

Technical Bulletin

Products Affected

Aruba AP-124, 125, 124 a/b/g, 125 a/b/g shipped with APBoot version 0.0.8.7

Topic

A brand new AP-120 series (AP-12x) AP does not get an IP address from the DHCP server when certain security features are enabled on the access switch to which it is connected. This issue is tracked under bug number 26529.

Overview

An Aruba AP-12x shipped with APBoot version 0.0.8.7 might not be able to receive an IP address from a DHCP server if it is connected via an access switch with certain security features enabled. These include features that enforce strict compliance with the DHCP protocol such as DHCP snooping and dynamic ARP inspection on IOS or CatOS-based Cisco switches. This issue does not affect AP's that have an AP OS already downloaded and stored in local flash. For example, an AP-12x that is connected directly to an Aruba controller and downloads the AP image and stores it locally can subsequently be connected to a Cisco switch with DHCP snooping and dynamic ARP inspection enabled.

Diagnostics

The easiest way to confirm this issue is to connect to the serial console of the AP (refer to the *Aruba AP-120 Series Indoor Access Point Installation Guide* for details).

This issue is applicable if the APBoot version is 0.0.8.7. The following message is displayed on the AP console upon boot-up of the AP:

```
APBoot 0.0.8.7 (build 16693)
Built: 2007-11-03 at 16:59:28
```

And subsequently, the following messages will be displayed:

```
Hit <Enter> to stop autoboot: 2 1 0
Invalid image format version: 0xffffffff
en0: Up 1Gbps Full duplex, (port 1)
BOOTP broadcast 1
BOOTP broadcast 2
BOOTP broadcast 3
BOOTP broadcast 4
BOOTP broadcast 5
```

```
Retry count exceeded; starting again
en1: Down 1Gbps Half duplex, (port 0)
BOOTP broadcast 1
BOOTP broadcast 2
BOOTP broadcast 3
BOOTP broadcast 4
BOOTP broadcast 5
```

Resolution

This issue is addressed in an updated version of the APBoot image (version 1.0.0.9 or later). All AP-12x units shipped after May 15th, 2008 have the updated APBoot image pre-installed and are not affected by this issue. For APs that were shipped prior to that date, one or more of the following methods can be used to mitigate the problem.

Method 1: Disable DHCP snooping and dynamic ARP inspection on Cisco switches

To work around this problem, the DHCP snooping and dynamic ARP inspection features on the Cisco switches can be disabled temporarily on the port that is directly connected to the AP while a brand-new AP-

12x receives an IP address and downloads ArubaOS. Once the ArubaOS image is downloaded and stored locally in the flash, the DHCP client in ArubaOS will be used instead of the one in APBoot. DHCP snooping and dynamic ARP inspection can be re-enabled without affecting normal operations (including power-cycling the AP and ArubaOS upgrades).

To disable DHCP Snooping and dynamic ARP inspection on CatOS based Cisco switches, issue the following changes on the port that is directly connected to the AP:

```
dc65131h2> (enable) set port dhcp-snooping 3/25 trust enable
Port(s) 3/25 state set to trusted for DHCP Snooping.
```

```
dc65131h2> (enable) set port arp-inspection 3/25 trust enable
Port(s) 3/25 state set to trusted for ARP Inspection.
```

For IOS based switches, both features (DHCP snooping and dynamic ARP Inspection) can be disabled on a per switch port basis by using the following interface commands:

```
ip dhcp snooping trust
ip arp inspection trust
```

Method 2: Pre-stage AP-12x prior to deployment

Before an Aruba AP-12x is connected to a Cisco access switch with DHCP snooping and dynamic ARP inspection enabled, it can be “pre-staged” by connecting the AP to a different switch without DHCP snooping or dynamic ARP inspection in order to allow the AP image to be downloaded and stored locally. Afterwards, the AP can be deployed in the field.

Method 3: Upgrade the APBoot image on the AP

The APBoot image can be upgraded if:

- 1) The serial console of the AP-12x is accessible
- 2) IP connectivity can be established to the AP
- 3) A TFTP server is available

To upgrade the APBoot image, please follow the instructions below:

Step 1: Download the updated APBoot image for AP-12x from the Aruba Support site.

With a valid userid and password, the updated APBoot image (version 1.0.0.9) can be downloaded from the Aruba Support site (<https://support.arubanetworks.com/>). It can be found in the location:

Download Software -> AP Boot Image -> AP-12x

Filename: ap12x-1.0.0.9-18209.ari

Step 2: Place the file in the top-level of a TFTP server.

Step 3: Connect to the serial console of the AP-12x (see *Aruba AP-120 Series Indoor Access Point Installation Guide* for details).

Step 4a: Establish IP connectivity by DHCP or manually. To use DHCP, from the APBoot prompt, issue the command:

```
dhcp
```

E.g.,

```
apboot> dhcp
BOOTP broadcast 1
DHCP IP address: 10.100.119.227
DHCP subnet mask: 255.255.255.0
DHCP def gateway: 10.100.119.254
DHCP DNS server: 10.3.113.252
DHCP DNS domain: arubanetworks.com
```

Step 4b: To establish IP connectivity manually:

```
setenv ipaddr <IP of AP>
setenv netmask <netmask>
setenv gatewayip <IP of Gateway>
```

E.g.

```
setenv ipaddr 10.100.119.123
setenv netmask 255.255.255.0
setenv gatewayip 10.100.119.254
```

Verify IP connectivity to the TFTP server with the ping command.

Step 5: Upgrade the APBoot image using the command:

```
upgrade boot <IP>:<filename>
```

E.g.,

```
upgrade boot 192.168.117.2:ap12x-1.0.0.9-18209.ari
```

You should see the following:

```
Using en0 device
TFTP from server 192.168.117.2; our IP address is 192.168.117.193
Filename 'ap12x-1.0.0.9-18209.ari'.
Load address: 0x1600000
Loading: #####
done
Bytes transferred = 256640 (3ea80 hex)

Verifying checksum... passed
Unprotecting flash... Un-Protected 2 sectors
Erasing flash... .. done
Erased 2 sectors
Copying to flash...
Writing ...done
Verifying flash... 256128 bytes were the same
Protecting flash... Protected 2 sectors
Upgrade successful.
```

Reboot the AP (with the 'boot' command).

After you have updated the APBoot image using one of the preceding methods, the AP-12x will operate as expected.

Contacting Aruba Networks

For additional information regarding this bulletin, ArubaOS updates and current information, go to the Aruba Networks support website:

<https://support.arubanetworks.com>



0510531-01
May 2008