

 Cisco  
Connect

Dubai, UAE

February 18-19, 2015

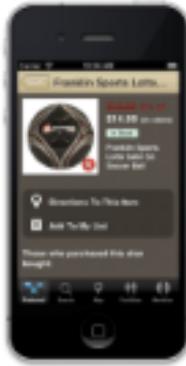
*TOMORROW  
starts here.*

# Delivering Location Based Services with Cisco Enterprise Mobility Services Platform

Christian Gauer, TME Enterprise Solutions Group

# Create Business Impact with Cisco's CMX

## Detect



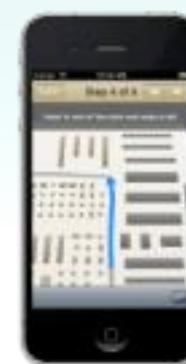
- Presence and location detection
- Visibility

## Connect



- Easy Wi-Fi login, custom or social
- Zone-based, custom splash pages

## Engage

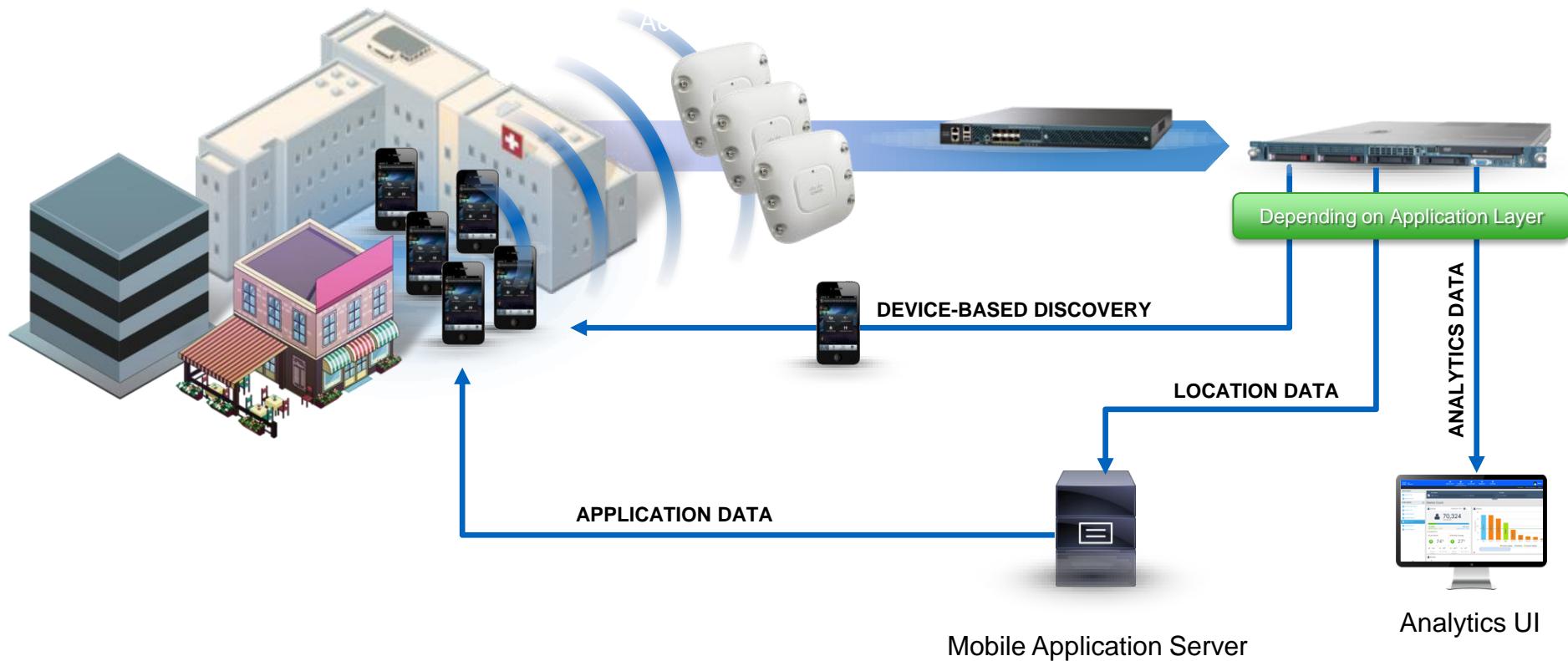


- App-based mobile engagement
- Context-aware in-venue experiences

Analytics

# How CMX Works

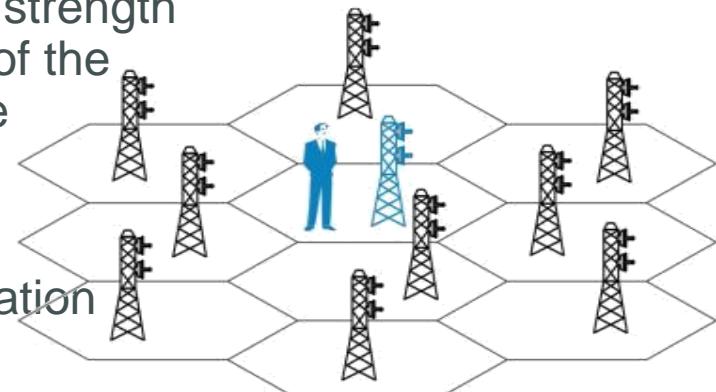
## Built on Cisco Unified Access



# Indoor Positioning

# Cell of Origin

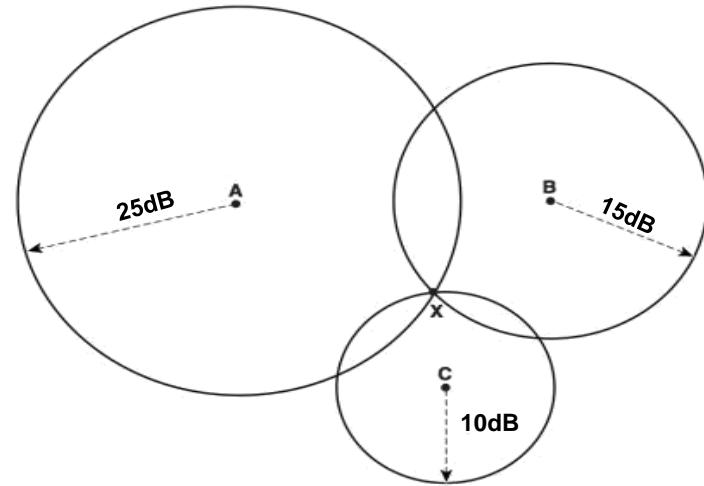
- One of the simplest mechanisms of estimating approximate location in any system based on RF cells is the concept of ‘cell of origin’ (or ‘associated access point’ in Wi-Fi 802.11 systems)
- To better determine which areas of the cell possess the highest probability of containing the mobile device, some additional method of resolving location within the cell is usually required.
- When receiving cells, provide received signal strength indication (RSSI) for mobile devices; the use of the highest signal strength technique can improve location granularity over the cell of origin.
- With CMX this level of positioning granularity would only suffice to provide presence information



# Distance-Based (Lateration) Techniques

## Received Signal Strength (RSS)

- Lateration can be performed by using RSS in place of time (TDOA)
  - Measured by either the mobile device or the receiving sensor
- Path loss represents the level of signal attenuation present in the environment due to the effects of free space propagation, reflection, diffraction, and scattering
  - Path loss exponent indicates the rate at which the path loss increases with distance; the value depends on frequency and environment
  - Is highly dependent on the degree of obstruction (or clutter) present in the environment



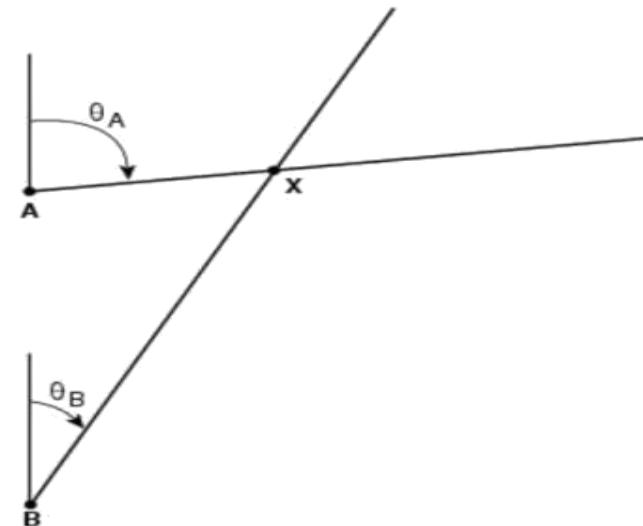
Typical path loss exponent for:

- Indoor office environment - 3.5
- Dense commercial or industrial environment - 3.7 to 4.0
- Dense home environment - as high as 4.5

# Angle-Based (Angulation) Techniques

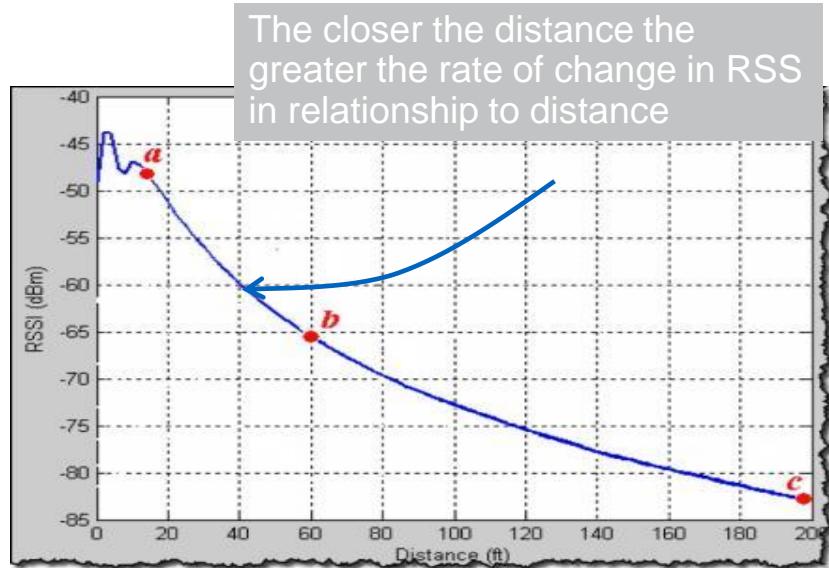
## Angle of Arrival (AoA)

- The AoA locates the mobile station by determining the angle of incidence at which signals arrive at the receiving sensor
- Requires two receiving sensors for location estimation, with improved accuracy coming from at least three or more receiving sensors (triangulation)
- Requires multiple element antenna arrays or mechanically-agile directional antennas
- Works well in situations with direct line of sight, but suffers from decreased accuracy and precision when confronted with signal reflections from surrounding objects
- In dense urban areas, AoA becomes barely usable because line of sight to two or more base stations is seldom present



# Relationship Between RSSI & Distance

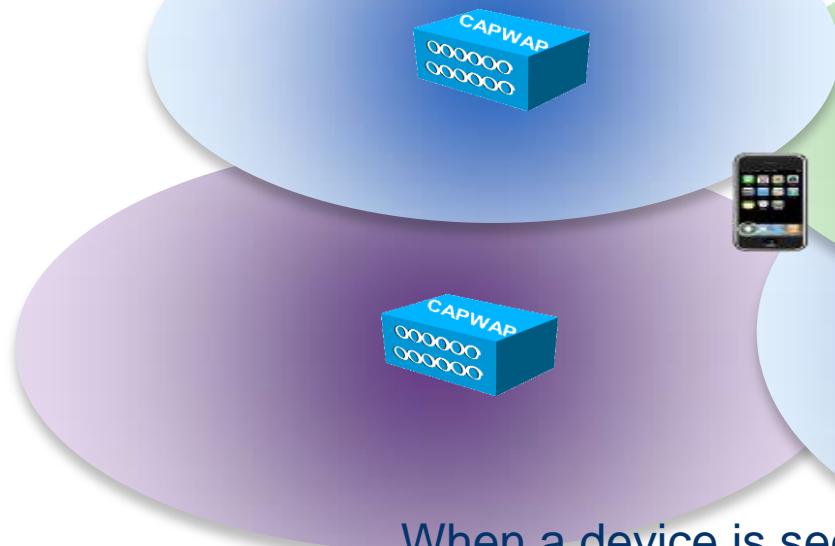
- RF fingerprinting uses a client's RSS from probe requests to localize a tracked client
- This localization works best when the relationship between the RSS and the distance from the AP poses a clearly monotonic relationship
- Monotonic means Y only moves up or down in relation to X



