



## Configuring the Access Point for the First Time

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This chapter describes how to configure basic settings on your access point for the first time. The contents of this chapter are similar to the instructions in the quick start guide that shipped with your access point. You can configure all the settings described in this chapter using the CLI, but it might be simplest to browse to the access point's web-browser interface to complete the initial configuration and then use the CLI to enter additional settings for a more detailed configuration.

This chapter contains these sections:

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- [Connecting to the 350 Series Access Point Locally, page 2-3](#)
- [Connecting to the 1100 Series Access Point Locally, page 2-4](#)
- [Connecting to the 1200 Series Access Point Locally, page 2-5](#)
- [Assigning Basic Settings, page 2-6](#)
- [Protecting Your Wireless LAN, page 2-10](#)
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## Before You Start

Before you install the access point, make sure you are using a computer connected to the same network as the access point, and obtain the following information from your network administrator:

- A system name for the access point
- The case-sensitive wireless service set identifier (SSID) for your radio network
- If not connected to a DHCP server, a unique IP address for your access point (such as 172.17.255.115)
- If the access point is not on the same subnet as your PC, a default gateway address and subnet mask
- A Simple Network Management Protocol (SNMP) community name and the SNMP file attribute (if SNMP is in use)
- If you use IPSU to find or assign the access point IP address, the MAC address from the label on the bottom of the access point (such as 00164625854c)

## Resetting the Access Point to Default Settings

If you need to start over during the initial setup process, follow these steps to reset the access point to factory default settings using the access point MODE button:

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- Step 1** Disconnect power (the power jack for external power or the Ethernet cable for in-line power) from the access point.
  - Step 2** Press and hold the MODE button while you reconnect power to the access point.
  - Step 3** Hold the MODE button until the Status LED turns amber (approximately 1 to 2 seconds), and release the button. All access point settings return to factory defaults.
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Follow these steps to return to default settings using the web-browser interface:

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- Step 1** Open your Internet browser. The browser interface is fully compatible with Microsoft Internet Explorer version 5.5 and 6.0 on Windows platforms (98, NT, 2000, and XP) and on Linux and Solaris platforms.
  - Step 2** Enter the access point's IP address in the browser address line and press **Enter**. An Enter Network Password window appears.
  - Step 3** Enter your username in the User Name field. The default username is **Cisco**.
  - Step 4** Enter the access point password in the Password field and press **Enter**. The default password is **Cisco**. The Summary Status page appears.
  - Step 5** Click **System Software** and the System Software screen appears.
  - Step 6** Click **System Configuration** and the System Configuration screen appears.
  - Step 7** Click the **Reset to Defaults** button.



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**Note** If the access point is configured with a static IP address, the IP address does not change.

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## Obtaining and Assigning an IP Address

To browse to the access point's Express Setup page, you must either obtain or assign the access point's IP address using one of the following methods:

- Use default address 10.0.0.1 when you connect to the access point locally. For detailed instructions, see the “[Connecting to the 1100 Series Access Point Locally](#)” section on page 2-4.
- If you have a 350 or a 1200 series access point, connect to the access point console port and assign a static IP address. Follow the steps in the “[Connecting to the 350 Series Access Point Locally](#)” section on page 2-3 or in the “[Connecting to the 1200 Series Access Point Locally](#)” section on page 2-5 to connect to the console port.
- Use a DHCP server (if available) to automatically assign an IP address. You can find out the DHCP-assigned IP address using one of the following methods:
  - If you have a 350 or a 1200 series access point, connect to the access point console port and use the **show ip interface brief** command to display the IP address. Follow the steps in the “[Connecting to the 350 Series Access Point Locally](#)” section on page 2-3 or in the “[Connecting to the 1200 Series Access Point Locally](#)” section on page 2-5 to connect to the console port.
  - Provide your organization's network administrator with your access point's Media Access Control (MAC) address. Your network administrator will query the DHCP server using the MAC address to identify the IP address. The access point's MAC address is on label attached to the bottom of the access point.
  - Use the Cisco IP Setup Utility (IPSU) to identify the assigned address. You can also use IPSU to assign an IP address to the access point if it did not receive an IP address from the DHCP server. IPSU runs on most Microsoft Windows operating systems: Windows 9x, 2000, Me, NT, and XP.

