

# AIRS – Architecture Overview

## Purpose

AIRS (Automated Incident Readiness Score) is a cloud-native platform that evaluates organizational incident preparedness using deterministic scoring, framework mapping, and optional AI-generated narratives.

## High-Level Architecture

- Frontend: React (Vite) hosted on Firebase Hosting
- Authentication: Firebase Authentication with server-side ID token verification
- API Layer: FastAPI on Google Cloud Run (stateless, auto-scaling)
- Core Logic: Rule-based scoring engine, framework mapping, findings generator
- AI Services: Google Gemini used strictly for narrative generation
- Database: Cloud SQL (PostgreSQL) with Alembic migrations
- Storage: Google Cloud Storage (private bucket for PDF reports)

## AI Usage Boundaries

AI is used exclusively for narrative explanations. Scores, severities, and mappings are fully deterministic and auditable.

## Security Controls

- Authenticated access enforced for all write operations
- Tenant isolation per user and organization
- Secrets managed via Google Secret Manager
- CORS restricted to production domains only

## Deployment

Frontend on Firebase Hosting; backend on Cloud Run; database on Cloud SQL; storage on GCS.