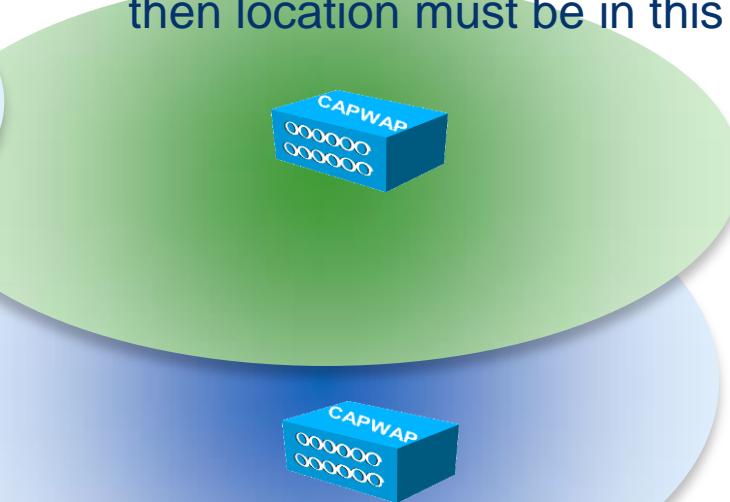
The change in RSS in relationship to distance flattens out at greater distances

# WiFi Based Location Calculation Basics (Trilateration)

A WIFI device seen by one AP could be located on anywhere in this **circle**



When a device is seen by two AP then location must be in this **line**



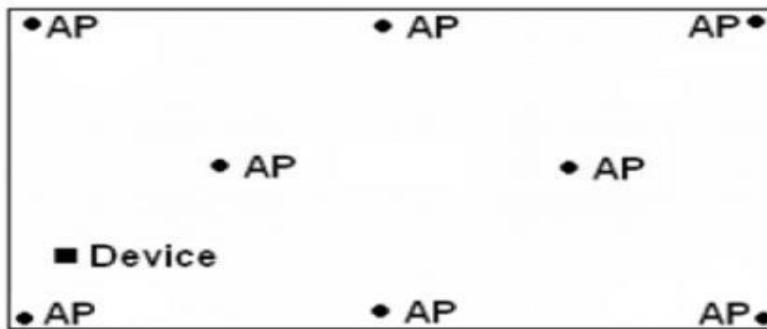
When a device is seen by four AP then location must be at this **point**.

Accuracy highest when a device is seen by at least 4 Access points

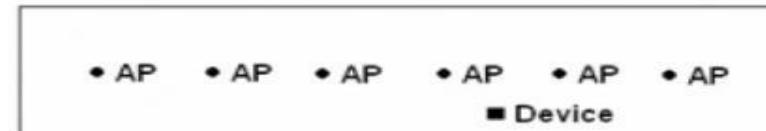
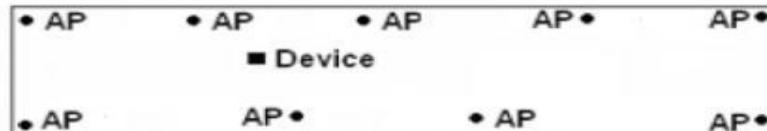
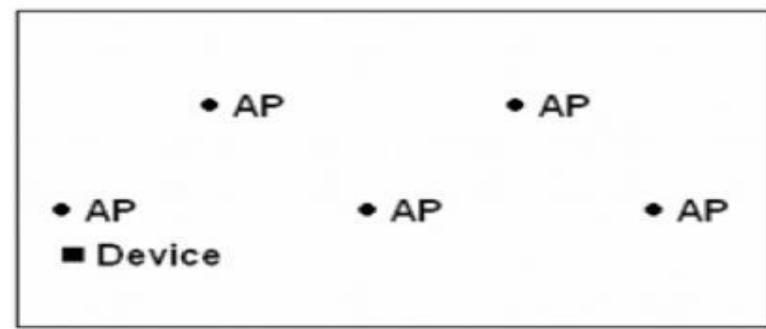
# Basic Example of Location-Aware Access Point Deployment

If possible, mount antennas such that they have an unencumbered 360° view of all areas around them, without being blocked at close range by large objects.

**Recommended**



**Not Recommended**



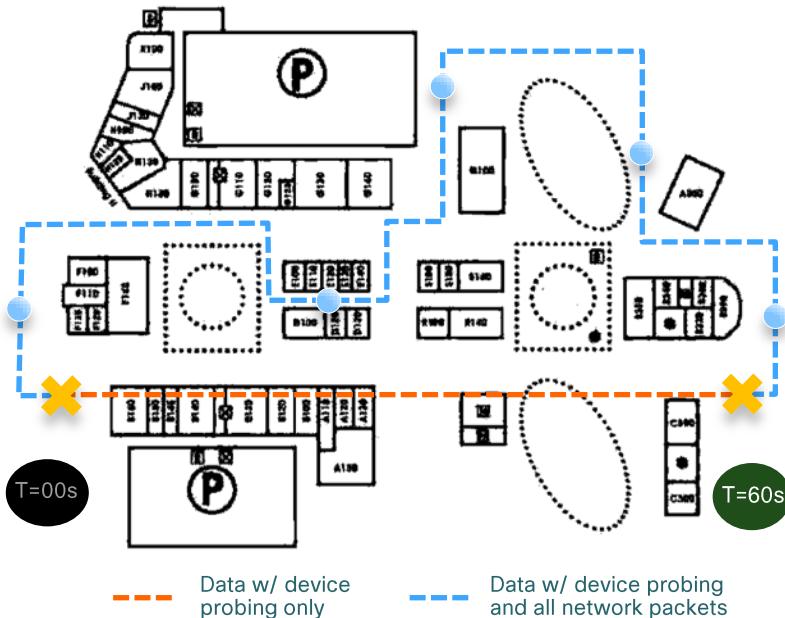
# Presence and Location Comparison

- Device is in/out of the store
- Based on distance to an access point
- Device is in a department of the store
- Based on X, Y coordinates

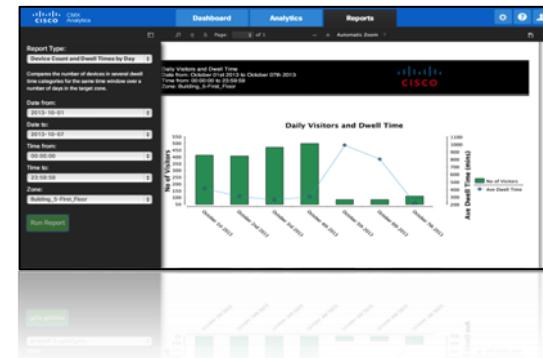


# Probe RSSI vs. Data RSSI

Location Resolution is Critical to Actionable Business Intelligence



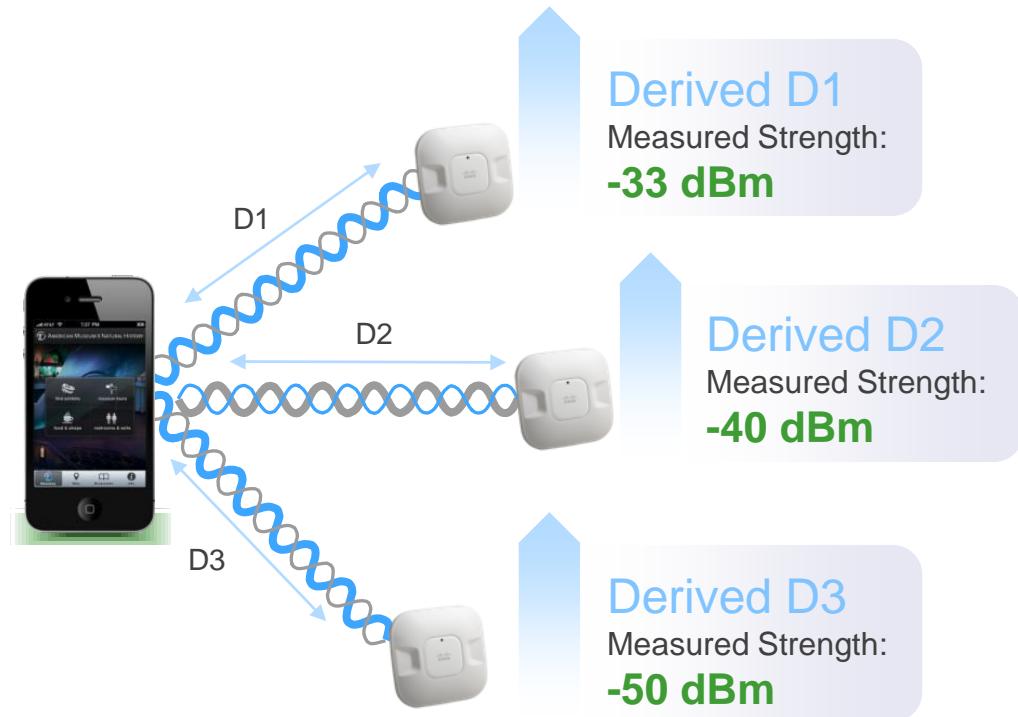
Business Intelligence is Critical to Proper Decision Making...



...And It Needs To Scale

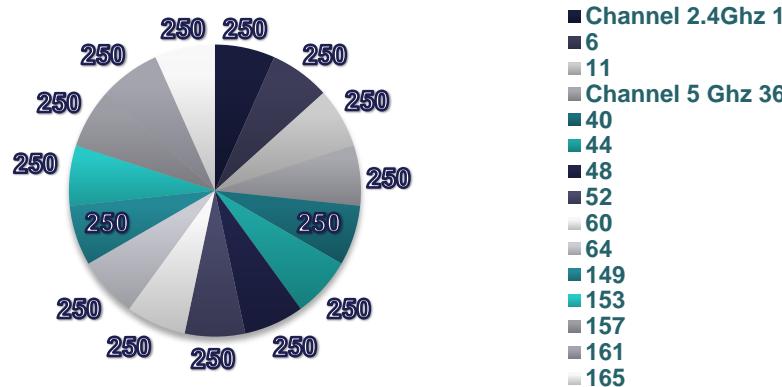
# How Location Is Calculated with FastLocate

- Access points detect mobile devices or tag signals and measure RSSI from all frames sent over Wi-Fi.
- Controllers send RSSI information signal to the Cisco MSE for location calculation.
- RF fingerprinting and triangulation, based on signal strengths, are used to calculate device location.
- Out of Data Path for Higher Scalability



# WSM Module Listening for $\frac{1}{4}$ Sec. on Each Channel

Scan Time on Channels (ms)



- When a client is constantly sending packets on a channel, network will get a packet **EVERY 4 seconds** ( $250\text{ms} \times 16 \text{ channels}$ ) and be able to gather values once every 4 seconds.
- Location is calculated approximately 1 every 8 seconds. (~8 times per Minute)

# What is Bluetooth Low Energy (BLE)?

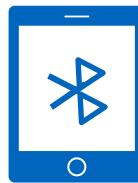
- Bluetooth Low Energy (BLE) is a subset of the Bluetooth 4.0 spec
  - Ultra-low power consumption – run for years on a coin battery
  - Low-cost system-on-chip solutions – proliferate in small devices
  - Simplified communication protocol – easy to implement & extend
- Operates on the 2.4GHz ISM band (2400-2483.5MHz)
  - 40 channels in-between & overlapping WiFi Ch 1,6,11
  - 1 Mbps GFSK, frequency-hopping
  - Reliable signaling up to 100m
- Devices identify themselves with UUIDs
  - Like a MAC address, but also encodes a “profile”
  - Sensors, health monitors, alarms, etc.