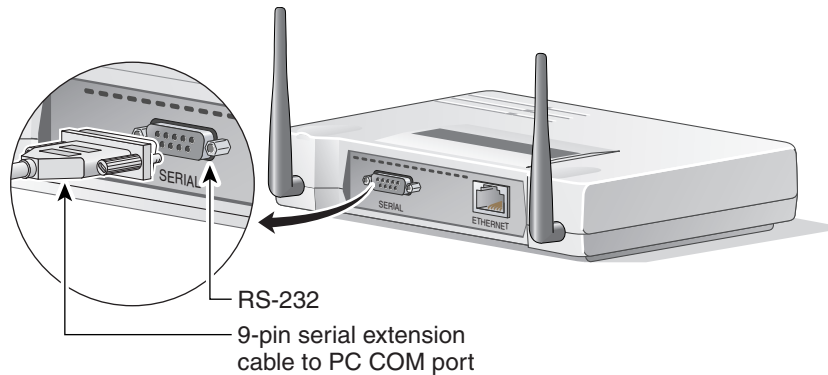
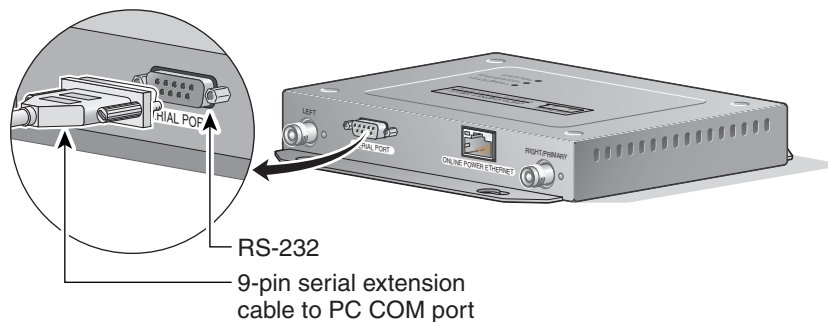
You can download IPSU from the Software Center on Cisco.com. Click this link to browse to the Software Center:

<http://www.cisco.com/public/sw-center/sw-wireless.shtml>

## Connecting to the 350 Series Access Point Locally

If you need to configure the access point locally (without connecting the access point to a wired LAN), you can connect a PC to its RS-232 console port using a nine-pin, male-to-female, straight-through serial cable. Follow these steps to open the CLI by connecting to the access point console port:

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- Step 1** Connect a nine-pin, male-to-female, straight-through DB-9 serial cable to the RS-232 serial port on the access point and to the COM port on a computer. [Figure 2-3](#) shows the serial port connection.

**Figure 2-1** Connecting the Serial Cable (Access Point with Plastic Case)**Figure 2-2** Connecting the Serial Cable (Access Point with Metal Case)

- Step 2** Set up a terminal emulator to communicate with the access point. Use the following settings for the terminal emulator connection: 9600 baud, 8 data bits, no parity, 1 stop bit, and Xon/Xoff flow control.

## Connecting to the 1100 Series Access Point Locally

If you need to configure the access point locally (without connecting the access point to a wired LAN), you can connect a PC to its Ethernet port using a Category 5 Ethernet cable. You can use a local connection to the Ethernet port much as you would use a serial port connection.



**Note** You do not need a special crossover cable to connect your PC to the access point; you can use either a straight-through cable or a crossover cable.

If the access point is configured with default values and not connected to a DHCP server or cannot obtain an IP address, it defaults to IP address 10.0.0.1 and becomes a mini-DHCP server. In that capacity, the access point provides up to twenty IP addresses between 10.0.0.11 and 10.0.0.30 to the following devices:

- An Ethernet-capable PC connected to its Ethernet port

- Wireless client devices configured to use either no SSID or *tsunami* as the SSID, and with all security settings disabled

The mini-DHCP server feature is disabled automatically when you assign a static IP address to the access point.

**Caution**

When an access point with default settings is connected on a wired LAN and does not receive an IP address from a DHCP server, the access point provides an IP address to any DHCP requests it receives.

Follow these steps to connect to the access point locally:

- Step 1** Make sure that the PC you intend to use is configured to obtain an IP address automatically, or manually assign it an IP address from 10.0.0.2 to 10.0.0.10. Connect your PC to the access point using a Category 5 Ethernet cable. You can use either a crossover cable or a straight-through cable.
- Step 2** Power up the access point.
- Step 3** Follow the steps in the “[Assigning Basic Settings](#)” section on page 2-6. If you make a mistake and need to start over, follow the steps in the “[Resetting the Access Point to Default Settings](#)” section on page 2-2.
- Step 4** After configuring the access point, remove the Ethernet cable from your PC and connect the access point to your wired LAN.

