Network as a Service — Cloud Networking Location Analytics

Providing users with actionable data to enhance the customer experience.

A CBTS White Paper

Introduction

Network as a Service (NaaS) from CBTS generates location analytics that will provide users with actionable data that can enhance the customer experience and generate new revenue opportunities.

Understand foot traffic and location-based user behavior

CBTS provides cloud-managed wireless access points (APs) that come equipped with the ability to detect user presence based on probe requests beaconing from Wi-Fi devices (e.g., smartphones, laptops, and tablets).

By exporting this data to the cloud for in-depth analysis, CBTS provides real-time analytics on the presence of Wi-Fi 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 Wi-Fi 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.

Key features

- APs detect probe requests from all Wi-Fi enabled devices

- Data sent to the 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

- Included at no additional cost

Out-of-the-box analytics platform

NaaS 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 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 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.

Complements existing visibility and traffic analysis

CBTS provides cloud-managed wireless access points (APs) that come equipped with the ability to detect user presence based on probe requests. NaaS'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). NaaS'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.

Recommended Markets and 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 the organization

- Export raw data for deeper analysis and statistical correlation

Event Wi-Fi, 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

APs track all probe requests from Wi-Fi enabled devices
Real-time upload of probe request data to the 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 database
Centrally managed via NaaS's cloud management platform

Specifications

Analytics metrics

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

Security and 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 the database

You can find additional information here:

http://www.cbts.net/Products-and-Services/Cloud-Services/Products/Network-as-a-Service