



## Environmental Sensors in Access Points

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## Feature History for Environmental Sensors in Access Points

This table provides release and related information for the feature explained in this module.

This feature is also available in all the releases subsequent to the one in which they are introduced in, unless noted otherwise.

**Table 1: Feature History for Environmental Sensors on Access Points**

Release	Feature	Feature Information
Cisco IOS XE Cupertino 17.8.1	Environmental Sensors in Access Points	The Environmental Sensors in Access Points feature helps you collect real-time environmental data, such as, air quality, temperature, and humidity, from the environmental sensors that are embedded in the Cisco Catalyst 9136 Series Access Points.
Cisco IOS XE Cupertino 17.9.1	Environmental Sensors in Access Points	This feature is supported on Cisco Catalyst Wireless 9166I Series Access Points.

## Information About Environmental Sensors in Access Points

You can collect real-time environmental data, such as, air quality, temperature, and humidity, from the environmental sensors that are embedded in the Cisco Catalyst 9136 Series Access Points, and make this data available to customers and partners through the Cisco Spaces solution. You can disable, enable, and configure the scan interval of the sensors from the Cisco Catalyst 9800 Series Wireless Controller CLIs.



**Note** This feature is supported on Cisco Catalyst 9136 Series APs.

Currently, two sensors are added to Cisco Catalyst 9136 Series APs:

- Total volatile organic compounds (TVOC) air quality sensor
- Combined Temperature and Humidity sensor

## Use Cases

The following are the use cases for the environmental sensors in APs:

- In the healthcare industry, environmental sensors help reduce wastage and spoilage of pharmaceuticals by maintaining a consistent environment.
- In the hospitality industry, environmental sensors help improve customer experience by monitoring the air quality of a room.
- In the retail industry, these sensors prevent spoilage of products.

## Configuring Environmental Sensors in an AP Profile (CLI)

To configure the environmental sensor in the Cisco Catalyst 9800 Series Wireless Controllers under an AP profile, follow these steps:

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>configure terminal</b>  <b>Example:</b> Device# configure terminal	Enters global configuration mode.
<b>Step 2</b>	<b>ap profile <i>ap-profile-name</i></b>  <b>Example:</b> Device(config)# ap profile ap-profile-name	Configures an AP profile.
<b>Step 3</b>	<b>sensor environment air-quality</b>  <b>Example:</b> Device(config-ap-profile)# sensor environment air-quality	Configures AP environmental air quality sensor. Enters AP sensor configuration mode.
<b>Step 4</b>	<b>no shutdown</b>  <b>Example:</b> Device(config-ap-sensor)# no shutdown	Enables the AP air quality sensor configuration.

	Command or Action	Purpose
<b>Step 5</b>	<b>sensor environment temperature</b> <b>Example:</b> <pre>Device(config-ap-profile)# sensor environment temperature</pre>	Configures AP environmental temperature sensor. Enters AP sensor configuration mode.
<b>Step 6</b>	<b>no shutdown</b> <b>Example:</b> <pre>Device(config-ap-sensor)# no shutdown</pre>	Enables the AP temperature sensor configuration.
<b>Step 7</b>	<b>sampling data-sampling-interval</b> <b>Example:</b> <pre>Device(config-ap-sensor)# sampling 200</pre>	Configures data sampling interval, in seconds. The valid range is between 5 and 3600. The default value is 5. Use the <b>no</b> form of this command to set the data sampling interval to the default time of 5.
<b>Step 8</b>	<b>exit</b> <b>Example:</b> <pre>Device(config-ap-sensor)# exit</pre>	Exits the sub mode.

## Configuring Environment Sensors in Privileged EXEC Mode (CLI)

To disable the sensor on an AP that might be sending invalid data (an AP near an air vent or near a coffee machine), you can disable the sensor by running the corresponding commands in the privileged EXEC mode of the Cisco Catalyst 9800 Series Wireless Controllers.



**Note** For a sensor to be operational in the **Up** state, both, the AP profile configuration state and the AP administrative state should be enabled. If any of the two is disabled, the sensor operational status will stay **Down**.

To disable and enable the admin state of the sensor, follow these steps:

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> <pre>Device&gt; enable</pre>	Enables privileged EXEC mode. Enter the password if prompted.
<b>Step 2</b>	<b>ap name <i>ap-name</i> sensor environment{air-quality   temperature} shutdown</b> <b>Example:</b> <pre>Device# ap name CiscoAP sensor environment air-quality shutdown</pre>	Disables the sensor admin state of the AP.

	Command or Action	Purpose
<b>Step 3</b>	<b>ap name <i>ap-name</i> no sensor environment{air-quality   temperature} shutdown</b>  <b>Example:</b> Device# ap name CiscoAP no sensor environment air-quality shutdown	Enables the sensor admin state of the AP.

## Verifying the AP Sensor Status

To verify the status of the AP sensors, run the following command:

```
Device# show ap sensor status
```

AP Name	Admin-State	Oper-Status	MAC-address	Sampling-Interval	Sensor-type	Config-State
Cisco.1DBC	Enabled	Down	xxxx.xxxx.xxx1	5	Air-quality	Disabled
Cisco.1DBC	Enabled	Down	xxxx.xxxx.xxx2	5	Temperature	Disabled
Cisco.1E24	Enabled	Down	xxxx.xxxx.xxx3	5	Air-quality	Disabled
Cisco.1E24	Enabled	Down	xxxx.xxxx.xxx4	5	Temperature	Disabled