



Bolstering and Scaling Proprietary Enterprise Cloud Software: A Node.js Adventure in Amazon Web Services

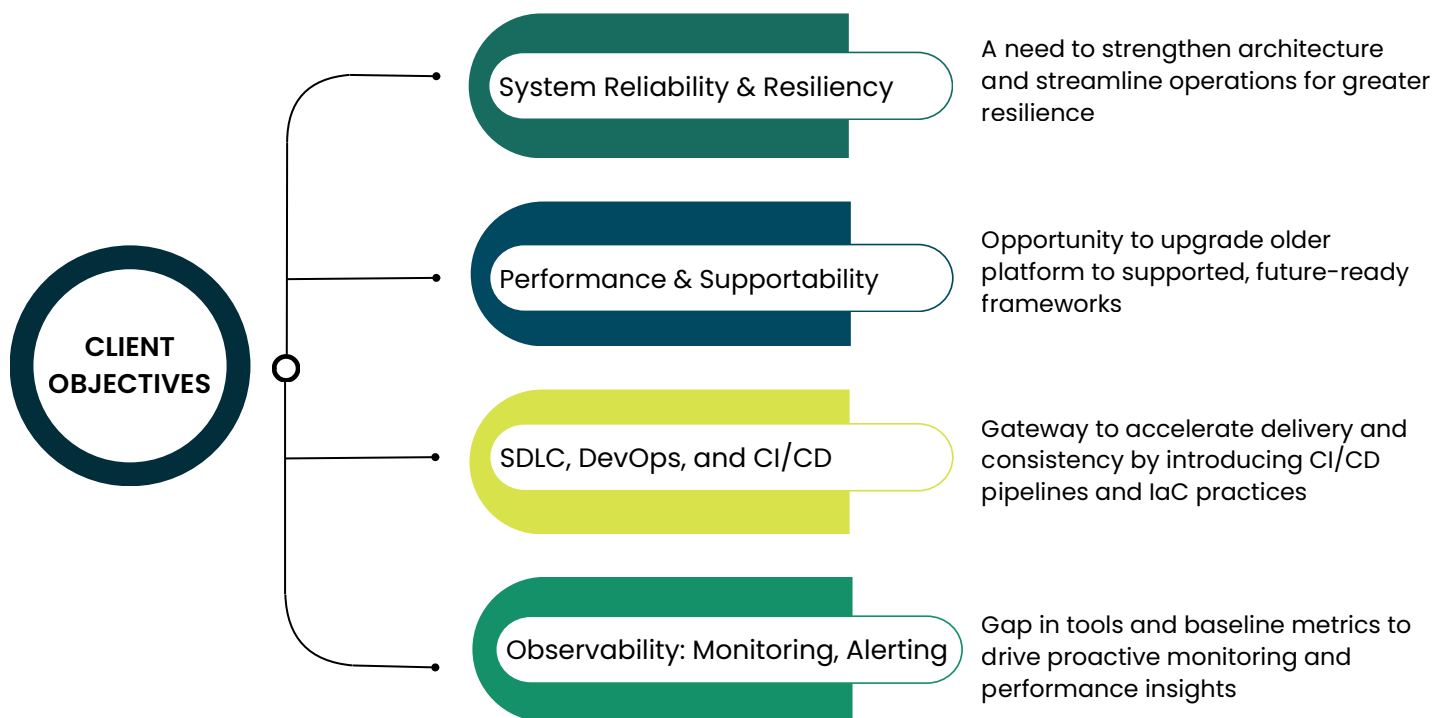
Case Study

Retooling for Tomorrow: Resilience, Scalability, Observability, and Performance —A LEAP STORY

SAAS & CLOUD ISVS

Case Study

Disruption often creates opportunity for transformation. After facing a prolonged outage, a leading SAAS platform turned to LEAP for a systematic review of their infrastructure, application code, cloud-native services, and SDLC. LEAP identified opportunities and partnered with the core product and operations teams to kickoff a series of major upgrades — modernizing their application’s core libraries, automating their release processes, and adding observability to both identify and troubleshoot problems.



OUR APPROACH



Uncover opportunities for resiliency through a deep technical audit and outage analysis.



Map a clear modernization path with a phased backend migration and best-in-class architecture.



Define a performance and monitoring strategy to boost observability and proactive issue detection.

