



Release Notes for Cisco Aironet Conversion Upgrade Image for Cisco IOS Software for Cisco Aironet 350 Series Access Points

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These release notes describe features and caveats for the Cisco Aironet Conversion Upgrade Image for Cisco IOS software for Cisco Aironet 350 Series Access Points.

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Introduction

The Cisco IOS Conversion Upgrade Image for Cisco Aironet 350 Series Access Points converts a 350 series access point system from VxWorks software to Cisco IOS Release 12.2(13)JA1.

When you use the upgrade image with the Cisco Aironet Conversion Tool for Cisco IOS Software, the upgrade image and the conversion tool maintain the access point configuration while converting the access point system to IOS operation. When you load the upgrade image onto an access point without using the conversion tool, the upgrade image converts the access point system to IOS software with all settings at factory defaults.

System Requirements

Your 350 series access point must run one of these VxWorks firmware versions to use the upgrade image: 12.03T, 12.02T1, 12.01T1, 12.00T, 11.23T, and 11.21



Note

The upgrade image and the conversion tool do not support VxWorks version 12.04. Access points running operating system version 12.04 must be downgraded to a supported operating system version before using the upgrade image or the conversion tool.



Note

Cisco Aironet 340 Series Access Points do not support IOS software. Do not attempt to load the upgrade image on 340 series access points.

Finding the Software Version

On 350 series access points that do not run IOS software, the software version appears in red at the top left of most pages in the web-browser interface. The home page on access points not running IOS software looks like the page in [Figure 1](#).

Figure 1 Home Page on Access Points not Running Cisco IOS Software

Nwc-Lab5b-Bucki2 **Summary Status** Cisco 1200 Series AP 12.00T

Home Map Network Associations Setup Logs Help Uptime: 11 days, 20:21:43

Current Associations

Clients: 0 of 3 Repeater: 0 of 0 Bridges: 0 of 0 APs: 4

Recent Events

Time	Severity	Description
7 days, 00:18:17	Info	Deauthenticating 00070eb96eb6, reason "Inactivity"
6 days, 23:51:37	Info	Station 00070eb96eb6 Associated
6 days, 23:51:37	Info	Station 00070eb96eb6 Authenticated
6 days, 23:50:32	Info	Deauthenticating 0040963398c9, reason "Inactivity"
6 days, 23:41:07	Info	Station 0040963398c9 Associated

Network Ports [Diagnostics](#)

Device	Status	Mb/s	IP Addr.	MAC Addr.
Ethernet	Up	100.0	192.168.138.15	00059a3842c5
AP Radio: Internal	Up	11.0	192.168.138.15	00059a3842c5
AP Radio: Module	Up	54.0	192.168.138.15	00059a3842c5

Obtaining the Conversion Upgrade Image

Follow these steps to download a copy of the upgrade image:

-
- Step 1** Click this link to browse to the Cisco IOS Software Center on Cisco.com:
<http://www.cisco.com/cisco/software/navigator.html>
 - Step 2** In the menu on the left, click **Wireless Software** to go to the Wireless LAN Software page.
 - Step 3** On the Wireless LAN Software page, click **Option #2: Aironet Wireless Software Display Tables**.
 - Step 4** Under Cisco Aironet Access Point Firmware and Utilities, click **Cisco Aironet 350 Series (VxWorks)**.
 - Step 5** Select the most recent release of the upgrade image, such as AP350-Cisco-IOS-Upgrade-Image-v2.img.
 - Step 6** On the Encryption Authorization Form, enter the requested information, read the encryption information, and check the boxes that apply.
 - Step 7** Click **Submit**.
 - Step 8** Read and accept the terms and conditions of the Software License Agreement.
 - Step 9** Select the upgrade image again to download it.
 - Step 10** Save the upgrade image on your computer or on a local drive on your network.
-

Using the Conversion Upgrade Image

If your 350 series access point does not run IOS software, you can use the conversion tool and the upgrade image or the upgrade image alone to convert the access point system to IOS operation.

**Caution**

The upgrade to Cisco IOS software is permanent. You cannot revert to non-IOS software after the upgrade.

