CISCO

GETTING STARTED GUIDE

Cisco Aironet 1140 Series Access Point
INCLUDING LICENSE AND WARRANTY

1   About this Guide

This Guide provides instructions on how to install and configure your Cisco Aironet 1140 Series Access Point. It also covers **====TBD=====**

2   Taking Out What You Need

Follow these steps:

Step 1   Unpack and remove the access point and the accessory kit from the shipping box.

Step 2   Return any packing material to the shipping container and save it for future use.

Step 3   Verify that you have received the items shown in. If any item is missing or damaged, contact your Cisco representative or reseller for instructions.
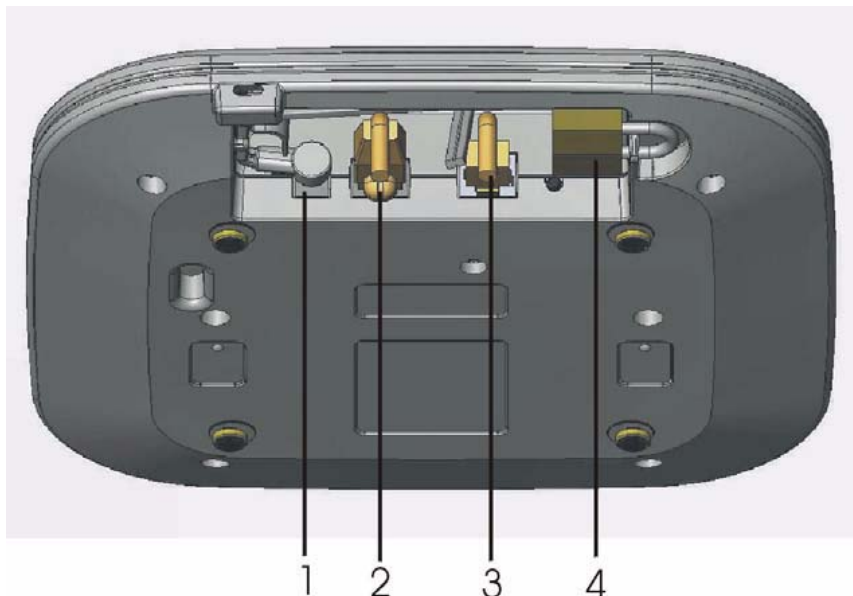
Figure 1   Shipping Box Contents

.......ILLUSTRATION SHOWING BOX CONTENTS.

3   Overview

The following illustrations show the connections and of the access point

Figure 2   *Access Point Ports and Connections*

1	Power jack	4	Security padlock connection
2	Console port?	5	Kensington lock connection
3	Ethernet port	6	

4   Installing the Access Point

The access point can be mounted on a ceiling, wall, or flat horizontal surface such as a table or desk top. For ceiling and wall mounted units, the access point can be mounted on existing mounting hardware for the 1100, 1200, or 1240 series access points.

Mounting the Access Point on a Suspended Ceiling

Follow these steps to mount the access point on a suspended ceiling.

Step 1   TBD

Step 2   TBD === NEED ILLUSTRATIONS

Mounting the Access Point Using Existing Mounting Hardware

1100 Series

Follow these steps to mount the access point on an existing 1100 series installation.

Step 1   TBD ==== ILLUSTRATION(S)

Step 2   TBD

1200 Series

Follow these steps to mount the access point on an existing 1200 series installation.

Step 1   TBD ==== ILLUSTRATION(S)

Step 2   TBD

1240 Series

Follow these steps to mount the access point on an existing 1240 series installation

Step 1   TBD ==== ILLUSTRATION(S)

Step 2

Mounting the Access Point on a Wall

Follow these steps to mount the access point on a wall.

Step 1   ====ILLUSTRATION(S)

Step 2

Connecting Power

The access point is 802.3af (13 watts) compliant and can be powered by any of the following 802.3af compliant controllers or switches:

- 2106 controller
- WS-C3550, WS-C3560, WS-C3750
- C1880
- 2600, 2610, 2611, 2621, 2650, 2651
- 2610XM, 2611XM, 2621XM, 2650XM, 2651XM, 2691
- 2811, 2821, 2851
- 3620, 3631-telco, 3640, 3660
- 3725, 3745
- 3825, 3845

The access point can also be powered by any of the following optional external power sources:

- Any 802.3af compliant power injector
- 1250 series access point power injector (if using Gigabit Ethernet)
- 1200 Series access point DC power supply
- 1250 series access point DC power supply

5 Configuring the Access Point

This section describes how to connect the access point to a wireless LAN controller.

