Dell™ PowerConnect™ 32*xx* and 52*xx* Switches

System Information Guide

Příručka k zařízení

Guide d'informations système

Systeminformationshandbuch

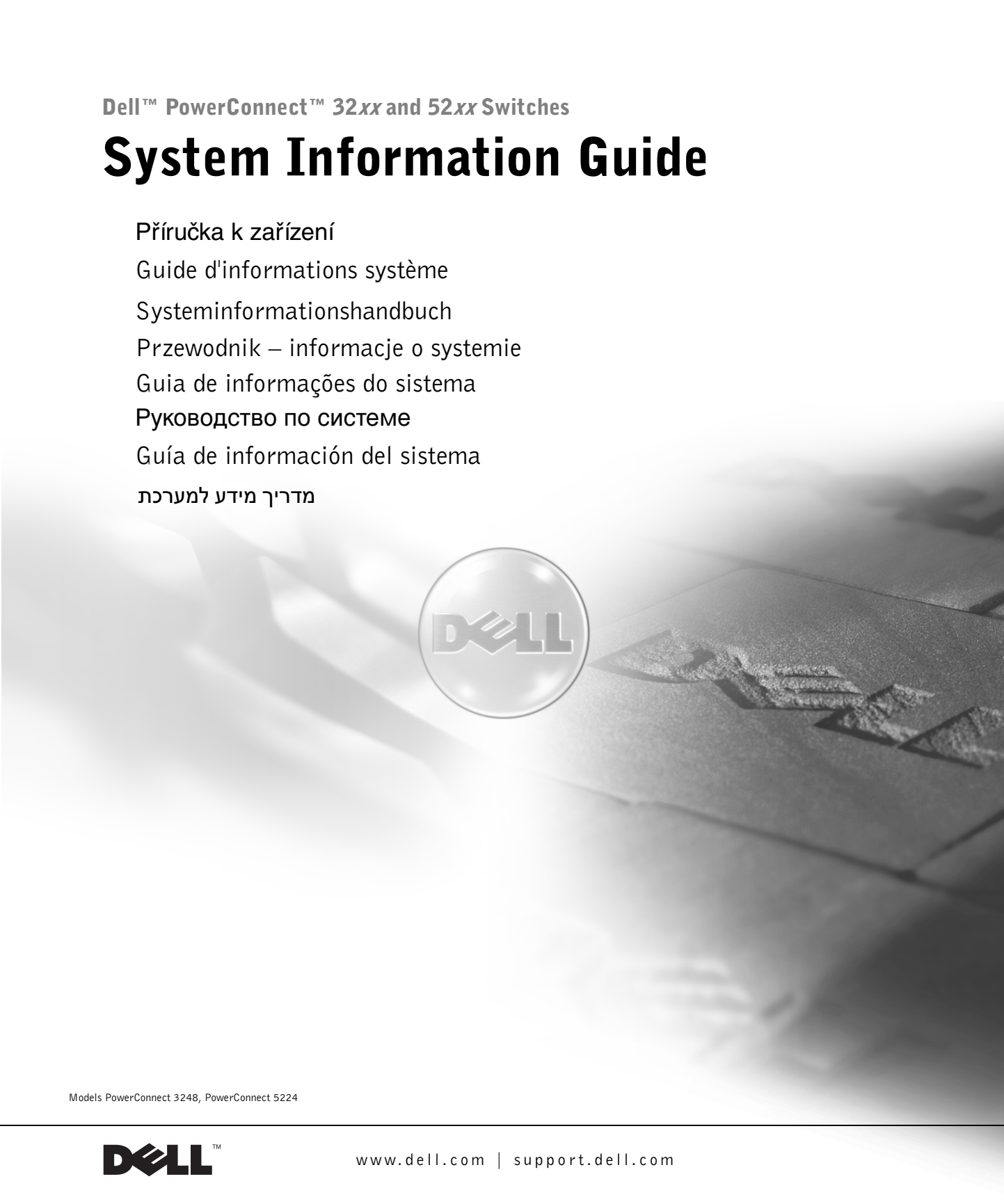
Przewodnik – informacje o systemie

Guia de informações do sistema

Руководство по системе

Guía de información del sistema

מדריך מידע למערכת



Models PowerConnect 3248, PowerConnect 5224

Notes, Notices, and Cautions

NOTE: A NOTE indicates important information that helps you make better use of your system.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

