Cassia IoT Access Controller

The Cassia IoT Access Controller (AC) is the industry's most powerful enterprise Bluetooth network management solution for Internet of Things (IoT) applications. With the Cassia IoT AC, businesses have unprecedented access, control, and security over Bluetooth IoT environments. The Cassia IoT AC solution enables seamless deployment and management of hundreds of enterprise Bluetooth routers and monitoring of thousands of connected end devices in an enterprise Bluetooth IoT environment from one easy-to-use interface.

OVERVIEW

A lack of standardization and interoperability across protocols is a major impediment to the growth of the IoT market. To solve this issue, Cassia Networks developed enterprise Bluetooth IoT, which includes: remote management, Bluetooth's longest range, and the highest number of reliable Bluetooth low power end device connections in the industry. This solves a fundamental barrier to IoT market entry: the high-cost and difficulty of deploying reliable large-scale IoT environments.

With the Cassia IoT AC, businesses have unprecedented access, control, and security over Bluetooth IoT environments. The Cassia IoT AC enables easy deployment and management of hundreds of long-range Bluetooth routers and monitoring of thousands of end devices in an enterprise environment from one centralized interface (see Figure 1 diagram).

From office to the factory floor, from sports arenas to hospitals, Cassia's Bluetooth IoT is changing many industries. Together, Cassia's IoT AC and Bluetooth routers deliver new enterprise Bluetooth IoT applications to new environments.
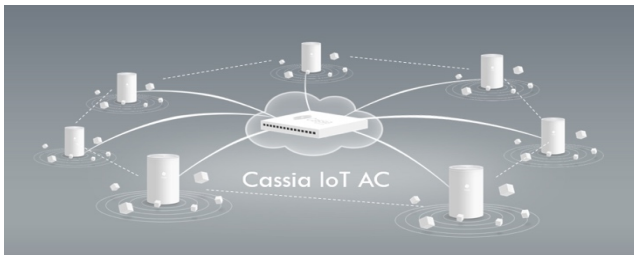

Figure 1 – Cassia IoT Access Controller (AC)

BENEFITS

Reliable and Seamless Bluetooth Coverage

Together, the Cassia IoT AC and Bluetooth routers provide seamless Bluetooth IoT coverage for data collection and location tracking both indoor and outdoor without requiring any changes to the end devices.

Centralized Management and Control

The Cassia IoT AC's centralized management and control includes: real-time Bluetooth router and end device monitoring, automatic Bluetooth router discovery, one-click firmware upgrades, end device locationing, and security policies.

End-to-End Security

Communication from end devices to the Cassia Bluetooth router is encrypted. The Cassia IoT AC and the application server provide end-to-end security.

Location Tracking

The Cassia IoT AC, used with multiple Cassia Bluetooth routers, tracks and reports the location of end devices – on people or assets - within its coverage area in real-time.

Edge Computing

Cassia Bluetooth edge routers support 3rd party applications running inside a container. This reduces latency and cloud costs, supports customized control, and ensures better data management. The Cassia IoT AC centralizes the management of containers and applications on the Bluetooth edge routers.

Flexible Deployment and Easy Access

Options for deploying the Cassia IoT AC include: an on-premise server, a private cloud, or in Cassia's public cloud. Administration of the Cassia IoT AC is simple and easy, using a web browser on a PC or a tablet.

Expandable Scalability

Build a large or small Bluetooth wireless network as needed. The Cassia IoT AC is a flexible pay-as-you-grow design, making it easy to add more Bluetooth routers as business requirements change.