**Note**

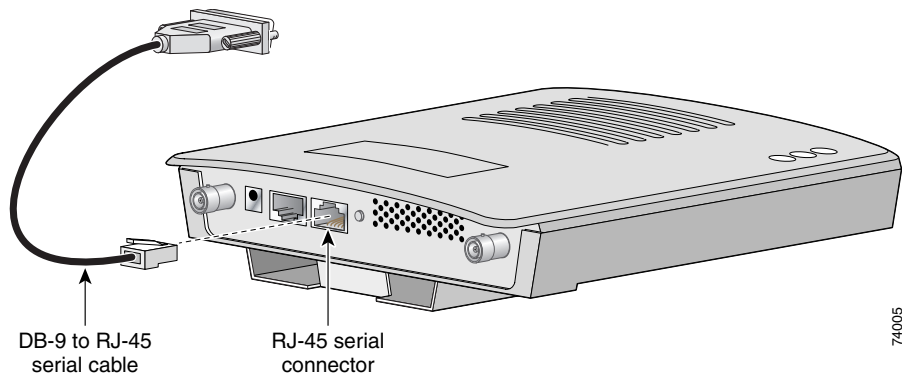
When you connect your PC to the access point or reconnect your PC to the wired LAN, you might need to release and renew the IP address on the PC. On most PCs, you can perform a release and renew by rebooting your PC or by entering **ipconfig /release** and **ipconfig /renew** commands in a command prompt window. Consult your PC operating instructions for detailed instructions.

## Connecting to the 1200 Series Access Point Locally

If you need to configure the access point locally (without connecting the access point to a wired LAN), you can connect a PC to its console port using a DB-9 to RJ-45 serial cable. Follow these steps to open the CLI by connecting to the access point console port:

- Step 1** Connect a nine-pin, female DB-9 to RJ-45 serial cable to the RJ-45 serial port on the access point and to the COM port on a computer. [Figure 2-3](#) shows the serial port connection.

Figure 2-3 Connecting the Serial Cable



**Note** The Cisco part number for the DB-9 to RJ-45 serial cable is AIR-CONCAB1200. Browse to <http://www.cisco.com/go/marketplace> to order a serial cable.

- Step 2** Set up a terminal emulator to communicate with the access point. Use the following settings for the terminal emulator connection: 9600 baud, 8 data bits, no parity, 1 stop bit, and no flow control.

## Assigning Basic Settings

After you determine or assign the access point's IP address, you can browse to the access point's Express Setup page and perform an initial configuration:

- Step 1** Open your Internet browser. You must use Microsoft Internet Explorer (version 5.x or later) or Netscape Navigator (version 4.x).
- Step 2** Enter the access point's IP address in the browser address line and press **Enter**. An Enter Network Password screen appears.
- Step 3** Press **Tab** to bypass the Username field and advance to the Password field.
- Step 4** Enter the case-sensitive password *Cisco* and press **Enter**. The Summary Status page appears. [Figure 2-4](#) shows the Summary Status page.

Figure 2-4 Summary Status Page

Close Window

**CISCO SYSTEMS**

## Cisco 1200 Access Point

Hostname **ap** ap uptime is 1 day, 22 hours, 15 minutes

**HOME**  
 EXPRESS SET-UP  
 NETWORK MAP  
 ASSOCIATION  
 NETWORK INTERFACES +  
 SECURITY +  
 SERVICES +  
 SYSTEM SOFTWARE +  
 EVENT LOG +

**Home: Summary Status**

**Association**

[Clients: 3](#) [Repeaters: 0](#)

**Network Identity**

IP Address	10.91.6.158
MAC Address	0005.9a38.42c0

**Network Interfaces**

Interface	MAC Address	Transmission Rate
<a href="#">FastEthernet</a>	0005.9a38.42c0	100Mb/s
<a href="#">Radio0-802.11B</a>	0001.6445.b9e6	11.0Mb/s
<a href="#">Radio1-802.11A</a>	000a.8a7a.d61c	54.0Mb/s

