



The Cisco CMX Presence Analytics Service

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Overview of the Presence Analytics Service

The Cisco Connected Mobile Experiences (Cisco CMX) Presence Analytics service enables organizations with small deployments, even those with only one or two access points (APs), to use the wireless technology to study customer behavior.

The Cisco CMX Presence Analytics service is a comprehensive analytics and engagement platform that uses APs to detect visitor presence based on their mobile devices' Received Signal Strength Indication (RSSI). The AP detects these client mobile devices irrespective of the latter's wireless association state as long as they are within the specified signal range, and the wireless option is enabled on the mobile device (ability to detect devices wirelessly even if they are not connected to the network).

You can use the **PRESENCE ANALYTICS Dashboard** to view the following key performance indicators (KPIs) of the various client mobile devices at a specific site:

- Visitors
- Average Dwell Time
- Peak Hour
- Passerby-to-visitor conversion rate
- Manufacturers of popular client mobile devices detected by AP

These KPIs can be viewed for any duration (day, week, month, or custom) not exceeding 180 days from the current date. You can also customize the display to show data for a specific day, weekend, or even trends over a month.

Installing the Presence Analytics Service

You cannot run the Presence Analytics and the Location services on the same box. Therefore, you should choose either the Location service or the Presence Analytics service during the initial installation.

Benefits of the Presence Analytics Service

- Enables organizations with small deployments, even those with just one or two APs, to understand customer behavior.
- Enhances on-site customer experience through insights into their mobile behavior across locations.
- Measures customer engagement and loyalty across sites through location statistics.
- Compares visitor trends between sites to gauge the effect of marketing actions.

Initial Configurations

In order to use the Cisco CMX Presence Analytics service, choose the **Presence** option when you install Cisco MSE Virtual Appliance. For more information, see the “Installing a Cisco MSE Virtual Appliance” section in the *Cisco MSE Virtual Appliance Installation Guide* for this release at: <http://www.cisco.com/c/en/us/support/wireless/mobility-services-engine/products-installation-and-configuration-guides-list.html>. After installation, perform the following operations:

- Add Controllers.
- Add sites.
- Add APs.

Presence Analytics Dashboard

The Presence Analytics Dashboard contains the following charts:

Table 1: Presence Analytics Charts

Chart	Description
Insights	Shows key insights for a week and month, including busiest days, busiest hours, peak days, and peak counts. Note Insight data allows comparison of current site metrics in comparison to the previous week and month. It is computed daily for all sites during aggregation.
Proximity	Shows information such as those pertaining to passersby, visitors, and connected devices, by hour (if it is a single day or last 3 days), or by day, for the given site.
Proximity Distribution	Shows information such as those pertaining to passers-by or visitors, and connected percentages for a given site for a given duration.
Dwell Time	Shows the visitor dwell levels by hour or by day. You can see the following dwell levels: 5-30 mins—Visitors who spent 5-30 mins in the site. 30-60 mins—Visitors who spent 30-60 mins in the site. 1-5 hours—Visitors who spent 1-5 hours in the site. 5-8 hours—Visitors who spent 5-8 hours in the site. 8+ hours—Visitors who spent more than 8 hours in the site.
Dwell Time Distribution	Shows visitor dwell-level percentages for a given site for a given duration.

Chart	Description
Repeat Visitors	Shows repeat visitors by hour or by day. You can see the following repeat visitor categories: Daily—Visitors who visited the selected site at least 5 days in the last 7 days. Weekly—Visitors who visited the selected site at least on 2 different weeks over the last 4 weeks. First Time—Visitors who visited the selected site for the first time. Occasional—Visitors who are not daily, weekly, or first-time visitors. Yesterday—Visitors who visited the site the previous day.
Repeat Visitors Distribution	Shows the repeat visitor distribution percentage.

Adding Sites

You can add new sites individually, or upload a .CSV list of sites to add sites in bulk.

You can add new sites using one of the following methods:

- Add sites individually. For more information, see [Adding Sites Individually, on page 4](#).
- Add sites in bulk. For more information, see [Adding Sites in Bulk, on page 5](#).
- Create sites from APs. This allows administrator to create sites by filtering APs by name and adding them directly to a new site. For more information, see [Adding an AP to a Site, on page 7](#).

