

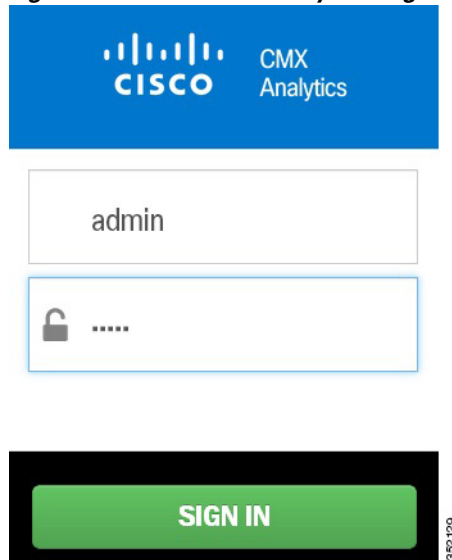


Understanding the CMX Analytics Home Page

The CMX Analytics user interface allows you to analyze the wireless devices location information using different analysis technique.

Log into the CMX Analytics user interface with your username and password (see [Figure 4-1](#)).

Figure 4-1 CMX Analytics Login Page



The CMX Analytics home page:

- Provides an easy way to visualize and understand the various parameters associated with visitors moving through a building or environment.
- Allows you to customize the display of pages with different widgets to suit your focus of inquiry.
- Estimates the number of visitors, the amount of time they spend, and the frequency of their visits within the building.

The CMX Analytics home page contains the following:

- [Dashboard Tab, page 4-2](#)
- [Analytics Tab, page 4-3](#)
- [Reports tab, page 4-6](#)
- [Real Path Configuration, page 4-6](#)

Dashboard Tab

CMX Analytics dashboard is designed to provide an easy way to visualize and understand various parameters associated with visitors moving within a building or environment. You can use dashboard on a daily basis to examine the current trends or events and customize the dashboard with different widgets as per your requirement.



Note

The average dwell time is reported only for those devices that are considered to be staying. Therefore this is based on those devices between 5 to 120 minutes dwell in the zone.

By default, the Dashboard tab is displayed when you log into the CMX Analytics UI and contains the following (see [Figure 4-2](#)).

Figure 4-2 Dashboard Page



- Page selector—Click the page selector icon to view the left pane. The left pane displays the following:
 - Add Page—To create a personalized dashboard.
 - Welcome—To open the home page.
 - Clicking on the page title allows the you to change the name, save, and delete it.

This section contains the following topics:

- [Configuring Widgets, page 4-2](#)
- [Edit Dashboard and Widgets, page 4-3](#)


Configuring Widgets

To add a new widget to the dashboard, follow these steps:

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- Step 1** Click the page selector icon located at the top left side of the dashboard page.
- Step 2** Click **+ Add Page** from the left pane. Four widget dashlets appear in the right pane.
- Step 3** Enter the name for dashboard in the Untitled Page text box and click **Save**. The newly added dashboard appears in the left pane.
- Step 4** Click **+ Add Widget** to add a new widget to the dashboard. The Add a Widget dialog box opens.
- Step 5** In the Add a Widget dialog box, do the following:
- On the Location tab, select the location of the building from the floor map that you want to include in the analysis.
 - On the Analytic tab, choose the analytic parameter for your widget: **Dwell Time**, or **Device Count**.
 - On the Visualization tab, choose the display format for your widget: **Line Chart** or **Bar Chart**.
 - On the Zones tab, select the focus zone from the floor map to include in the widget.
 - On the Date & Time tab, configure the date and time.
 - Click the calendar icon to choose the start date and end date or choose a preset value from the Select from a Preset drop-down list. The presets available are **Today**, **Yesterday**, **This Week**, and **This Month**.
 - Click the time icon to choose the time, hour, and minute or choose a preset value from the Select from a Preset drop-down list. The presets available are **All day**, **Business hours**, **Morning**, **Lunch time**, **Afternoon**, and **Evening**.
- Step 6** Click **ADD WIDGET** to add a new widget to the dashboard.
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Edit Dashboard and Widgets

To edit the individual widgets within the dashboard, follow these steps:

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- Step 1** Click the  icon in the top-right corner of the widget.
- Step 2** Edit the necessary parameters in the Add a Widget dialog box.
- Step 3** Click **Save Changes**.
-

Analytics Tab

In the Analytics tab, you can perform deeper analysis on devices that pass through a building or environment and view the analytics results in 3D and 2D environment.