**Event Log**

Time	Severity	Description
03:26:35	◆ Notification	Configured from console by Cisco on vty0 (64.101.192.69)
00:00:39	◆ Information	Interface Dot11Radio0, Station COMPAQ-E500 0040.9648.51ea Associated
00:00:28	◆ Information	Interface Dot11Radio0, Station TOSHIBA 4080 0040.9627.f7a2 Reassociated
00:00:22	◆ Notification	Line protocol on Interface Dot11Radio1, changed state to up
00:00:21	◆ Error	Interface Dot11Radio1, changed state to up
00:00:19	◆ Information	Radio frequency 5220 selected
00:00:19	◆ Information	Radio frequency 5260 is in use
00:00:19	◆ Information	Radio frequency 5180 is in use
00:00:17	◆ Notification	Line protocol on Interface Dot11Radio0, changed state to up
00:00:16	◆ Error	Interface Dot11Radio0, changed state to up

Refresh

Close Window Copyright (c) 1992-2002 by Cisco Systems, Inc.

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**Step 5** Click **Express Setup**. The Express Setup screen appears. [Figure 2-5](#) shows the Express Setup page.

Figure 2-5 Express Setup Page

**Step 6** Enter the configuration settings you obtained from your system administrator. The configurable settings include:

- **System Name**—The system name, while not an essential setting, helps identify the access point on your network. The system name appears in the titles of the management system pages.



**Note** When you change the system name, the access point resets the radios, causing associated client devices to disassociate and quickly reassociate.

- **Configuration Server Protocol**—Click on the button that matches the network’s method of IP address assignment.
  - **DHCP**—IP addresses are automatically assigned by your network’s DHCP server.
  - **Static IP**—The access point uses a static IP address that you enter in the IP address field.
- **IP Address**—Use this setting to assign or change the access point’s IP address. If DHCP is enabled for your network, leave this field blank.



**Note** If the access point’s IP address changes while you are configuring the access point using the web-browser interface or a Telnet session over the wired LAN, you lose your connection to the access point. If you lose your connection, reconnect to the access point using its new IP address. Follow the steps in the “[Resetting the Access Point to Default Settings](#)” section on page 2-2 if you need to start over.

- **IP Subnet Mask**—Enter the IP subnet mask provided by your network administrator so the IP address can be recognized on the LAN. If DHCP is enabled, leave this field blank.

- **Default Gateway**—Enter the default gateway IP address provided by your network administrator. If DHCP is enabled, leave this field blank.
- **Radio Service Set ID (SSID)**—Enter the case-sensitive SSID (32 alphanumeric characters maximum) provided by your network administrator. The SSID is a unique identifier that client devices use to associate with the access point.
- **Broadcast SSID in Beacon**—Use this setting to allow devices that do not specify an SSID to associate with the access point.
  - **Yes**—This is the default setting; it allows devices that do not specify an SSID to associate with the access point.
  - **No**—Devices must specify an SSID to associate with the access point. With No selected, the SSID used by the client devices must match exactly the access point's SSID.
- **Role in Radio Network**—Click on the button that describes the role of the access point on your network. Select **Access Point (Root)** if your access point is connected to the wired LAN. Select **Repeater (Non-Root)** if it is not connected to the wired LAN.
- **Optimize Radio Network for**—Use this setting to select either preconfigured settings for the access point radio or customized settings for the access point radio.
  - **Throughput**—Maximizes the data volume handled by the access point but might reduce its range.
  - **Range**—Maximizes the access point's range but might reduce throughput.
  - **Custom**—The access point uses settings you enter on the Network Interfaces: Radio-802.11b Settings page. Clicking **Custom** takes you to the Network Interfaces: Radio-802.11b Settings page.
- **Aironet Extensions**—Enable this setting if there are only Cisco Aironet devices on your wireless LAN.
- **SNMP Community**—If your network is using SNMP, enter the SNMP Community name provided by your network administrator and select the attributes of the SNMP data (also provided by your network administrator).

**Step 7** Click **Apply** to save your settings. If you changed the IP address, you lose your connection to the access point. Browse to the new IP address to reconnect to the access point.

Your access point is now running but probably requires additional configuring to conform to your network's operational and security requirements. Consult the chapters in this manual for the information you need to complete the configuration.



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**Note** You can restore the access point to its factory defaults by unplugging the power jack and plugging it back in while holding down the Mode button for a few seconds, or until the Status LED turns amber.

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## Default Settings on the Express Setup Page

Table 2-1 lists the default settings for the settings on the Express Setup page.

