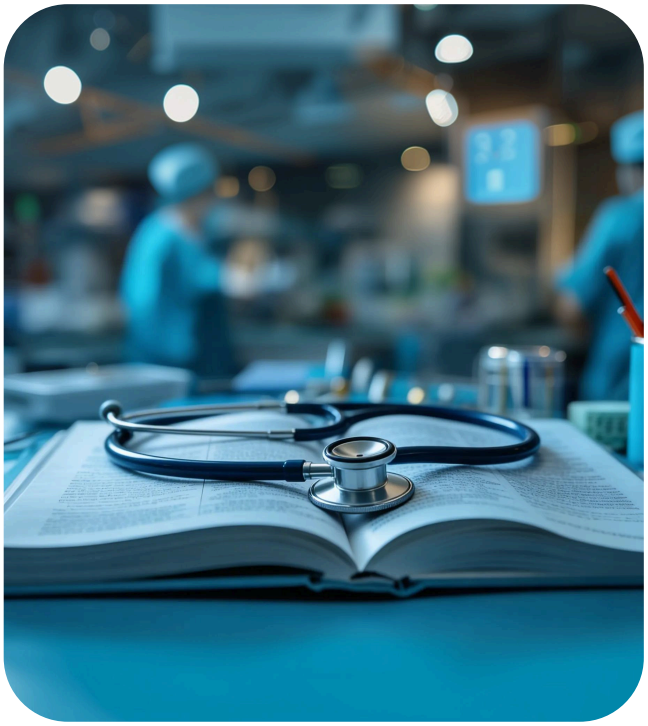
QBurst | A High AI-Q™ Company

Palm-based Biometric System for Seamless Patient Registration

Transforming patient registration with a secure, palm-based identity system that accelerates check-ins and enhances healthcare efficiency.

Overview

- Developed a palm-based biometric identification system that integrates with the client's Electronic Health Record (EHR) platform.
- Ensured full compliance with healthcare data privacy standards using AWS encryption and HL7 messaging.
- Achieved a 60% reduction in average check-in times, streamlining front-desk operations and improving patient experience.



Client Profile

Headquartered in the United States, the client is a leading integrated academic health system operating multiple inpatient and outpatient facilities across several regions. With a workforce of over 40,000 healthcare professionals, educators, and researchers, the organization advances patient care, clinical research, and medical education through technology-driven innovation.

Challenges: Front-Desk Overload Disrupts Patient Experience

- Long queues during peak hours due to manual ID verification and appointment lookups.
- High administrative burden on front-office staff managing repetitive, low-value tasks.
- Risk of human errors during manual data entry into the EHR.
- Lack of a **contactless, compliant** solution to enhance efficiency and patient trust.

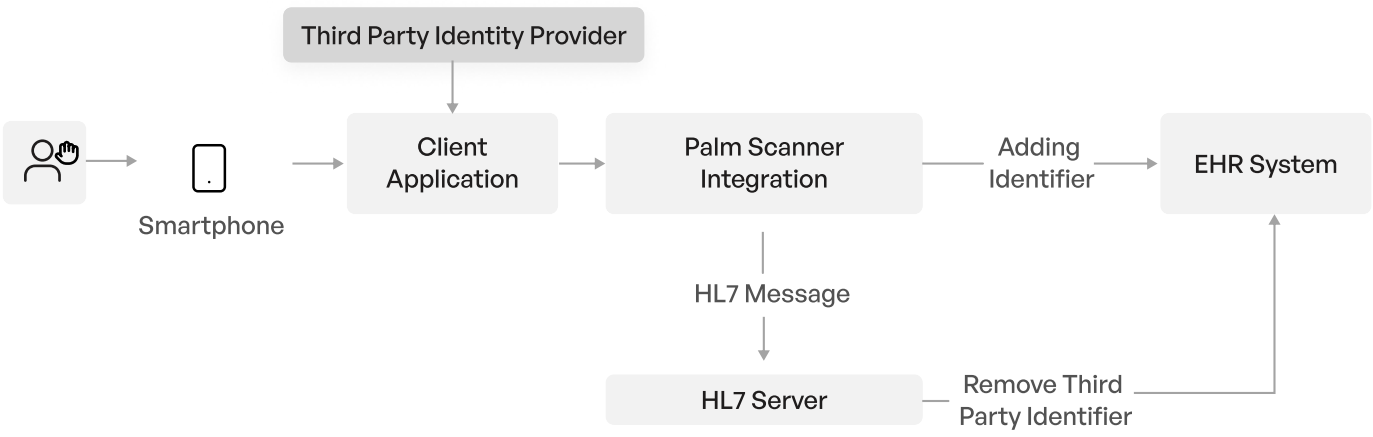
QBurst Solution: Palm-Based Identity Verification Integrated with EHRs

We developed a **secure, event-driven system** integrating palm-based biometric verification with EHRs to automate patient identification and check-in.

- Patients register once through a mobile app linked to a **trusted third-party identity provider** that handles authentication only.
- During subsequent visits, palm scans instantly trigger **automated workflows** that retrieve or deregister patient data securely in the EHR.
- All payloads are **fully encrypted** and processed via **AWS services**, ensuring privacy, compliance, and operational transparency.
- The **serverless design** ensures scalability and fault tolerance without maintaining continuous infrastructure.

Technical Highlights: Serverless, Secure, and Scalable

- Event-driven integration using Amazon EventBridge, AWS Lambda, and Amazon SQS
- Secure data encryption with AWS Key Management Service (KMS)
- HL7 standard compliance for seamless data interoperability
- Serverless background processes for cost-efficient scalability
- Built-in fault tolerance with dedicated failure queues and real-time monitoring through CloudWatch and AWS X-Ray



Impact: Faster, Safer, and More Efficient Check-Ins

- **60% faster check-ins,** reducing patient wait times from 2–3 minutes to under a minute.
- **Lower front-office workload,** allowing staff to focus on patient interaction.
- **Improved data accuracy,** minimizing manual errors in EHR entries.
- **Enhanced privacy and compliance,** with no personal data stored and all transmissions encrypted.
- **Scalable, event-driven foundation** ready to support expansion across multiple healthcare facilities.