



Configuring the Switch with the CLI Setup Program

This appendix provides a command-line interface (CLI) setup procedure for a standalone switch. Before connecting the switch to a power source, review the safety warnings in [Warnings, page 13](#) and [Installation Guidelines, page 33](#)

Accessing the CLI Through Express Setup

When you first set up the switch, you should use Express Setup to enter the initial IP information. This process enables the switch to connect to local routers and the Internet. You can then access the switch through the IP address for additional configuration.

Required Equipment

You need this equipment to set up the switch:

- Computer with Windows 2000/Vista/2003/XP/Window7/Mac.
- A Web browser (IE, Firefox) with JavaScript enabled.
- A straight-through or crossover Category 5 Ethernet cable to connect your computer to the switch port.

Do not use the RS232 serial console port for express setup.

- A small paper clip to reach to button.

Note: Before running Express Setup, disable any pop-up blockers or proxy settings on your browser and any wireless client running on your computer.

Express Setup Procedure

To run Express Setup:

1. Make sure that nothing is connected to the switch.
2. Ensure the switch is in default factory mode.

Skip to next step if freshly out of the box.

- a. If not freshly out of the package, use a paper clip to reset the switch for at least 15 seconds until the SYS LED light turns **red**; then release the paper clip.

Switch will automatically reboot once the SYS led goes red.

3. Ensure no data port is connected to the switch.

Note: During Express Setup, the switch acts as a DHCP server.

- You can add a serial console cable to monitor the booting sequence. **Do not hit [return key] on console screen.**

- Ensure the computer connected to switch is configured with DHCP.

4. Web Browser: disable pop-up blockers and proxy settings.
5. Connect power to the switch.

See the wiring instructions in [Grounding the Switch, page 34](#) and [Wiring the Power Source, page 37](#).

6. Power on or reset the switch.

Use LEDs to monitor boot progress:

- Sys blinking: bootloader
- Sys Blank: POST
- Sys solid: exit post, IOS initializing
- Sys and alarm LEDs green: IOS init done
- ~90 – 100 seconds after power on

7. Insert paper clip into express setup button (see [Figure 4 on page 6](#)) for 1-2 seconds.

When released, port Gig1/1 LED starts flashing green.

8. Connect computer to port Gig1/1.

LED continues to blink.

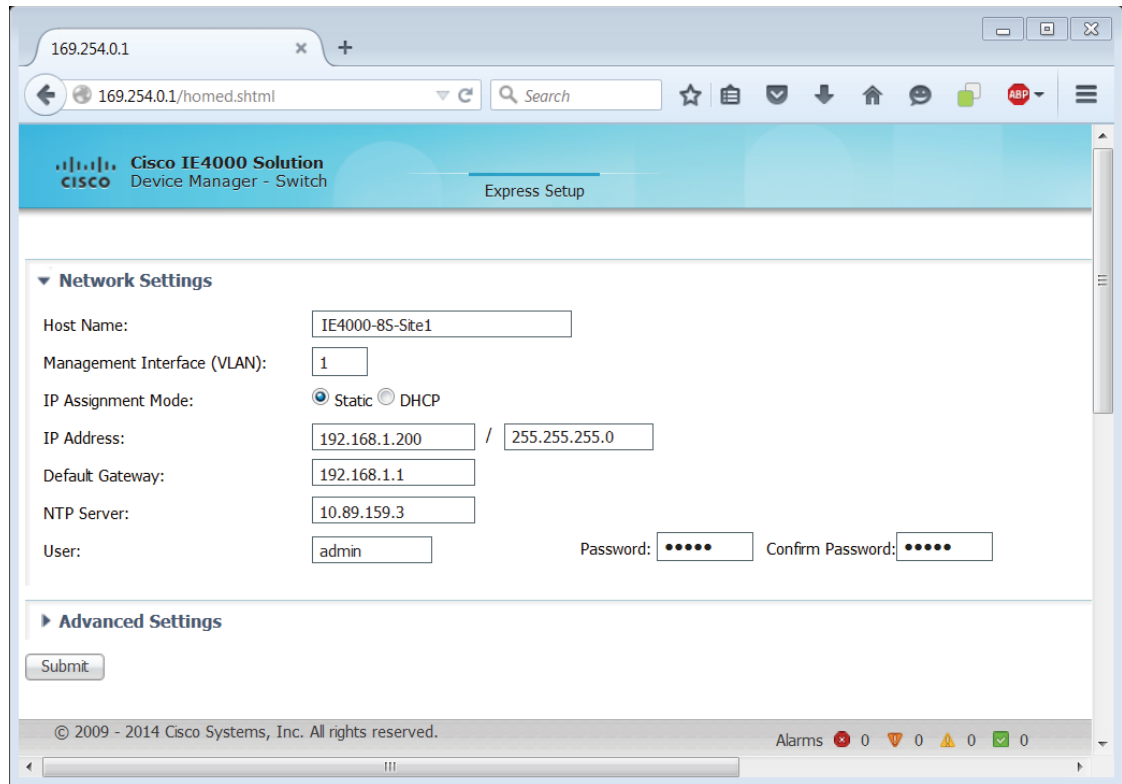
9. After computer has IP address (192.168.1.1), point browser to <http://192.168.1.254>.

