Engineering a Comprehensive Digital Platform for Modern Living

Engineering a custom, cloud-native residential hospitality platform on Google Cloud to consolidate property management systems, integrate smart building access, and deliver a seamless digital experience for 12K+ units.

Overview

A leading US multifamily hospitality provider sought to modernize its digital platform to overcome escalating costs and an inefficient, fragmented resident experience.

- Engineered a proprietary, cloud-native digital platform (using React.js and Golang on Google Cloud) to replace reliance on third-party booking systems, streamlining reservations and payments.

- Consolidated fragmented operations by migrating and integrating multiple property management systems (PMS) into Yardi PMS and building a custom module for automated access control (SaltoKS and Stayntouch).

- Achieved a significant 70% annual reduction in cloud and SaaS spend through infrastructure right-sizing and comprehensive third-party service audits.

- Boosted conversion rates by 20%, enhanced security with Shift4 payment integration, and esta blished a scalable foundation for market expansion.

Client Profile

Based in the US, the client is a leader in urban multifamily hospitality, focused on blending property management with premium guest experiences. Their digital-first model relies on integrating smart building technologies, such as SaltoKS smartlocks, and partnerships like Airbnb.

Challenges: Fragmented, Costly Ecosystem

The client faced operational and financial challenges that directly impacted their profitability and service quality:

- **Exorbitant Infrastructure Costs:** High and unsustainable spend on cloud services (Google Cloud) and SaaS tools (Contentful, Cloudinary, Cloudflare).

- **Poor Booking Experience:** Reliance on external booking platforms resulted in friction, a lack of branding control, and limited flexibility in pricing and inventory management.

- **Operational Incompatibility:** Building management systems (like smart locks) and hospitality systems were fragmented, complicating access management and resident journeys.

- **Security Risk:** Existing system vulnerabilities posed a threat of potential breaches in transactional data.

Proprietary, Cloud-Native PropTech Engine

QBurst engineered a comprehensive, cloud-native digital platform to centralize operations, drive down costs, and deliver a seamless, integrated user experience.

- **Proprietary Booking Engine:** Developed a custom, React.js-based e-commerce channel supported by centralized Golang APIs; this eliminated reliance on external booking platforms, providing full control over pricing, branding, and user experience.

- **Cloud Cost Optimization:** Performed infrastructure right-sizing and implemented a cloud-native architecture on Google Cloud.

- **Streamlined Integrations:** Consolidated multiple property management systems (including Entrata) into the centralized Yardi PMS, and developed a custom integration module to automate the critical function of room access management, bridging the SaltoKS smart locks with the Stayntouch hospitality operations system.

- **Enhanced Security:** Integrated Shift4 for secure payment processing, ensuring encryption and compliance for all hotel and rental transactions.

Technical Highlights

The platform was built for scale, performance, and integration complexity

- **Modern Stack:** Used React.js and TypeScript for the responsive frontend and Golang for the powerful, performant backend engine, with PostgreSQL as the core database.

- **Centralized API Engine:** Created APIs to manage property exploration, reservations, and seamless integration with critical external partners (Airbnb, Yardi, Stayntouch, Iterable, etc.)

- **Smart Access Control:** Developed a custom integration bridge to automate access management between SaltoKS smart locks and hospitality operations, improving operational efficiency.

- **Scalable Cloud Foundation:** Hosted on Google Cloud with a design featuring dynamic scaling, high availability, and auto-failover to handle peak demand during leasing and booking cycles.

Impact: Delivering Quantifiable Financial and Operational Benefits

- **70% Annual Cost Savings:** Achieved through aggressive cloud right-sizing and SaaS service audits, freeing up capital for strategic expansion.

- **20% Boost in Conversion Rates:** Resulted from the custom booking engine, which simplified the reservation flow and enhanced user experience.

- **Improved Security and Trust:** Shift4 integration ensured transaction encryption and compliance, strengthening customer trust.

- **Scalable and Flexible Platform:** The streamlined, cloud-native architecture provides the foundation necessary to expand quickly to new markets and integrate future smart-building technologies seamlessly.