

Healthcare Interoperability at Scale: Standards-Based EHR–PMS Synchronization

About the Client

Our client is a fast-growing, US-based dental practice network running a primary EHR alongside a separate Practice Management System (PMS).

They needed **secure, standards-based interoperability** so clinicians could view and update patient data such as medications and procedures in real-time across both systems.

Challenge

- **Bidirectional sync for interoperability:** keep EHR and PMS data consistent and up to date at the point of care.
- **Standards and compliance:** implement HL7 FHIR interoperability under strict security and regulatory requirements (HIPAA/GDPR).
- **Identity & access:** unify authentication/authorization across on-prem and cloud systems with SSO.
- **Operational reliability:** provide auditable logs, monitoring, and governed change without disrupting clinical work.



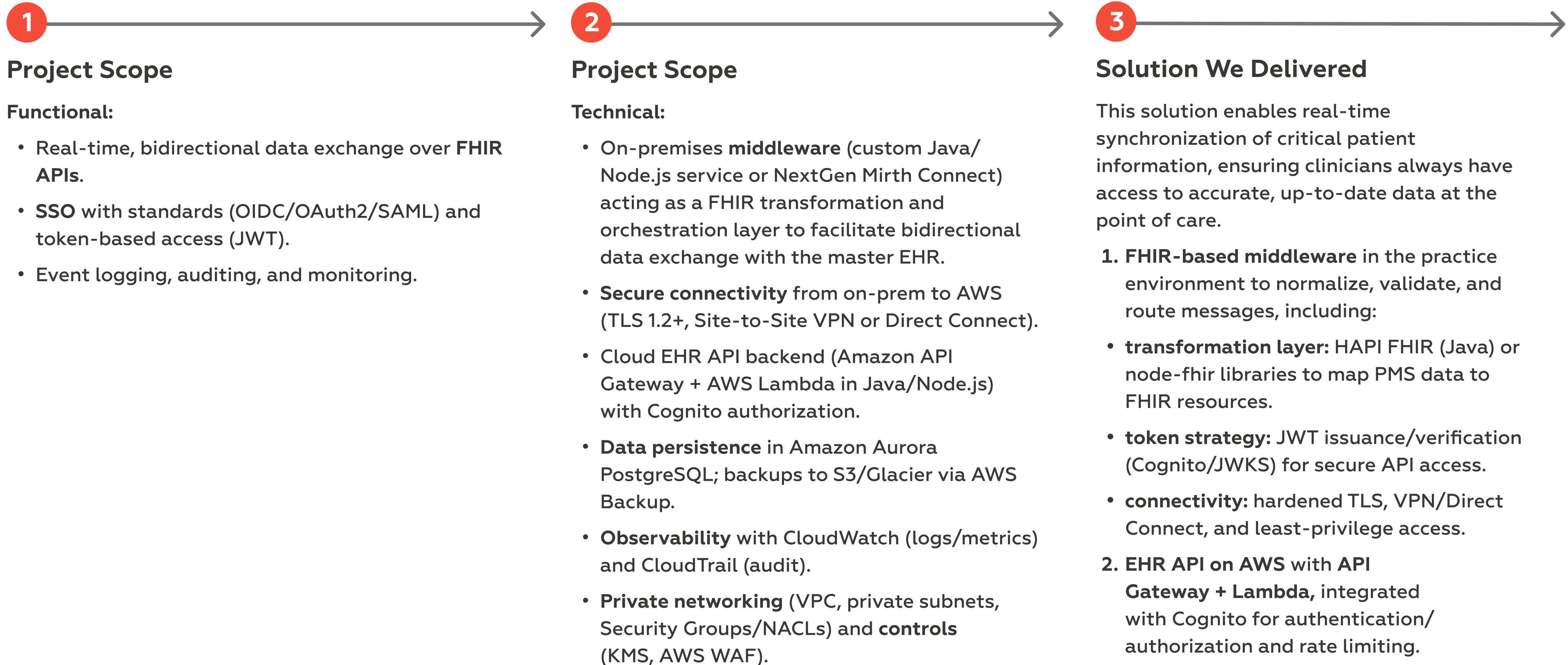
Team Composition

- Lead Engineer
- 2 Backend Engineers
- DevOps Engineer
- 2 QA Engineers
- Business Analyst
- Project Manager
- Architect