# What is BLE being used for?

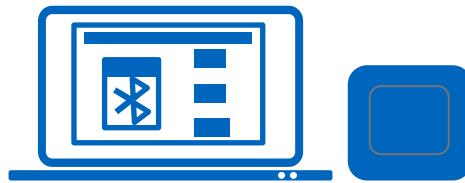
- Battery operated BLE Beacon and App for management (sometimes crowd sourced)
- Retailers are using this to quickly test drive location based services
- Healthcare facilities are using this to improve patient experience.
- Museums are using this for personalizing tour experience
- Use cases:
  - Target marketing messages and Ads
  - Display patient location and map of the hospital for navigation
  - Gather Analytics

# Cisco's BLE Strategy

## BLE Aware



## BLE Capable



- Use CleanAir to detect BLE
- Check Beacon Health
- Track Assets with BLE
- Alert on rogue beacons

**MSE 10.x and WLC 8.0MR1**  
**Q1CY15**

## BLE Gateway



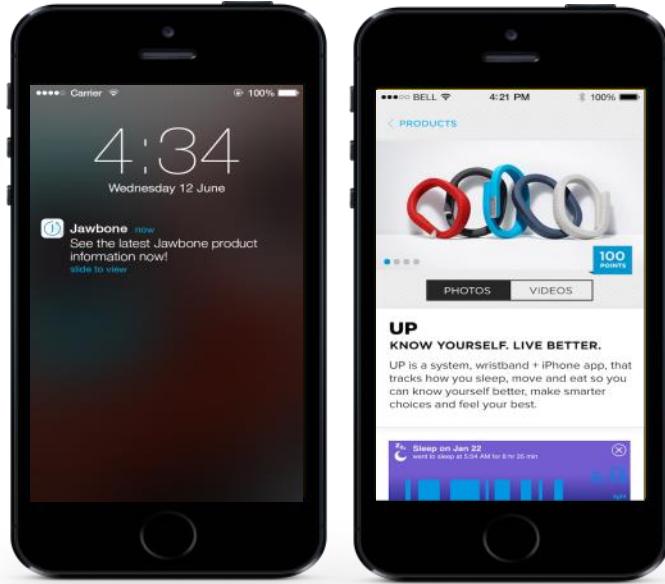
- Integrated BLE radio with Hyperlocation module
- Reduce number of beacons
- Transmit multiple UUIDs

**MSE 10.x and WLC 8.1**  
**Q2CY15**

- Combined WiFi + BLE Location and Analytics
- Extend CMX SDK to BLE

**MSE10.x and WLC 8.x**  
**Q3CY15**

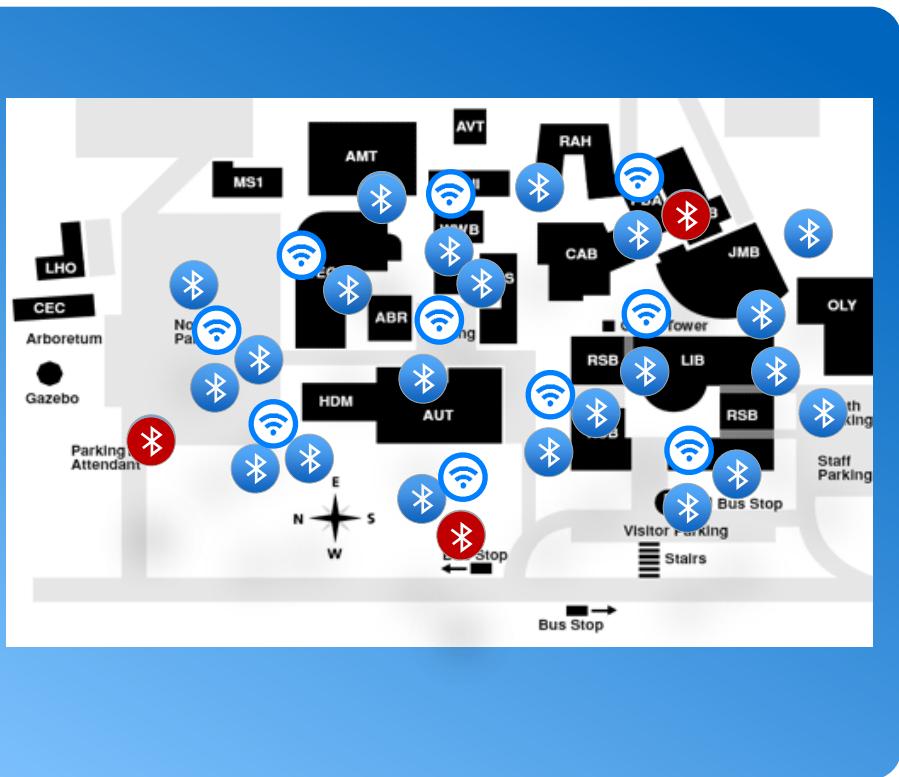
# Where does BLE fit in Location strategy



BLE can be part of your location strategy if you already have or will have an App

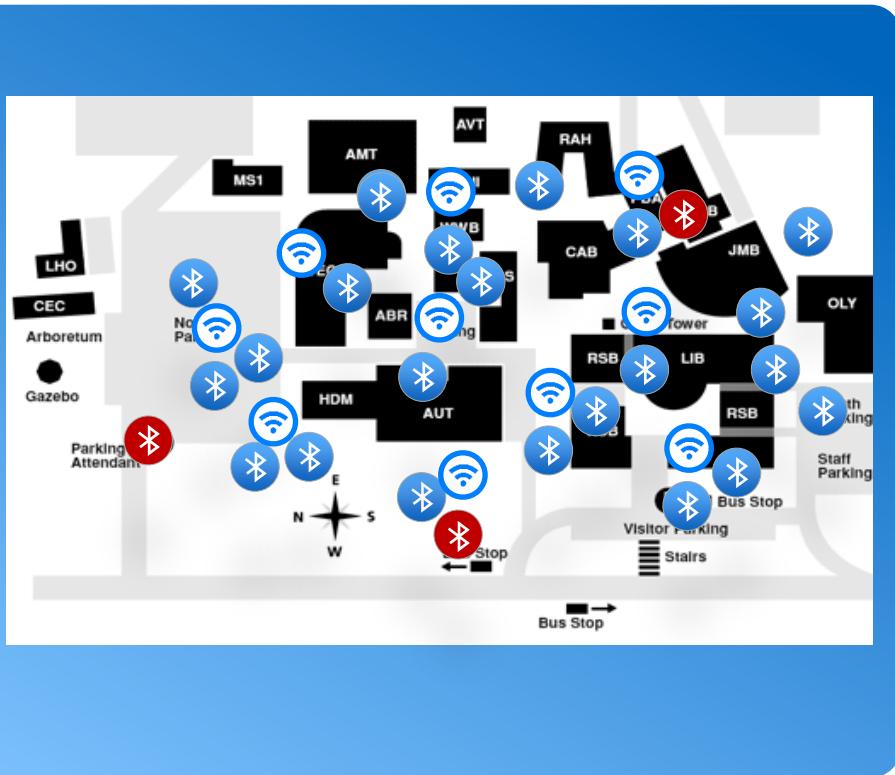
- Opportunities for BLE only
  - Proximity-based messaging
  - Easy to deploy
  - Lower CapEx
- Challenges for BLE only
  - Requires App to be downloaded and running
  - Limited Use Cases if deployed without Wi-Fi
  - Higher OpEx

# Beacon and Wi-Fi Location Deployment



- AP's for Wi-Fi
- Beacons for Location
- Beacon rogues difficult to detect

# Beacon and Wi-Fi Location Deployment

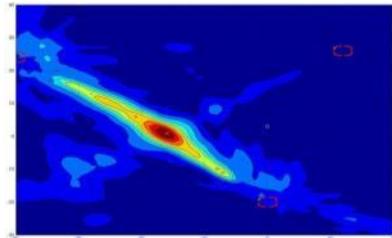


- Hyperlocation - BLE integrated with APs
- Fewer beacons to deploy/track
- Rouges can be detected and removed

# BLE Monitoring – Visibility and Alerts



# Introducing the Cisco Hyperlocation Module



**Angle of Arrival (AoA) Triangulation**  
1-3 m accuracy, <1m with beacons



**Integrated BLE Beacon**  
Reduce BLE deployment size



**Centralized Management**  
BLE and Wi-Fi visibility



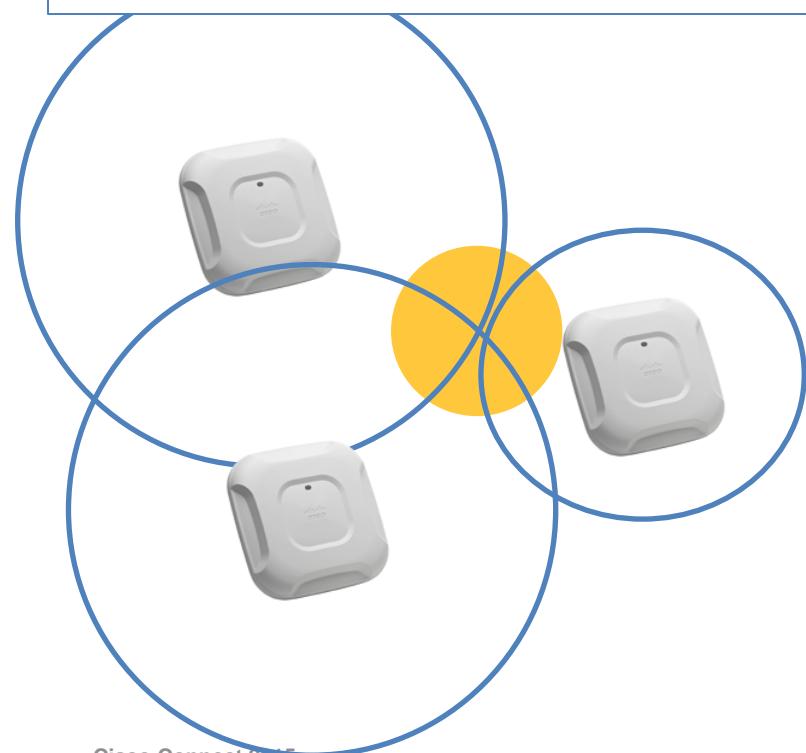
**Enhanced FastLocate**  
Faster refresh rates



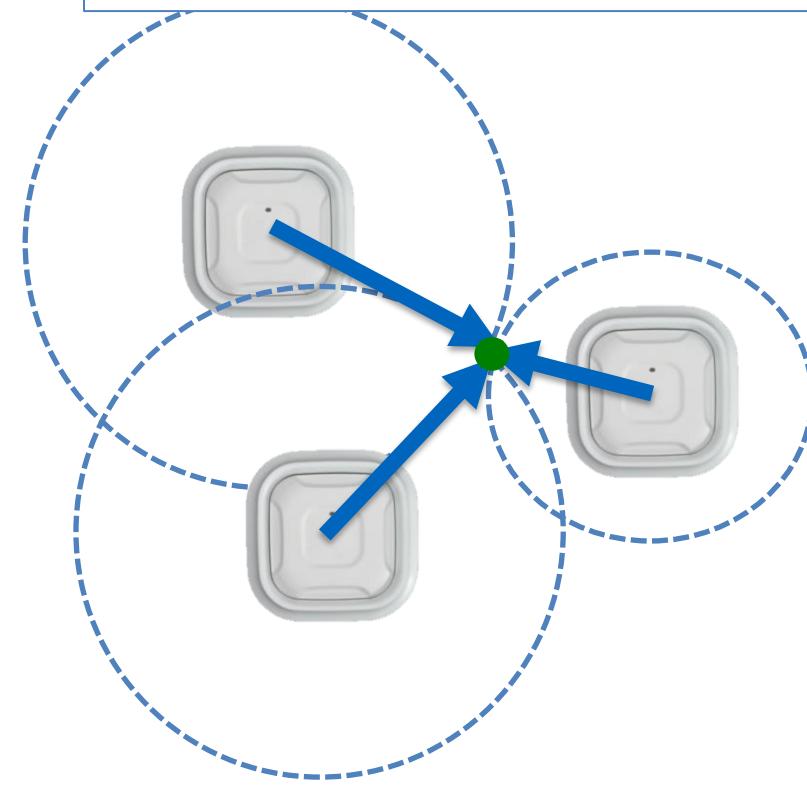
**Improved Security Coverage**  
Integrated Wireless Security Module