Using the Upgrade Image with the Conversion Tool

Use the upgrade image with the conversion tool to maintain the current access point configuration after the conversion. Refer to the *Cisco Aironet Conversion Tool for Cisco IOS Software Administrator Guide for Windows* for complete instructions on using the upgrade image with the conversion tool. Click this link to browse to the *Cisco Aironet Conversion Tool for Cisco IOS Software Administrator Guide for Windows*:

http://www.cisco.com/en/US/docs/wireless/access_point/conversion/ios/administration/guide/tool3ios.html

Using the Upgrade Image Without the Conversion Tool

To convert to IOS operation without maintaining the current access point configuration, load the upgrade image on the access point just as you would when performing a firmware upgrade.

Follow these steps to convert your access point system to IOS operation and reset the configuration to factory defaults:

-
- Step 1** Type the access point's IP address in your browser's address line to browse to the access point web-browser interface.
 - Step 2** Click **Setup** on the Summary Setup screen.
 - Step 3** Under Services, click **Cisco Services**.
 - Step 4** Under Fully Update Firmware, click **Through Browser**.
 - Step 5** Click **Browse** to browse to the upgrade image file and select it.
 - Step 6** Click **Browser Update Now**. The upgrade process begins.

When the upgrade completes, a message appears that asks you to wait for the access point to reboot.



Note The access point might take up to 30 minutes to reboot after the upgrade. Do not attempt to reset the access point before the reboot is complete.

After it reboots, the access point runs IOS software. To access your IOS access point, browse to the access point and enter **Cisco** as the administrator username and **Cisco** as the password.

Upgrade Troubleshooting

This section describes how to troubleshoot and correct problems that sometimes occur during the upgrade from VxWorks to IOS software.

If the access point does not have enough available DRAM, the upgrade can fail. There are two types of upgrade failures, one in which the access point continues to run VxWorks instead of IOS software, and one in which the access point runs IOS software with a limited command set. These sections describe each failure type and the steps you take to correct the problem:

- [Access Point Still Running VxWorks, page 4](#)
- [Access Point Operating with Limited Command Set, page 6](#)

Access Point Still Running VxWorks

After the upgrade process, the access point reboots in VxWorks mode. It should reboot running IOS software. The VxWorks operating system is fully loaded and the access point can associate clients and operate normally.

Symptoms

If you have a console connection during this type of task failure, warnings similar to the following are displayed while the task is running:

```
Retrieving file "10.0.0.11:UpgradeImage10.0.0.108Jun20.img" via TFTP.
*** Suppressing console event log display due to low memory.
*** Restarting System in 5 seconds...
*** Recovered from low-memory condition. Restoring normal console event log display.
```

If you do not have a console connection, the only observable symptom is the behavior of the access point LEDs, which blink in an unfamiliar pattern.

Recovery

Make sure that the access point has at least 4 MB of DRAM available per task. To display the amount of available DRAM, use the following VxWorks command during a console or Telnet session with the access point:

:vxdiag_memshow

Output similar to the following is displayed:

```
(Auto Apply On) :Bottom, :Down, :Back, ^R, =, <ENTER>, or [Link Text]: :vxdiag_memshow
```

status	bytes	blocks	avg block	max block
current				
free	3263544	370	8820	2875056
alloc	10061376	5490	1832	
cumulative				
alloc	11956232	16310	733	

This example shows that 3,263,544 bytes (or about 3.2 MB) of DRAM are available (see the number in the "bytes" column above). This is not enough DRAM to upgrade an access point running VxWorks to IOS software.

You can free some DRAM by:

- Terminating non-critical processes.
- Setting non-IP related configurations back to the default values.
- Disabling extra memory allocations used by some SNMP functions.
- Changing some event handling configurations on the access point. Set the maximum number of bytes stored per alert packet to **0** and set maximum memory reserved for detailed event trace buffer (bytes) to **0**. (Making these configuration changes requires that you reboot the access point.)

After freeing DRAM, use the **:vxdiag_memshow** command to confirm that there is enough DRAM to perform the upgrade to IOS software.

Access Point Operating with Limited Command Set

After the upgrade process, the access point does not have any operating system fully loaded and is operating with a limited command set. The access point has only limited functionality and cannot associate clients.

Symptoms

When the access point reboots during the upgrade or after a failed upgrade, you see a display similar to the following:

```
Problem Description: System ID: 0009E8D2698E
Motherboard: IBM405 200MHz, 8192KB FLASH, 16384KB DRAM, Revision 03
Bootstrap Ver. 1.00: FLASH, CRC 1C914641 (OK)
Initialization: OK
```

Memory Bank	total	used	left				
DRAM	16742624	0	16742624				
Config	524288	0	524288				
FLASH	7602176	0	7602176				
Memory Bank:File		address	size	encoding	type	flags	

Recovery

The menu displayed is the VxWorks bootloader, which is functionally equivalent to IOS ROM Monitor (ROMMON). Neither full operating system is loaded or available, so neither full command set is available.