Industry

Healthcare

Project Overview

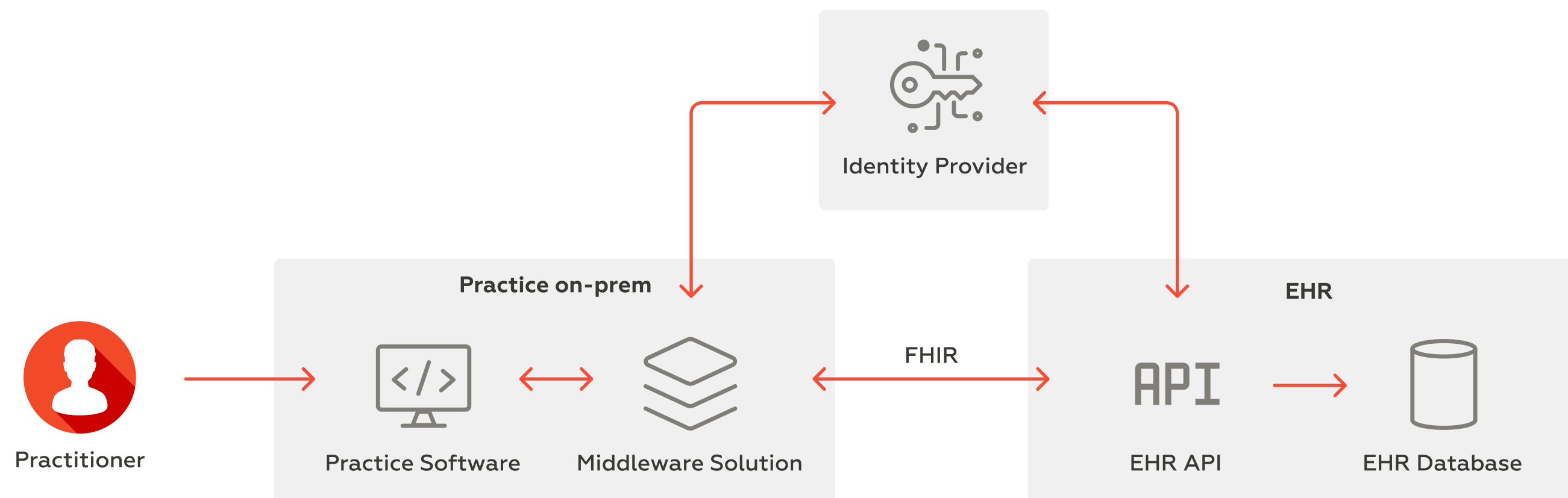


Project Overview

4

Solution We Delivered

3. **Identity federation** with common IdPs (Okta, Azure AD, Auth0, Keycloak) to provide SSO across on-prem apps and cloud services.
4. **Observability & governance:** Centralized logging, auditing, and alerts; change control and rollout playbooks.
5. **Deployment options:**
 - **custom executable/daemon** (Java Spring Boot JAR or Node.js service) on practice desktops/servers, or
 - **Mirth Connect** as the integration engine where third-party tooling is preferred.



5

Output

With this solution we:

- Enabled **real-time access** to synchronized clinical data (medications, procedures) across EHR and PMS.
- **Standardized data exchange** with HL7 FHIR, minimizing custom integrations and long-term maintenance risk.
- **Unified access and security** through SSO, JWT-based authorization, encryption, and full auditability.
- **Increased operational reliability** with centralized monitoring, alerting, and backups.
- Built an **extensible integration layer** that simplifies onboarding new clinics, vendors, or system modules.