**Table 2-1** Default Settings on the Express Setup Page

Setting	Default
System Name	ap
Configuration Server Protocol	DHCP
IP Address	Assigned by DHCP by default; if DHCP is disabled, the default setting is 10.0.0.1
IP Subnet Mask	Assigned by DHCP by default; if DHCP is disabled, the default setting is 255.255.255.224
Default Gateway	Assigned by DHCP by default; if DHCP is disabled, the default setting is 0.0.0.0
Radio Service Set ID (SSID)	tsunami
Broadcast SSID in Beacon	Yes <sup>1</sup>
Role in Radio Network	Access point (root)
Optimize Radio Network for	Throughput
Aironet Extensions	Enable
SNMP Community	defaultCommunity

1. When you assign multiple SSIDs, this setting no longer appears.

## Protecting Your Wireless LAN

After you assign basic settings to your access point, you must configure security settings to prevent unauthorized access to your network. Because it is a radio device, the access point can communicate beyond the physical boundaries of your building. Configure some combination of these security features to protect your network from intruders:

- Unique SSIDs that are not broadcast in the access point beacon (see [Chapter 7, “Configuring Multiple SSIDs”](#))
- Cipher suites, WEP, and WEP features (see [Chapter 9, “Configuring Cipher Suites and WEP”](#))
- Dynamic WEP and client authentication (see [Chapter 10, “Configuring Authentication Types”](#))

## Using the IP Setup Utility

IPSU enables you to find the access point's IP address when it has been assigned by a DHCP server. You can also use IPSU to set the access point's IP address and SSID if they have not been changed from the default settings. This section explains how to install the utility, how to use it to find the access point's IP address, and how to use it to set the IP address and the SSID.

**Note**

IPSU can be used only on the following operating systems: Windows 95, 98, NT, 2000, ME, or XP.

**Tip**

Another simple way to find the access point's IP address is to look on the Status screen in the Aironet Client Utility on a client device associated to the access point.

## Obtaining IPSU

IPSU is available on the Cisco website. Click this link to browse to the Software Center on Cisco.com: <http://www.cisco.com/public/sw-center/sw-wireless.shtml>

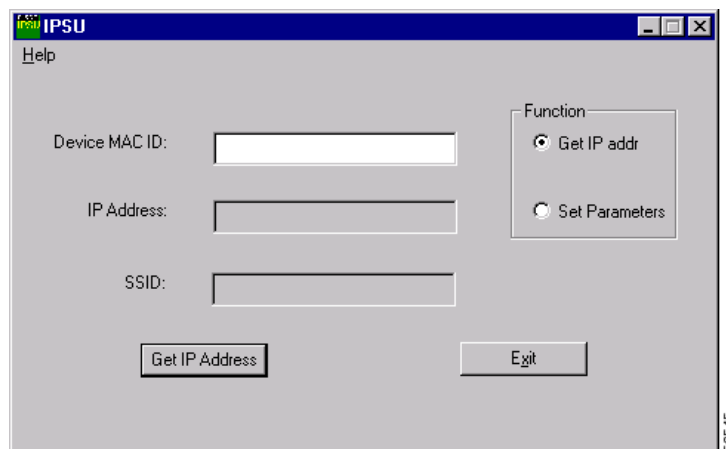
You can find IPSU in the Software Display Tables for access points that run Cisco IOS software.

## Using IPSU to Find the Access Point's IP Address

If your access point receives an IP address from a DHCP server, you can use IPSU to find its IP address. Because IPSU sends a reverse-ARP request based on the access point MAC address, you must run IPSU from a computer on the same subnet as the access point. Follow these steps to find the access point's IP address:

- Step 1** Double-click the **IPSU** icon on your computer desktop to start the utility. The IPSU screen appears (see [Figure 2-6](#)).

**Figure 2-6** IPSU Get IP Address Screen



- Step 2** When the utility window opens, make sure the *Get IP addr* radio button in the Function box is selected.
- Step 3** Enter the access point's MAC address in the Device MAC ID field. The access point's MAC address is printed on the label on the bottom of the unit. It should contain six pairs of hexadecimal digits. Your access point's MAC address might look like the following example:

000164xxxxxx



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**Note** The MAC address field is not case-sensitive.

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- Step 4** Click **Get IP Address**.

- Step 5** When the access point's IP address appears in the IP Address field, write it down.

