

# AX411 Access Point Release Notes

October 2011  
Revision 07

These release notes accompany the release of the Juniper Networks AX411 Access Point. They describe the access point and also describe known and resolved issues with the hardware and accompanying software and documentation.

You can also find these release notes on the Juniper Networks Technical Publications webpage at <http://www.juniper.net/techpubs/>.

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## Hardware Features—AX411 Access Point

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The AX411 Access Point provides network access for wireless clients such as laptop or desktop computers, personal digital assistants (PDAs), and any other device equipped with a Wi-Fi adapter. The AX411 Access Point supports the new IEEE 802.11n wireless networking standard with backward compatibility for IEEE 802.11a/b/g standards.

The AX411 Access Point is managed by an SRX210, SRX220, SRX240, or SRX650 Services Gateway. You manage and configure access points from the SRX Series device through the Junos operating system (Junos OS) command-line interface (CLI), J-Web interface, and Network and Security Manager (NSM).

To deploy a wireless network with AX411 Access Points, you install one or more access points throughout your site and connect them to Ethernet ports on the services gateway. You can provide power to the access points using Power over Ethernet (PoE) by connecting them to SRX210, SRX220, SRX240, or SRX650 Services Gateway ports that have PoE capability. You can also power the access points using either optional external power supplies or PoE adapters.

You can connect and use up to two AX411 Access Points with the SRX210, SRX220, SRX240, and SRX650 Services Gateways without obtaining access point licenses. To connect and use additional access points, you must install one or more licenses on the services gateway. Each of these licenses specifies the number of access points that can be configured and managed in addition to the two that are automatically supported on the device:

- 2-access point license
- 4-access point license
- 8-access point license
- 14-access point license

You can install multiple licenses to increase the number of access points supported on the SRX Series device.



**NOTE:** We recommend that you deploy no more than four AX411 Access Points per SRX Series Services Gateway. For larger deployments, we recommend that you use Juniper Networks WLA Series Access Points and WLC Series Wireless LAN Controllers. For more information about these products, see:

<http://www.juniper.net/us/en/products-services/wireless/wla-series>

<http://www.juniper.net/us/en/products-services/wireless/wlc-series>

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To configure the AX411 Access Point, use the [edit wlan] hierarchy.

[*Junos OS WLAN Configuration and Administration Guide*]

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## General Notes

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The following items describe expected behaviors for the AX411 Access Point:

- Starting with Junos OS Release 10.3R2, the AX411 Access Point is supported on the SRX220 Services Gateway.
- When using WEP or TKIP security in 802.11n mode, performance is reduced. This is because aggregation is disabled in these security modes.
- Multicast traffic has limited performance compared to unicast in 802.11 networks, mainly caused by the lack of ACK packets in the 802.11 protocol for multicast packets.
- Voice frames are not subject to 802.11n frame aggregation. This allows for low latency of each voice frame.
- When in 802.11n mode, “No Ack” is not supported.
- Disabling 802.11d prevents the country code from being broadcast in the beacons. However, this only applies to radios configured to operate in the 802.11g (2.4 GHz) band. For radios operating in the 802.11a (5 GHz) band, the access point software configures support for 802.11h. When 802.11h is supported, the country code information is broadcast in the beacons.

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## Firmware Release History

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The following sections describe the released versions of the AX411 Access Point firmware. Where applicable, they describe open and resolved issues. For information on upgrading access point firmware, see the *Junos OS WLAN Configuration and Administration Guide*.



**NOTE:** We recommend that you upgrade your AX411 Access Points to the latest available firmware release.

We also recommend that you upgrade your SRX Series services gateway to the latest available Junos OS software release (currently Junos OS Release 11.2R1).

- [Firmware Release 10.1.3.16 \(October 2011\) on page 3](#)
- [Firmware Release 10.1.3.14 \(December 2010\) on page 4](#)
- [Firmware Release 10.3.1.11 \(July 2010\) on page 5](#)
- [Firmware Release 10.3.1.9 \(April 2010\) on page 5](#)
- [Firmware Release 10.3.1.7 \(October 2009\) on page 6](#)

### Firmware Release 10.1.3.16 (October 2011)

Access points running firmware version 10.1.3.14 or earlier, might not pass the multicast or broadcast traffic due to which the access points will be unable to obtain a DHCP IP address. This issue is resolved in access points running firmware version 10.1.3.16 or later.

## Firmware Release 10.1.3.14 (December 2010)

For access points running firmware version 10.1.3.11 and earlier, when you configure the maximum stations on the SRX Series Services Gateway, the configuration does not take effect on the AX411 Access Point. Access point firmware version 10.1.3.14 and later resolve this issue.

For AX411 Access Points running firmware version 10.1.3.11 and earlier, when the route supplied to the access point using DHCP lies outside the subnet and is not reachable, the access point reboots continuously. Access point firmware version 10.1.3.14 and later resolve this issue.

