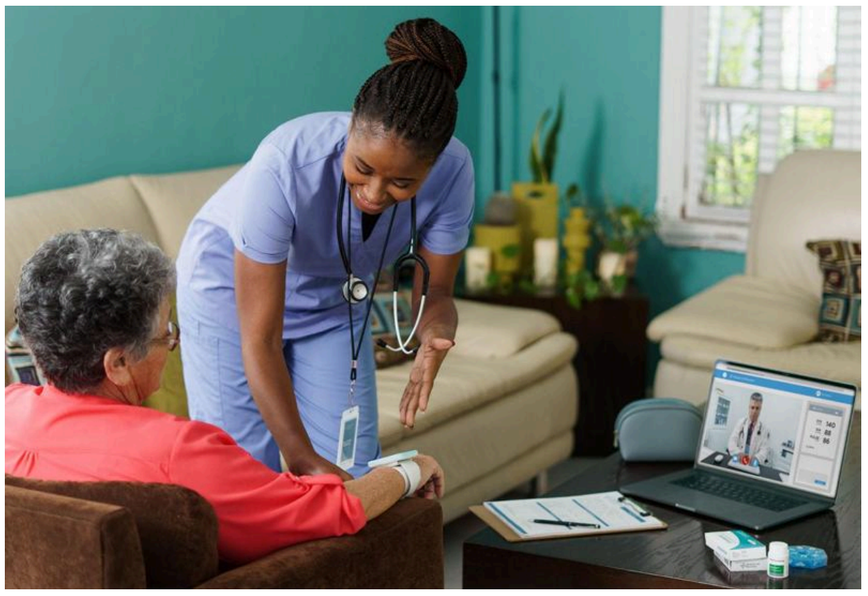
CASE STUDY

Continuum Care Solution



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

- As part of solution, we developed media server-based solution to establish multiple virtual consultation sessions running in parallel where clinician will help patients to setup the call.
- The platform enables healthcare practitioners to remotely view and diagnose patients' condition by using state of the art multimedia and collaboration technologies.
- Each virtual consultation session has the capability to connect to multiple devices for receiving audio/video and discrete data input.

Product Features

- Developed a web-based telemedicine solution, where doctors can check remote patient accurately with help of medical devices
- Solution involved a console that is operated by care giver for the patient for having remote consultation with provider
- Console supports devices for vitals like SpO2, Heart Rate, NIBP, Weight, Temperature, Glucose, Respiration, ECG, Stethoscope and SpCO
- Near real time display of vitals to the doctor at remote end
- Telehealth session recording and playback along with vital measurements
- Integrated APIs for drug database, drug strength ICD codes etc.
- Developed digital prescriptions
- Patient clinical data management including medications (Rx), clinical notes, orders, allergies, and prior medical records
- Integrated secure payment gateway for consultation and services
- Automated patient notifications via WhatsApp and email for appointments and follow-ups
- Bulk patient onboarding and data upload
- Physician-driven session scheduling with configurable availability and slot-based appointment booking

Technology Used

- PHP, MongoDB, Angular, RabbitMQ
- AWS, Azure storage, GCP, microservices
- Payment gateway integration - RazerPay

Key Technical Achievements

- Deployed cloud-based backend on GCP with dev/stage/prod isolation and production-ready deployment practices.
- Designed and implemented horizontal scaling for Kurento Media Server, enabling dynamic allocation of media workloads based on active sessions.
- Designed and hardened WebRTC infrastructure (STUN/TURN using Coturn) to ensure reliable real-time audio/video connectivity.
- Implemented end-to-end TLS across application services, TURN servers, and third-party integrations.
- Enforced least-privilege firewall rules and network segmentation, reducing attack surface.
- Built a secure Razorpay payment system with server-side order creation and payments.
- Integrated cloud-native object storage (GCS) for scalable handling of user uploads and media assets.
- Implemented gcsfuse-based filesystem mounts to expose object storage to application services where POSIX access was required.
- Resolved FUSE permission, mount persistence, and reboot recovery issues, ensuring reliable storage availability in production.
- Integrated SendGrid transactional email with authenticated domains (SPF/DKIM), dynamic templates, and delivery failure handling.
- Implemented WhatsApp transactional notifications.
- Debugged and resolved network, TLS, storage, and service-startup failures using protocol-level inspection and system tooling.