

Project Design Phase
Solution Architecture

Date	14 March 2025
Team ID	PNT2025TMID00705
Project Name	TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning
Maximum Marks	4 Marks

Solution architecture

Solution architecture is a **strategic framework** that defines how a technology solution aligns with business objectives. It serves as a bridge between **business problems and technical solutions**, ensuring that all system components work together efficiently.

Key Goals of Solution Architecture:

1. Identifying the Best Tech Solution

Solution architects analyze the **business problem** and evaluate various **technological approaches** to determine the most effective solution. This includes selecting the appropriate **architecture pattern (monolithic, microservices, serverless, etc.)**, **technology stack**, and **infrastructure**.

2. Defining the Software Structure & Behavior

Solution architecture describes the **components, interactions, and operational behavior** of the system. It provides a **blueprint** for stakeholders, ensuring clarity on how the solution will function, scale, and integrate with existing systems.

3. Defining Features, Development Phases & Requirements

A well-defined solution architecture outlines:

- **Core Features:** The essential functionalities required to solve the business problem.
- **Development Phases:** A structured roadmap, including MVP (Minimum Viable Product), feature enhancements, and long-term scalability.
- **Solution Requirements:** Functional and non-functional requirements such as **security, performance, scalability, and compliance**.

4. Providing Specifications for Implementation

The architecture includes **technical guidelines** for software engineers, including API design, database schemas, deployment models, and system integrations. These specifications help teams build a **scalable, secure, and efficient** solution.

Conclusion

Solution architecture plays a crucial role in **aligning technology with business goals**. A well-defined architecture ensures that the solution is

scalable, cost-effective, secure, and future-proof, enabling organizations to achieve long-term success.

Example - Solution Architecture Diagram:

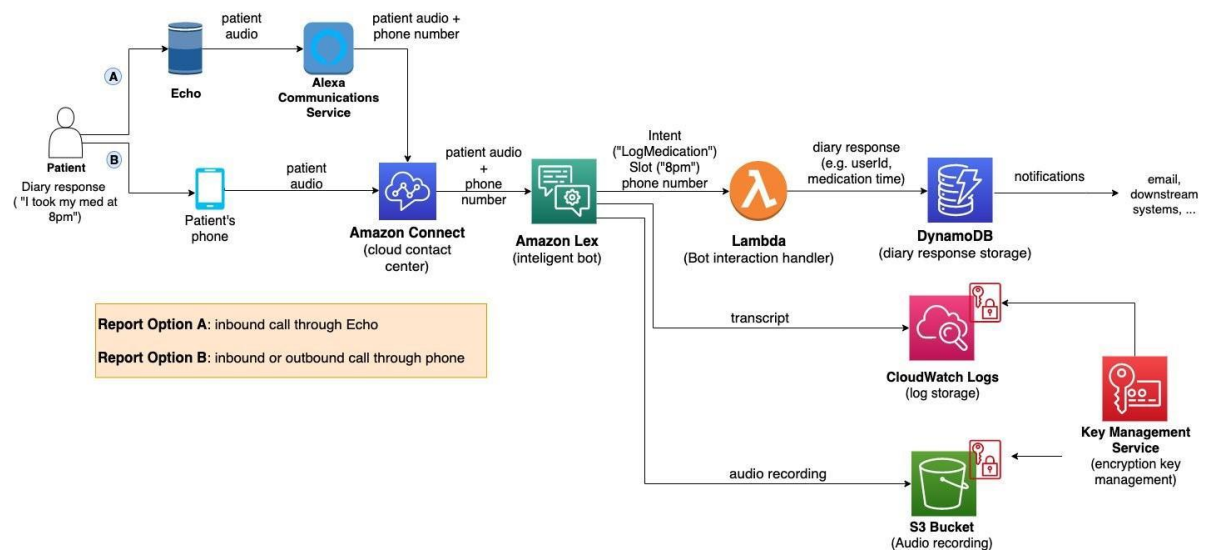


Figure 1: Architecture and data flow of the voice patient diary sample application

Reference: <https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/>