APPENDIX G

Configuring DHCP Option 43 for Lightweight Access Points

This appendix describes the steps needed to configure DHCP Option 43 on a Windows 2003 Enterprise DHCP server, such as a Cisco Catalyst 3750 series switch, for use with Cisco Aironet lightweight access points. This appendix contains these sections:

Overview

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.

Cisco Aironet 1000 and 1500 series access points use a comma-separated string format for DHCP Option 43. Other Cisco Aironet access points use 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 strings for Cisco access points capable of operating in lightweight mode are listed in Table G-1:

Table G-1 Lightweight Access Point VCI Strings

Access Point	Vendor Class Identifier (VCI)
Cisco Aironet 1000 series	Airespace.AP1200
Cisco Aironet 1100 series	Cisco AP c1100
Cisco Aironet 1130 series	Cisco AP c1130
Cisco Aironet 1200 series	Cisco AP c1200
Cisco Aironet 1240 series	Cisco AP c1240
Cisco Aironet 1300 series	Cisco AP c1300
Cisco Aironet 1500 series	Cisco AP.LAP1510

The format of the TLV block for 1100, 1130, 1200, 1240, and 1300 series access points is listed below:

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

Configuring Option 43 for 1000 Series Access Points

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

Step 1 Enter configuration mode at the Cisco IOS command line interface (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 AP1000
    <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 "Airespace.AP1200"
```

The quotation marks must be included.

Step 4 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 access points using the controller IP addresses 10.126.126.2 and 10.127.127.2, add the following line to the DHCP pool in the Cisco IOS CLI:

```
option 43 ascii "10.126.126.2,10.127.127.2"
```

The quotation marks must be included.

Configuring Option 43 for 1100, 1130, 1200, 1240, and 1300 Series Lightweight Access Points

To configure DHCP Option 43 for Cisco Aironet 1100, 1130, 1200, 1240, and 1300 series lightweight access points 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 AP1240
    <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*, use the value from Table G-1. 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