October 2002 P/N 2X612 Rev. A00

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⚠ Caution: Safety Instructions

Use the following safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

General

- Observe and follow service markings. Do not service any product except as explained in your system documentation. Opening or removing covers that are marked with the triangular symbol with a lightning bolt may expose you to electrical shock. Components inside these compartments should be serviced only by a trained service technician.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Keep your system away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide or contact your trained service provider.
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with approved equipment.
- Allow the product to cool before removing covers or touching internal components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.

⚠ Caution: Safety Instructions *(continued)*

- Use only approved power cable(s). If you have not been provided with a power cable for your system or for any AC-powered option intended for your system, purchase a power cable that is approved for use in your country. The power cable must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.
- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.
- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Position system cables and power cables carefully; route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- When connecting or disconnecting power to hot-pluggable power supplies, if offered with your system, observe the following guidelines:
  - Install the power supply before connecting the power cable to the power supply.
  - Unplug the power cable before removing the power supply.
  - If the system has multiple sources of power, disconnect power from the system by unplugging *all* power cables from the power supplies.
- Move products with care; ensure that all casters and/or stabilizers are firmly connected to the system. Avoid sudden stops and uneven surfaces.

Rack Mounting of Systems

Observe the following precautions for rack stability and safety. Also refer to the rack installation documentation accompanying the system and the rack for specific caution statements and procedures.

⚠ Caution: Safety Instructions *(continued)*

Systems are considered to be components in a rack. Thus, "component" refers to any system as well as to various peripherals or supporting hardware.

⚠ **CAUTION: Installing systems in a rack without the front and side stabilizers installed could cause the rack to tip over, potentially resulting in bodily injury under certain circumstances. Therefore, always install the stabilizers before installing components in the rack.**

After installing system/components in a rack, never pull more than one component out of the rack on its slide assemblies at one time. The weight of more than one extended component could cause the rack to tip over and may result in serious injury.

NOTE: Your system is safety-certified as a free-standing unit and as a component for use in a Dell rack cabinet using the customer rack kit. The installation of your system and rack kit in any other rack cabinet has not been approved by any safety agencies. It is your responsibility to have the final combination of system and rack kit in a rack cabinet evaluated for suitability by a certified safety agency. Dell disclaims all liability and warranties in connection with such combinations.

- System rack kits are intended to be installed in a rack by trained service technicians. If you install the kit in any other rack, be sure that the rack meets the specifications of a Dell rack.

⚠ **CAUTION: Do not move racks by yourself. Due to the height and weight of the rack, a minimum of two people should accomplish this task.**

- Before working on the rack, make sure that the stabilizers are secured to the rack, extended to the floor, and that the full weight of the rack rests on the floor. Install front and side stabilizers on a single rack or front stabilizers for joined multiple racks before working on the rack.
- Always load the rack from the bottom up, and load the heaviest item in the rack first.
- Make sure that the rack is level and stable before extending a component from the rack.
- Use caution when pressing the component rail release latches and sliding a component into or out of a rack; the slide rails can pinch your fingers.
- After a component is inserted into the rack, carefully extend the rail into a locking position, and then slide the component into the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.

⚠ Caution: Safety Instructions *(continued)*

- Do not step on or stand on any component when servicing other components in a rack.

⚠ **CAUTION: A qualified electrician must perform all connections to DC power and to safety grounds. All electrical wiring must comply with applicable local or national codes and practices.**

⚠ **CAUTION: Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.**

⚠ **CAUTION: The system chassis must be positively grounded to the rack cabinet frame. Do not attempt to connect power to the system until grounding cables are connected. Completed power and safety ground wiring must be inspected by a qualified electrical inspector. An energy hazard will exist if the safety ground cable is omitted or disconnected.**

Modems, Telecommunications, or Local Area Network Options

- Do not connect or use a modem during a lightning storm. There may be a risk of electrical shock from lightning.
- Never connect or use a modem in a wet environment.
- Do not plug a modem or telephone cable into the network interface controller (NIC) receptacle.
- Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.