Follow these steps to restart the upgrade process and resume access point operation:

-
- Step 1** If your 1200 series access point has an 802.11a radio module, remove the module. You can reinstall the module after the upgrade process is complete.
- Step 2** Verify that the connection settings in the terminal application are **9600-8-None-1** and **NO flow control** (not hardware or software).
- Step 3** Format the Flash memory to accept the VxWorks upgrade image:
- Press **Control-Z** to display the hidden format menu.
 - Press **!** (exclamation point) to select Format. The option to format Flash is usually selected by pressing **3**.
 - Press **Y** (uppercase Y) to confirm the Flash memory reformat. After a few moments, the bootloader menu appears.
- Step 4** Press **l** [lowercase L] to put the access point in receiving mode. The file transfer protocol (usually Xmodem-1k) is displayed and characters begin scrolling across the line, indicating that the access point is ready to receive data.
- Step 5** Start the file transfer:
- In HyperTerminal, select **Transfer**, then **Send File**.
 - Select the same file transfer protocol you selected in Step 4.
 - Browse to the AP350-Cisco-IOS-Upgrade-Image-v2.img file on the hard drive.
 - Click **Send**.

After the file is transferred to the access point, the bootloader menu is redisplayed and the file listing shows that the files compressed inside AP350-Cisco-IOS-Upgrade-Image-v2.img are located in the access point DRAM.

- Step 6** Copy the files from the access point DRAM to Flash memory:
- a. Press **c** to copy.
 - b. Press **3** to select Flash memory as the copy destination.
 - c. Select the appropriate option for each of the files listed in DRAM.
 - d. Repeat this process for each of the files in DRAM.

The bootloader menu and file listing is redisplayed, showing the progress of DRAM files being copied into Flash memory.

- Step 7** Reboot the access point. The upgrade process should proceed normally.

You should see these messages displayed during a successful upgrade:

```
flashfs[0]: Checking block 25...bad block number (-1)
flashfs[0]: erasing block 25...done.
flashfs[0]: Checking block 26...bad block number (-1)
flashfs[0]: erasing block 26...done.
flashfs[0]: Checking block 27...bad block number (-1)
flashfs[0]: erasing block 27...done.
```

Important Notes

This section describes important information about the upgrade to IOS software. For more information on Cisco IOS releases for access points, refer to the release notes for specific releases.

Some Fields Not Updated During Upgrade to IOS Software

Some fields that are reported in the console messages during the upgrade are blank or are populated with zeros. However, blank or zero fields are normal after a successful upgrade, because the 350 series access point does not support that information. This example shows fields that might appear blank or populated with zeros:

```
32K bytes of flash-simulated non-volatile configuration memory.
Base Ethernet MAC Address: 00:05:9A:38:42:91
Part Number                : 0-0000-00
PCA Assembly Number        : 000-00000-00
PCA Revision Number        :
PCB Serial Number          :
Top Assembly Part Number   : 000-00000-00
Top Assembly Serial Number :
Top Revision Number        :
Product/Model Number       : AIR-AP352-IOS-UPGRD
```

Caveats

For a description of the open and closed caveats, refer to the *Release Notes for Cisco Aironet 350, 1100, and 1200 Series Access Points for Cisco IOS Release 12.2(13)JA1*.

Troubleshooting

For the most up-to-date, detailed troubleshooting information, refer to the Cisco TAC website at <http://www.cisco.com/cisco/web/support/index.html>. Click **Technology Support**, select **Wireless/Mobility** from the menu on the left, and click **WLAN (Wireless, LAN)**.

Related Documentation

This section lists documents related to Cisco IOS Release 12.2(13)JA1 and to 350, 1100, and 1200 series access points.

- *Cisco Aironet Conversion Tool for Cisco IOS Software, 2.0 Administrator Guide for Windows*
- *Quick Start Guide: Cisco Aironet 350 Series Access Points*
- *Quick Start Guide: Cisco Aironet 1100 Series Access Points*
- *Quick Start Guide: Cisco Aironet 1200 Series Access Points*
- *Cisco IOS Software Configuration Guide for Cisco Aironet Access Points*
- *Cisco IOS Command Reference for Cisco Aironet Access Points and Bridges*
- *Installation Instructions for Cisco Aironet Power Injectors*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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