If IPSU reports that the IP address is 10.0.0.1, the default IP address, then the access point did not receive a DHCP-assigned IP address. To change the access point IP address from the default value using IPSU, refer to the [“Using IPSU to Set the Access Point's IP Address and SSID”](#) section on page 2-12.

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## Using IPSU to Set the Access Point's IP Address and SSID

If you want to change the default IP address (10.0.0.1) of the access point, you can use IPSU. You can also set the access point's SSID at the same time.



**Note**

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IPSU can change the access point's IP address and SSID only from their default settings. After the IP address and SSID have been changed, IPSU cannot change them again.

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**Note**

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The computer you use to assign an IP address to the access point must have an IP address in the same subnet as the access point (10.0.0.x).

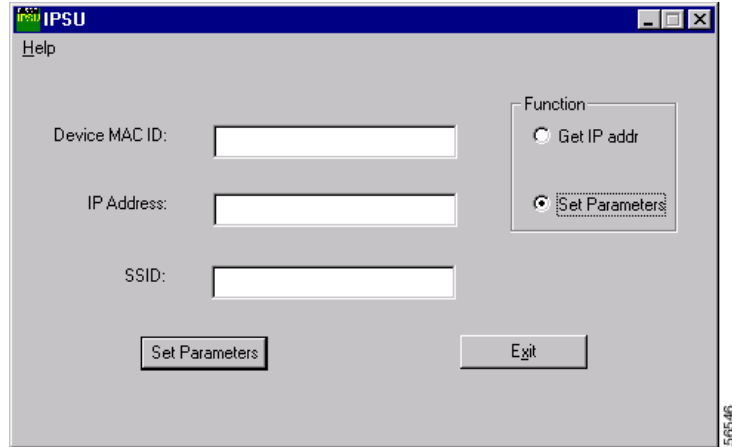
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Follow these steps to assign an IP address and an SSID to the access point:

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- Step 1** Double-click the **IPSU** icon on your computer desktop to start the utility.
- Step 2** Click the **Set Parameters** radio button in the Function box (see [Figure 2-7](#)).

Figure 2-7 IPSU Set Parameters Screen



- Step 3** Enter the access point's MAC address in the Device MAC ID field. The access point's MAC address is printed on the label on the bottom of the unit. It should contain six pairs of hexadecimal digits. Your access point's MAC address might look like this example:

004096xxxxxx



**Note** The MAC address field is not case-sensitive.

- Step 4** Enter the IP address you want to assign to the access point in the IP Address field.

- Step 5** Enter the SSID you want to assign to the access point in the SSID field.



**Note** You cannot set the SSID without also setting the IP address. However, you can set the IP address without setting the SSID.

- Step 6** Click **Set Parameters** to change the access point's IP address and SSID settings.

- Step 7** Click **Exit** to exit IPSU.

## Assigning an IP Address Using the CLI

When you connect the access point to the wired LAN, the access point links to the network using a bridge virtual interface (BVI) that it creates automatically. Instead of tracking separate IP addresses for the access point's Ethernet and radio ports, the network uses the BVI.

When you assign an IP address to the access point using the CLI, you must assign the address to the BVI. Beginning in privileged EXEC mode, follow these steps to assign an IP address to the access point's BVI:

	Command	Purpose
Step 1	<b>configure terminal</b>	Enter global configuration mode.
Step 2	<b>interface bvi1</b>	Enter interface configuration mode for the BVI.
Step 3	<b>ip address</b> <i>address</i> <i>mask</i>	Assign an IP address and address mask to the BVI.  <b>Note</b> If you are connected to the access point using a Telnet session, you lose your connection to the access point when you assign a new IP address to the BVI. If you need to continue configuring the access point using Telnet, use the new IP address to open another Telnet session to the access point.

## Using a Telnet Session to Access the CLI

Follow these steps to browse to access the CLI using a Telnet session. These steps are for a PC running Microsoft Windows with a Telnet terminal application. Check your PC operating instructions for detailed instructions for your operating system.

**Step 1** Select **Start > Programs > Accessories > Telnet**.

If Telnet is not listed in your Accessories menu, select **Start > Run**, type **Telnet** in the entry field, and press **Enter**.

**Step 2** When the Telnet window appears, click **Connect** and select **Remote System**.



**Note** In Windows 2000, the Telnet window does not contain drop-down menus. To start the Telnet session in Windows 2000, type **open** followed by the access point's IP address.

**Step 3** In the Host Name field, type the access point's IP address and click **Connect**.