When Working Inside Your System

Protecting Against Electrostatic Discharge

NOTICE: Only a certified service technician should perform repairs on your system. Damage due to servicing that is not authorized by Dell is not covered by your warranty.

Static electricity can harm delicate components inside your system. To prevent static damage, discharge static electricity from your body before you touch any of the electronic components, such as the microprocessor. You can do so by periodically touching an unpainted metal surface on the chassis.

⚠ Caution: Safety Instructions *(continued)*

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component in your system. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads and an antistatic grounding strap.

NOTE: Your system may also include circuit cards or other components that contain batteries. These batteries must also be disposed of in a battery deposit site. For information about such batteries, refer to the documentation for the specific card or component.

About This Guide

This document contains getting started/setup, safety, regulatory, and warranty information about your Dell™ PowerConnect™ network switch.

To obtain the latest versions of the documents on your hard drive, go to the Dell Support website at **support.dell.com**.

Finding Information and Assistance

Resource	Contents	Using the Resource
	Dell Support website • Technical support and information • Downloads for your system • Order or delivery status • Hints and tips, technology papers, service information	Go to **support.dell.com** and complete the one-time registration. • Get help with general usage, installation, and troubleshooting questions. • Obtain answers to technical service and support questions. • Get the latest versions of the drivers for your system. • Access documentation about your system and devices. • Join online discussions with other Dell customers and Dell technical professionals. • Explore a list of online links to Dell's primary vendors.
Premier Support.Dell.com	Dell Premier Support website • Service call status • Top technical issues by product • Frequently asked questions by product number • Customized service tags • System configuration detail	Go to **premiersupport.dell.com**: The Dell Premier Support website is customized for corporate, government, and education customers. This site may not be available in all regions.

Getting Started/Setup

Package Contents

Before you begin installing the switch, confirm that your package contains the following items:

- Switch
- AC power cable
- Null modem cable
- Self-adhesive rubber pads for desktop installation

- Rackmount kit for rack installation
- Dell PowerConnect CD

Before You Connect to the Network: Mounting Kit Instructions

NOTICE: Do not connect the switch to the network until you have established the correct Internet Protocol (IP) settings.

Before you connect to the network, you must install the switch on a flat surface or in a rack, set up a terminal emulation program, and plug in the power cable. Then you will set up a password and IP address.

The switch is supplied with rubber feet for stationing it on a flat surface and mounting brackets and screws for mounting it in a rack.

Installing on a Flat Surface

The switch can be installed on any appropriate level surface that can safely support the weight of the hubs and their attached cables. There must be adequate space around the switch for ventilation and access to cable connectors.

To install the switch on a flat surface:

1. Set the switch on the flat surface and check for proper ventilation.

   Allow at least 5.1 cm (2 inches) on each side for proper ventilation and 12.7 cm (5 inches) at the back for power cable clearance.

2. Attach rubber feet on each marked location on the bottom of the chassis.

   The rubber feet are optional but recommended to keep the unit from slipping.

Installing in a Rack

The switch can be installed in most standard 48.3-cm (19-inch) racks.

To install the switch in a rack:

NOTE: For racks that are not prethreaded, cage nuts are provided.

1. Use the supplied screws to attach a mounting bracket to each side of the switch.
2. Position the switch in the rack and align the holes in the mounting bracket with the holes in the rack.

3 Insert and tighten two screws appropriate for your rack through each of the mounting brackets.

Connecting the Console Port

The switch provides an RS-232 serial port that enables a connection to a desktop system or terminal for monitoring and configuring the switch. This port is a male DB-9 connector, implemented as a data terminal equipment (DTE) connection.

To use the console port, you need the following equipment:

- A terminal or TTY-compatible terminal, or a desktop or portable system with a serial port and the capability to emulate a terminal
- A null modem or crossover RS-232 cable with a female DB-9 connector for the console port on the switch

To connect a terminal to the console port:

1 Connect the female connector of the RS-232 cable directly to the console port on the switch, and tighten the captive retaining screws.

