CASE STUDY

Community Care Platform

US based customer has developed a platform designed to support senior-care organizations in delivering safe, responsive, and high-quality care to elderly residents. The system connects caregivers, nurses, and administrators through a unified interface while seamlessly integrating with wearable and environmental devices to ensure real-time visibility of resident well-being. In addition to the primary cloud-based solution, an offline/on-premise is also developed, which serves as a replica of the on-premise deployment.

Customer was looking for a development partner to implement large-scale modernization and architectural transformation initiative.

Solution

- SpringCT team studied the entire platform and started creating documentation for maintenance perspective. In parallel, the team worked on various new features that the platform was
- The initial phase involved rewriting the **Reporting Module** of an existing application within a tight timeline. To ensure smooth integration without disrupting the existing application, we proposed an **IFRAME-based rendering approach**, allowing reports to be embedded seamlessly while maintaining performance and isolation.
- This solution not only enabled in-application reporting but also supported **scheduled report delivery via email**, meeting business requirements efficiently. The approach delivered strong performance results, leading to high customer satisfaction and paving the way for additional project ownership.
- Subsequently, the project scope expanded to a **Node.js microservices modernization initiative**, where we proposed and drove a structured architectural approach to upgrade and standardize the system.

Product Features

- Embedded and high-performance reporting module integrated into the existing application
- Scheduled email reports for automated delivery
- Microservice-based backend architecture with 12–15 services
- Support for both cloud-based and on-premise deployments
- Integration with multiple third-party healthcare device vendors
- Scalable backend supporting increasing team size and parallel development
- Improved maintainability, observability, and testability across services
- Integration with multiple vendor devices (wearables, bed sensors, room sensors)
- Real-time capture of movement, health events, system events
- Centralized event logging for auditing and care insights
- Detailed reports: resident check-ins, staff logins, health & system events
- Scheduled report delivery for Admins and senior management
- Data-driven insights for quality monitoring and compliance documentation

Technology Used

- .NET Framework 4.7.2, ZMQ, Protobuf
- Ionic (Angular), Node JS, Microservice Architecture, RabbitMQ, MySQL, Redshift, Redis, AWS, Kubernetes, AWS SQS, Grafana

Key Technical Achievements

- Designed and delivered a lightweight IFRAME-based reporting architecture, enabling rapid delivery under tight timelines
- Led the Node.js modernization initiative, upgrading services from mixed Node versions (6, 14) to LTS Node
- Drove complete migration from JavaScript to TypeScript for improved type safety and maintainability
- Established strong engineering standards by introducing, Linting, Prettier, Husky, Changelog
- Strict parameter validation using Zod
- Integrated SonarQube for code quality and security analysis
- Implemented CI/CD pipelines, improving deployment reliability and development velocity
- Refactored services into a modular, maintainable architecture