# Location Accuracy

Today: Approx. distance via RSSI, but no idea which direction → more error in calculation

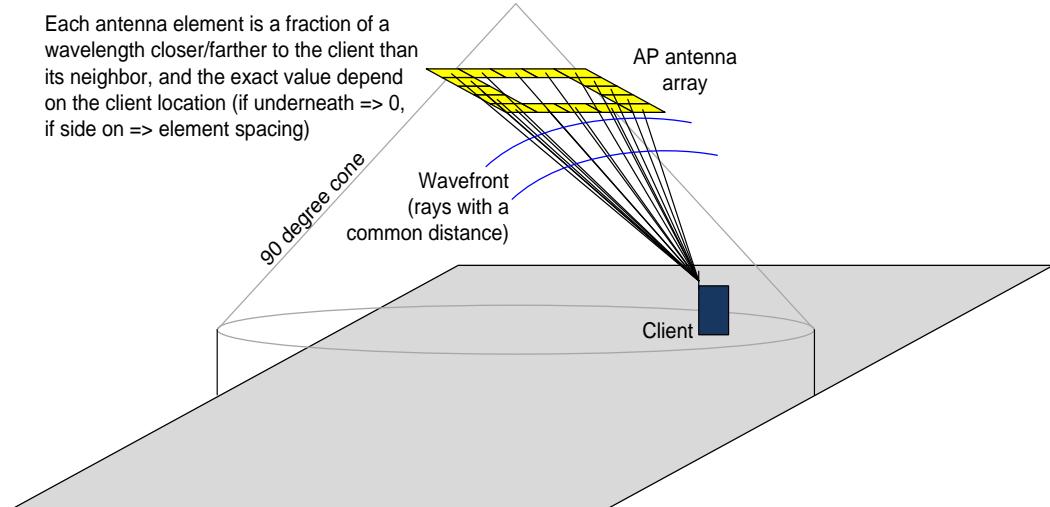


Solution: Determine direction to client in addition to distance → dramatic error reduction



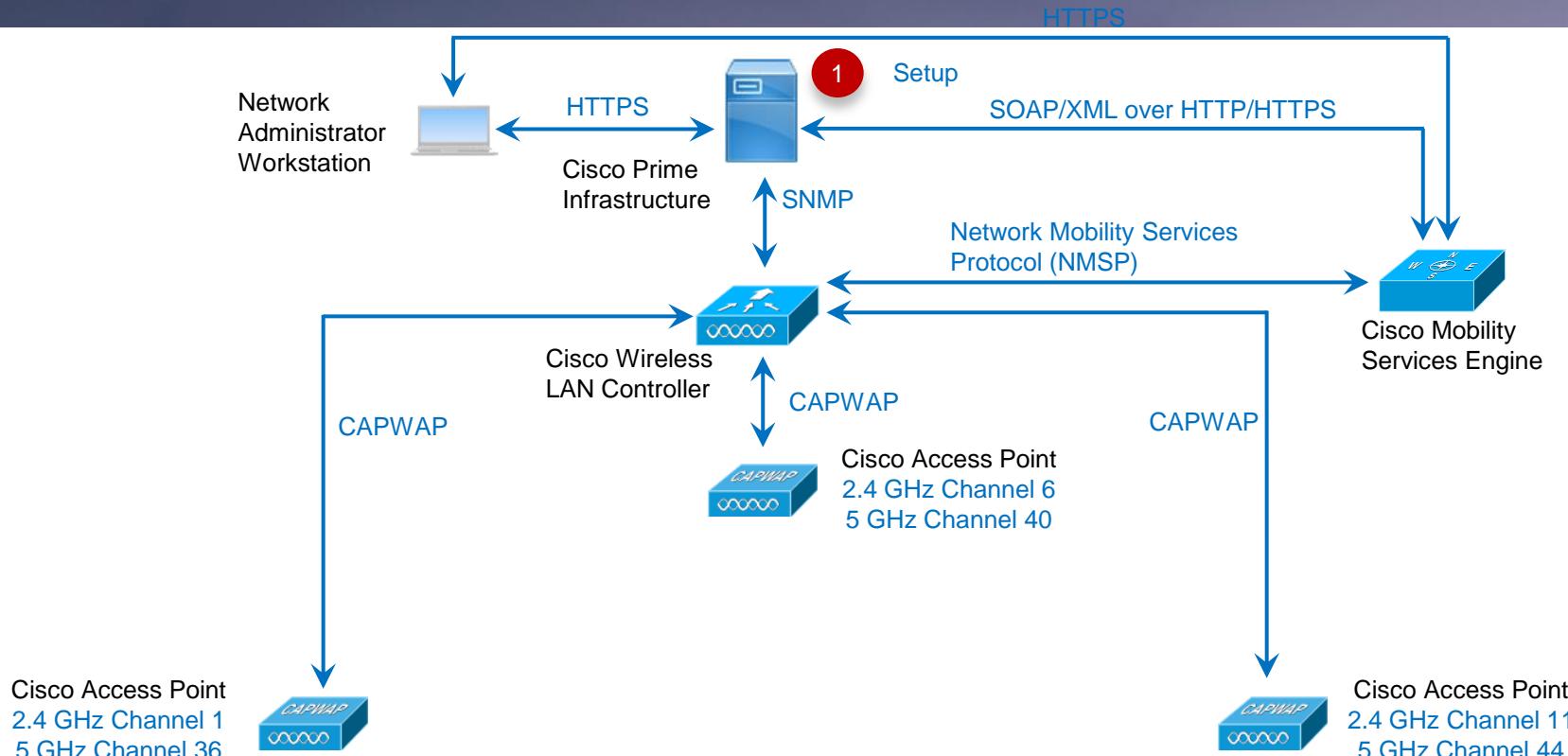
# Innovation: Angle of Arrival(AOA) = ~meter accuracy

- Different antenna elements hear the signal a little earlier/later than others, measured by the phase of the signal
- Favors line-of-sight with stellar accuracy in cone under AP