======ARE THERE ANY PRECONDITIONING COMMANDS AVAILABLE? ======

The Controller Discovery Process

The 1140 series access point uses the IETF standard Control and Provisioning of Wireless Access Points Protocol (CAPWAP) to communicate between the controller and other wireless access points on the network. CAPWAP is a standard, interoperable protocol which enables an access controller to manage a collection of wireless termination points. The discovery process using CAPWAP is identical to the Lightweight Access Point Protocol (LWAPP) used with previous Cisco Aironet access points.

LWAPP enabled access points are compatible with CAPWAP and conversion to a CAPWAP controller is seamless. Deployments can have a mix of CAPWAP and LWAPP software running on the controllers. The CAPWAP enabled software will allow for access points to join either a controller running CAPWAP or LWAPP.

The functionality provided by the controller does not change except for customers that have Layer 2 deployments, which CAPWAP does not support.

In an CAPWAP environment, a wireless access point discovers a controller by using CAPWAP discovery mechanisms and then sends it an CAPWAP join request. The controller sends the access point a CAPWAP join response allowing the access point to join the controller. When the access point joins the controller, the controller manages its configuration, firmware, control transactions, and data transactions.

> **Note** For additional information about the discovery process and CAPWAP, see the *Cisco Wireless LAN Controller Software Configuration Guide*. This document is available on cisco.com.

> **Note** CAPWAP support is provided in controller software release 5.2 or greater.

> **Note** Cisco controllers cannot edit or query any access point information using the CLI if the name of the access point contains a space.

> **Note** Make sure that the controller is set to the current time. If the controller is set to a time that has already occurred, the access point might not join the controller because its certificate may not be valid for that time.

Follow these steps to prepare the access point and connect it to the wireless network.

Step 1 TBD ==== ILLUSTRATION(S)

Step 2

6 Troubleshooting

Guidelines for Using Cisco Aironet Lightweight Access Points

Keep these guidelines in mind when you use a 1140 series lightweight access point:

- The access point can only communicate with Cisco controllers, such as the 2106 series wireless LAN controllers or 4400 series controllers.
- The access point does not support Wireless Domain Services (WDS) and cannot communicate with WDS devices. However, the controller provides functionality equivalent to WDS when the access point associates to it.
- CAPWAP does not support Layer 2. The access point must get an IP address and discover the controller using DHCP, DNS, or IP subnet broadcast.
- The access point console port is enabled for monitoring and debug purposes (all configuration commands are disabled when connected to a controller).

Using DHCP Option 43

You can use DHCP Option 43 to provide a list of controller IP addresses to the access points, enabling the access point to find and join a controller. For additional information, refer to the "Configuring Option 43" section on page 22.

Checking the Lightweight Access Point LEDs

If your lightweight access point is not working properly, check the Status, Ethernet, and Radio LEDs. You can use the LED indications to quickly assess the unit's status. Figure 3 shows the location of the access point LEDs.

Figure 3   *Access Point LED Location*

Table 1 shows the access point LED status indications for various conditions.

Table 1   LED Status Indications

Message Type	Ethernet LED	Radio LED	Status LED	Message Meaning
Boot loader status	Green	Amber	–	DRAM memory test in progress.
	Green	Green	Green	DRAM memory test OK.
	–	Red	–	Board initialization in progress.
	–	Blinking Green	Blinking Green	Initializing Flash file system.
	–	Green	Green	Flash memory test OK.
	Amber	–	White	Initializing Ethernet.
	Green	–	Blinking blue	Ethernet OK.
	Green	Green	Blinking green	Starting Cisco IOS.
	–	–	–	Initialization OK.
Association status	–	–	Green	Normal operating condition, no wireless client device associated.
	–	–	Blue	Normal operating condition, wireless client devices associated.
Operating status	Green	–	–	Ethernet link is operational.
	Blinking green	–	–	Transmitting or receiving Ethernet packets.
	–	Blinking green	–	Transmitting or receiving radio packets.
	–	–	Blinking blue	Software upgrade in progress.
	Blinking green	Blinking green	Blinking green	Access point location command.