10. Leave the **username** blank and enter the default password, **cisco**.

Note: The switch ignores text in the **username** field. The Express Setup window appears.

Troubleshooting: If the Express Setup window does not appear, make sure that any pop-up blockers or proxy settings on your browser are disabled and that any wireless client is disabled on your computer.

Note: The screen capture below shows an IE 4000 series switch, but the functionality is identical for the IE 5000.



11. Enter all entries in English letters and Arabic numbers.

In the Network Settings (Required for Static IP):

- **IP Address:** Enter a valid IP address for the switch.

You can later use the IP address to access the switch through Device Manager.

- **Switch Username and Password:** Enter a password. The password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the Confirm Password field, enter the password again.

Note: You must change the password from the default password, **cisco**.

- **Default Gateway:** Enter the IP address of the router.

12. Enter the Control Industrial Protocol (CIP) VLAN settings (optional):

- **CIP VLAN:** Enter the VLAN on which CIP will be enabled. The CIP VLAN can be the same as the management VLAN, or you can isolate CIP traffic on another VLAN that is already configured on the switch. The default CIP VLAN is VLAN 1. Only one VLAN on a switch can have CIP enabled.
- **IP Address:** Enter the IP address for the CIP VLAN. If the CIP VLAN is different from the management VLAN, you must specify an IP address for the CIP VLAN. Make sure that the IP address that you assign to the switch is not being used by another device in your network.
- **Subnet Mask:** Select a mask from the drop-down list.

For more information about the CIP VLAN settings, click Help on the tool-bar.

13. Optional Settings:

You can enter the optional information now, or enter it later by using Device Manager. For more information about the Express Setup fields, see the on-line help for the Express Setup window.

Click Submit to save your changes and to complete the initial setup.

For more information about the optional settings, click Help on the tool-bar.