FEATURES

Dashboard and statistics

The dashboard displays real-time data in the current state, including: Throughput, System, Routers connected, end devices connected, and Top 10 Used Routers (see Figure 2).
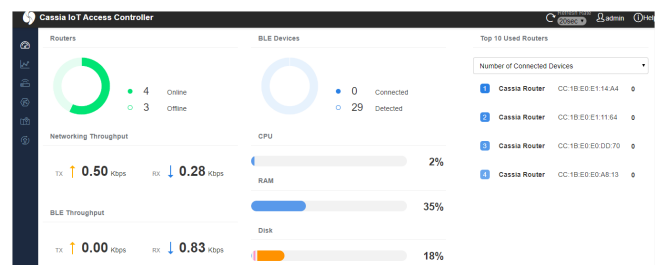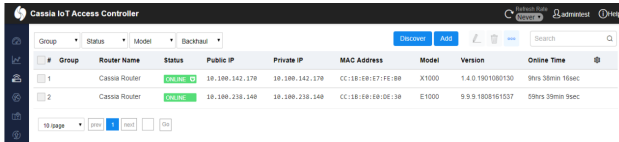

Figure 2 – Cassia IoT AC Dashboard

Simplified Router and End Device Management

- Router auto discovery: The Cassia IoT AC auto-detects and adds Bluetooth routers in the same local network and those

configured to talk to a specific IoT AC. Administrators are not required to manually enter a router's MAC address.

- Fast configuration: The Cassia IoT AC configures Bluetooth routers individually, or in a batch. Parameters include: group, network settings, AC Domain/IP address, etc.

- One-click firmware upgrade: Administrators upload multiple firmware images to the Cassia IoT AC then select a version to upgrade one or many Bluetooth routers in the network.

- Router and Device Listing: The status of all Bluetooth routers and end devices in the Cassia IoT AC network is displayed in real-time (see Figure 3).

Figure 3 – Cassia IoT AC Router Management

- Fast relocation: To retire a Cassia IoT AC and relocate the routers that it manages, simply export the router list into a file and import the file into the new AC.

- Real-time logs: The Cassia IoT AC's events page displays logs for HTTP API, Network Event, and System Operation. The events are categorized into three severity levels: Info, Warning, and Error.

Advanced Security

- The communication between the end devices, Cassia Bluetooth router, Cassia IoT AC, and application server are encrypted

- The Cassia RESTful APIs use OAuth (Open Authentication) 2.0 for user authentication

- The Cassia IoT AC uses Docker architecture in the Cloud. The Docker Container isolates applications from one another and the underlying infrastructure while providing an added layer of protection for the application

- A router whitelist manages router access to the Cassia IoT AC

- Supports dedicated SSL private key and certificate import options

- Create and manage user accounts with varying levels of access control

- Supports Bluetooth 4.1 Secure Simple Pairing: Just Works, Passkey entry, and OOB

- Supports HTTPS (TLS v1.2) for Cassia IoT AC web console access

- Communication between the Cassia IoT AC and router is based on DTLS v1.2 over UDP

- The Cassia IoT AC and router firmware is signed by a certificate to ensure authenticity

Map and Location Management

- Map management: upload floor plans for the covered space.

- Annotate maps for deployed Bluetooth routers.

- Supports querying of the relationship between Bluetooth routers and end devices.

Room-based Positioning

The Cassia IoT AC uses RSSI (signal strength) to locate a Bluetooth end device. This feature is often used in campuses and senior facilities for people and asset tracking.

License

- Based on subscription time (monthly or yearly)

- Based on the number of managed Bluetooth routers

Application Interface

The Cassia IoT AC provides RESTful APIs to application servers. The APIs are based on HTTP, or HTTPS (see Figure 4).
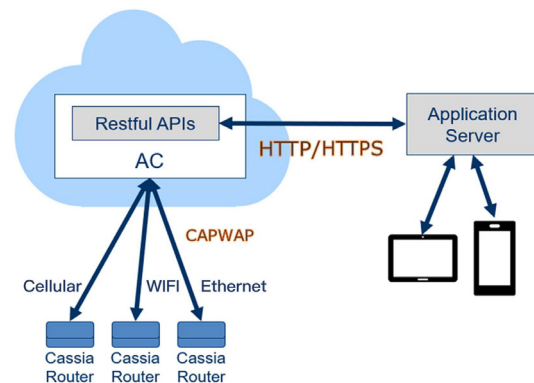

Figure 4 – Cassia IoT AC API

Flexible Deployment Options

Cassia IoT AC's deployment options include:

- Private cloud: customer-managed private, or public cloud
- Cassia public cloud
- On-premise hardware box