Table 1   *LED Status Indications (continued)*

Message Type	Ethernet LED	Radio LED	Status LED	Message Meaning
Boot loader warnings	–	–	Blinking red	Ethernet link not operational.
	Red	–	Red	Ethernet failure.
	Amber	–	Blinking blue	Configuration recovery in progress. (Mode button pushed for 2 to 3 seconds).
	–	Red	Red	Image recovery in progress. (Mode button pressed for 20 to 30 seconds).
	Blinking green	Red	Blinking green	Image recovery in progress and Mode button is released.
Boot loader errors	Red	Red	Red	DRAM memory test failure.
	–	Red	Blinking red and blue	Flash file system failure.
	–	Amber	Alternating red and green	Environment variable failure.
	Amber	–	Rapidly blinking red	Bad MAC address.
	Red	–	Blinking red and off	Ethernet failure during image recovery.
	Amber	Amber	Blinking red and off	Boot environment error.
	Red	Amber	Blinking red and off	No Cisco IOS image file.
	Amber	Amber	Blinking red and off	Boot failure.

Table 1   *LED Status Indications (continued)*

Message Type	Ethernet LED	Radio LED	Status LED	Message Meaning
Cisco IOS errors	Blinking amber	–	–	Transmit or receive Ethernet errors.
	–	Blinking amber	–	Maximum retries or buffer full occurred on radio.
	Red	Red	–	Software failure; try disconnecting and reconnecting power.
	–	–	Cycling through blue, green, red, and off	General warning, insufficient inline power.

==== ADDITIONAL INFO TBD ====

7 Declarations of Conformity and Regulatory Information

This section provides declarations of conformity and regulatory information for the Cisco Aironet 1140 Series Access Point.

Manufacturers Federal Communication Commission Declaration of Conformity Statement

FC Tested To Comply With FCC Standards

FOR HOME OR OFFICE USE

Models	Certification Numbers
AIR-(L)AP1141N-A-K9	LDK102069
AIR-(L)AP1142N-A-K9	LDK102070

Manufacturer:

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA

This device complies with Part 15 rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and radiates radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference. However, there is no guarantee that interference will not occur. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase separation between the equipment and receiver.

- Connect the equipment to an outlet on a circuit different from which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician.

⚠️
Caution   The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency when using the integrated antennas. Any changes or modification to the product not expressly approved by Cisco could void the user's authority to operate this device.

⚠️

Caution   Within the 5.15 to 5.25 GHz band (5 GHz radio channels 34 to 48) the UNII devices are restricted to indoor operations to reduce any potential for harmful interference to co-channel Mobile Satellite System (MSS) operations.

VCCI Statement for Japan

Warning

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

警告   VCCI 準拠クラスB機器（日本）
この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをしてください。

Industry Canada

Models	Certification Numbers
AIR-(L)AP1141N-A-K9	2461B-102069
AIR-(L)AP1142N-A-K9	2461B-102070

Canadian Compliance Statement

This Class B Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numerique de la classe B respecte les exigences du Reglement sur le material broilleur du Canada.

This device complies with Class B Limits of Industry Canada. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

Cisco Aironet Access Points are certified to the requirements of RSS-210. The use of this device in a system operating either partially or completely outdoors may require the user to obtain a license for the system according to the Canadian regulations. For further information, contact your local Industry Canada office.