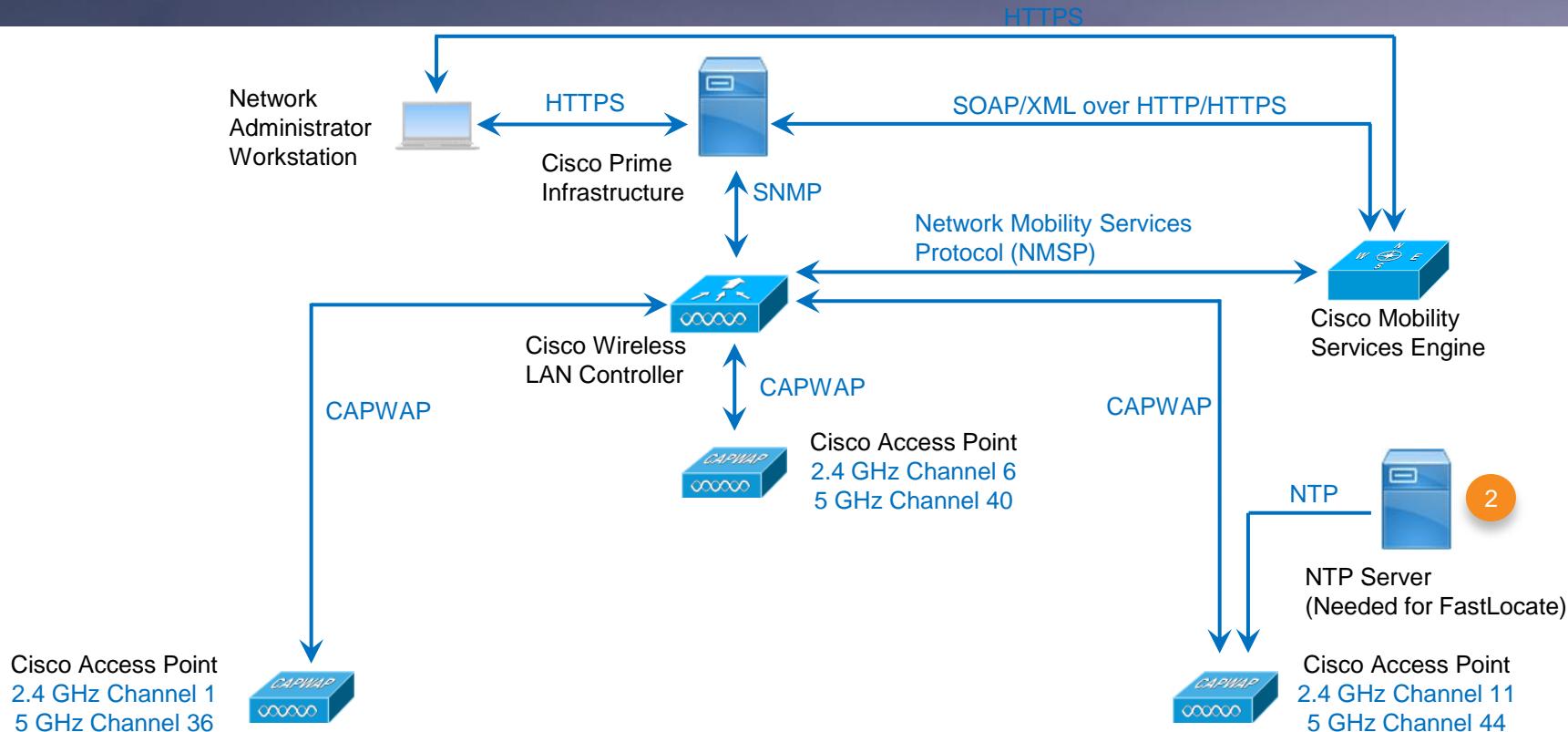


# Context Aware Services Architecture

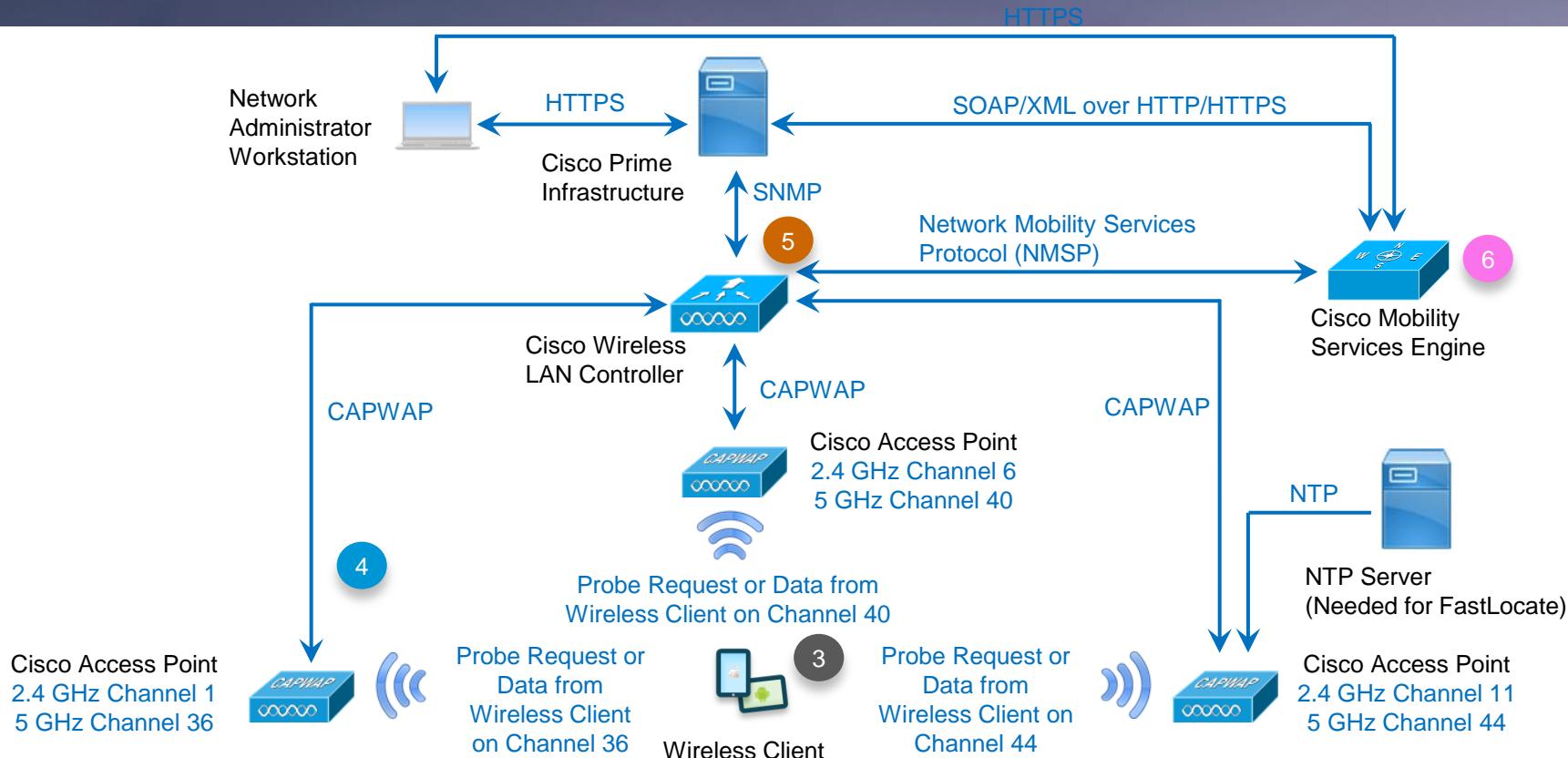
# Context Aware Service (CAS) Hardware and Data Flows