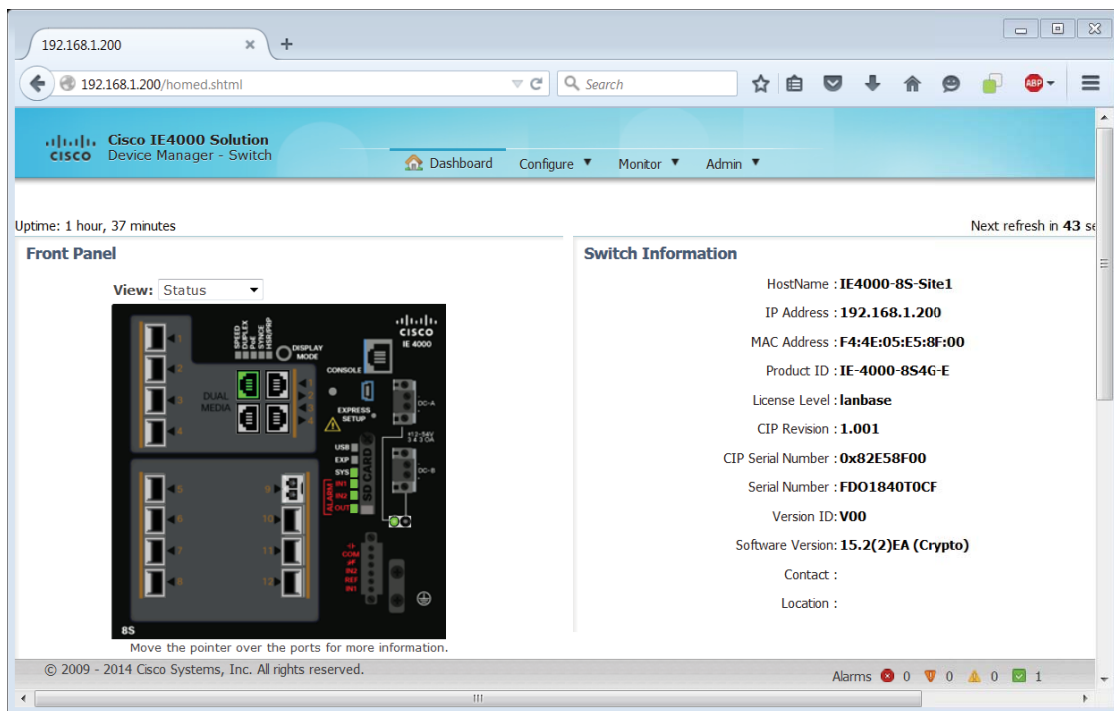
After you click Submit, these events occur:

- The switch is configured and exits Express Setup mode.
- The browser displays a warning message and tries to connect with the earlier switch IP address.
- Typically, connectivity between the computer and the switch is lost because the configured switch IP address is in a different subnet from the IP address on the computer.

14. Turn off DC power at the source, disconnect all cables to the switch, and install the switch in your network. See [Management Options, page 12](#) for information about configuring and managing the switch.

15. If you changed the static IP address on your computer in Step 1, change it to the previously configured static IP address.

Note: The screen capture below shows an IE 4000 series switch, but the functionality is identical for the IE 5000.



16. You can now manage the switch by using the Cisco Network Assistant, Device Manager, or both. See [Management Options, page 12](#) for information about configuring and managing the switch.

You can display Device Manager by following these steps:

- a. Start a web browser on your computer.
- b. Enter the switch **IP address**, **username**, and **password** in the web browser, and press Enter. The Device Manager page appears.

Troubleshooting:

If the Device Manager page does not appear:

- Confirm that the port LED for the switch port connected to your network is green.
- Confirm that the computer that you are using to access the switch has network connectivity by connecting it to a well known web server in your network. If there is no network connection, troubleshoot the network settings on the computer.
- Make sure that the switch IP address in the browser is correct.
- If the switch IP address in the browser is correct, the switch port LED is green, and the computer has network connectivity, continue troubleshooting by reconnecting the computer to the switch. Configure a static IP address on the computer that is in the same subnet as the switch IP address.

When the LED on the switch port connected to the computer is green, reenter the switch IP address in a web browser to display the Device Manager. When Device Manager appears, you can continue with the switch configuration.

