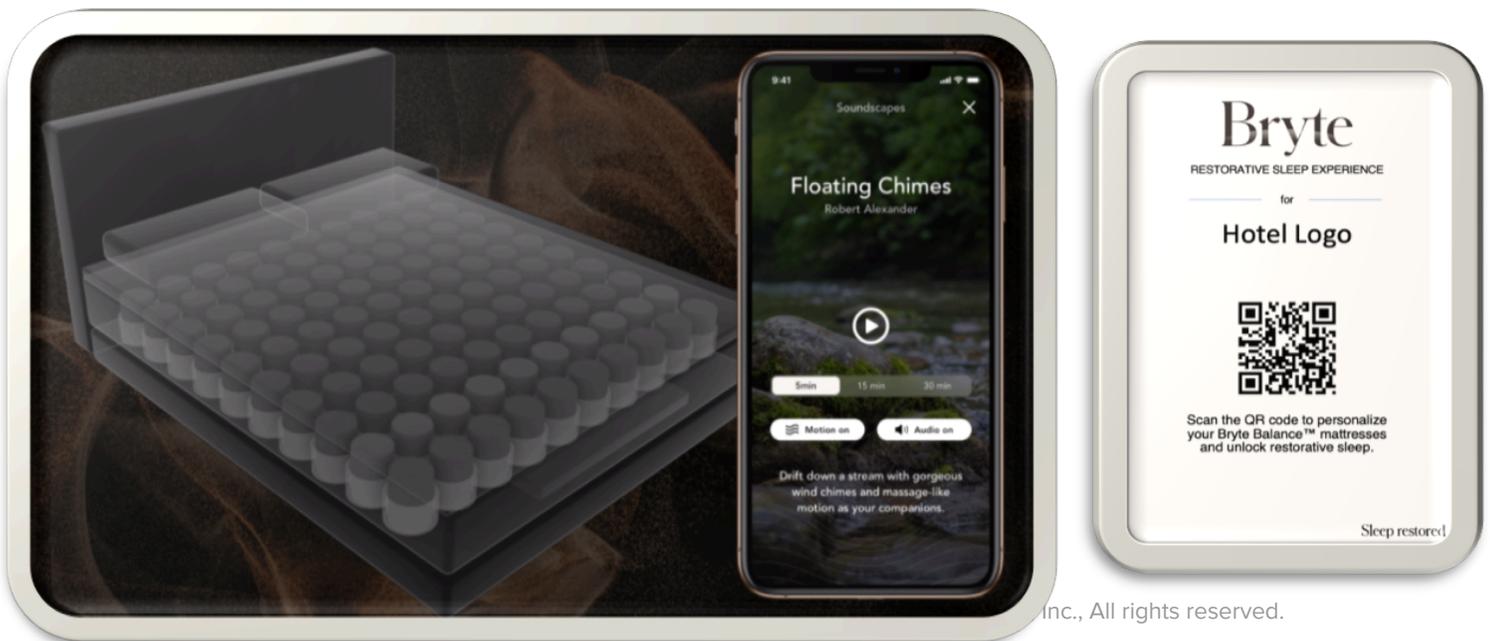# Bryte

Bryte Hospitality System
IT Specifications and Install Requirements

Description and Requirements

The Bryte hospitality system consists of the following elements:

- **Bryte Balance mattress:** a plug & play smart-mattress equipped with the most advanced dynamic firmness solution available. It requires connection to a power outlet and to the internet via WiFi. The mattress will use Bluetooth for initial setup and then use only internet access via WiFi to connect to the Bryte cloud.

- **Bryte web-app for guests:** this web-based app (no download requirement) is accessed by guests using their own Apple or Android phone by scanning a QR code displayed on the night table, next to the bed. The web-app allows guests to personalize and experience the Bryte Balance Mattress during their stay at the hotel. Guests may select a desired level of firmness, experience multi-sensory relaxation, configure wake, among other functions.