# Context Aware Service (CAS) Hardware and Data Flows



# Context Aware Service (CAS) Hardware and Data Flows



# Detect – CMX Analytics

# Create Connected Experiences with Cisco's CMX



## Presence & Analytics

- Presence detection
- On-premise visibility



## Visitor Connect

- Easy Wi-Fi login, custom or social
- Zone-based, custom splash pages



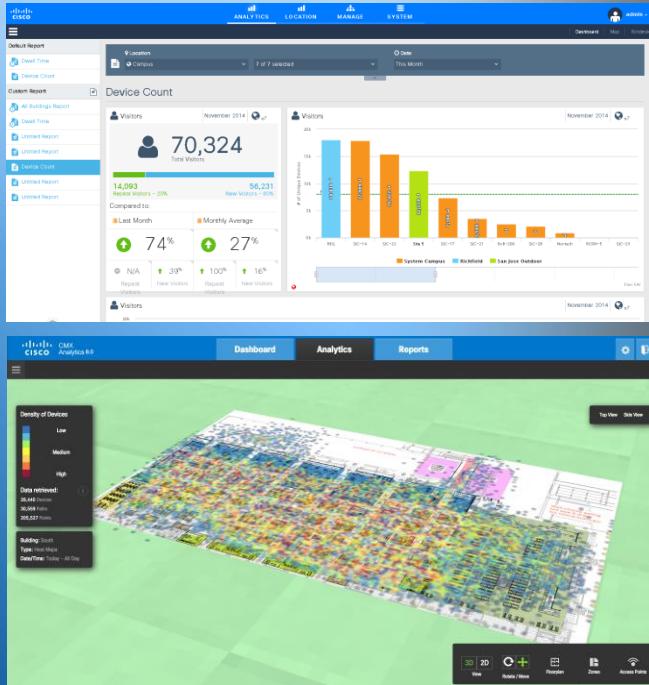
## Contextual Experience

- Location-based push notifications
- App-based mobile engagement

Analytics



# Understand How People Interact in the Location



Number people by venue and zones



Peak time in venue



New compared to repeat visitors

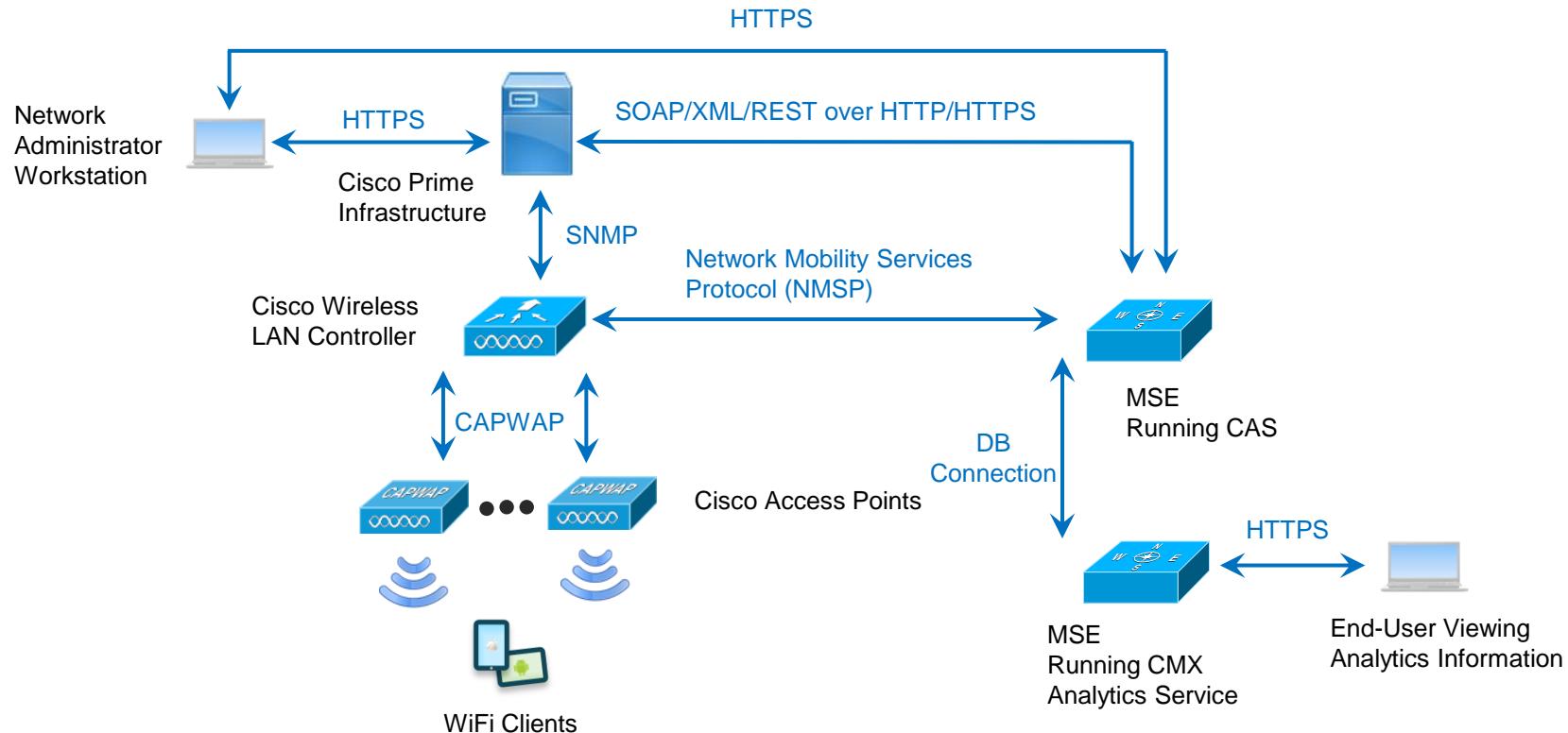


Common traffic patterns

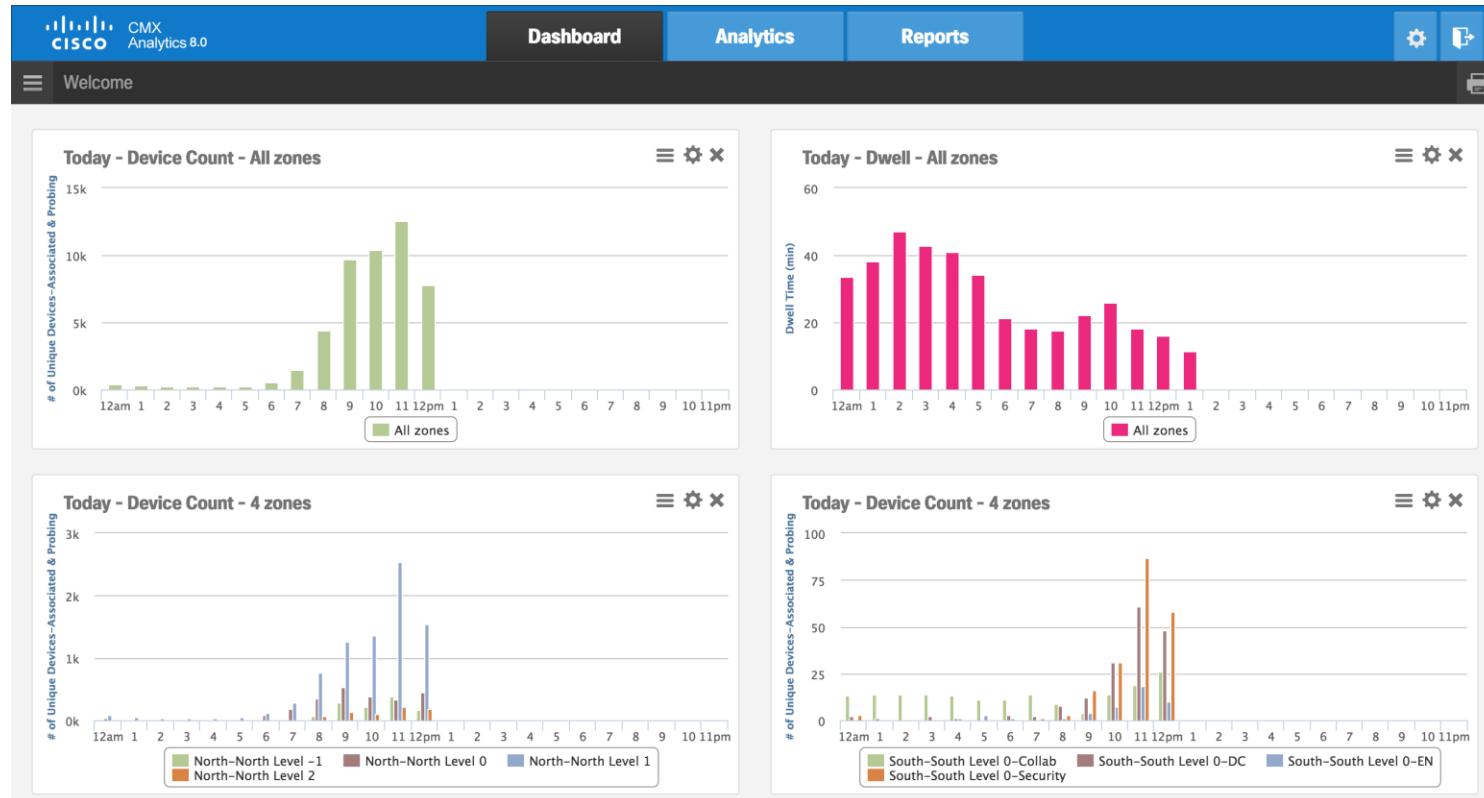


Where people spend time

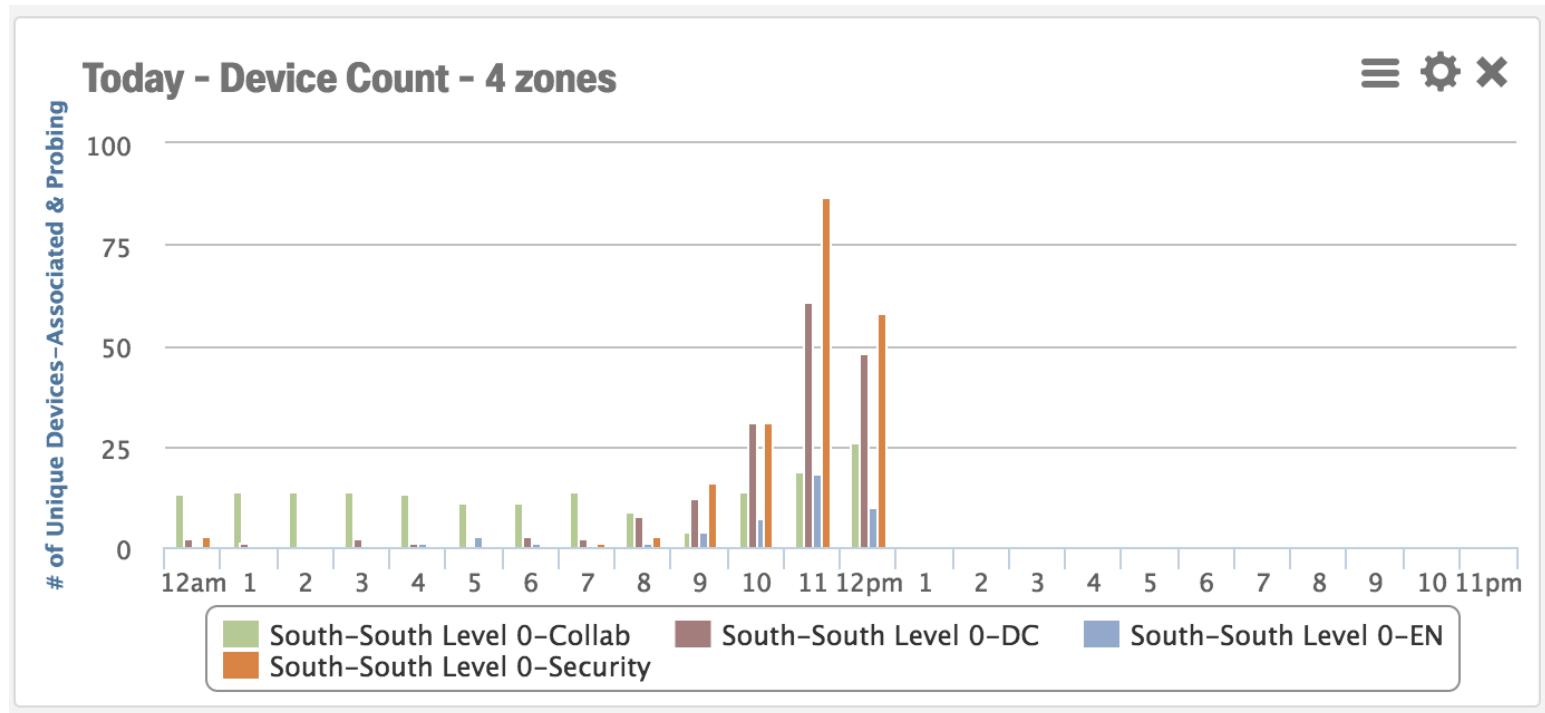
# High-level overview of Hardware and Information Flows for CMX Location Analytics



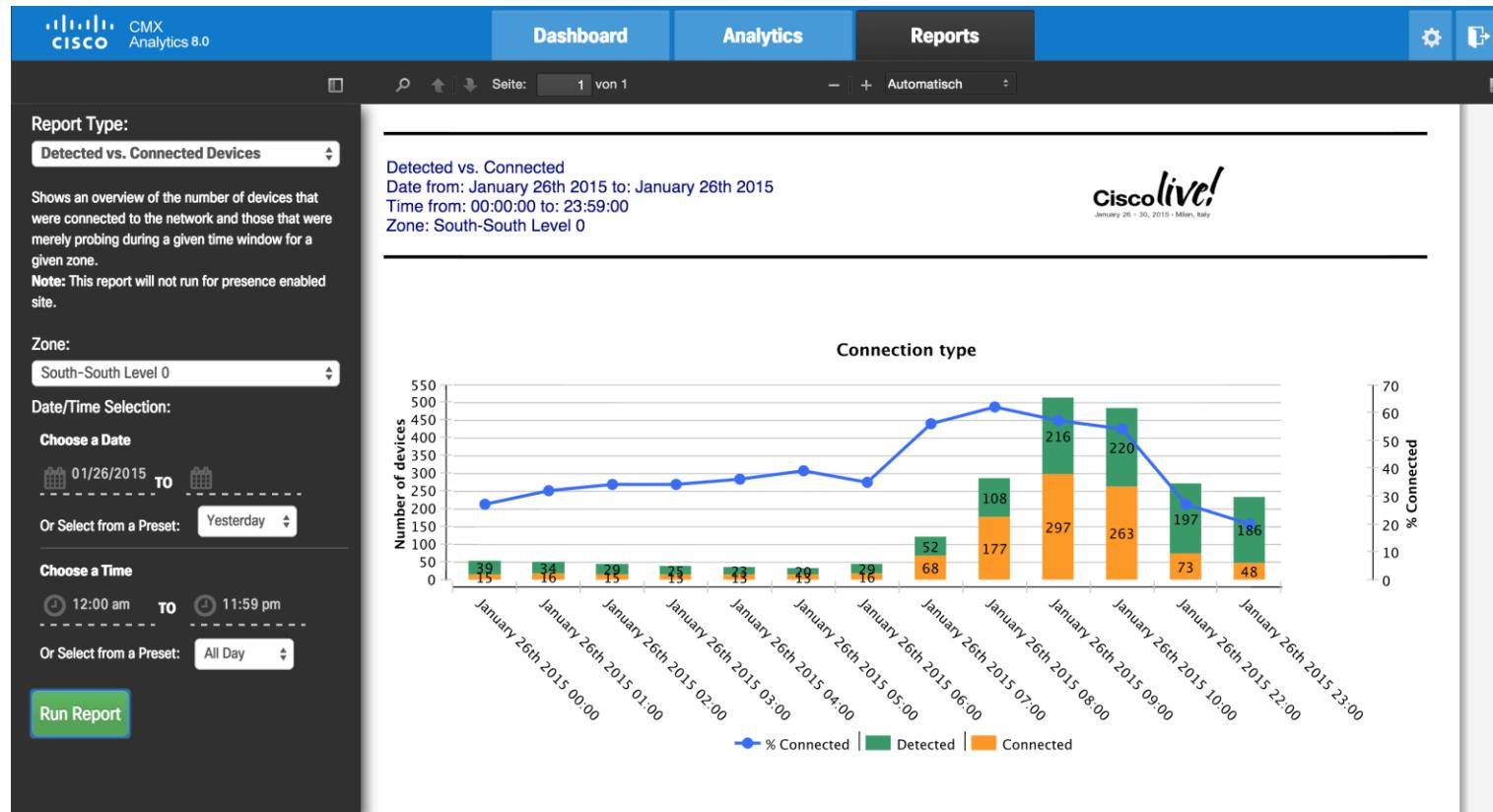
# CMX Analytics Dashboard



# Multiple Zones Comparison in Dashboard



# Report: Detected vs. Connected Devices



# Preview - Analytics MSE 10

The screenshot displays the Cisco CMX Analytics MSE 10 dashboard. The top navigation bar includes links for ANALYTICS, LOCATION, MANAGE, SYSTEM, and a user account for 'admin'. The left sidebar features a 'Default Report' section with 'Dwell Time' and 'Device Count' options, and a 'Custom Report' section with 'All Buildings Report', 'Device Count', 'Dwell Time', and 'Last Weeks Mall Acti...'. The main content area is titled 'Last Weeks Mall Activity Report' and shows two primary data cards: 'Visitors' and 'Average Dwell Time'.

**Visitors:** Jan 12, 2015 – Jan 18, 2015 | x4

| Total Visitors        |                    |
|-----------------------|--------------------|
| <b>28,185</b>         |                    |
| 9,622                 | 18,563             |
| Repeat Visitors - 34% | New Visitors - 66% |

Compared to:

| Two Weeks Ago         | Weekly Average     |
|-----------------------|--------------------|
| <b>06%</b>            | <b>03%</b>         |
| 01% ↑ Repeat Visitors | 09% ↓ New Visitors |
| 01% ↑ Repeat Visitors | 05% ↓ New Visitors |

**Average Dwell Time:** Jan 12, 2015 – Jan 18, 2015 | x4

| Average Dwell Time of All Visitors |              |
|------------------------------------|--------------|
| <b>1 HR 2 MINS</b>                 |              |
| 1hr 27mins                         | 50mins       |
| Repeat Visitors                    | New Visitors |

Compared to:

| Two Weeks Ago       | Weekly Average   |
|---------------------|------------------|
| <b>00%</b>          | <b>00%</b>       |
| 00% Repeat Visitors | 00% New Visitors |
| 00% Repeat Visitors | 00% New Visitors |

# Enterprise Mobility Services Platform

# Challenge for Today's Enterprise



## Line of Business Challenges

- Delivering personalized content to drive sales and loyalty
- Incorporating existing application functionality into mobile apps
- Being able to get the application built quickly and affordably

IT is challenged delivering on the LOB needs and timelines....



Multiple Devices  
and Platforms to  
Support



Resource Intensive  
Development



Scale Across  
Locations, People  
Environments



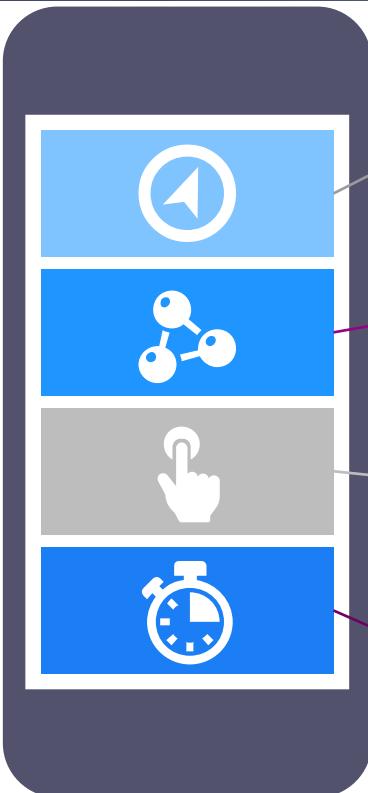
Deliver Highly  
Secure Solutions

# What Is Cisco EMSP?

The Cisco Enterprise Mobility Services Platform enables the rapid delivery of context-aware mobile experiences that exceed business and customer expectation. It binds Cisco network infrastructure capabilities with enterprise and open cloud systems, creating ready-to-use modules for mobile, web and native applications.