For AX411 Access Points running firmware version 10.1.3.14 and later, managed by services gateways running Junos OS Release 10.4R2 (or 10.2R4 or 10.3R4) or later:

- Access points automatically synchronize their system times with their services gateways.
- The CLI command to set the NTP server for the access point is no longer available.
- The access point time displayed by the CLI command **show wlan access-point access-point name details** no longer shows time zone information.
- The following changes have been made to the output of the **show wlan access-point access-point name neighbors** command:
  - The neighbor entry beacon time stamp is now displayed with regard to the system time of the services gateway, instead of with regard to the access point uptime as in earlier firmware and software revisions.
  - The beacon time display does not include the time zone.
  - Neighbor access point entries are displayed in descending order of beacon time, that is, with the most active neighbors at the top of the list.
- Dynamic Frequency Selection (DFS) is disabled, and you cannot enable it. In earlier firmware and software revisions, DFS was enabled by default.
- CLI and J-Web options to configure the following radio channels have been removed to prevent interference with radar systems: 52, 56, 60, 64, 100, 108, 112, 116, 120, 124, 128, 132, 136, and 140. If the services gateway has previously been configured so that its access points use any of these channels, the following actions take effect:
  - A warning is logged in the wlan logs.
  - The channel selection on the access point is changed to "Automatic."
  - The access point automatically chooses channels other than those listed above.

## Firmware Release 10.3.1.11 (July 2010)

For access points running firmware version 10.1.3.9 and earlier, there was no way to evaluate the signal strength of access point neighbors or of clients associated with the access point. Access point firmware version 10.1.3.11 resolves this issue as follows:

- By displaying the signal strengths, transmit rate, and channel for each of the clients associated with the access point when you use the **show wlan access-points client-associations access point name** CLI command on the services gateway
- By displaying the received signal strength of access point neighbors when you use the **show wlan access-points neighbors access point name** CLI command on the services gateway [PR/530979]

For access points running firmware version 10.1.3.9 and earlier, attempting to upgrade the firmware in all of the access points in a cluster at the same time would sometimes result in the access points not rejoining the cluster after the upgrade. Access point firmware version 10.1.3.11 resolves this issue by disabling clustering by default. [PR/538994]



**NOTE:** The access point clustering feature implemented in Junos OS Release 10.2 and later acts unpredictably. We recommend that you do not use or enable the clustering functionality. See [“Outstanding Issues for the AX411 Access Point” on page 6](#) for more information.



**NOTE:** We recommend that if you upgrade your AX411 Access Point to firmware version 10.1.3.11 or later, you also upgrade Junos OS on its SRX Series Services Gateway to Junos OS Release 10.2R2, 10.3R1, or later. For information about upgrading Junos OS on the services gateway, see the *Junos OS Migration Guide*.

## Firmware Release 10.3.1.9 (April 2010)

For access points running firmware version 10.1.3.7, the access point sometimes does not allow wireless clients to reconnect to the network. The client would connect with the network through an SSID on the access point, receive an IP address through DHCP, and then later disconnect. When the client returned after a period of about 24 hours, the access point would not issue the client an IP address with DHCP, and the client could not connect with the network. This issue is resolved in access point firmware version 10.1.3.9. [PR/300708]

For access points running firmware version 10.1.3.7, it is possible to create an access point cluster containing access points with different band plan settings, for example FCC and ETSI. However, in such a cluster the access points change their country-specific settings unpredictably. Access point firmware version 10.1.3.9 resolves this issue by requiring that all access points in a cluster have the same band plan. An access point with a different band plan setting would not be allowed into the cluster.



NOTE: The access point clustering feature implemented in Junos OS Release 10.2 and later acts unpredictably. We recommend that you do not use or enable the clustering functionality. See “[Outstanding Issues for the AX411 Access Point](#)” on page 6 for more information.

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NOTE: We recommend that if you upgrade your AX411 Access Point to firmware version 10.1.3.9 or later, you also upgrade Junos OS on its SRX Series Services Gateway to Junos OS Release 10.1R1, 10.2R2, or later. For information about upgrading Junos OS on the services gateway, see the *Junos OS Migration Guide*.

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### Firmware Release 10.3.1.7 (October 2009)

Release 10.3.1.7 was the initial firmware release for the AX411 Access Point. We recommend that if your access points are running firmware release 10.3.1.7, you upgrade them to the latest available firmware release.