European Community, Switzerland, Norway, Iceland, and Liechtenstein

Models:

AIR-(L)AP1142N-E-K9
AIR-(L)AP1141N-E-K9

Declaration of Conformity with Regard to the R&TTE Directive 1999/5/EC

Български [Bulgarian]	Това оборудване отговаря на съществените изисквания и приложими клаузи на Директива 1999/5/EC.
Česky [Czech]:	Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/EC.
Dansk [Danish]:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.
Deutsch [German]:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele.
English:	This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de la Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.
Íslenska [Icelandic]:	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.
Italiano [Italian]:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.
Latviešu [Latvian]:	Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiele eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-ħtiġiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC.
Magyar [Hungarian]:	Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
Norsk [Norwegian]:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Polski [Polish]:	Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.
Português [Portuguese]:	Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Română [Romanian]	Acest echipament este in conformitate cu cerintele esentiale si cu alte prevederi relevante ale Directivei 1999/5/EC.
Slovensko [Slovenian]:	Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC.
Slovensky [Slovak]:	Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC.
Suomi [Finnish]:	Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Svenska [Swedish]:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

142730

This device complies with the EMC requirements (EN 60601-1-2) of the Medical Directive 93/42/EEC. For 2.4 GHz radios, the following standards were applied:

- Radio—EN 300.328-1, EN 300.328-2
- EMC—EN 301.489-1, EN 301.489-17
- Safety—EN 60950-1

> ✎
>
> **Note** This equipment is intended to be used in all EU and EFTA countries. Outdoor use may be restricted to certain frequencies and/or may require a license for operation. For more details, contact Cisco Corporate Compliance.

For 54 Mbps, 5 GHz access points, the following standards were applied:

- Radio—EN 301.893
- EMC—EN 301.489-1, EN 301.489-17
- Safety—EN 60950-1

The following CE mark is affixed to the access point with a 2.4 GHz radio and a 54 Mbps, 5 GHz radio:

C E ⓘ

Declaration of Conformity for RF Exposure

United States

This system has been evaluated for RF exposure for Humans in reference to ANSI C 95.1 (American National Standards Institute) limits. The evaluation was based on ANSI C 95.1 and FCC OET Bulletin 65C rev 01.01. The minimum separation distance from the antenna to general bystander is 7.9 inches (20cm) to maintain compliance.

Canada

This system has been evaluated for RF exposure for Humans in reference to ANSI C 95.1 (American National Standards Institute) limits. The evaluation was based on RSS-102 Rev 2. The minimum separation distance from the antenna to general bystander is 7.9 inches (20cm) to maintain compliance.

European Union

This system has been evaluated for RF exposure for Humans in reference to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The evaluation was based on the EN 50385 Product Standard to Demonstrate Compliance of Radio Base stations and Fixed Terminals for

Wireless Telecommunications Systems with basic restrictions or reference levels related to Human Exposure to Radio Frequency Electromagnetic Fields from 300 MHz to 40 GHz. The minimum separation distance from the antenna to general bystander is 20cm (7.9 inches).

Australia

This system has been evaluated for RF exposure for Humans as referenced in the Australian Radiation Protection standard and has been evaluated to the ICNIRP (International Commission on Non-Ionizing Radiation Protection) limits. The minimum separation distance from the antenna to general bystander is 20cm (7.9 inches).

Guidelines for Operating Cisco Aironet Access Points in Japan

This section provides guidelines for avoiding interference when operating Cisco Aironet access points in Japan. These guidelines are provided in both Japanese and English.

Japanese Translation

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか工場の製造ライン等で使用されている移動体識別用の構内無線局（免許を要する無線局）及び特定小電力無線局（免許を要しない無線局）が運用されています。

1　この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局が運用されていないことを確認して下さい。

2　万一、この機器から移動体識別用の構内無線局に対して電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等(例えば、パーティションの設置など)についてご相談して下さい。

3　その他、この機器から移動体識別用の特定小電力無線局に対して電波干渉の事例が発生した場合など何かお困りのことが起きたときは、次の連絡先へお問い合わせ下さい。

連絡先：03-6434-6500

43768

English Translation

This equipment operates in the same frequency bandwidth as industrial, scientific, and medical devices such as microwave ovens and mobile object identification (RF-ID) systems (licensed premises radio stations and unlicensed specified low-power radio stations) used in factory production lines.

1. Before using this equipment, make sure that no premises radio stations or specified low-power radio stations of RF-ID are used in the vicinity.

2. If this equipment causes RF interference to a premises radio station of RF-ID, promptly change the frequency or stop using the device; contact the number below and ask for recommendations on avoiding radio interference, such as setting partitions.