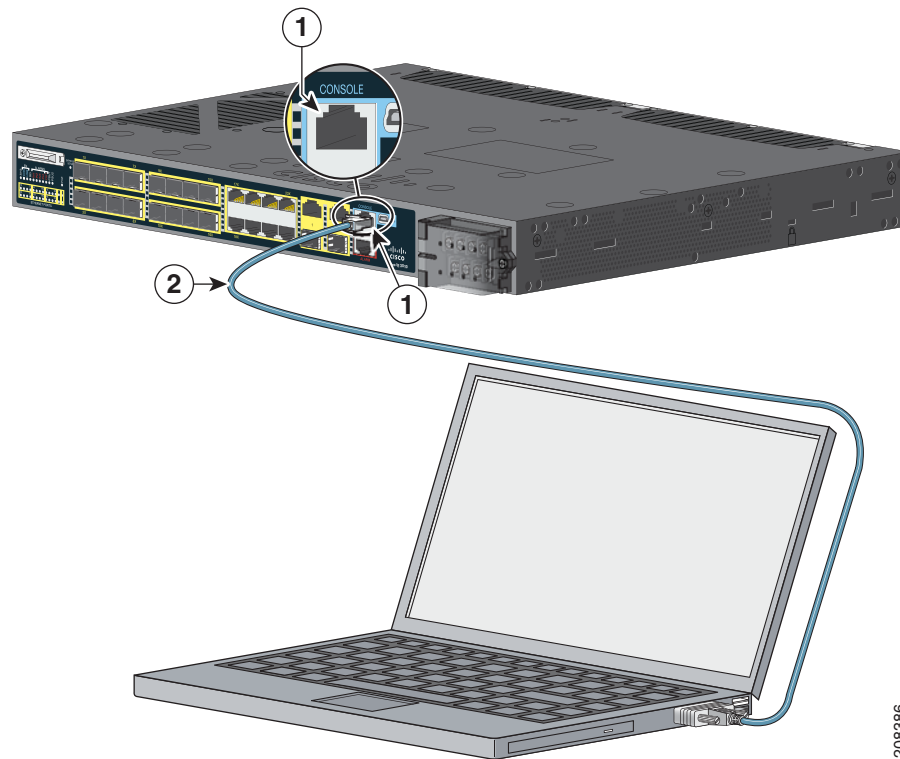
Accessing the CLI Through the Console Port

You can enter Cisco IOS commands and parameters through the CLI. Use one of these options to access the CLI:

- [RJ-45 Console Port, page 59](#)
- [USB Console Port, page 60](#)

RJ-45 Console Port

1. Connect the RJ-45-to-DB-9 adapter cable to the 9-pin serial port on the PC. Connect the other end of the cable to the switch console port.
2. Start the terminal-emulation program on the PC or the terminal. The program, frequently a PC application such as HyperTerminal or ProcommPlus, makes communication between the switch and your PC or terminal possible.

Figure 41 Connecting the Console Cable

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1	RJ-45 console port	2	Console cable (RJ-45-to-DB-9 adapter cable)
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3. Configure the baud rate and character format of the PC or terminal to match the console port characteristics:

- 9600 baud
- 8 data bits
- 1 stop bit
- No parity
- None (flow control)

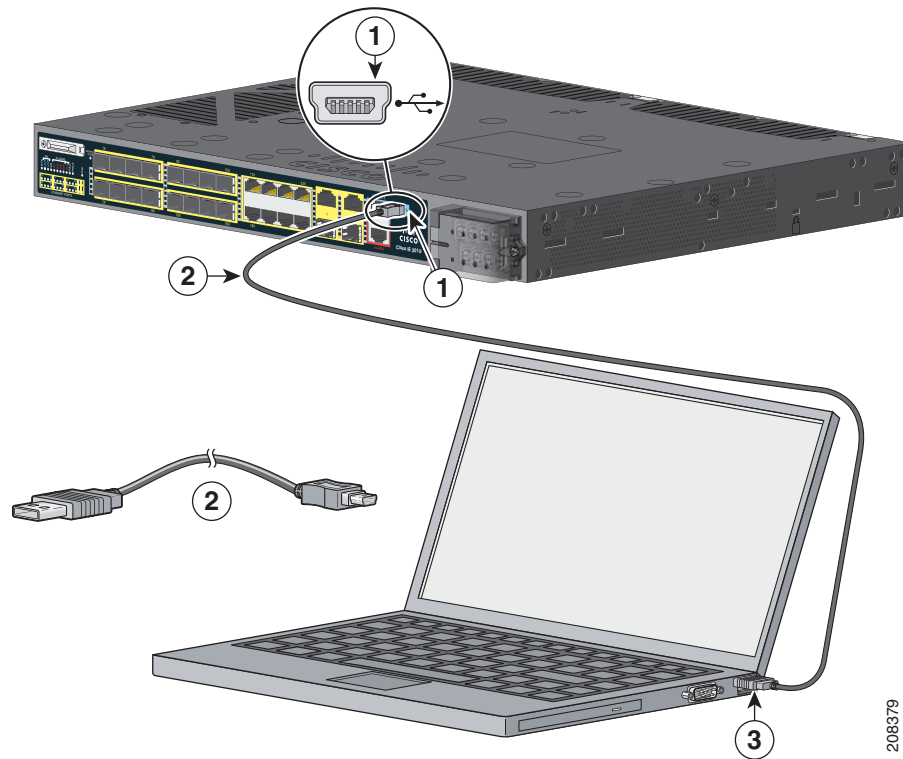
4. Connect power to the switch as described in [Wiring the Power Source](#), page 37.