- **Bryte cloud**: the mattress will connect via WiFi directly to the Bryte cloud to enable its configuration, software updates, remote monitoring, and customer support. At the same time, guests will interact with the Bryte cloud via the Bryte web-app for guests, to personalize and interact with the mattress.

- **Bryte admin tablet:** (optional) a dedicated Android tablet - provided by Bryte - uses Bluetooth to connect to the mattress and WiFi to connect to the Bryte Cloud for initial setup of the mattress and for specific, non-routinary local configuration adjustments.

Bryte

IT Architecture:
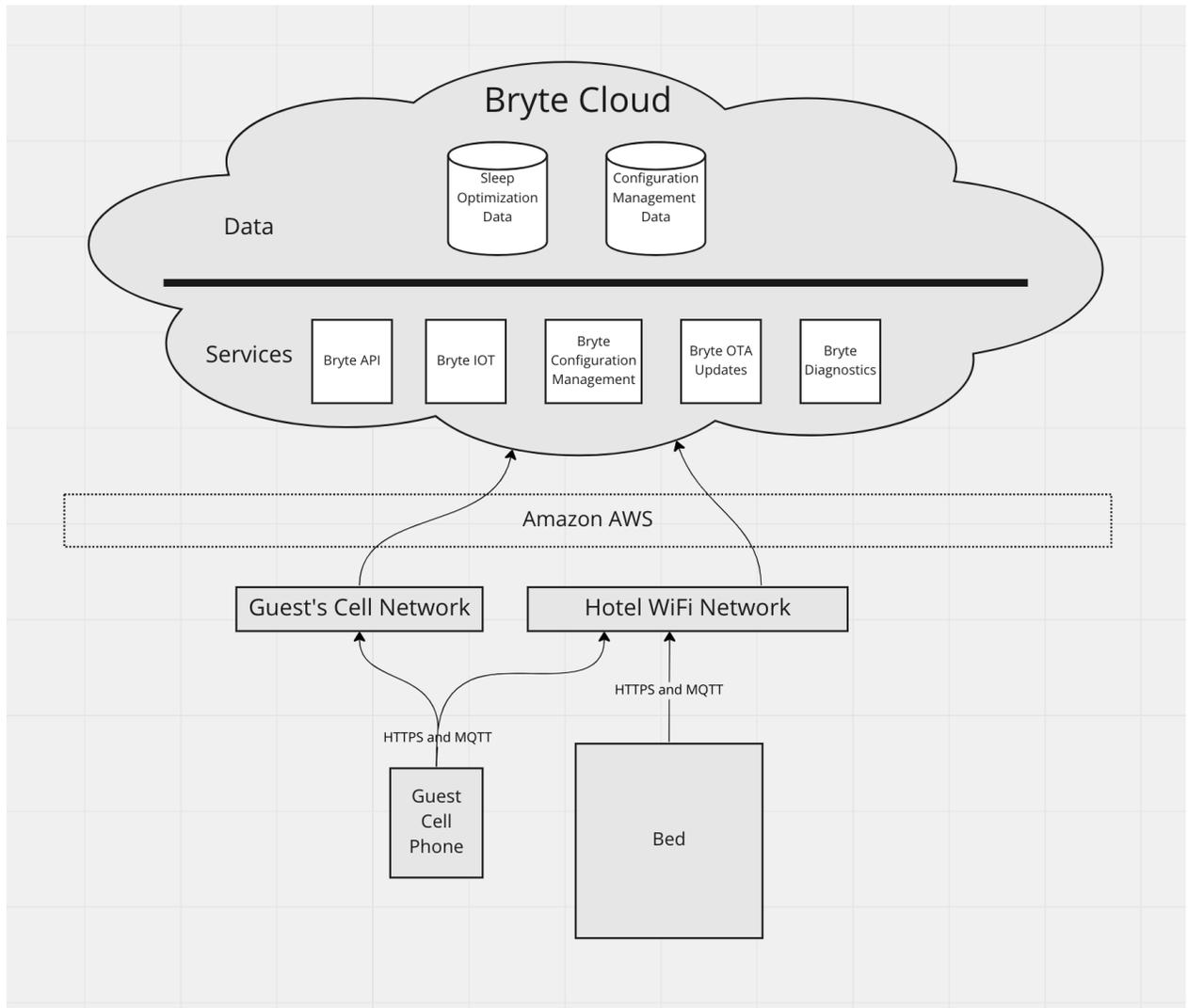
Wireless Network Requirements