3. If this equipment causes RF interference to a specified low-power radio station of RF-ID, contact the number below.

   Contact Number: `03-5549-6500`

Administrative Rules for Cisco Aironet Access Points in Taiwan

This section provides administrative rules for operating Cisco Aironet access points in Taiwan. The rules are provided in both Chinese and English.

All Access Points

Chinese Translation

低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

　　　　　前項合法通信，指依電信法規定作業之無線電信。

　　　　　低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

127048

English Translation

Administrative Rules for Low-power Radio-Frequency Devices

Article 12

For those low-power radio-frequency devices that have already received a type-approval, companies, business units or users should not change its frequencies, increase its power or change its original features and functions.

Article 14

The operation of the low-power radio-frequency devices is subject to the conditions that no harmful interference is caused to aviation safety and authorized radio station; and if interference is caused, the user must stop operating the device immediately and can't re-operate it until the harmful interference is clear.

The authorized radio station means a radio-communication service operating in accordance with the Communication Act.

The operation of the low-power radio-frequency devices is subject to the interference caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

Chinese Translation

<u>低功率射頻電機技術規範</u>

4.7　無線資訊傳輸設備

4.7.5　在 5.25-5.35 秭赫頻帶內操作之無線資訊傳輸設備，限於室內使用。

4.7.6　無線資訊傳輸設備須忍受合法通信之干擾且不得干擾合法通信；如造成干擾，應立即停用，俟無干擾之虞，始得繼續使用。

4.7.7　無線資訊傳輸設備的製造廠商應確保頻率穩定性，如依製造廠商使用手冊上所述正常操作，發射的信號應維持於操作頻帶中。

202591

English Translation

Low-power Radio-frequency Devices Technical Specifications

4.7	Unlicensed National Information Infrastructure
4.7.5	Within the 5.25-5.35 GHz band, U-NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.
4.7.6	The U-NII devices shall accept any interference from legal communications and shall not interfere the legal communications. If interference is caused, the user must stop operating the device immediately and can't re-operate it until the harmful interference is clear.
4.7.7	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user manual

Declaration of Conformity Statements

All the Declaration of Conformity statements related to this product can be found at the following URL:

http://www.ciscofax.com

Declaration of Conformity Statements for European Union Countries

The Declaration of Conformity statement for the European Union countries is listed below:

TO BE ADDED.

8 Configuring Option 43

This section contains a DHCP Option 43 configuration example on a Windows 2003 Enterprise DHCP server for use with Cisco Aironet lightweight access points. For other DHCP server implementations, consult their product documentation for configuring DHCP Option 43. In Option 43, you should use the IP address of the controller management interface.

> ✎
> **Note**   DHCP Option 43 is limited to one access point type per DHCP pool. You must configure a separate DHCP pool for each access point type.

The 1140 series access point uses the type-length-value (TLV) format for DHCP Option 43. DHCP servers must be programmed to return the option based on the access point's DHCP Vendor Class Identifier (VCI) string (DHCP Option 60). The VCI string for the 1140 series access point is

TBD

The format of the TLV block is listed below:

- Type: 0xf1 (decimal 241)
- Length: Number of controller IP addresses * 4
- Value: List of WLC management interfaces

To configure DHCP Option 43 for the 1140 series access point in the embedded Cisco IOS DHCP server, follow these steps:

Step 1   Enter configuration mode at the Cisco IOS CLI.

Step 2   Create the DHCP pool, including the necessary parameters such as default router and name server. A DHCP scope example is as follows:

```
ip dhcp pool <pool name>
network <IP Network> <Netmask>
default-router <Default router>
dns-server <DNS Server>

Where:
<pool name> is the name of the DHCP pool, such as AP1140
<IP Network> is the network IP address where the controller resides, such as
10.0.15.1
<Netmask> is the subnet mask, such as 255.255.255.0
<Default router> is the IP address of the default router, such as 10.0.0.1
<DNS Server> is the IP address of the DNS server, such as 10.0.10.2
```

Step 3   Add the option 60 line using the following syntax:

```
option 60 ascii "VCI string"

For the VCI string, "TBD". The quotation marks must be included.
```

Step 4   Add the option 43 line using the following syntax:

```
option 43 hex <hex string>
```

The *hex string* is assembled by concatenating the TLV values shown below:

Type + Length + Value

Type is always *f1(hex)*. *Length* is the number of controller management IP addresses times 4 in hex. *Value* is the IP address of the controller listed sequentially in hex.