This section contains the following topics:

- [Rules Pane, page 4-4](#)
- [Analytics Tab Toolbar, page 4-5](#)
- [Prerequisites for Viewing CMX Analytics in 3D, page 4-6](#)

Rules Pane

The Rules pane allows you to identify the specific set of devices to which the analytics are to be applied and displays the following:

- **Building**—Lists all buildings that are synchronized with the MSE for analysis.
- **Type**—Lists different type of analysis to run: **Zone Analysis**, **Most Popular Paths**, **Alternative Path Analysis**, **Heat Maps**, and **Location Analysis**. See [Analysis, page 5-1](#) for more information.
- **Date/Time**—This restricts the analysis to specific dates and times. Click the Date/Time group box and configure the following:



Note The date selector allows you to select only those dates for which there is some data available in the analytics database.

- Click the calendar icon to choose a start date and end date or choose a preset value from the Select from a Preset drop-down list. The presets available are **Today**, **Yesterday**, **This Week**, and **This Month**.
- Click the time icon to choose the time, hour, and minute or choose a preset value from the Select from a Preset drop-down list. The presets available are **All Day**, **Business Hours**, **Morning**, **Lunch Time**, **Afternoon**, and **Evening**.



Note

Only those paths that are within the time period are considered for analysis. For example, if the time period is between 6 AM to 4 PM, then only paths that start after 6 AM and finishes before 4 PM are considered for analysis.

- **Zones**—This restricts the analysis to specific zones. Click the Zones group box and configure the following:
 - **Restrict to Zones**—Select this check box and choose one or multiple zones to restrict your analysis to selected zones. If want to analyze only certain part of the building, then information about the selected part is displayed.



Note Zones are defined as coverage areas in the Prime Infrastructure. Zone names are retained when there is data associated with them. Therefore while deleting previous zones in the Prime Infrastructure, these remain on the menus in Analytics until they disappear from the database during natural data pruning or rollover.

- **Path Filters**—This restricts the analysis to those devices that have followed a particular path through the predefined zones for analysis. The options are:
 - **Starts In**—Select the zone where the wireless device was first detected from the Starts In drop-down list.
 - **Visits**—Select the intermediate zone through which the device passes through from the Visits drop-down list.
 - **Ends In**—Select the zone where the device was last detected from the Ends In drop-down list.
- **Tags**—This configures any additional labels that is associated with point, paths, and devices. This allows you to describe the choices of devices based on characteristics such as manufacturer, associate/probing etc.

- **Advanced Filters**—This restricts the analysis to points and paths with specific characteristics.
 - **Location Filters**—Location filters allows you to select points for which you are more certain of the dwell times. This comes about when multiple points are detected in the same close proximity. These points (Actual) are replaced by a single one and the dwell time attached to it is the elapsed duration between the first and the last point. Mostly this filter is used to get a more accurate estimate on the dwell times, although using less data. As a side effect, it identifies the devices/paths which have instances of these points within them. Estimated dwell covers all points including the actual path.
 - **Path Filters**—Path filters allows you to select the data for analysis based on quantitative constraints on paths. The different quantitative constraints that you can use on paths from the Path Filters are:
 - **Length**—Length restricts the analysis to those paths within the sum of the straight line distances between the points.
 - **Duration**—Duration restricts the analysis to the total duration between the first and the last time points on the path.
 - **Hops**—Hops is the measure of the number of location observations made on that path.
- **Granularity Options**—This allows you to specify the number of typical locations that you want to find.



Note Number of Locations and Optimal field is displayed for Typical Locations Analysis.

- **Number of Locations**—Enter the number of locations that you want to include in the analysis. A large number of locations for zone analysis results in a dense concentration of markers across an area.
- **Optimal**—Select this check box if you want the number of locations to be determined mathematically.



Note Number of Paths is displayed for Most Popular Path analysis.

- **Number of Paths**—Enter the number of popular paths that you want to include in the analysis.

Analytics Tab Toolbar

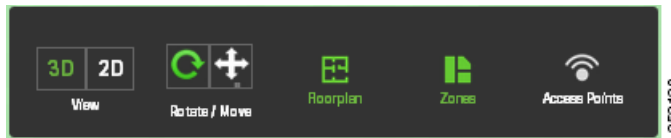
The Analytics tab contains the toolbars at the top-right of the page (see [Figure 4-3](#)).