Network Security

The Bryte mattress supports Wi-Fi networks of type WPA-PSK or WPA2-PSK, otherwise known as WPA Personal, that either broadcast or do not broadcast their SSIDs. The system does not support the WEP wireless security protocol or any variants of WPA-Enterprise setups. Open networks (no password requirement) are not supported. The Mattress does not support captive portal setups (no splash page).

DHCP

Wireless access points must have DHCP enabled. The Mattress cannot be given a static IP address.

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WiFi Standards and Frequency

The mattress supports 802.11b/g/n/ac networks operating on the 2.4 GHz and 5 GHz frequencies. 5 GHz setups offer higher throughput while 2.4 GHz offer greater range and signal strength. 2.4 GHz setups are preferred for the Bryte system.

Internet Communication

The mattress communicates to the Bryte cloud via the HTTPS and MQTT protocols. All connections are outbound, originating from the bed, and utilize TLS 1.2 for security. Communication between the guest web-app and the mattress occurs over MQTT, brokered via the Bryte cloud.

The mattress will make occasional ICMP ping requests to verify access to the internet.

Port Requirements

The Bryte bed communicates over port 8883 while provisioning itself to the Bryte cloud. Once this setup is complete it will only utilize standard ports when communicating with the internet. If the internet can be browsed from a device on the WiFi network the system can connect to the Bryte cloud.

Data Traffic Requirements

A mattress will typically upload < 30MB of data per day to the cloud, with the majority of the data being uploaded between midnight and 1am UTC.

Network strength RSSI

Bryte mattresses require a stable internet connection to perform. In order to avoid connectivity issues that could have a negative impact on the guest experience, the network provided for our system must pass a few connectivity tests before the installation. It is required to verify the Wi-fi strength in each room to confirm signal strength before Bryte ships the testing device. Suggestions to changes to the network may be provided in advance if WiFi signal is not sufficiently strong.

We rate the RSSI range on our app as follows:
< 30	(Amazing)
30 - 67	(Very Good)
67 - 70	(Okay)
70 - 80	(Not Good)
90	(Unusable)

Anything below 50 is ideal for the Bryte Balance system to work. And for anything above 70 we'll most likely see drops and loss of connectivity and Bryte would require an improvement of the network before installation.

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Data & Privacy

Privacy Policy

- Bryte Privacy Policy is presented to guests during the mattress setup flow, and it is part of Bryte End User License Agreement (EULA). Guests will accept these terms while completing the setup process.

Data Collection & Storage

- Bryte does not require an interface with the hotel Property Management System, hence there is no Personal Identifiable Information shared when accessing the Bryte platform during a default hotel stay.
- For each stay the Bryte system will anonymously collect the data required to personalize system performance and generate sleep insight reports.
- If desired, proximity detection can be enabled via IP or GPS location
- The Bryte Cloud is hosted by Amazon Web Services and complies with industry's standard security protocols.

Energy requirements

- The Bryte Balance mattress requires permanent uninterrupted connection to a standard power 120V AC outlet. The bed should not be connected to a smart outlet which cuts power by time of day, room occupancy or for other reasons. Typical daily use amounts to approximately 150 Wh in a 24 hour period, including idle time, rebalancing throughout the night and dynamic relaxation modes.