



## Benefits

- Improve asset utilization and workflow efficiency by monitoring the location of valuable equipment with real-time location services.
- Understand how visitors and employees interact with your building in real-time with location analytics such as heatmaps, traffic flows, and occupancy analytics.
- Enable location-based services in large venues such as hospitals or workplaces with indoor navigation, location-based engagement, and location sharing.
- Control the spread of viruses in your workplace with digital contact tracing, occupancy and congestion management, and cleaning compliance.

## Integrations

- ExtremeWireless™ Access Points
- ExtremeLocation™ API
- Pointr Deep Location®
- Pointr Mobile SDK
- Pointr Cloud
- Pointr WorkSafe™

# Reopen Buildings Safely with Location Intelligence and Great Visitor Experiences

## Extreme Networks and Pointr

The world and how people interact and operate within workplaces, hospitals, retail stores, and event venues is rapidly changing. Pointr and Extreme Networks have partnered to help organizations evolve their business accordingly with smart building technology and location intelligence.

Pointr leverages ExtremeWireless Access Points to provide highly accurate indoor positioning of people and assets in order to:

- Improve asset utilization and workflow efficiency by monitoring the location of valuable equipment. View an asset's real-time location, replay paths, and trigger a location-based alert if an asset moves.
- Control the spread of viruses in your workplace and reassure employees with digital contact tracing, occupancy and congestion management, and cleaning compliance.
- Understand how visitors and employees interact with your building in real-time with location analytics such as heatmaps, traffic flows, and occupancy analytics. Improve space utilization, eliminate bottlenecks, enable great visitor experiences, and improve operational efficiency in your buildings.
- Create great visitor experiences in large venues such as hospitals, corporate campuses, and event venues. Visitors can find their way to the closest available meeting room or a specific facility with indoor maps, real-time location services, and digital wayfinding. Visitors and employees get contextual in-application notifications based on their current or past location and can share their live location with colleagues and loved ones.

## How Does It Work?

ExtremeWireless™ Access Points pick up Wi-Fi and Bluetooth® signals from smartphones or tags used by visitors or employees in the building, and send the raw data to Pointr's Deep Location® platform using ExtremeLocation™ APIs. Pointr's engine calculates the precise location of visitors, employees, or assets in the venue. The information is displayed on a digital map using Pointr Cloud, an operational dashboard for building managers that enables a range of location-based services and analytics:

- **Pointr WorkSafe™:** Employees get the WorkSafe contact tracing app on their smartphones which automatically checks them in as they enter the building using geofencing technology. The app records proximity interactions between employees using a Bluetooth handshake — no hardware is required. If an employee tests positive for a virus, they inform their employer who can then alert employees who had been in close proximity to them. Employers are able to control the spread of the virus efficiently, reassure employees that they are safe, and maintain business continuity.
- Building managers are able to leverage ExtremeWireless Access Points for a range of additional WorkSafe solutions in their buildings: occupancy counts, congestion management, safe wayfinding, and cleaning compliance. The ExtremeWireless Access Points equipped with Bluetooth beacons broadcast signals to nearby smartphones with WorkSafe installed. The Pointr Mobile SDK inside the WorkSafe app calculates the precise location data of the smartphones — without an internet connection. The location is then displayed on the Pointr Cloud dashboard. Employers can manage occupancy and congestion on the Pointr Cloud dashboard and set maximum occupancy counts in specific zones. They can also view which areas have been cleaned and for how long to ensure cleaning compliance.
- **App-Free Analytics:** As people move around the building, ExtremeWireless Access Points pick up WiFi and Bluetooth signals without the need of an app. Location data is calculated by the Pointr Deep Location engine. The Pointr Cloud dashboard displays heatmaps, people flows, visitor paths, and occupancy analytics in real-time and in replay. This enables venue owners to identify bottlenecks in specific zones and change the layout or processes accordingly. It also allows them to manage occupancy in their building.
- **Asset Tracking:** Assets such as trolleys, wheelchairs, cleaning carts, and pallets are equipped with Bluetooth tags provided by Pointr or the client themselves. ExtremeWireless Access Points pick up Bluetooth signals from the tags and send raw data to the Pointr Deep Location engine, which calculates the precise location of assets on a map. Pointr showcases the real-time location of assets on a map in the Pointr Cloud dashboard where managers can also replay an asset's path and view historical data to improve workflows.
- **Deep Location:** Pointr leverages ExtremeWireless Access Points to enable wayfinding, and location-based engagement. The Pointr Mobile SDK leverages the ExtremeWireless Bluetooth-enabled Access Points to calculate the accurate position of mobile app users in the venue. Pointr's Deep Location engine then enables mobile wayfinding and in-app notifications using geofencing and a user's real-time location.

Pointr and Extreme Networks deliver a solution that helps organizations reopen offices and buildings safely with location intelligence and great visitor experiences. Extreme Networks is dedicated to creating effortless networking experiences that enable all of us to advance.