Figure 4-3 *Analytics Tab View Toolbar—Top-right*



- **Top View**—Displays the top view for the floor map.
- **Site View**—Displays the side view for the floor map.

The Analytics tab contains the Navigation toolbar at the bottom-right of the page (see). This window provides access to the 2D and 3D navigation and visible overlays on the building or area when you are in the 3D or 2D environment.

Figure 4-4 Analytics Tab Navigation Toolbar—Bottom-right

- View
 - 3D—The CMX analytics system provides the ability to view analytics results in 3D environment. This provides a better understanding of results on multiple floor paths or when the dwell time is calculated for the multi-storey building.
 - 2D—The CMX analytics provides the ability to view the analytic results in 2D. The 2D environment is primarily for outdoor visualization such as analyzing the open space or placing the building in its geographical context.
- Rotate/Move—Click this to move or rotate the floor plan.
- Floorplan—Click this to view individual floor plans in the building.
- Zones—Click this and select the zone that you want to view on the floor.
- Access Points—Click this to view access points on the floor plan.

Prerequisites for Viewing CMX Analytics in 3D

- Set up the CMX analytics system. See the [Process for Setting up the CMX analytics System](#) for more information.
- The CMX analytics supports a 3D representation of analytic results using the WebGL through Three.js library. See the [WebGL Requirements, page 2-46](#) for information on compatible browsers.

Reports tab

The CMX analytics reporting is necessary to monitor common behavioral patterns over time. A number of reports can be generated and it provides more zone oriented analysis on the patterns of behavior in different zones of the building as well as movements throughout the building. See the [Reports, page 6-1](#) section for more information.

Real Path Configuration

The real path configuration allows you to define a set of valid nodes and edges throughout the building which provides a directed network describing all possible paths that a visitor may take. You can define navigation paths for each building or floor and use this network to display the most common paths.



Note

When the real path is configured as one-directional, but the actual devices are moving in both directions, then the results of the analysis may not follow the real path. Hence, use one directional lines in real path configuration only when the pathway is truly one-directional and the devices never go in the opposite direction.







This section contains the following topics:

- [Path Configuration Icons, page 4-7](#)
- [Configuring Real Path, page 4-7](#)

Path Configuration Icons


The below table lists the path configuration icons.

Table 4-1 Real Path Configuration Icons

Icons	Description
	Select—Identify a node or path for possible deletion.
	Draw Point—To place a node on the floor.
	Draw Floor Connector—To connect two floors.
	Draw Two Directional Line—Identify two nodes to connect together with a line in which people can move in both directions
	Draw One Directional Line—Identify two nodes to connect together with a line in which people can move only in one direction.
	Delete—To delete a node or a path.

Configuring Real Path

To configure the real path, follow these steps:

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- Step 1** Click the  icon located at the top right side of the CMX Analytics home page. The Path Configuration pane appears.
 - Step 2** Choose the building to configure the real paths from the Building drop-down list.
 - Step 3** Choose the floor to configure the real paths from the Floor drop-down list. The map of the selected floor is displayed in the right pane (see [Figure 4-5](#)).
 - Step 4** To import the paths that you have created and saved, Click **Import**. The Import Paths From dialog box opens.
 - Step 5** Click **Browse** to select the file to import.
 - Step 6** Find and select the file to import and click **Open**.
 - Step 7** Click **Done**. The saved map is displayed in the right pane.
 - Step 8** To place nodes on the map, click **Draw Point**.

**Note**

Nodes should be placed inside the rooms and outside the entrance in the corridor to ensure a smooth appearance. In case of a set of adjacent small rooms, it is best to aggregate the rooms together and provide a common node to enter or exit. The accuracy of locations is currently 5-7 meters and bigger rooms with a node inside is more likely to be accurate.

- Step 9** To connect various nodes and paths on the floor, click either **Draw One Directional Line** icon or **Draw Two Directional Line** icon.
- Step 10** Click the **Draw Floor Connectors** icon to connect two floors in the building.

Figure 4-5 Real Path Configuration



- Step 11** Click the **Delete** icon to delete any node or path.
- Step 12** After finishing allocation of paths on the floor map, click **SAVE PATHS**.
Click **CLEAR** to clear the created paths. Click **RELOAD** to refresh the settings.
- Step 13** Click **Export** from the Path Configuration pane to export the paths output.
The Export Paths Output dialog box opens.
- Step 14** Click **Done** to export the paths.