# CMX Location Analytics

Multi-site analysis and reporting of users with WiFi devices

Understand foot traffic and presence-based user behavior

Meraki's cloud-managed wireless access points (APs) come equipped with the ability to detect user presence based on probe requests beaconing from WiFi devices (e.g., smartphones, laptops, and tablets). By exporting this data to the Meraki cloud for in-depth analysis, Meraki provides real-time analytics on the presence of WiFi devices with intuitive and customizable graphs, facilitating useful insight into trends such as foot traffic by time of day, new vs. repeat visitors, and visitor dwell time. This visibility facilitates a deeper understanding of a WiFi hotspot's visitors and provides insights
such as capture rate for a retail outlet or dwell time for a hotel lobby or enterprise branch office.

Detailed Visitor Appeal
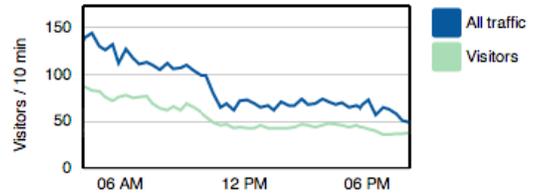
Detailed Vistor Loyalty
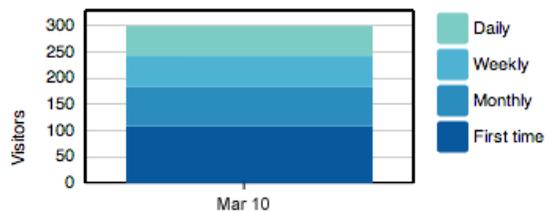
Key Features

- APs detect probe requests from all WiFi enabled devices

- Data sent to Meraki cloud in real-time for aggregation and analysis

- Intuitive, customizable graphs; view graphs for specific days, weeks, or months

- Statistics on capture rate (clients passing by vs. visitors spending time), engagement (time spent within hotspot by visitors), and appeal (new vs. repeat visitors)

Key Benefits

- Understand user behavior and foot traffic for specific time periods

- Use information to make decisions on staffing, storefront design, or employee and BYOD policies

- CMX location API for real-time output of raw data for integration with business intelligence and analytics systems

- Included at no additional cost

Out-of-the-box analytics platform

Meraki CMX Location Analytics are included and require no additional software, hardware, or licenses. By default, all APs gather data on probing clients from the surrounding environment and upload the data in real-time to the Meraki cloud for analysis, storage and presentation in aggregated views.

Customizable metrics and graphs

Toggle between simple and detailed graphs to understand metrics such as the number of people passing by your site, time spent within your location, and the typical repeat visit rate for all users. A calendar function allows for customizable time periods; see daily, weekly or monthly fluctuations in client traffic to understand peak times of day or seasonal fluctuations in device presence.

