

System Architecture Overview

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High-Level Architecture

ClearPath uses a microservices architecture deployed on AWS. Key components: React frontend, Node.js API servers, PostgreSQL database, Redis cache, S3 storage.

Frontend

React 18 with TypeScript, Redux for state management, React Query for API caching. Hosted on CloudFront CDN. Build process: Vite for dev, Webpack for production.

Backend

Node.js 20 with Express framework. Microservices: API service, webhook service, notification service, file processing service. Communication via RabbitMQ message queue. Deployed on ECS Fargate.

Database

PostgreSQL 15 (RDS) for primary data. Redis for session storage and caching. Elasticsearch for full-text search. Daily automated backups retained for 30 days.

Infrastructure

AWS: Application Load Balancer, ECS, RDS, ElastiCache, S3, CloudFront
Monitoring: DataDog for metrics, Sentry for error tracking
CI/CD: GitHub Actions, ArgoCD for deployments
Infrastructure as Code: Terraform