# EMSP Delivers New Experiences



Gives applications context awareness, allowing customer engagement like never before

Prebuilt integration to infrastructure, applications and cloud services

Robust analytics and admin consoles that empower business users to manage content

Leverages real-time data to influence and drive behavior

# Finding and Engaging Loyal Customers

## Cisco EMSP in Retail

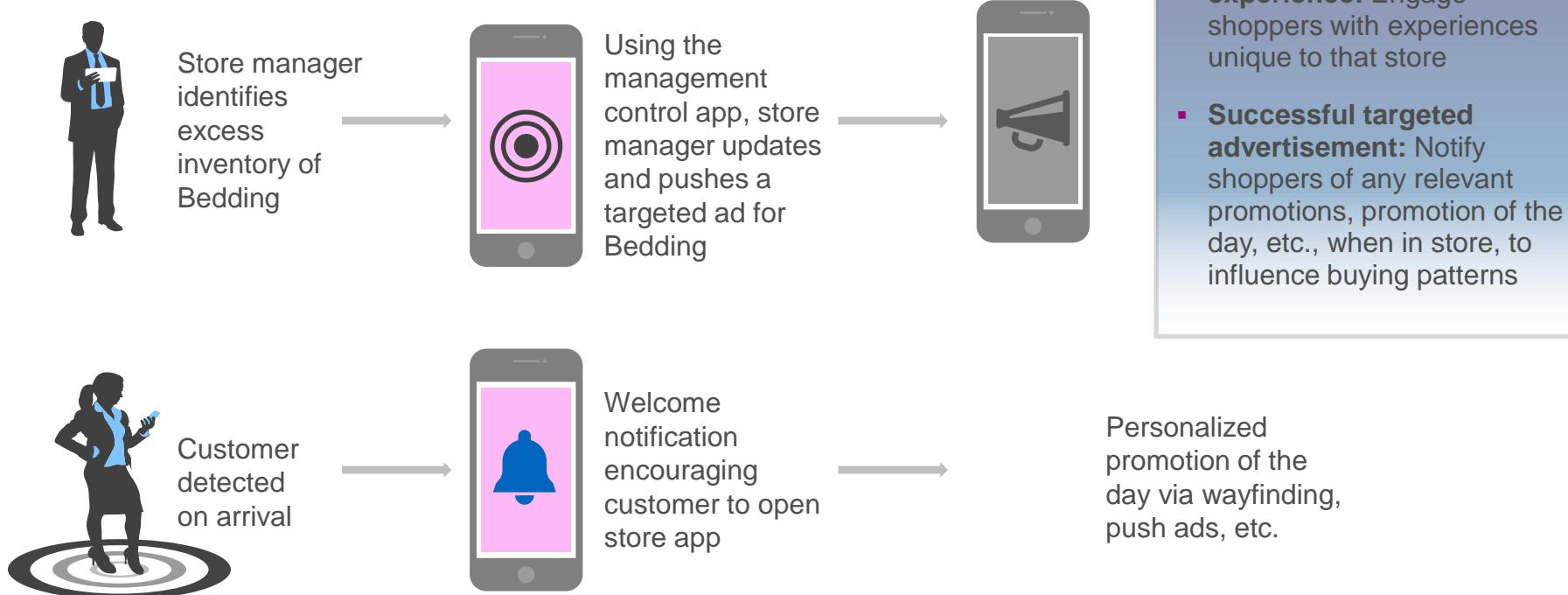
- Engage with shoppers when in store
- Differentiation between retail locations
- Flexibility for store manager to make updates to mobile experience/content



# Finding and Engaging Loyal Customers

Cisco EMSP in Retail

## Proposed Solution (Workflow Enabled)



# Targeted Offers Delivered to your Application

Francisco Retail Store 🔍 ⋮

Do you need assistance?  
Ask a store expert.

 Save on a Bundle  
of baby must haves 

Offer Ends  
August 31 [Shop the Catalog](#)


**Offers** **Store Map**


**Scan** **Search**

Francisco Retail Store 🔍 ⋮



**Madison Park Melanie 9-pc. Comforter Set**  
**Sale \$139.99**  
Original \$279.99

Rich accents and touchable fabrics make this comforter set a luxurious bedding addition.

|                     |                              |                                |
|---------------------|------------------------------|--------------------------------|
| <b>Features</b>     | <b>What's Included</b>       | <b>Construction &amp; Care</b> |
| 9-piece set         | Comforter                    | Polyester                      |
| Quilted charmeuse   | 2 shams, 2 Euro shams        | Machine wash                   |
| Embroidered details | Bedskirt, Neck roll pillow   | Imported                       |
| Borders & florals   | Oblong pillow, Square pillow |                                |

[Get me there](#)



# EMSP Location Services



## Geo Location

- Devise GPS via WiFi or cellular connectivity



## Premise

- WiFi Access Point association



## Zone (x,y,z)

- WiFi Triangulation
- BLE

Infra Requirements

# Context Aware Mobile Experiences For The Hybrid Enterprise



Enterprise Service Mobility Platform delivers context aware mobile experiences by bringing together infrastructure, enterprise apps, and cloud services

## Network Enriched Engaging Experiences

Leverage intelligent network services to deliver engaging context aware mobile experiences

## Expose Cloud and App Services

Integrate, expose and mobilize business intelligence, cloud services, and enterprise app services

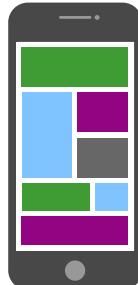
## Operational Efficiencies

Pre-built, ready-to-use, and device agnostic application experiences to meet industry and LoB needs

# Cisco EMSP Application Development

## Native Application Development:

- Use EMSP Studio and app builder to develop iOS or Android native applications
- Leverage hundreds of pre-built experiences for rapid app development



## Hybrid Application Development:

- Use the EMSP AppX SDK and Studio to provide feature rich hybrid application experiences embedded within your native application



## Web Application Development:

- Use the EMSP Studio to rapidly build, host, and update web-based applications
- Primary vehicle to deliver context experiences





# EMSP WiFi MX Demo

# EMSP Dashboard

File Edit View Favorites Tools Help

**WiFi-MX**

Accounts ▾

**Monitor**

Engagement Report

**Configure**

SSIDs

Locations

Experience Zones

Maps

**Create**

**Portals**

Microsites

**Manage Users**

Users

Portals » Cisco Connect UAE

Select a section to configure. Drag & drop to reorder items within the menu.

Brand name Notice Configure in :  ON

Notice

Ticker Text Only

Text Only

Text with Image

Welcome message

Feedback

Get Apps

Get Internet

Venue Map

Map

My Agenda

Menu Item 1

Menu Item 2

Help

Notice text

What do you want to see connected?  
Connecting the Unconnected

Cisco -

Hide After

Export Style sheet Editor

Preview

Choose Experience Zone

Cisco Connect

Welcome to Cisco Connect UAE, 2015

Map My Agenda Workshops

Speakers Sessions Sponsors

Roll over to magnify

QR code

# EMSP Demo

- Connect to SSID
- Login with your E-Mail
  - Subscribe to SMS Service

For more details visit the  
Enterprise Networks Demo Booth



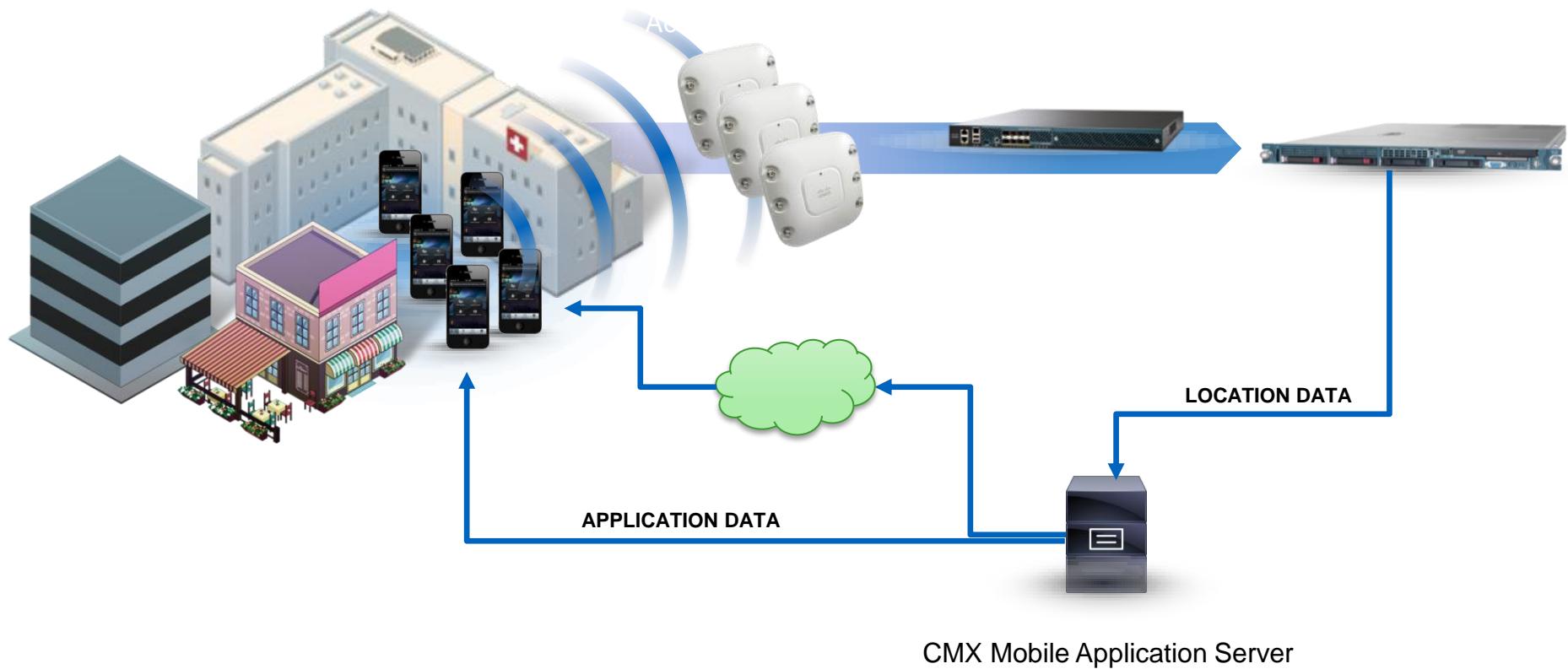
# Mobility Services API

# Mobility Services API and CMX App SDK

- Supports SOAP/XML and REST (new)
- Exposes current and historical location information for tracked devices
- Enables numerous use cases – apps, analytics, equipment tracking, etc.
- Offers a pull model: XML or JSON, based on the requesting client
- Offers a push model: XML, JSON, and protocol buffer formats Can be streamed over HTTP, HTTPS, or TCP



# Mobility Services SDK

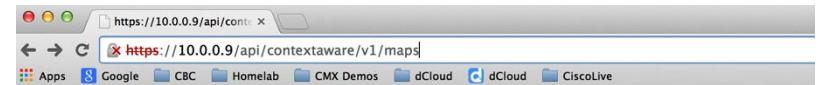


# CMX Tools: API



# REST API - Examples

- Just use your Webbrowser to:
  - Get Maps Information:
  - <https://MSE-IP/api/contextaware/v1/maps>
- Get Map Image:
  - [https://MSE-IP/api/contextaware/v1/maps/imagesource/domain\\_0\\_1363174316182.jpg](https://MSE-IP/api/contextaware/v1/maps/imagesource/domain_0_1363174316182.jpg)

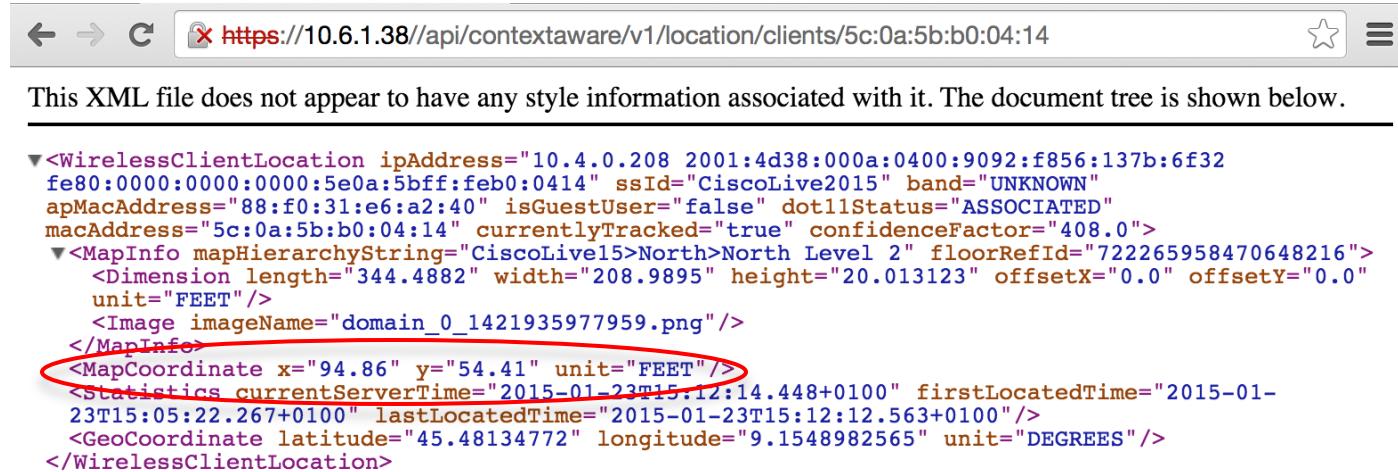


This XML file does not appear to have any style information associated with it. The document tree is shown below.