For example, suppose that there are two controllers with management interface IP addresses, 10.126.126.2 and 10.127.127.2. The type is *f1(hex)*. The length is *2 * 4 = 8 = 08 (hex)*. The IP addresses translate to *0a7e7e02* and *0a7f7f02*. Assembling the string then yields *f1080a7e7e020a7f7f02*. The resulting Cisco IOS command added to the DHCP scope is listed below:

```
option 43 hex f1080a7e7e020a7f7f02
```

==== ADDITIONAL INFO TO BE ADDED =====

9 Access Point Specifications

Table 2 lists the technical specifications for the 1140 series access point.

Table 2   ***Access Point Specifications***

Category	Specification
Dimensions (LxWxD)	8.68 x 8.68 x 1.84 in. (22.04 x 22.04 x 4.67 cm)
Weight	1.9 lbs (0.86 kg)
Operating temperature	32 to 104 degrees F (0 to –40 degrees C)
Storage temperature	–22 to 185 degrees F (–30 to 85 degrees C)
Humidity	10% to 90% (noncondensing)
Antenna	(TBD)
Compliance	The 1140 series access point complies with UL 2043 for products installed in a building's environmental air handling spaces, such as above suspended ceilings.

Table 2   Access Point Specifications (continued)

Category	Specification
Safety	UL1950 CSA C22.2, No. 60950-00 UL 60950 Third Edition IEC 60950 Second Edition, including Amendments 1-4, with all national deviations EN 60950:1992, including Amendments 1-4 UL 2043 (Plenum rating)
EMI and Susceptibility	FCC Part 15.07 and 15.109 Class B ICES-003 Class B (Canada) EN 55022 Class B, 2000 version (Telecommunications Port Conducted Emissions EN 55024 AS/NZS 3548 Class B VCCI Class B
Radio	FCC Part 15.247 Canada RSS-139-1, RSS-210 Japan Telec 33B EN 330.328 EN 301.489 FCC Bulletin OET-65C Industry Canada RSS-102

Table 3 lists the channel identifiers, channel center frequencies, and maximum power levels for each channel allowed by the –A regulatory domain for a 2.4-GHz radio with up to 10-dBi antennas.

Table 3   *Channels and Maximum Conducted Power in the –A Regulatory Domain with up to 4-dBi Antennas*

Maximum Conducted Power Levels (dBm) in the –A Regulatory Domain for the 2.4-GHz Radio with up to 4-dBi Antennas

	Center Channel		802.11b Single Antenna 1 to 11 Mbps			802.11g Single Antenna 6 to 54 Mbps			HT-20 MHz Dual Antennas M0 to M15[1]			HT-40 MHz Dual Antennas M0 to M15[1]		
Freq (MHz)	20 MHz	40 MHz	Tx A	Tx B	Total Pwr	Tx A	Tx B	Total Pwr	Tx A	Tx B	Total Power	Tx A	Tx B	Total Pwr
2412	1	3	19	OFF	19	16	OFF	16	14	14	17	14	14	17
2417	2	4	20	OFF	20	17	OFF	17	16	16	19	15	15	18
2422	3	5	20	OFF	20	17	OFF	17	17	17	20	12	12	15
2427	4	6	20	OFF	20	17	OFF	17	17	17	20	15	15	18
2432	5	3, 7	20	OFF	20	17	OFF	17	17	17	20	14	14	17
2437	6	4, 8	23	OFF	23	17	OFF	17	17	17	20	15	15	18
2442	7	5, 9	20	OFF	20	17	OFF	17	17	17	20	15	15	18
2447	8	6, 10	20	OFF	20	17	OFF	17	17	17	20	15	15	18
2452	9	7, 11	20	OFF	20	17	OFF	17	16	16	19	12	12	15
2457	10	8	19	OFF	19	16	OFF	16	15	15	18	15	15	18
2462	11	9	18	OFF	18	14	OFF	14	12	12	15	14	14	17
2467	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2472	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2484	–	–	–	–	–	–	–	–	–	–	–	–	–	–

1. M0 to M15 corresponds to the Modulaton and Coding Schemes (MCS0 to MCS15). The MCS settings determine the number of spatial streams, the modulation, the coding rate, and the data rate values.

