



Configuring a Spectrum Expert Connection

To obtain detailed spectrum data that can be used to generate RF analysis plots similar to those provided by a spectrum analyzer, you can configure a Cisco CleanAir-enabled access point to connect directly to a Microsoft Windows XP or Vista PC running the Spectrum Expert application (referred to as a *Spectrum Expert console*). You can initiate the Spectrum Expert connection semi-automatically from Prime Infrastructure or by manually launching it from the controller. This section provides instructions for the latter.



Note The Cisco Aironet Access Point Module for Wireless Security and Spectrum Intelligence (WSSI) for the Cisco Aironet 3600 Series Access Point tightly couples data connectivity, spectrum analysis, and security threat detection and mitigation into a single, multipurpose access point. With WSSI you have to use Metageek Chanalyzer Pro with CleanAir support and not Spectrum expert for wIPS, CleanAir and spectrum analysis.

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Spectrum Expert Connection

To obtain detailed spectrum data that can be used to generate RF analysis plots similar to those provided by a spectrum analyzer, you can configure a Cisco CleanAir-enabled access point to connect directly to a Microsoft Windows XP or Vista PC running the Spectrum Expert application (referred to as a *Spectrum Expert console*). You can initiate the Spectrum Expert connection semi-automatically from Prime Infrastructure or by manually launching it from the controller. This section provides instructions for the latter.



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This section contains the following subsections:

Configuring Spectrum Expert (GUI)

Before you begin

Prior to establishing a connection between the Spectrum Expert console and the access point, make sure that IP address routing is properly configured and the network spectrum interface (NSI) ports are open in any intervening firewalls.

Step 1 Ensure that Cisco CleanAir functionality is enabled for the access point that will be connected to the Spectrum Expert console.

Step 2 Configure the access point for SE-Connect mode using the controller GUI or CLI.

Note The SE-Connect mode is set for the entire access point, not just a single radio. However, the Spectrum Expert console connects to a single radio at a time.

If you are using the controller GUI, follow these steps:

- Choose **Wireless > Access Points > All APs** to open the All APs page.
- Click the name of the desired access point to open the All APs > Details for page.
- Choose **SE-Connect** from the AP Mode drop-down list. This mode is available only for access points that are capable of supporting Cisco CleanAir functionality. For the SE-Connect mode to appear as an available option, the access point must have at least one spectrum-capable radio in the Enable state.
- Click **Apply** to commit your changes.
- Click **OK** when prompted to reboot the access point.

If you are using the CLI, follow these steps:

- To configure the access point for SE-Connect mode, enter this command:

```
config ap mode se-connect Cisco_AP
```

- When prompted to reboot the access point, enter **Y**.
- To verify the SE-Connect configuration status for the access point, enter this command:

```
show ap config {802.11a | 802.11b} Cisco_AP
```

Information similar to the following appears:

```
Cisco AP Identifier..... 0
Cisco AP Name..... CISCO_AP3500
...
Spectrum Management Information
  Spectrum Management Capable..... Yes
  Spectrum Management Admin State..... Enabled
  Spectrum Management Operation State..... Up
  Rapid Update Mode..... Disabled
  Spectrum Expert connection..... Enabled
  Spectrum Sensor State..... Configured (Error code = 0)
```

Step 3 On the Windows PC, access the Cisco Software Center from this URL:

<http://www.cisco.com/cisco/software/navigator.html>

- Step 4** Click **Product > Wireless > Cisco Spectrum Intelligence > Cisco Spectrum Expert > Cisco Spectrum Expert Wi-Fi**, and then download the Spectrum Expert 4.0 executable (*.exe) file.
- Step 5** Run the Spectrum Expert application on the PC.
- Step 6** When the Connect to Sensor dialog box appears, enter the IP address of the access point, choose the access point radio, and enter the 16-byte network spectrum interface (NSI) key to authenticate. The Spectrum Expert application opens a TCP/IP connection directly to the access point using the NSI protocol.
- Note** The access point must be a TCP server listening on ports 37540 for 2.4 GHz and 37550 for 5 GHz frequencies. These ports must be opened for the spectrum expert application to connect to the access point using the NSI protocol.
- Note** On the controller GUI, the NSI key appears in the Network Spectrum Interface Key field (below the Port Number field) on the All APs > Details for page. To view the NSI key from the controller CLI, enter the **show ap config {802.11a | 802.11b}** *Cisco_AP* command.
- When an access point in SE-Connect mode joins a controller, it sends a Spectrum Capabilities notification message, and the controller responds with a Spectrum Configuration Request. The request contains the 16-byte random NSI key generated by the controller for use in NSI authentication. The controller generates one key per access point, which the access point stores until it is rebooted.
- Note** You can establish up to three Spectrum Expert console connections per access point radio. The Number of Spectrum Expert Connections text box on the 802.11a/n (or 802.11b/g/n) Cisco APs > Configure page of the controller GUI shows the number of Spectrum Expert applications that are currently connected to the access point radio.
- Step 7** Verify that the Spectrum Expert console is connected to the access point by selecting the Slave Remote Sensor text box in the bottom right corner of the Spectrum Expert application. If the two devices are connected, the IP address of the access point appears in this text box.
- Step 8** Use the Spectrum Expert application to view and analyze spectrum data from the access point.
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