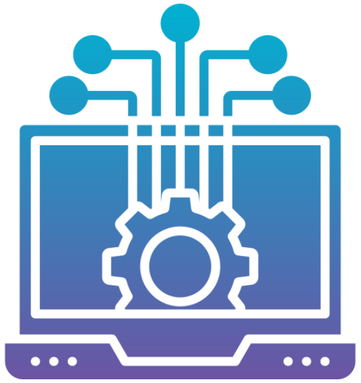
BUILDING A SCALABLE AND SECURE MEDICAL PLATFORM ON AWS

PROBLEM STATEMENT

- **Performance Bottlenecks**: On-premises infrastructure struggled during peak medical data processing (e.g., national health drives), causing delays in uploading and downloading large medical records.
- **Slow Access to Critical Data**: Delayed retrieval of patient information created service escalations from hospitals and clinics.
- **Limited Scalability & Availability**: Existing setup could not handle rapid user growth and lacked failover readiness.



SOLUTIONS OFFERED

- **Migrated workloads to AWS** using Amazon ECS (Fargate) for containerized hosting with Auto Scaling.
- **Implemented Amazon RDS (Multi-AZ)** for resilient database hosting and Amazon S3 for secure document storage.
- **Deployed AWS Lambda** for background processing and API integrations.
- **Secured workloads** using AWS WAF, AWS Secrets Manager, IAM, and ACM-managed TLS/SSL certificates.
- **Automated deployments** with AWS CodePipeline & CodeBuild and operational tasks with AWS Systems Manager.

BUSINESS OUTCOMES

- **Improved Performance**: Reduced latency for large file transfers and handled peak workloads without service degradation.
- **High Availability: Multi-AZ RDS** and ECS ensured continuous uptime and disaster recovery readiness.
- **Enhanced Security**: End-to-end encryption for data in transit and at rest, plus stronger access controls.
- **Operational Efficiency**: Automation reduced manual maintenance, and CI/CD accelerated release cycles.
- **Future Ready**: Architecture supports national-scale healthcare expansion and rapid feature integration