Table 4 lists the channel identifiers, channel center frequencies, and maximum power levels for each channel allowed by the –A regulatory domain for a 5-GHz radio with up to 6-dBi antennas.

Table 4   ***Channels and Maximum Conducted Power in the –A Regulatory Domain with up to 3-dBi Antennas***

Maximum Conducted Power Levels (dBm) in the –A Regulatory Domain for the 5-GHz Radio with up to 3-dBi Antennas

Channel ID	Freq (MHz)	802.11a Single Antenna 6 to 54 Mbps			HT-20 MHz Dual Antennas M0 to M15[1]			Duplicate (2x20 MHz) Single Antennas 6 Mbps			HT-40 MHz Dual Antennas M0 to M15[1]		
		Tx A	Tx B	Total Pwr	Tx A	Tx B	Total Pwr	Tx A	–	–	Tx A	Tx B	Total Pwr
5150-5250 MHz													
36	5180	14	OFF	14	11	11	14	13	–	–	14	14	17
40	5200	14	OFF	14	11	11	14	13	–	–	14	14	17
44	5220	14	OFF	14	11	11	14	13	–	–	14	14	17
48	5240	14	OFF	14	11	11	14	13	–	–	14	14	17
5250 to 5350 MHz													
52	5260	17	OFF	17	17	17	20	17	–	–	17	17	20
56	5280	17	OFF	17	17	17	20	17	–	–	17	17	20
60	5300	17	OFF	17	17	17	20	13	–	–	14	14	17
64	5320	17	OFF	17	16	16	19	13	–	–	14	14	17
5470 to 5725 MHz													
100	5500	17	OFF	17	17	17	20	14	–	–	14	14	17
104	5520	17	OFF	17	17	17	20	14	–	–	14	14	17
108	5540	17	OFF	17	17	17	20	17	–	–	17	17	20
112	5560	17	OFF	17	17	17	20	17	–	–	17	17	20
116	5580	17	OFF	17	17	17	20	–	–	–	–	–	–
120	5600	–	–	–	–	–	–	–	–	–	–	–	–
124	5620	–	–	–	–	–	–	–	–	–	–	–	–
128	5640	–	–	–	–	–	–	–	–	–	–	–	–
132	5660	17	OFF	17	17	17	20	17	–	–	17	17	20

Table 4   Channels and Maximum Conducted Power in the –A Regulatory Domain with up to 3-dBi Antennas (continued)

Maximum Conducted Power Levels (dBm) in the –A Regulatory Domain for the 5-GHz Radio with up to 3-dBi Antennas

Channel ID	Freq (MHz)	802.11a Single Antenna 6 to 54 Mbps			HT-20 MHz Dual Antennas M0 to M15[1]			Duplicate (2x20 MHz) Single Antennas 6 Mbps			HT-40 MHz Dual Antennas M0 to M15[1]		
		Tx A	Tx B	Total Pwr	Tx A	Tx B	Total Pwr	Tx A	–	–	Tx A	Tx B	Total Pwr
136	5680	17	OFF	17	17	17	20	17	–	–	17	17	20
140	5700	17	OFF	17	17	17	20	–	–	–	–	–	–
5725 to 5850 MHz													
149	5745	17	OFF	17	17	17	20	17	–	–	17	17	20
153	5765	17	OFF	17	17	17	20	17	–	–	17	17	20
157	5785	17	OFF	17	17	17	20	17	–	–	17	17	20
161	5805	17	OFF	17	17	17	20	17	–	–	17	17	20
165	5825	17	OFF	17	17	17	20	–	–	–	–	–	–

1. M0 to M15 corresponds to the Modulaton and Coding Schemes (MCS0 to MCS15). The MCS settings determine the number of spatial streams, the modulation, the coding rate, and the data rate values.

Note For additional information on the maximum power and the channels allowed in your regulatory domain, refer to the *Channels and Maximum Power Settings for Cisco Aironet Autonomous Access Points and Bridges* or the *Channels and Maximum Power Settings for Cisco Aironet Lightweight Access Points*.