Adding Sites Individually

To add a site individually, perform the following task:

Procedure

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- Step 1** Log in to Cisco CMX.
 - Step 2** Choose **PRESENCE ANALYTICS > Manage**.
 - Step 3** Click the **Sites** tab.
 - Step 4** Click **Add Site**.
 - Step 5** In the **Name** field, enter the name of the site.
 - Step 6** In the **Address** field, enter the address of the site.
 - Step 7** Configure the **Signal Strength Threshold** to determine whether a client device is in the site or is just a passer-by. You can move the circular blue buttons to specify the Visitor Signal Threshold and Ignore Signal

Threshold values. There are two RSSI threshold values defined for a site, low (-95 dBm default) and high (65 dBm default).

Note The lower RSSI threshold is bounded to -95 dBm to -45 dBm and the higher threshold is bounded to -90dBm to -40 dBm.

The difference between the two threshold must not be less than 5.

The minimum dwell time is bound to 0 to 20

- Clients with RSSI below the low threshold (-95 dBm default) are discarded.
- Clients with RSSI above the low threshold are classified as “passer-by”. The RSSI threshold range for passer-by clients is between -95dBm and -75 dBm.
- Clients with RSSI above high threshold over x minutes (default 5) in past 20 minutes are classified as visitors.
- Clients associated with AP in a site are classified as connected clients at the site.

Step 8 In the **Configure the Minimum Dwell Time For Visitor (minutes)** field, specify the minimum dwell time for visitors. The minimum dwell time for visitors is 20 minutes.

Step 9 Click **Save**.

Adding Sites in Bulk

Procedure

Step 1 Log in to Cisco Connected Mobile Experiences (Cisco CMX).

Step 2 Choose **PRESENCE ANALYTICS > Manage**.

Step 3 Click **Import**.

Step 4 Under **Sites**, click **Browse**.

The **File Upload** dialog box is displayed.

Note The file that you upload for importing site information must be in .csv format.

Step 5 Navigate to the location of the CSV file that contains the list of sites you wish to upload, select the CSV file, and click **Open**. To import the site details correctly, store them in the following order and format: *Site Name, Address, RSSI High Threshold, RSSI Low Threshold, Dwell Time in Minutes, Timezone*. For example, *Test Site, 123 Main Street City CA US, -65, -95, 5 US/Pacific*.

Step 6 Click **Import**.

A set of new sites is created and added to the table of sites under **PRESENCE ANALYTICS > Manage**.

Viewing Available Sites

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Choose **PRESENCE ANALYTICS > Manage**.
 - Step 3** Under the **Sites** tab, you can view a list of available sites in a tabular format, sorted alphabetically by site name. You can customize your view of the Sites table by sorting according to **Location**, **Timezone**, or **AP count**.
-

Editing an Existing Site

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Choose **PRESENCE ANALYTICS > Manage**.
 - Step 3** Under **Sites**, click the name of the corresponding site listed in the table of available sites.
The dialog box is displayed.
 - Step 4** Edit the site **Name**, site **Address**, **Signal Strength Threshold** limits, or the **Minimum Dwell Time for Visitor**.
 - Step 5** Click **Save**.
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Deleting an Existing Site

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Choose **PRESENCE ANALYTICS > Manage**.
- Step 3** Under **Sites**, check the check box of the site that you want to delete.
- Step 4** Click **Delete**.
You will receive a confirmation dialog box when you try to delete a site. Click **OK** to confirm the delete action.

Note If you want to delete all available sites simultaneously, select the check box in the header row, and then click **Delete**.

Searching for a Site

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Choose **PRESENCE ANALYTICS > Manage > Sites**.
- Step 3** In the **Search** field on the top right-corner of the window, enter the site's name, and press the **Return** key. If the specified site has already been added to **PRESENCE ANALYTICS**, it is displayed in the search results.
-

Adding APs

You can add new APs individually or by uploading a .CSV list of APs to add them in bulk.

You can add new APs, with or without maps, using one of the following methods:

- Add APs individually—Add individual APs to specific sites. For more information, see [Adding an AP to a Site, on page 7](#).
- Add APs in bulk—Add multiple APs at one go by importing a list of APs in .CSV format. For more information, see [Adding APs in Bulk, on page 8](#).

Adding an AP to a Site



Note If you do not see the AP list, you should update the community string of the WLC using the **System > Settings** window. The AP information is retrieved from the WLC using SNMP.

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** To add an AP to a site individually:
- a) Choose **PRESENCE ANALYTICS > Manage > Sites**.
 - b) In the table of available sites, click the name of the site to which you want to associate the new AP.
 - c) Click the **Details** icon next to **AP count**.
- A list of available APs is displayed in a tabular format.