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    <Dimension length="65.62" width="65.62" height="10.0" offsetX="0.0" offsetY="0.0" unit="FEET"/>
    <Building objectVersion="50" name="Home">
      <Dimension length="65.62" width="39.37" height="10.0" offsetX="4.59" offsetY="0.0" unit="FEET"/>
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      </Floor>
    </Building>
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    </GPSMarker>
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    </GPSMarker>
    <GPSMarker name="GPS_Marker_2">
      <GeoCoordinate latitude="48.091921" longitude="11.534977" unit="DEGREES"/>
      <MapCoordinate x="0.98" y="29.53" unit="FEET"/>
    </GPSMarker>
  <Zone name="Homelab">
    <ZoneCoordinate x="25.78" y="21.28" unit="FEET"/>
    <ZoneCoordinate x="37.54" y="21.28" unit="FEET"/>
    <ZoneCoordinate x="37.54" y="29.64" unit="FEET"/>
    <ZoneCoordinate x="25.87" y="29.47" unit="FEET"/>
  </Zone>
</Campus>
</Maps>
```

# REST API - Examples

- Get Client Location by MAC Address:
- <https://MSE-IP/api/contextaware/v1/location/clients/5c:0a:5b:b0:04:14>



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<WirelessClientLocation ipAddress="10.4.0.208 2001:4d38:000a:0400:9092:f856:137b:6f32 fe80:0000:0000:5e0a:5bff:feb0:0414" ssid="CiscoLive2015" band="UNKNOWN" apMacAddress="88:f0:31:e6:a2:40" isGuestUser="false" dot11Status="ASSOCIATED" macAddress="5c:0a:5b:b0:04:14" currentlyTracked="true" confidenceFactor="408.0"><MapInfo mapHierarchyString="CiscoLive15>North>North Level 2" floorRefId="722265958470648216"><Dimension length="344.4882" width="208.9895" height="20.013123" offsetX="0.0" offsetY="0.0" unit="FEET"/><Image imageName="domain_0_1421935977959.png"/></MapInfo><MapCoordinate x="94.86" y="54.41" unit="FEET"/><Statistics currentServerTime="2015-01-23T15:12:14.448+0100" firstLocatedTime="2015-01-23T15:05:22.267+0100" lastLocatedTime="2015-01-23T15:12:12.563+0100"/><GeoCoordinate latitude="45.48134772" longitude="9.1548982565" unit="DEGREES"/></WirelessClientLocation>
```



 Cisco  
Connect

Dubai, UAE

February 18-19, 2015

*TOMORROW  
starts here.*

# HALO Module is a Mainstream AoA Solution



- Halo module wraps around AP
- 32 extra antennas to turbo-charge Angle of Arrival
- The Halo module will include Bluetooth capability as well

# Analytics Configuration

- Enable History Logging for Client Stations on Context Aware MSE

The screenshot shows the 'History Params' configuration page in the Cisco Context Aware Service. The left sidebar includes options like SYSTEM, CONTEXT AWARE SERVICE (Tracking, Filtering, History, selected), Presence, Asset Information, Advanced Configuration, and NOTIFICATIONS (Subscriptions, Statistics). The main area displays settings for history archiving and pruning, and a list of entities for which history logging is enabled. The 'History' tab is highlighted in blue.

**History Params**

Archive for: 30 days

Prune data starting at: 23 hours 50 minutes and also every 1440 minutes

Enable History Logging of Location Transitions for:

- Client Stations
- Wired Stations
- Asset Tags
- Rogue Access Points
- Rogue Clients
- Interferers

Save Cancel

# Fan Wifi On-boarding In-Stadium

## Business Problem

- Mode to publish Mobile apps to non-frequent fans In- Stadium
- Capture new fans coming into the Stadium
- Visibility to In-Stadium activity



Fan connects on SSID and opens browser



Portal On-board

WLC re-directs the https session to EMSP web portal



The user to the device mapping is noted on EMSP



INFO

Stadiums can track Fan activity when In-Stadiums moving forward

## Solution Pre-requisites

- Cisco WLAN Infrastructure Design for Location Capability
- CMX provides location info
- CRM with fan history Dbs w/API Integration capability

## Business Outcomes

- Personalized experience – Based on Profile and Likes
- In-Stadium Analytics- Track behavior and actions



# EMSP Cisco Infrastructure Requirements

| Feature   | Infrastructure Requirements   |
|---|---|
| Mobile Application Development<br>(Native, Hybrid, Web) | N/A, infra independent  |
| WiFi Engage Portal w/ Location based web experience*    | <p>Meraki:</p> <ul style="list-style-type: none"><li>• Wireless LAN Cloud Controller</li><li>• Minimum of 1 AP (MR12, MR18, MR26, MR34, MR62, MR66)</li></ul> <p>Cisco:</p> <ul style="list-style-type: none"><li>• Wireless LAN Controller</li><li>• Minimum of 1 AP (Aironet 700, 1700, 2700, 3700)</li><li>• MSE 7.6 or 8.0 (highly recommended)</li></ul> |
| Location Services API's<br>('where am I', POI, etc)     | <p>Cisco:</p> <ul style="list-style-type: none"><li>• Wireless LAN Controller</li><li>• Minimum of 4 (high density) AP's (Aironet 1700, 2700, 3700) w/ Fast Locate Modules/WSM</li><li>• MSE 8.0</li></ul>  |

\*The minimum bandwidth cap we recommend is 5mbps per user to ensure the initial page load experience is acceptable. With a 1:3 sharing, 50mbps can support ~30 users connecting simultaneously

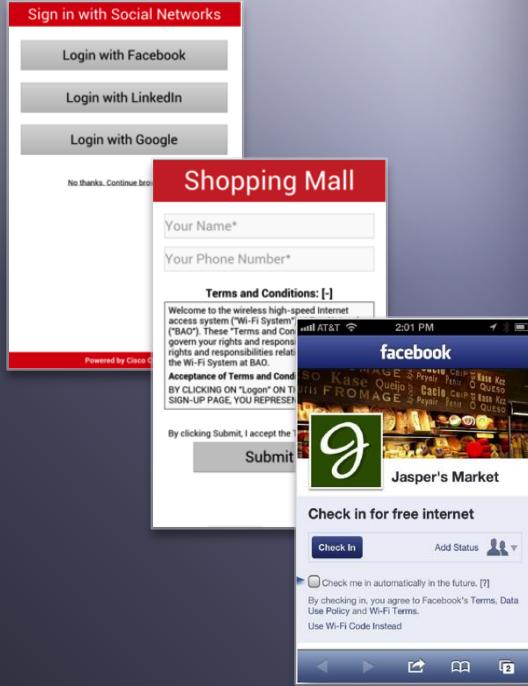
# EMSP Deployment Requirements

| Tool                             | Requirements                    |  |
|----------------------------------|---------------------------------|--|
| EMSP Studio                      | Operating System                | MAC OS 10.6 and above (64 bit)<br>Microsoft Windows XP and above (32bit)   |
|                                  | RAM                             | 2GB  |
|                                  | Other                           | Adobe Air v15<br><br>Adobe Flash v15   |
| EMSP Development Studio          | Operating Systems               | MAC OS 10.6 and above (64bit) Microsoft Windows XP and above (32bit)   |
|                                  | RAM                             | 2 GB   |
|                                  | Java Environment                | Java Development Kit 1.6.x   |
|                                  | Database                        | MySQL 5.5 and above  |
| WiFi Engage Portal               | N/A, full cloud hosted solution |  |
| Location Services API's          | N/A, full cloud hosted solution |  |
| Cisco Integration Platform – ESB | Hardware Requirements           | <ul style="list-style-type: none"> <li>• 2GHz, dual-core CPU, or 2 virtual CPUs in virtualized environments</li> <li>• 2GB of RAM</li> <li>• 4GB of storage</li> </ul>                         |
|                                  | Java Runtime Environments       | <ul style="list-style-type: none"> <li>• Oracle Java 1.6</li> <li>• Oracle Java 1.7</li> <li>• IBM Java 1.6</li> </ul>   |
|                                  | Operating Systems               | Windows (32- and 64-bit) 2003, 2008, Windows 7, Windows 2012<br>Mac OS 10.7, 10.8<br>Linux RHEL (64-bit) 5.3, 6.1<br>Ubuntu Server 12.04 (64-bit)<br>Solaris OS 10<br>HP-UX 11i V3<br>AIX V7.1 |

# CMX Connect



# Location-Specific Guest Access



**Simplify Access with User Opt-In**  
*Offer Clear Terms and Conditions*



**Multiple Access Methods**  
*Custom or Social Media*



**Customized Access and Promotion**  
*Proximity-Based Landing Pages and Video*



**Understand Who Is in Your Location**  
*Enhanced Analytics*

# Location-Specific Guest Access – Cisco CMX Connect



- Customize the Wi-Fi guest access experience
- Gain valuable analytics about who is in venue
- Simplify the user experience while offering clear terms and conditions

**Shopping Mall**

Your Name\*

Your Phone Number\*

**Terms and Conditions:** [-]

Welcome to the wireless high-speed Internet access system ("Wi-Fi System") at Bao Networks ("BAO"). These "Terms and Conditions of Use", govern your rights and responsibilities and our rights and responsibilities relating to the use of the Wi-Fi System at BAO.

**Acceptance of Terms and Conditions of Use**  
BY CLICKING ON "Logon" ON THE WI-FI SYSTEM SIGN-UP PAGE, YOU REPRESENT that:

By clicking Submit, I accept the Terms & Conditions

**Submit**



**Sign in with Social Networks**

Login with Facebook

Login with LinkedIn

Login with Google

No thanks. Continue browsing >>

**Powered by Cisco CMX**

**Registration, Terms, and Conditions**

**Custom Landing Page/Video**

**Simplified Login**

# Captive Portal Configuration

- Login to: <https://mse/dashboard/>

The screenshot shows the CMX Connect & Engage dashboard with a sidebar on the left and a main content area on the right.

**Left Sidebar:**

- Summary
- Visitor Connect
- Splash Templates
- Template Fields
- Social Connectors
- Third Party Advertisement
- Facebook Wi-Fi
- Visitor Policy
- Maps
- Mobile App
- Accounts
- Settings

**Main Content Area - Splash Template Configuration:**

## Splash Templates

Splash Templates help you design Splash Pages for your guest portal. Follow these steps to create a Splash Template:

- STEP: 1**  
(Optional) Create Template Fields  
if you would like to collect information from visitors as part of registration.
- STEP: 2**  
(Optional) Create Social Connectors  
if you would like to offer Social Network Authentication such as Facebook, Google+, and LinkedIn.
- STEP: 3**  
Create Splash Templates in the table below and attach Template Fields and/or Social Connectors to them.
- STEP: 4**  
Assign the Splash Template to one or more locations inside Maps.

The first Splash Template you create will be your Default Template.

When determining which Splash Template to use, MSE will select the template belonging to the location of the highest granularity that the guest-user is in. If that location does not have a Splash Template, MSE will look for that location's parent for a Splash Template instead, repeating as needed until finally reaching the Default Template.

The hierarchy is Zone -> Floor -> Venue -> Campus. You can change the Default Template designation in the table below.

# Login Procedure – First Login

- User connects to SSID
- User opens Safari
- Redirect to Captive Portal
  - User enters E-Mail etc.
- Play Advertisement Video
  - User can skip after 10sec
- Select Social Login and enter credentials
- Redirect to original page or Redirect URL





# Guest Access – Cisco CMX for Facebook Wi-Fi

- Increase brand recognition and gain insights through Facebook Wi-Fi.
- User connects to Wi-Fi, opens browser, and checks in.
- Venue gains exposure through news feeds, notifying friends.