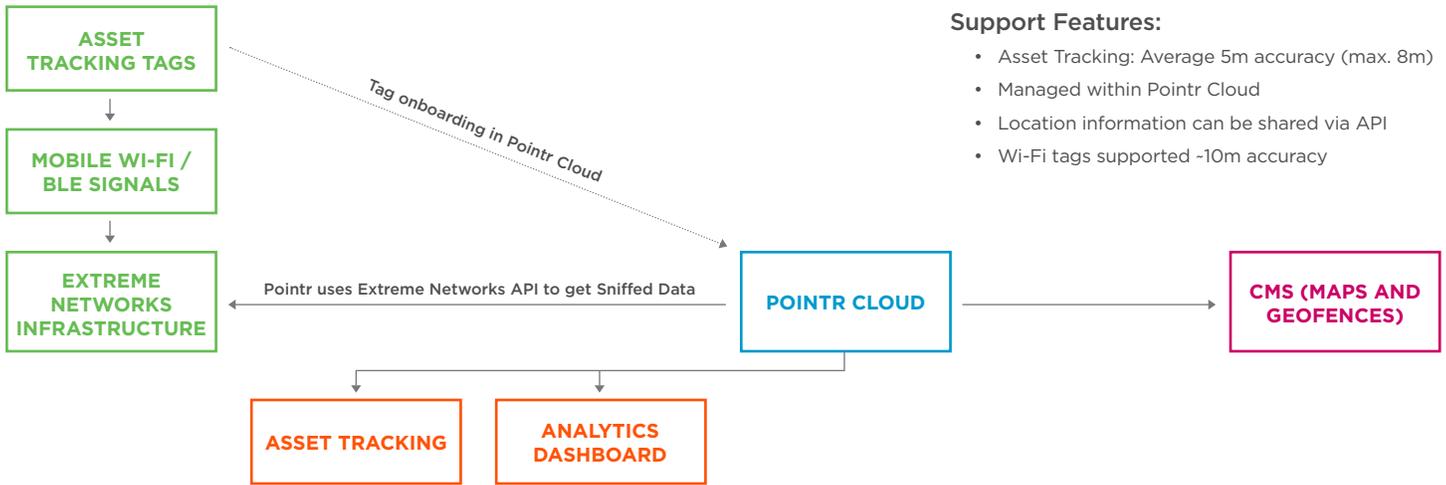
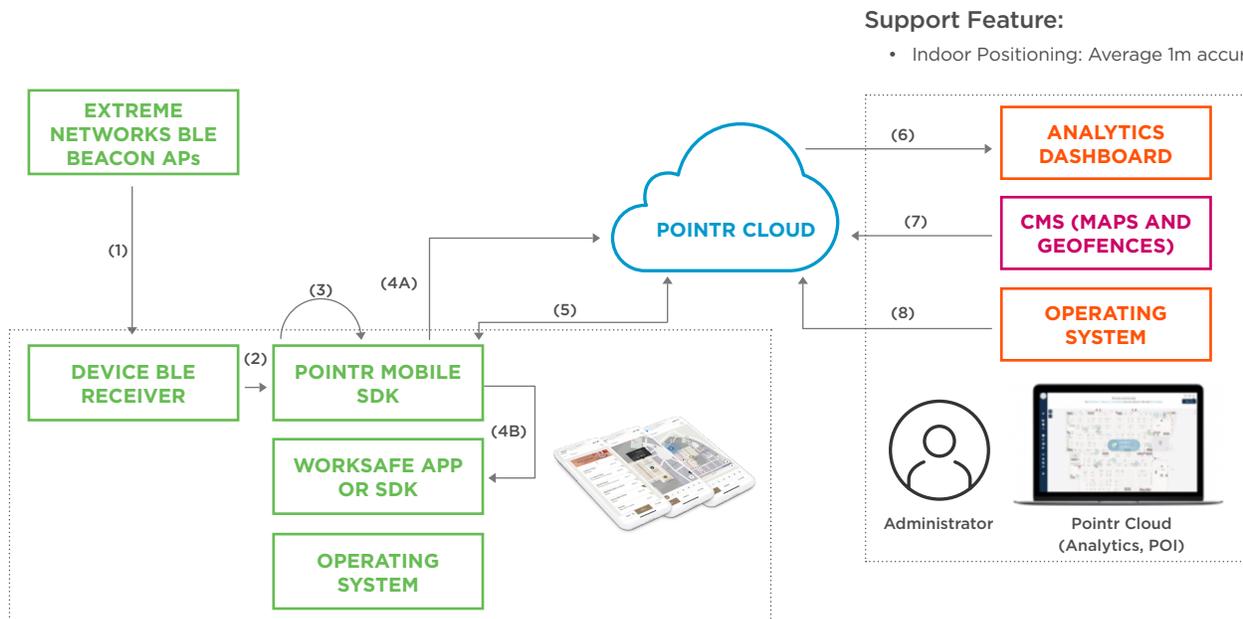


Figure 1: Integration Architecture: Asset Tracking with App-Free Analytics

**Support Features:**

- Asset Tracking: Average 5m accuracy (max. 8m)
- Managed within Pintr Cloud
- Location information can be shared via API
- Wi-Fi tags supported -10m accuracy



**Support Feature:**

- Indoor Positioning: Average 1m accuracy

**Arrows Denote the Information flow as follows:**

1. BLEs APs or Beacons broadcast locations information.
2. BLE location information is captured by phone's receiver and shared with Pintr SDK.
3. SDK produces real-time location using BLE signals and device sensors (e.g. gyroscope)
4. A - Pintr Mobile SDK sends location information to Pintr Cloud.  
B - Pintr WorkSafe™ App or WorkSafe SDK is optional. Pintr Mobile SDK shares contact tracing information with WorkSafe UI
5. Pintr Cloud sends content to SDK.
6. Pintr Cloud Dashboard present location analytics.
7. Content created via CMS interface is uploaded to Pintr Cloud.
8. Configuration parameters sent to Pintr Cloud.

Figure 2: Integration Architecture for Pintr WorkSafe™ or Pintr Deep Location™



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