



cnPilot™ Enterprise AP Location-API User Guide

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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 sent as HTTP post to the HTTP server every interval. The HTTP server address, port, and the interval can be configured from the AP CLI and UI.

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 500. The list contains both 2.4Hz and 5GHz clients in the case of dual-radio APs.

Note: For AP to scan on both 2.4 Ghz and 5 Ghz, please configure the WLAN to operate on both the bands

SENDING REPORT

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

Note: Number of client entries in the report is directionally proportional to the time interval of the scan

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: 2-3600	—
MAC Anonymization	Ignore client MAC addresses that have been anonymized	—

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. Select **MAC Anonymization** to enable the anonymization of MAC addresses.
6. Click **Save**.

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

In the CLI

To configure Location-API:

```
Anand-AP(config)# location-api
ignore-anonymized-mac : Ignore MAC addresses that are anonymized
interval              : Configure reporting interval in secs
server                : HTTP/HTTPS server to send report to with the port number
```

To disable the Location-API:

```
Anand-AP(config)# no location-api
```

HTTP post message sample format

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

```
{u'beaconed_aps': [{u'rssi': -54, u'mac': u'00-04-56-B1-66-70', u'chan': 11, u'ssid': u'#wagre-500', u'last_seen': 4},
{u'rssi': -62, u'mac': u'00-04-56-B8-A5-D1', u'chan': 11, u'ssid': u'', u'last_seen': 4}],
u'associated_clients': [{u'ch': 6, u'rssi': -55, u'mac': u'94-14-7A-B7-AB-B3', u'bss': u'58-C1-7A-65-5C-D0', u'last_seen': 0}],
u'probe_requests_clients': [{u'ch': 36, u'rssi': -95, u'mac': u'84-3D-C6-3F-2A-6F', u'last_seen': 1, u'bss': u'00-04-56-AF-57-B1'},
{u'ch': 36, u'rssi': -89, u'mac': u'28-31-66-4B-74-83', u'last_seen': 0, u'bss': u'00-04-56-AF-57-B1'},
{u'ch': 6, u'rssi': -52, u'mac': u'F0-D5-BF-15-18-FA', u'last_seen': 1, u'bss': u'00-04-56-B5-E1-90'},
{u'ch': 6, u'rssi': -67, u'mac': u'00-04-56-9A-F4-F0', u'last_seen': 1, u'bss': u'00-04-56-B1-52-80'},
{u'ch': 36, u'rssi': -73, u'mac': u'00-04-56-AF-62-90', u'last_seen': 3, u'bss': u'58-C1-7A-C8-4B-60'},
{u'ch': 6, u'rssi': -69, u'mac': u'58-C1-7A-69-F2-30', u'last_seen': 1, u'bss': u'06-88-09-A0-24-00'},
{u'ch': 6, u'rssi': -95, u'mac': u'58-C1-7A-65-5C-D1', u'last_seen': 2, u'bss': u'00-04-56-AF-1D-C0'},
{u'ch': 36, u'rssi': -78, u'mac': u'1C-4D-70-C0-E8-DD', u'last_seen': 2, u'bss': u'00-04-56-A5-42-60'},
{u'ch': 36, u'rssi': -95, u'mac': u'74-E5-F9-EE-02-1E', u'last_seen': 1, u'bss': u'74-3E-2B-C3-8E-AC}],
u'ap_mac': u'58-C1-7A-6E-DE-A1', u'version': u'2.2', u'ap_name': u'E425-6EDEA1'}
```

The JSON object contains the MAC of the AP followed by an array of 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
ap-name	The hostname 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 2.2.
probe_requests_clients	<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. Each client record has the following details:</p> <ul style="list-style-type: none"> • ch: Channel on which the client sends the probe request. • mac: The MAC address of the client. • bss: The BSSID/MAC address of the WLAN on which the client has probed. • rsni: The SNR of the client in dB. • last_seen: Time in seconds when the last probe request was received from the client.
beaconed_aps	<p>A JSON object with an array of discovered Neighbour BSS's records.</p> <p>Each AP record has the following details:</p> <ul style="list-style-type: none"> • ch: Channel on which the BSS observed. • mac: The MAC address of the BSS. • SSID: The SSID name on which the BSS has sent beacon. • rsni: The SNR of the BSS in dB. • last_seen: Time in seconds when the last probe request was received from the AP.
associated_clients	<p>A JSON object with an array of associated client's records.</p> <p>The client record details are same as "probe_requests_clients"</p>