- d) Enter the MAC address of the AP you want to add and associate to the specified site.
- e) Click **Add**.

The specified AP is added and associated to the specified site.

Step 3 To add one or more APs to a site:

- a) Choose **PRESENCE ANALYTICS > Manage > Access Points**.
- b) From the **APs by Controller** drop-down list, select the APs that you want to add to a site.

You can use the **Ctrl+a** or **Command+a** keys to select all sites from drop-down list.

- c) After selecting the APs, click **Close**.

The count of the APs you selected from the available APs is shown in the drop-down list, for example, 8 of 160 selected.

- d) Click **Add to Site**.
- e) Select the site to which you want to add the selected APs.
- f) Click **Add**.

The selected APs are added and associated to the specified site.

To create a site from this page, click **Create Site**.

Step 4 Under **Controller AP list**, click **Download CSV** to download the .CSV file, add the missing site names for APs, and import the file again from the Import tab.

CSV Format: Radio MAC Address,Ethernet MAC Address,Name,Site Name,Site Address

Example: aa:bb:cc:dd:ee:ff,bb:cc:dd:ee:ff:11,AP-1,Site-1,123 Main St City CA US

Adding APs in Bulk

To add APs to a site in bulk:

Procedure

Step 1 Log in to Cisco CMX.

Step 2 Choose **PRESENCE ANALYTICS > Manage > Import**.

Step 3 Under **APs**, click **Browse**.

The **File Upload** dialog box is displayed.

Step 4 Navigate to the location of the .CSV file that contains the list of APs you want to upload, select the .CSV file, and click **Open**.

To import the AP details correctly, store them in the following order and format: *Radio MAC Address, Ethernet MAC Address, Name, Site Name, Site Address*, for example, *aa:bb:cc:dd:ee:ff,bb:cc:dd:ee:ff:11,AP-1,Site-1,123 Main St City CA US*

Step 5 Click **Import**.

A set of new APs is created and added.

Deleting an AP

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Choose **PRESENCE ANALYTICS > Manage > Sites**.
- Step 3** In the table of available sites, click the name of the site from which you want to delete and unassociate the corresponding AP.
- The dialog box is displayed.
- Step 4** Click the **Details** icon next to **AP count**.
- A list of available APs is displayed in a tabular format.
- Step 5** Click the **Delete** icon next to the AP that you wish to delete.
-

Viewing Site Details for a Specified Period

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Click **PRESENCE ANALYTICS**.
- Step 3** Select a site from the **SITE** drop-down list.
- Step 4** Select a duration from the **DATE** drop-down list. You can choose from the following options:
- **Today**
 - **Yesterday**
 - **Last 3 Days**
 - **Last 7 Days**
 - **Last 30 Days**
 - **This Month**
 - **Last Month**
 - **Custom**—Specify a date range and click **Change**. You can either manually enter the dates in the **FROM** and **TO** fields in yyyy-mm-dd format, or select the dates from the respective calendars. These calendars

are displayed when you select **Custom** or click the **FROM** or **TO** fields. The window is refreshed to show the site KPIs based on your selection.

Note You can choose a single day by selecting the same date in both the **FROM** and the **TO** fields.

Viewing KPI Summary

You can click any of the following KPI buttons that appear at the top of the window to view further details about a visitor's behavior at the site:

- **Visitors**—Clients associated with AP in a site are classified as visitors at the site.
- **Average Dwell Time**—Average dwell time or a wait time of all the visitors in a location.
- **Peak Hour**—The hour at which maximum number visitors are found in a location.
- **Conversion Rate**—Conversion rate is a percentage of passersby who are converted to visitors and is computed as $\text{visitors} / (\text{visitors} + \text{passersby}) \times 100$.
- **Top Device Maker**—Manufacturer of popular client mobile devices detected by AP

Viewing Device Proximity, Count, and Distribution for a Specific Site

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Click **PRESENCE ANALYTICS**.
 - Step 3** Select a site from the **SITE** drop-down list.
 - Step 4** Select or specify a duration from the **DATE** drop-down list.
The window is refreshed to show the site details based on your selection.
 - Step 5** Click the corresponding elements within the **Proximity** or **Proximity Duration** chart to view hourly breakdown of passersby, visitors, and connected devices for the selected site during the specified duration.
- Note** If the duration selected in **Step 4** exceeds one day, clicking the elements in the **Proximity** chart will display the details for the selected site for the specific date.

