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## **cnPilot™ Enterprise AP Location-API User Guide**

### **ePMP1000 Hotspot, cnPilot E400, cnPilot E500**

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# Location API

## Overview

Location API feature is a method to send the discovered (probed) clients list to the specified server address. The reports are send as a http post to the http server every interval. The http server address, port, and the interval can be configured from the AP CLI.

### DISCOVERED CLIENT LIST

The AP listens to the probe requests on the native (configured) channel and populates the discovered client list. The maximum list entries are set to 100. At first, 100 probed clients are added to the report and send to server. The list contains both 2.4Hz and 5GHz clients in case of dual radio APs viz E400 & E500. User can look at the opmode to identify the operation mode of the client.

### SENDING REPORT

The discovered/probed client list is send to the configured http server periodically. The server, port, and period/interval can be configured by using the CLI command.

### AGING OUT STALE ENTRIES

The discovered client entries are deleted from the list if the entry is aged out. The age out time is five minutes, if there are no new probe requests from the client within 5 minutes the entry is deleted.

## Configuring Location-API

The following table lists the fields that are displayed in the **Configuration > Services > Location-API** page:

**Table 1:** Configuration: **Services > Location-API** parameters

Parameter	Description	Default Value
Enable	To enable the Location-API functionality.	—
Server	The HTTP/HTTPS server to send report with the port number. (Example: http://192.168.0.100:8000)	—
Interval	The Location-API interval in seconds. Range: 5-3600	—

You can configure the parameters through the UI or CLI.

### In the UI

1. Navigate to the **Configuration > Services > Location-API** tab. The following fields are displayed:
2. Select the **Enable** checkbox to enable Location-API.
3. Enter the HTTP/HTTPS server and port number in the **Server** text box.
4. Enter the interval for location-API in the **Interval** text box.
5. Click **Save**.

**Figure 1:** Configurations: **Services > Location-API** page

**Location-API**

Enable ☒

Server  Configure HTTP/HTTPS server to send report to with the port numbe

Interval  Configure Location API interval (5-3600) seconds

## In the CLI

To configure Location-API:

```
(cnPilot Enterprise AP) (configure)# location-api
```

```
Interval<5-3600>
```

```
Server
```

To disable the Location-API:

```
(cnPilot Enterprise AP) (configure)# no location-api
```

## HTTP post message format

The reports are send in JSON format as mentioned in the below sample:

```
{'ap_mac': '00-04-56-F8-33-26', 'version': u'1.0', 'ap_name': 'E400-F83326',
'probe_requests':
[ {'ch': 11, 'rssi': 42, 'mac': 'A4-4E-31-5F-6D-2C', 'bss': u'00-04-56-F8-34-00', u'last_seen':
20080},
{'ch': 40, 'rssi': 11, 'mac': '48-3B-38-25-C8-E2', 'bss': '00-04-56-F8-39-80', 'last_seen': 77610},
{'ch': 11, 'rssi': 49, 'mac': 'D0-51-62-2E-B5-5E', 'bss': '00-04-56-F8-34-00', 'last_seen': 286350},
{'ch': 11, 'rssi': 45, 'mac': 'CC-C3-EA-FD-12-CB', 'bss': '00-04-56-F8-34-00', 'last_seen': 1650},
{'ch': 11, 'rssi': 51, 'mac': '00-04-56-AC-5F-C0', 'bss': '00-04-56-F8-34-00', u'last_seen': 3870},
{'ch': 40, 'rssi': 9, 'mac': '60-57-18-62-88-BF', 'bss': '00-04-56-F8-39-80', 'last_seen': 55420}]}
```

The JSON object contains the MAC of the AP followed by an array or records. The user/server can look at the MAC of the AP to find out from which device the reports are being sent.

**Table 2:** HTTP post message format parameters

Parameter	Description
ap-mac	The MAC address of the AP which is same as the ESN number printed on the device.
ap-name	The host name of the AP.
version	The version number of the protocol. if there is any change in the message format the version number will be changed and the server

	can look at the version number and parse the message accordingly. Currently the version is set to 1.0.
probe-requests	<p>A JSON object with an array of probed client's records.</p> <p>The details about the probed client are sent in probe requests JSON array.</p> <p>Each client record has the following details:</p> <ul style="list-style-type: none"><li>• <b>ch</b>: Channel on which client sends the probe request.</li><li>• <b>mac</b>: The MAC address of the client.</li><li>• <b>bss</b>: The BSSID/MAC address of the WLAN on which the client has probed.</li><li>• <b>rsi</b>: The SNR of the client in dB.</li><li>• <b>last_seen</b>: Time in milliseconds when the last probe request was received from the client.</li></ul>