Multi-site comparisons

The Meraki cloud aggregates data from one or many AP endpoints and intelligently stitches together statistics from multiple logical sites; reports can then be run to present averages of data for one or more batches of sites. Generate comparisons between different networks within the same organization to analyze user behavior across different locations.
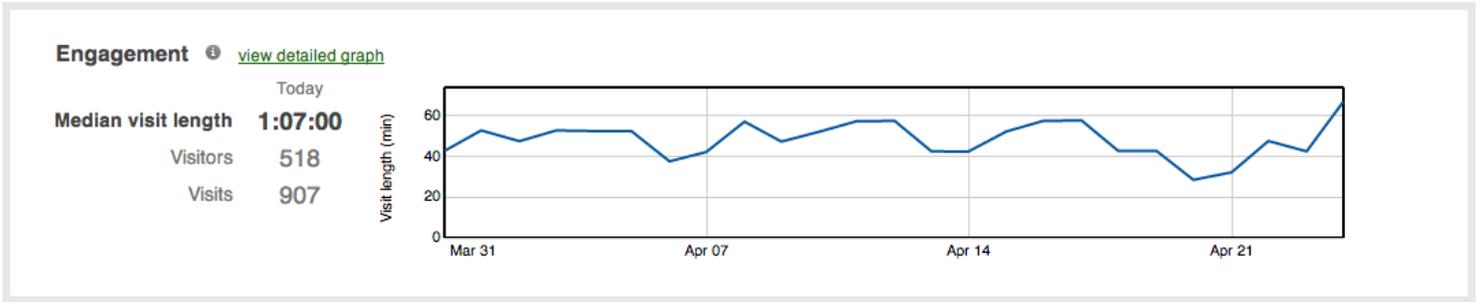
Engagement graph shows shows the amount of time visitors spent in range
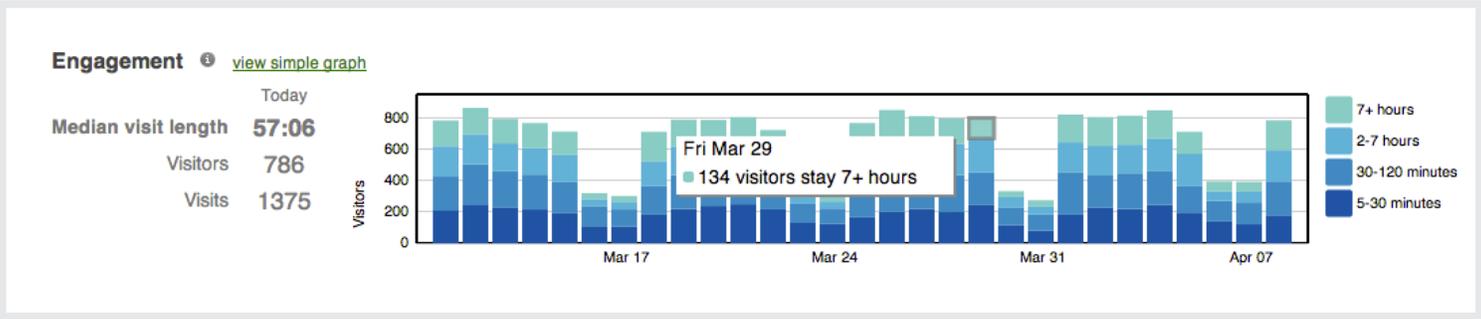
Detailed engagement graph details visitor count by visit length.

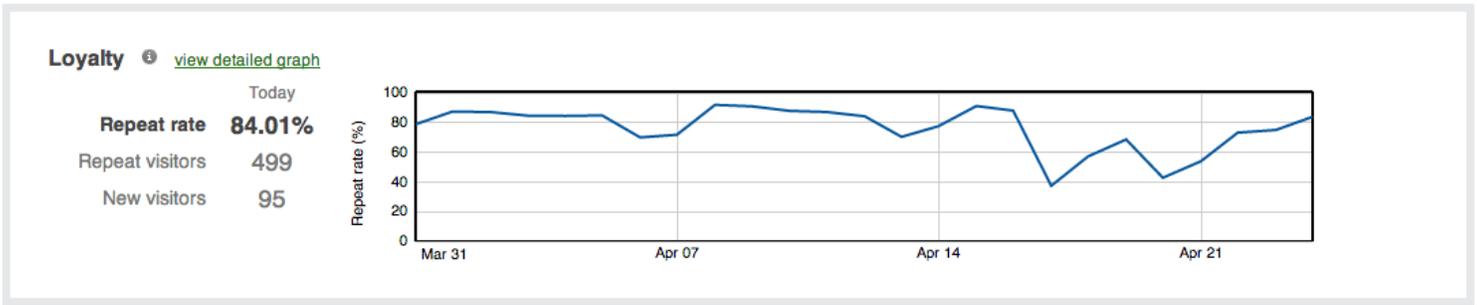**Complements existing visibility and traffic analysis**

Meraki's cloud platform comes equipped with rich visibility into user devices (OS, manufacturer), applications (e.g., Facebook, Spotify, YouTube) and unique websites and traffic flows (e.g., an internal e-mail server, a specific CDN, or VoIP protocols). Meraki's location analytics complements this data and completes a 360 degree view of all devices and traffic by collecting and presenting data on unassociated devices based on their presence.

