

SCALABLE HYBRID CLOUD ARCHITECTURE FOR A HEALTHCARE SAAS PROVIDER

Client Overview

Company: MediCore Systems, Inc.

Industry: Healthcare SaaS

Location: Chicago, IL

Size: 150+ employees | 6M+ monthly platform users

Challenge: Inflexible on-prem infrastructure, rising AWS bills, and HIPAA compliance risks.

The Problem

MediCore's legacy infrastructure was straining under the demands of their rapidly growing telehealth platform.

Key issues:

- Unpredictable AWS cloud bills due to auto-scaling inefficiencies
- Lack of redundancy across regions for compliance and disaster recovery
- Slow DevOps deployment cycles with manual provisioning
- Growing risk of HIPAA non-compliance due to inconsistent security controls

They needed a hybrid architecture that balanced performance, compliance, and cost-efficiency without disrupting their live production systems.

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The Solution by AI4IT Services

We designed and implemented a Hybrid Cloud Architecture leveraging on-prem compute with scalable AWS services.

🔧 Key Deliverables:

- **Cloud Readiness Assessment:** Evaluated workloads and separated mission-critical services from batch/offloadable tasks.
- **Hybrid Design Blueprint:** Built a multi-tiered architecture with secure VPN tunnels connecting their on-prem datacenter to AWS VPCs.
- **IaC Deployment:** Used Terraform and AWS CloudFormation to automate infrastructure provisioning, reducing deployment time by 75%.
- **Security Hardening:** Applied encryption-at-rest/in-transit, centralized IAM, logging, and HIPAA controls.
- **CI/CD Enablement:** Integrated GitLab pipelines with auto-scaling container environments (ECS Fargate).

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Metric	Before	After
Cloud Spend Variability	$\pm 38\%$ monthly	$< \pm 7\%$ monthly
New Environment Setup	3–5 days	~6 hours
DevOps Cycle Time	2+ weeks	< 3 days
Security Audit Compliance	68% pass rate	98%+ pass rate
Uptime During Migration	-	100% (zero downtime)

Client Testimonial

“AI4IT helped us modernize without breaking our systems or budgets. The hybrid design gave us speed, control, and compliance — and their automation cut our deployment cycles in half.”

— CTO, MediCore Systems



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Technologies Used

Cloud: AWS (VPC, ECS, CloudWatch), On-Prem VMware

IaC: Terraform, AWS CloudFormation

Security: IAM, AWS KMS, VPC Flow Logs

CI/CD: GitLab, Docker

Compliance: HIPAA, NIST 800-53

Services Provided

- ✓ Hybrid Cloud Architecture Design
- ✓ Infrastructure as Code (IaC)
- ✓ Security & Compliance Consulting
- ✓ Cloud Cost Optimization
- ✓ DevOps Enablement

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