### Outstanding Issues for the AX411 Access Point

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The following items describe the outstanding issues for the AX411 Access Point:

- After a period of time ranging from several days to several weeks, Radio 2 stops communicating with wireless clients. The radio still sends beacons, and clients can still see the SSID, but when they attempt to connect to the network they do not receive an IP address. The workaround for this problem is to execute the **restart wireless-lan service** CLI command on the SRX Series device that manages the access point. [PR/579520]
- The access point clustering feature implemented in Junos OS Release 10.2 and later acts unpredictably. We recommend that you do not use or enable the clustering functionality. To disable clustering:
  1. Delete access point associations to any factory-default or user-configured cluster:

```
root@silver# delete wlan access-point name cluster id
```
  2. Delete all cluster configurations. Make sure to delete the factory default cluster as well:

```
root@silver# delete wlan cluster id
```

```
root@silver# delete wlan cluster vlan-0-default
```
- On SRX210, SRX220, SRX240, and SRX650 devices, when you commit changes to the WLAN hierarchy in the command-line interface (CLI) or apply changes on the Wireless LAN tab of the J-Web interface, it might take up to several minutes before the new settings are reflected on the access point. The actual delay depends on the number of access points connected and the number of virtual access points configured on the access points. [PR/450230]

- On SRX210, SRX220, SRX240, and SRX650 devices, when you use the CLI to commit changes to WLAN settings, the services gateway might not respond immediately to the queries while it delivers the configuration to the access point. This might result in the following error message in response to **show** commands:

```
the wireless-lan-service subsystem is not responding to management requests
```

The device responds correctly after it finishes delivering the configuration to the access point. This process takes from 5 to 50 seconds, depending on the complexity of the access point configuration changes. [PR/460736]

- On SRX Series devices configured for Layer 3 mode, when the DHCP router is configured outside the DHCP pool, disconnecting one of the access points can cause continuous rebooting of the other access points. The workaround for this issue is to reconfigure DHCP so that the DHCP router is within the DHCP pool, as shown in the following configuration:

```
root@silver# show system services
dhcp {
  pool 10.1.1.1/24 {
    router {
      10.1.1.1;
    }
  }
}
```

[PR/464296]

- On SRX210 devices with the default Power over Ethernet (PoE) configuration, a fourth access point connected to the services gateway does not boot. The workaround for this issue is to configure all PoE ports for a maximum power of 12.4 watts using the following command:

```
root@silver# set poe interface all maximum-power 12.4
```

[PR/465307]

- Depending on the country code setting, the AX411 Access Point supports different channel and bandwidth settings per radio. In the current software there is no restriction to on these settings according to country code. If the radio is set incorrectly, it might behave erratically or might not function at all. Use the procedures described in "Setting the AX411 Access Point Country-Specific Settings" in the *AX411 Access Point Hardware Guide* to apply settings that comply with regulations for radio frequency usage in your country. [PR/498374]
- The access point prioritizes data traffic over management traffic.
- When many virtual access points are enabled (with the radios on) and/or the DHCP client needs to be restarted, the Web response times can fluctuate. Occasionally the browser might incompletely load a page and might not accept form submissions. This issue can be resolved by clearing the browser cache and reloading the page.
- As additional virtual access points are enabled, performance is impacted because of the additional control traffic.

- With a large number of VLANs and clients, network users might experience client disassociations. The workaround is to increase the Group Key Timeout setting or to set it to zero.
- The WPA2-AES/PSK fragmentation is 16 bytes larger than the configured threshold. The IEEE802.11-2007 standard allows +8 bytes.
- When the access point is highly loaded (high data-traffic volume, maximum number of virtual access points, and maximum number of clients), a decrease in performance can result. This can include high management response times, slow data management retrieval, and generally slow access point operation.
- The access point does not always randomize UDP source port numbers.
- When the country code is set to IE, the power levels sent in the beacons are incorrect.
- When the access point is heavily loaded with traffic, the J-Web interface on the services gateway that manages the access point becomes very slow.
- The IEEE802.1X broadcast key refresh also sends the EAPOL frame tagged 'session' key.
- The beacon interval might vary by up to +/-5 milliseconds from the expected 100 milliseconds.

## Junos Documentation and Release Notes

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For a list of related Junos OS documentation, see <http://www.juniper.net/techpubs/software/junos/> .

If the information in the latest release notes differs from the information in the documentation, use the *Junos OS Release Notes*.

To obtain the most current version of all Juniper Networks technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

## Requesting Technical Support

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Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need postsales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf> .
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/> .
- JTAC Hours of Operation —The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/> .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, visit us at <http://www.juniper.net/support/requesting-support.html>

## Revision History

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October 2009—Revision 01 Initial Release

January 2010—Revision 02 Add procedures and tables for country-specific settings

May 2010—Revision 03 Remove procedures that are incorporated in *AX411 Access Point Hardware Guide*, add Resolved Issues section

July 2010—Revision 04 Add recommendation for upgrading services gateway software

April 2011—Revision 05 Reorganize firmware sections. Address firmware version 10.1.3.14.

April 2011—Revision 06 Minor changes to firmware version 10.1.3.14 descriptions.

October 2011—Revision 07 Add new firmware version 10.1.3.16 description.

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