2 Connect the other end of the cable to a terminal or the serial connector of a desktop system running terminal emulation software.

Ensure that the terminal emulation software is set as follows:

a Select the appropriate serial port (serial port 1 or serial port 2).

b Set the data rate to 9600 baud.

c Set the data format to 8 data bits, 1 stop bit, and no parity.

d Set flow control to *none*.

e Under **Properties**, select **VT100 for Emulation** mode.

f Select **Terminal keys** for **Function, Arrow, and Ctrl keys**. Ensure that the setting is for **Terminal keys** (*not* **Windows keys**).

NOTICE: When using HyperTerminal with Microsoft® Windows® 2000, ensure that you have Windows 2000 Service Pack 2 or later installed. With Windows 2000 Service Pack 2, the arrow keys function properly in HyperTerminal's VT100 emulation. Go to **www.microsoft.com** for information on Windows 2000 service packs.

3 Once you have set up the terminal correctly, plug the power cable into the power receptacle on the back of the switch.

The boot sequence appears in the terminal.

Password Protection

To proceed through the CLI initial login screen, you must enter a password. If you have not logged into the CLI program, the default user names are *admin* and *guest*, and the corresponding passwords are *admin* and *guest*. If you log in as *guest*, you have access to the Normal Exec level. If you log in as *admin*, you have access to the Privileged Exec level.

```
User Access Verification

Username: admin
Password:

      CLI session with the PowerConnect 3248 is opened.
      To end the CLI session, enter [Exit].

Console#
```

After your initial login, define new passwords for both default user names to prevent unauthorized access to the switch, and record the passwords for future reference.

1 At the CLI login prompt, enter `admin` as the user name and password for the Privileged Exec level, and then press <Enter>.

2 Type `configure` and press <Enter>.

3 To set the Normal Exec level password, type `username guest password 0 password`, where *`password`* is your new password (up to eight characters), and then press <Enter>.

NOTE: Passwords are case sensitive.

4 To set the Privileged Exec level password, type `username admin password 0 password`, where *password* is your new password (up to eight characters), and then press <Enter>.

5 To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

NOTICE: CLI configuration commands only modify the running configuration file and are not saved when you restart the switch. To save all your configuration changes in nonvolatile storage, use the **copy** command to copy the running configuration file to the startup configuration.

SNMP Settings

Simple Network Management Protocol (SNMP) is a protocol designed specifically for managing devices on a network. Network equipment, such as hubs, switches, and routers, use SNMP to configure system features for proper operation, as well as to monitor their performance and detect potential problems.

Managed devices that support SNMP include software (referred to as an agent), which runs locally on the device. A defined set of variables (managed objects) is maintained by the SNMP agent and used to manage the device. These objects are defined in a Management Information Base (MIB), which provides a standard presentation of the information controlled by the agent. SNMP defines both the format of the MIB specifications and the protocol used to access this information over the network.

The PowerConnect 3248 switch includes an on-board SNMP agent that monitors the status of the switch hardware, as well as the traffic passing through the ports. A computer on the network running SNMP-based management software, called a Network Management Station (NMS), can be used to access this information. Access rights to the SNMP agent are controlled by community strings. To communicate with the switch, the NMS must first submit a valid community string for authentication.

The default community strings for the switch are:

- Public — Allows authorized management stations to retrieve MIB objects
- Private — Allows authorized management stations to retrieve and modify MIB objects

If you do not intend to utilize SNMP, delete both of the default community strings. SNMP management access to the switch is disabled if no community strings exist.

To delete the strings:

1. If you are not already in the Privileged Exec level global configuration mode, type `configure` and press <Enter>.
2. To delete the **private** community string, type `no snmp-server community private` and press <Enter>.
3. To delete the **public** community string, type `no snmp-server community public` and press <Enter>.
4. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

If you do intend to utilize SNMP, change the default community strings to prevent unauthorized access to the switch.