5. The PC or terminal displays the bootloader sequence. Press **Enter** to display the setup prompt. Follow the steps in the [Completing the Setup Program](#), page 63.

USB Console Port

1. If you are connecting the switch USB console port to a Windows-based PC for the first time, install a USB driver. See [Installing the Cisco Microsoft Windows XP, 2000, Vista, 7, 8, and 10 USB Device Driver](#), page 62 for more information.

Figure 42 Connecting the USB Console Cable



2. Connect an USB cable to the PC USB port, and connect the other end of the cable to the switch mini-B (5-pin-connector) USB console port. See [Figure 42 on page 61](#).
3. To identify the COM port assigned to the USB console port:
 - a. Choose **Start > Control Panel > Systems**
 - b. Click the **Hardware** tab and choose **Device Manager**.
 - c. Expand the **Ports** section.

The assigned COM port appears in parenthesis at the end of the line with this entry: Cisco USB System Management Console.

4. Start the terminal-emulation program on the PC or the terminal.

The program, frequently a PC application such as HyperTerminal or ProcommPlus, makes communication possible between the switch and your PC or terminal.
5. Configure the COM port.
6. Configure the baud rate and character format of the PC or terminal to match the console port characteristics:
 - 9600 baud
 - 8 data bits

- 1 stop bit
 - No parity
 - None (flow control)
7. Connect power to the switch as described in [Wiring the Power Source, page 37](#)
The PC or terminal displays the bootloader sequence.
 8. Press **Enter** to display the setup prompt.
 9. Follow the steps in the [Completing the Setup Program, page 63](#).

Installing the Cisco Microsoft Windows XP, 2000, Vista, 7, 8, and 10 USB Device Driver

A USB device driver must be installed the first time a Microsoft Windows-based PC is connected to the USB console port on the switch. Use this procedure to install the USB driver on Windows XP, Windows 2000, Windows Vista, Windows 7, Windows 8, and Windows 10.

1. Obtain the file `Cisco_usbconsole_driver_3_1.zip` from the Cisco.com website
<https://software.cisco.com/download/release.html?mdfid=282979369&softwareid=282855122&release=3.1>

The file details are as follows:

- Description: `Cisco_usbconsole_driver_3_1.zip`
 - Release: 3.1
 - Release Date: 27/Nov/2014
 - File Name: `Cisco_usbconsole_driver_3_1.zip`
 - Size: 14.35 MB (15045453 bytes)
 - MD5 Checksum: `eff2e955edcdc70209e6f9c8f6bd59cd`
2. Unzip the file and install the corresponding exe file.
 3. Navigate to the **Device Manager** window by performing a search in Windows for **Device Manager** and opening it.
 4. Connect the USB cable from the Windows PC to the Cisco switch.
 5. From the **Device Manager** page, expand **Ports (COM & LPT)**. Select **USB Serial Port**. Right-click and select **Update Driver Software ...**
 6. In the Update Driver Software window, select **Browse my computer for driver software**. Then choose **Let me pick from a list of device drivers on my computer** and click **Next**.
 7. Enable **Show compatible hardware** and choose **Cisco Serial** as the model. Click **Next**.
After the update is completed, Windows displays **Windows has successfully updated your driver software**.
 8. Click **Close**.

Uninstalling the Cisco Microsoft Windows XP, 2000, Vista, 7, 8, and 10 USB Driver

Note: Disconnect the switch console terminal before uninstalling the driver.

1. Run `setup.exe` for Windows 32-bit or `setup(x64).exe` for Windows-64bit.
2. Click **Next**.

3. When the InstallShield Wizard for Cisco Virtual Com appears, click **Next**.
4. When the Program Maintenance window appears, select the **Remove** radio button.
5. Click **Next**.
6. When the Remove the Program window appears, click **Remove**.

