

APPLICATION NOTE

CONFIGURING DHCP OPTION 43 FOR LIGHTWEIGHT CISCO AIRONET ACCESS POINTS IN IOS

CONFIGURING DHCP OPTION 43 FOR LIGHTWEIGHT CISCO AIRONET ACCESS POINTS

This section contains an example of configuring DHCP Option 43 for Lightweight Cisco Aironet Access Points on Windows 2003 Enterprise DHCP Server. Consult the product documentation for configuring DHCP Option 43 with other DHCP Server implementations.

Cisco 1000 series APs use a string format for DHCP option 43, whereas Cisco Aironet APs use the type-length-value (TLV) format for DHCP option 43. DHCP servers must be programmed to return the option based on the AP's DHCP Vendor Class Identifier (VCI) string (DHCP Option 60). The VCI strings for Cisco APs capable of operating in lightweight mode are:

Table 1

Access Point	Vendor Class Identifier (VCI)
Cisco 1000 Series	Airespace.AP1200
Cisco Aironet 1130 Series	Cisco AP c1130
Cisco Aironet 1240 Series	Cisco AP c1240
Cisco Aironet 1200 Series	Cisco AP c1200

The format of the TLV block is:

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

Cisco Aironet Series Access Points—Embedded IOS DHCP Server

To configure DHCP Option 43 for lightweight Cisco Aironet access points in the embedded IOS DHCP server, follow these steps:

1. Enter configuration mode at the IOS CLI.
2. Create the DHCP pool, including the necessary parameters such as default router and name server. An example DHCP scope is as follows:

```
ip dhcp pool <pool name>
network <IP Network> <Netmask>
default-router <Default router>
dns-server <DNS Server>
```
3. Add the option 60 line using the following syntax:

```
option 60 ascii "VCI string"
```

For the VCI string, use the value from Table 1. The quotation marks must be included.

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:

Type + Length + Value

“Type” is always 0xf1. “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 0xf1. The length is $2 * 4 = 8 = 0x08$. The IP addresses translate to 0a7e7e02 (10.126.126.2) and 0a7f7f02 (10.127.127.2). Assembling the string then yields f1080a7e7e020a7f7f02. The IOS command then added to the DHCP scope is:

```
option 43 hex f1080a7e7e020a7f7f02
```

Cisco 1000 Series Access Points—Embedded IOS DHCP Server

To configure DHCP Option 43 for lightweight Cisco 1000 Series access points in the embedded IOS DHCP server, follow these steps:

5. Enter configuration mode at the IOS CLI.
6. Create the DHCP pool, including the necessary parameters such as default router and name server. An example DHCP scope is as follows:

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

7. Add the option 60 line using the following syntax:
`option 60 ascii “Airespace.AP1200”`

The quotation marks must be included.

8. Add the option 43 line using the following syntax:
`option 43 ascii “Comma Separated IP Address List”`

For example, if you are configuring option 43 for Cisco 1000 series APs using the controller values 10.126.126.2 and 10.127.127.2, add the following line to the DHCP pool in the IOS CLI:

```
option 43 ascii “10.126.126.2,10.127.127.2”
```

Frequently Asked Questions

Which Controller IP Address Should I Use for the DHCP Option 43 Entry?

You should use the management interface of the WLAN controller.

How do I Configure an IOS DHCP Scope to Support Multiple AP Types?

The IOS DHCP server is limited to one option 43 per DHCP pool so you can only configure a DHCP scope for a single access point type.



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