



Hot Standby Access Points

This note describes how to configure your wireless device as hot standby unit in the following sections:

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Understanding Hot Standby

In hot standby mode, an access point is designated as a backup for another access point. The standby access point is placed near the access point that it monitors and is configured exactly like the monitored access point. The standby access point associates with the monitored access point as a client and sends Internet Access Point Protocol (IAPP) queries to the monitored access point through the Ethernet and radio ports. If the monitored access point fails to respond, the standby access point comes online and takes the monitored access point's place in the network.

Except for the IP address, the standby access point's settings should be identical to the settings on the monitored access point. If the monitored access point goes off line and the standby access point takes its place in the network, matching settings ensure that client devices can switch easily to the standby access point.

The standby access point monitors another access point in a device-to-device relationship, not in an interface-to-interface relationship. For example, you cannot configure the standby access point's 5-GHz radio to monitor the 5-GHz radio in access point alpha and the standby's 2.4-GHz radio to monitor the 2.4-GHz radio in access point bravo. You also cannot configure one radio in a dual-radio access point as a standby radio and configure the other radio to serve client devices.

Hot standby mode is disabled by default.



Note

If the monitored access point malfunctions and the standby access point takes its place, repeat the hot standby setup on the standby access point when you repair or replace the monitored access point. The standby access point does not automatically revert to standby mode.



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**Note**

The MAC address of the monitored access point might change if a basic service set identifier (BSSID) on the monitored unit is added or deleted. If you use multiple BSSIDs on your wireless LAN, check the status of the standby access point when you add or delete BSSIDs on the monitored access point. If necessary, reconfigure the standby unit to use the BSSID's new MAC address.

Configuring a Hot Standby Access Point

When you set up the standby access point, you must enter the MAC address of the access point that the standby unit will monitor. Record the MAC address of the monitored access point before you configure the standby access point.

The standby access point must also duplicate several key settings on the monitored access point. These settings are as follows:

- Primary SSID (as well as additional SSIDs configured on the monitored access point)
- Default IP subnet mask
- Default gateway
- Data rates
- Wired Equivalent Privacy (WEP) settings
- Authentication types and authentication servers

Check the monitored access point, and record its settings before you set up the standby access point.

**Note**

Wireless client devices associated to the standby access point lose their connections during the hot standby setup process.

**Tip**

To quickly duplicate the monitored access point's settings on the standby access point, save the monitored access point configuration and load it on the standby access point.

To enable hot standby mode on an access point, follow these steps, beginning in privileged EXEC mode:

	Command	Description
Step 1	configure terminal	Enters global configuration mode.
Step 2	iapp standby <i>mac-address</i>	<p>Puts the access point into standby mode and specifies the MAC address of radio on the monitored access point.</p> <p>Note The MAC address of the monitored access point might change if a BSSID on the monitored unit is added or deleted. If you use multiple BSSIDs on your wireless LAN, check the status of the standby unit when you add or delete BSSIDs on the monitored access point. If necessary, reconfigure the standby unit to use the BSSID's new MAC address.</p>
Step 3	interface dot11radio <i>port</i>	Enters interface configuration mode for the radio interface.
Step 4	ssid <i>ssid-string</i>	Creates the SSID that the standby access point uses to associate to the monitored access point. In the next step designate this SSID as an infrastructure SSID. If you created an infrastructure SSID on the monitored access point, create the same SSID on the standby access point, also.
Step 5	infrastructure-ssid [optional]	Designates the SSID as an infrastructure SSID. The standby access point uses this SSID to associate to the monitored access point. If the standby access point takes the place of the monitored access point, infrastructure devices must associate to the standby access point using this SSID unless you also enter the optional keyword.
Step 6	authentication client username <i>username</i> password <i>password</i>	If the monitored access point is configured to require Light Extensible Access Protocol (LEAP) authentication, configure the username and password that the standby access point uses when it performs LEAP authentication. This username and password must match the username and password that you set up for the standby access point on the authentication server.
Step 7	exit	Exits SSID configuration mode and returns to radio interface configuration mode.
Step 8	iapp standby poll-frequency <i>seconds</i>	Sets the number of seconds between queries that the standby access point sends to the monitored access point's radio and Ethernet ports. The default polling frequency is 2 seconds.
Step 9	iapp standby timeout <i>seconds</i>	<p>Sets the number of seconds that the standby access point waits for a response from the monitored access point before it assumes that the monitored access point has malfunctioned. The default timeout is 20 seconds.</p> <p>Note You should increase the standby timeout setting if the bridged path between the standby and monitored access points can be lost for periods greater than 20 seconds (during spanning tree recalculation, for example).</p> <p>Note If the monitored access point is configured to select the least congested radio channel, you might need to increase the standby timeout setting. The monitored unit might take up to 40 seconds to select the least congested channel.</p>

	Command	Description
Step 10	iapp standby primary-shutdown	(Optional) Configures the standby access point to send a Dumb Device Protocol (DDP) message to the monitored access point to disable the radios of the monitored access point when the standby unit becomes active. Sending this message prevents client devices that are associated to the monitored access point from remaining associated to the malfunctioning access point.
Step 11	show iapp standby-parms	Verifies your entries. If the access point is in standby mode, this command displays the standby access point parameters, including the MAC address of the monitored access point and the polling frequency and timeout values. If the access point is not in standby mode, <i>no iapp standby mac-address</i> appears.
Step 12	end	Returns to privileged EXEC mode.

After you enable standby mode, configure the standby access point settings to match the settings that you recorded for the monitored access point.

Verifying Standby Operation

Use the following command to check the status of the standby access point:

show iapp standby-status

This command displays the status of the standby access point. [Table 1](#) lists the standby status messages that can appear.

Table 1 Standby Status Messages

Message	Description
IAPP Standby is Disabled	The access point is not configured for standby mode.
IAPP—AP is in standby mode	The access point is in standby mode.
IAPP—AP is operating in active mode	The standby access point has taken over for the monitored access point and is functioning as a root access point.
IAPP—AP is operating in repeater mode	The standby access point has taken over for the monitored access point and is functioning as a repeater access point. The Cisco 800 Series routers do not support repeater mode.
Standby status: Initializing	The standby access point is initializing link tests with the monitored access point.
Standby status: Takeover	The standby access point has transitioned to active mode.
Standby status: Stopped	Standby mode has been stopped by a configuration command.
Standby status: Ethernet Linktest Failed	An Ethernet link test failed from the standby access point to the monitored access point.
Standby status: Radio Linktest Failed	A radio link test failed from the standby access point to the monitored access point.
Standby status: Standby Error	An undefined error occurred.

Table 1 **Standby Status Messages (continued)**

Message	Description
Standby State: Init	The standby access point is initializing link tests with the monitored access point.
Standby State: Running	The standby access point is operating in standby mode and is running link tests to the monitored access point.
Standby State: Stopped	Standby mode has been stopped by a configuration command.
Standby State: Not Running	The access point is not in standby mode.

Use the following command to check the standby configuration:

show iapp standby-parms

This command displays the MAC address of the standby access point, the standby timeout, and the polling frequency values. If no standby access point is configured, the following message appears:

```
no iapp standby mac-address
```

If a standby access point takes over for the monitored access point, you can use the **show iapp statistics** command to help determine why the standby access point took over.