Emailing a Report

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Click **PRESENCE ANALYTICS**.
- Step 3** Click the **Email** icon.
- Step 4** Enter the email address of a recipient.
- Step 5** Enter notes, if any.
- Step 6** Click **Send**.

If you want to send this email later, check the **Schedule** check box and enter Schedule parameters such as **Start From** (date and time) and **Frequency** (**Daily** or **Weekly**), and then click **Schedule**.

Printing a Report

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Click **PRESENCE ANALYTICS**.
 - Step 3** Click the **Printer** icon.
 - Step 4** Specify the printer settings.
 - Step 5** Click **OK**.
-

Generating a PDF Report



Note You can customize the logo on the PDF reports. To view an archived report, choose **PRESENCE ANALYTICS** > **Manage** > **Reports**.

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Click **PRESENCE ANALYTICS**.

- Step 3** Click the **PDF Report** icon.
- Step 4** Enter notes for the PDF report, if any.
- Step 5** Enter the email address (optional) of the recipient. If there are multiple recipients for the report, separate the email addresses using a comma.
- Step 6** Click **Submit**.

If you want to schedule the PDF report to a future date, check the **Schedule** check box and enter the Schedule parameters such as **Start From** (date and time) and **Frequency (Daily or Weekly)**, and then click **Schedule**.

Managing Reports

The **Presence Analytics** service enables you to manage the scheduled and generated reports. In addition, you can customize the logo that appears on the generated PDF reports.

The **Reports** window contains the following areas:

- **Report Logo**—Enables you to upload an image file that you can use as a logo for your PDF report.
- **Scheduled Reports**—Enables you to modify or delete a report that is already scheduled (email or PDF).
- **Generated PDF Reports**—Enables you to download or delete a generated PDF report.

Procedure

- To upload a logo for your report, perform the following steps:
 - a) Log in to Cisco CMX.
 - b) Click **PRESENCE ANALYTICS > Manage**.
 - c) Click **Reports**.
 - d) In the **Report Logo** area, click **Browse** and then choose the image file that you want upload as the report logo.
 - e) Click **Upload**.
- To edit or delete a scheduled report, perform the following steps:
 - a) Log in to Cisco CMX.
 - b) Click **PRESENCE ANALYTICS > Manage**.
 - c) Click **Reports**.
 - d) In the **Scheduled Reports** area, under the **Link** column, click either **Edit** or **Delete**.

If you choose to edit a scheduled report, the existing schedule details are displayed in the **EDIT SCHEDULED REPORT** window, where you can make the necessary changes.

- To download or delete a generated PDF report, perform the following steps:
 - a) Log in to Cisco CMX.
 - b) Click **PRESENCE ANALYTICS > Manage**.
 - c) Click **Reports**.
 - d) In the **Generated Reports** area, under the **Link** column, click either **Download** or **Delete**.

Specifying Filter Parameters

The **Filter Parameters** tab allows you to exclude data from a specific SSID, MAC address, or defined duration.

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Choose **PRESENCE ANALYTICS > Manage > Filters**.
 - Step 3** Check the **Enable Exclusion Filters** check box to exclude data.
 - Step 4** Click **Save**.
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Enabling a Global Site

Enabling a Global site combines all the existing data from all the individual sites into a single large site so that you can view the data for all the sites at once. You must provide a time zone for the global site, which will override all individual site time zones. All the analysis will be in context of the time zone defined for the global site.

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Choose **PRESENCE ANALYTICS > Manage > Global Sites**.
 - Step 3** Check the **Enable Global Site** check box.
 - Step 4** Specify **Site Name, Address, and Time Zone**.
 - Step 5** Click **Save**.
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Creating a Site Group

Site groups allow you to combine information from multiple sites for analysis, for example, all the sites in the same time zone.

Procedure

- Step 1** Log in to Cisco CMX.
- Step 2** Choose **PRESENCE ANALYTICS > Manage > Site Groups**.
- Step 3** Click **Create Group**.
- Step 4** Specify **Group Name, Address, Timezone, and Sites**.

Step 5 Click **Save**.

Changing the Presence Analytics Theme

Procedure

- Step 1** Log in to Cisco CMX.
 - Step 2** Click **PRESENCE ANALYTICS**.
 - Step 3** Click the **Themes** icon.
 - Step 4** Choose your desired theme.
-