Share analytics reports with cross-functional teams

Analytics reports can be generated and shared with departments outside of IT, such as marketing, facilities, and business intelligence teams, enhancing an understanding of user behavior and facilitating more effective decision making across an organization.
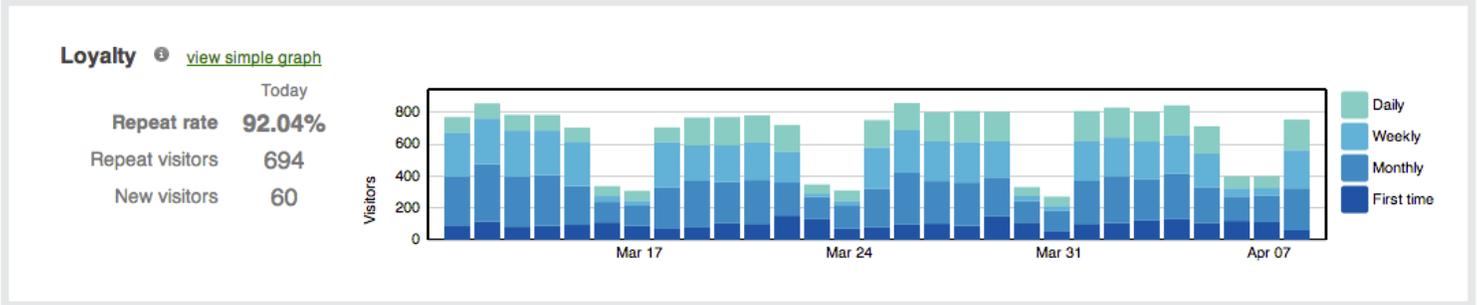
Location API

For those looking for a raw export of location data, Meraki includes a lightweight location API which exports information on a user's presence, how much time they spend within the WiFi area, and their approximate signal strength from each AP. This information can be used for integration with third-party data CRM, warehousing, and analytics platforms.

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Loyalty graph compares new and repeat visitor counts

Detailed loyalty graph shows visitor count based on how frequently they return

Recommended Markets & Use Cases

Retail, hospitality

- Glean insights on capture rate (people passing by store vs. coming inside), engagement (visit times), and loyalty (new vs. repeat visitors)

- Make data available to marketing, business intelligence, and financial analyst teams within organization

- Export raw data for deeper analysis and statistical correlation

Event WiFi, public spaces, service provider

- Understand peak times for events and public areas, deploy staff accordingly

- Use data to display foot traffic for advertisers, justify cost structures for ads in certain areas

Distributed enterprise

- Monitor foot traffic and BYOD trends across multi-site enterprise networks

- Track employee work hours and dwell time

Specifications

Analytics engine

Meraki APs track all probe requests from WiFi enabled devices

Real-time upload of probe request data to Meraki cloud

Aggregation of analytics data from multiple end-points based on network architecture

Computation of client states based on metrics (signal strength, timestamps)

Storage of client hashed MAC and state in Meraki database

Centrally managed via Meraki's cloud management platform

Analytics metrics

Capture rate: devices above a certain signal strength & present for longer than 5 minutes (certain signal strength opens and maintains a visit session, session state maintained for 20 mins)

Engagement: tracking devices by probe requests and aggregating total time spent

Loyalty: tracking device's return rate by unique MAC hash

Toggle between simple and detailed graphs

Calendar function for customizable time periods

Mouseover for specific statistics by day or time of day

Comparisons

Assign tags for logical groupings of network, creation of network hierarchies

Run analytics metrics by network tag

Perform comparisons between one or more sites, one or more sets of sites by tag

Location API

HTTP POST of JSON file in real-time from Meraki cloud to third-party web server

JSON file contains AP MAC, Client MAC, RSSI and Timestamps

Use location API for advanced integration and custom use-cases

Security & privacy features

One-way hash of all client MACs based on unique customer ID (eliminates possibility of tracking specific clients across customers)

Hash function truncates client hash to 4 bytes, introduces information theoretic loss - impossible to get back to original MAC identifier of device

Global opt-out feature for any MAC address to be dropped from Meraki database - available at https://account.meraki.com/optout

Ordering information

Included with Meraki Enterprise license

No additional hardware necessary