To change the strings:

1. If you are not already in the Privileged Exec level global configuration mode, type `configure` and press <Enter>.
2. To delete the existing **private** community string, type `no snmp-server community private` and press <Enter>.
3. Type `snmp-server community` *`string`* `rw`, where *`string`* is your new community string (case sensitive) for read-write access, and then press <Enter>.
4. To delete the existing **public** community string, type `no snmp-server community public` and press <Enter>
5. Type `snmp-server community` *`string`* `ro`, where *`string`* is your new community string (case sensitive) for read-only access, and then press <Enter>.
6. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

IP Address Assignment

You must assign an IP address to the switch to gain management access over the network. You may also need to a establish a default gateway between the switch and management stations that exist on another network segment. You can statically configure a specific IP address or direct the switch to obtain an address from a Boot Protocol (BOOTP) or Dynamic Host Configuration Protocol (DHCP) server when the switch is powered on. Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods. The CLI program does not accept addresses in any other format.

NOTICE: By default, the IP address is assigned to VLAN 1 through DHCP.

If you select the **bootp** or **dhcp** option, IP is enabled but does not function until a BOOTP or DHCP reply has been received. Requests are broadcast periodically by the switch in an effort to learn its IP address. (BOOTP and DHCP values can include the IP address, default gateway, and subnet mask).

To display assigned IP settings using the CLI:

1. From the Privileged Exec or Normal Exec level mode, type `show ip interface` and press <Enter>.

   The assigned IP address and subnet mask displays.

2. From the Privileged Exec mode, type `show ip redirects` to display the assigned gateway IP address, and then press <Enter>.

The following example displays IP settings assigned by **bootp** or **dhcp** using the CLI.

```
Console#show ip interface
 IP address and netmask: 10.1.0.1 255.255.252.0 on VLAN 1,
 and address mode: User specified.
Console# show ip redirects
ip default gateway 10.1.0.254
Console#
```

Before you can assign a static IP address to the switch, you must obtain the following information from your network administrator:

- IP address for the switch
- Default gateway for the network
- Network mask for the network

To assign a static IP address to the switch:

1. From the Privileged Exec level global configuration mode prompt, type `interface vlan 1` to access the interface-configuration mode, and then press <Enter>.
2. Type `ip address` *`ip-address netmask`*, where *`ip-address`* is the switch IP address and *`netmask`* is the network mask for the network.
3. Type `exit` to return to the global configuration mode prompt and press <Enter>.
4. To set the IP address of the default gateway for the network to which the switch belongs, type `ip default-gateway` *`gateway`*, where *`gateway`* is the IP address of the default gateway, and then press <Enter>.
5. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

NOTICE: Only one VLAN can be assigned an IP address. If you assign an address to any other VLAN, the new address overrides the original IP address.

The following example shows how to set a static IP address using the CLI.

```
Console(config)# interface vlan 1
Console(config-if)# ip address 192.168.1.5 255.255.255.0
Console(config-if)# exit
Console(config)# ip default-gateway 192.168.1.254
Console(config)#
```

To configure the switch for DHCP or BOOTP:

1. From the Privileged Exec level global configuration mode prompt, type `interface vlan 1` to access the interface-configuration mode, and then press <Enter>.
2. At the next prompt, use one of the following commands:
   - To obtain IP settings through DHCP, type `ip address dhcp`
   - To obtain IP setting through BOOTP, type `ip address bootp`
3. Press <Enter>.
4. To save your configuration changes, type `copy running-config startup-config` and press <Enter>.

Connecting Devices to the Switch

After you assign IP addresses to the switch, you can connect devices to the RJ-45 connectors on the switch.

NOTICE: If autonegotiation is disabled for an RJ-45 port, the auto-MDI/MDI-X pin signal configuration is also disabled.

To connect a device to an SFP transceiver port:

1. Use your cabling requirements to select an appropriate SFP transceiver type.
2. Insert the SFP transceiver (sold separately) into the SFP transceiver slot.
3. Use the appropriate network cabling to connect a device to the connectors on the SFP transceiver.

NOTICE: When the SFP transceiver acquires a link, the associated integrated 10/100/1000BASE-T port is disabled.