If a User Account Control warning appears, click **Allow - I trust this program to proceed**.

7. When the InstallShield Wizard Completed window appears, click **Finish**.

Entering the Initial Configuration Information

To set up the switch, you need to complete the setup program, which runs automatically after the switch powers on. You must assign an IP address and other configuration information necessary for the switch to communicate with the local routers and the Internet.

IP Settings

You need this information:

- Switch IP address
- Subnet mask (IP netmask)
- Default gateway (router)
- Enable secret password
- Enable password
- Telnet password

Completing the Setup Program

Follow these steps to complete the setup program and to create an initial configuration for the switch:

1. Enter **Yes** at these two prompts.

```
Would you like to enter the initial configuration dialog? [yes/no]: yes
```

```
At any point you may enter a question mark '?' for help.  
Use ctrl-c to abort configuration dialog at any prompt.  
Default settings are in square brackets '[]'.
```

```
Basic management setup configures only enough connectivity  
for management of the system, extended setup will ask you  
to configure each interface on the system.
```

```
Would you like to enter basic management setup? [yes/no]: yes
```

2. Enter a host name for the switch, and press **Return**.

On a command switch, the host name is limited to 28 characters and on a member switch to 31 characters. Do not use *-n*, where *n* is a number, as the last character in a host name for any switch.

```
Enter host name [Switch]: host_name
```

3. Enter an enable secret password, and press **Return.**

The password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, allows spaces, but ignores leading spaces. The secret password is encrypted, and the enable password is in plain text.

```
Enter enable secret: secret_password
```

4. Enter an enable password, and press **Return.**

```
Enter enable password: enable_password
```

5. Enter a virtual terminal (Telnet) password, and press **Return.**

The password can be from 1 to 25 alphanumeric characters, is case sensitive, allows spaces, but ignores leading spaces.

```
Enter virtual terminal password: terminal-password
```

6. (Optional) Configure Simple Network Management Protocol (SNMP) by responding to the prompts. You can also configure SNMP later through the CLI. To configure SNMP later, enter **no.**

```
Configure SNMP Network Management? [no]: no
```

7. Enter the interface name (physical interface or VLAN name) of the interface that connects to the management network, and press **Return. For this release, always use **vlan1** as that interface.**

```
Enter interface name used to connect to the
management network from the above interface summary: vlan1
```

8. Configure the interface by entering the switch IP address and subnet mask and pressing **Return. The IP address and subnet masks shown below are examples.**

```
Configuring interface vlan1:
Configure IP on this interface? [yes]: yes
IP address for this interface: 10.4.120.106
Subnet mask for this interface [255.0.0.0]: 255.0.0.0
```

9. Enter Y to configure the switch as the cluster command switch. Enter N to configure it as a member switch or as a standalone switch.

If you enter **N**, you can configure the switch as a command switch later through the CLI. To configure it later, enter **no**.

```
Would you like to enable as a cluster command switch? [yes/no]: no
```

You have completed the initial configuration of the switch, and the switch displays its configuration. This is an example of the configuration output:

```
The following configuration command script was created:
hostname switch1
enable secret 5 $1$U1q8$D1A/OiaEbl90WcBPd9cOn1
enable password enable_password
line vty 0 15
password terminal-password
no snmp-server
!
no ip routing

!
interface Vlan1
no shutdown
ip address 10.4.120.106 255.0.0.0
!
interface FastEthernet1/0/1
!
```

Entering the Initial Configuration Information

```
interface FastEthernet1/0/2

interface FastEthernet1/0/3
!
...<output abbreviated>
end
```

10. These choices appear:

- [0] Go to the IOS command prompt without saving this config.
- [1] Return back to the setup without saving this config.
- [2] Save this configuration to nvram and exit.

If you want to save the configuration and use it the next time the switch reboots, select option 2 to save it in NVRAM.

Enter your selection [2]:**2**

Make your selection, and press **Return**.

After you complete the setup program, the switch can run the default configuration that you created. To change this configuration or to perform other management tasks, enter commands at the `Switch>` *prompt*.