SERVICE OFFERINGS



Technical Audit & Outage Analysis

Conducted a deep review of the platform's architecture, infrastructure, and CI/CD pipelines, including postmortem analysis of a major outage to identify technical debt and opportunities for improvement.



Architecture & Modernization Roadmap

Developed recommendations for system improvements, including upgrading aging frameworks, introducing infrastructure-as-code practices, and enhancing automation.



Backend Migration Planning

Designed a structured implementation plan to transition from an unsupported backend framework to a modern architecture with modular design and best practices.



Performance Testing Framework Design

Scoped a strategy for stress and load testing using Dockerized K6 scenarios to baseline performance across key business processes.

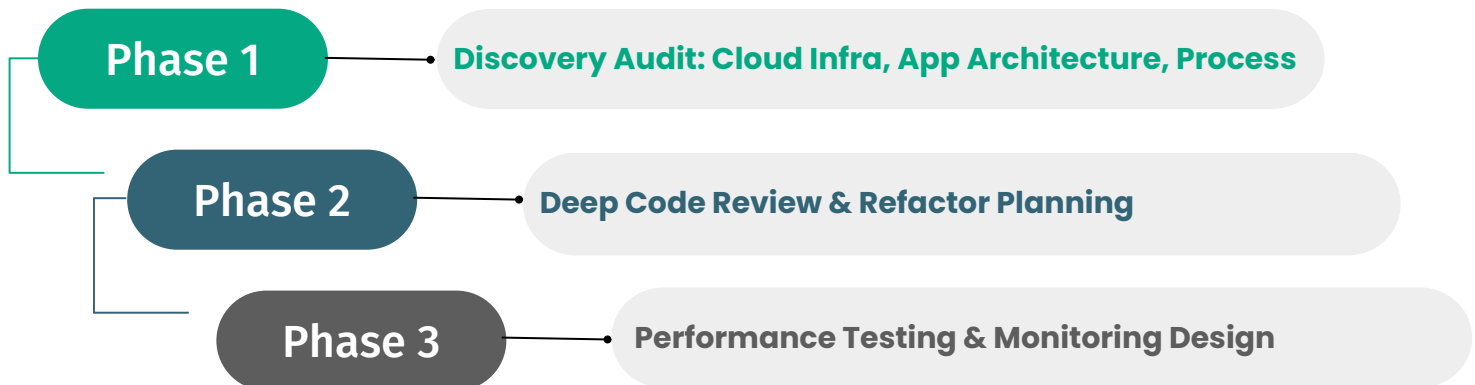


Monitoring & Observability Strategy

Outlined an approach leveraging AWS and Datadog to strengthen monitoring, troubleshoot issues, and improve proactive detection of system failures.

PHASE ANALYSIS

LEAP provided a *structured, phased* approach towards modernization – enabling the tech solutions company to efficiently adapt to new changes and work towards continuous improvement.



LEAP Preliminary Analysis Focused on the Following Areas:

System Architecture & Design

- Architectural diagram of overall platform system
- Data flow and workflow diagrams, including interactions with MongoDB, Redis, and DynamoDB
- API specifications with request and response examples
- Analysis of cold storage process and related documentation

Infrastructure & Resource Configuration

- Reviewed ECS (Elastic Container Service) configuration including:
 - Number of clusters and containers/nodes
 - Task definitions and networking configurations
 - Scaling rules & policies
 - Memory allocation per service
- Investigated data storage systems:
 - Multiple NoSQL DBs
 - Caching Layers
 - Cluster or instance configuration, including replication and sharding
 - Schema descriptions covering structure, relationships, constraints, and indexes

Outage & Logging

- Reviewed Root Cause Analyses (RCAs) related to recent outages or system crashes
- Analyzed system logs and backend metrics before and during outage events
- Collected performance data including:
 - CPU and memory usage on backend nodes/instances
 - Average response times for database queries
 - Average API response times

PHASE 1: DISCOVERY AUDIT – CLOUD INFRA, APP ARCHITECTURE, PROCESS

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In a fast-moving digital world, LEAP helps organizations turn disruption into opportunity. In Phase 1, we conducted a postmortem analysis of the company's platform outage – pinpointing areas for modernization in the client's application, architecture, and deployment pipelines. This clarity set the stage for smarter upgrades and stronger performance at scale.

Result

Enabled the client to focus resources on the most impactful improvements by uncovering and prioritizing system bottlenecks.



Deliverable 1

Postmortem analysis of production outage, driving framework for recommendations



Deliverable 2

Presentation of recommendations, including the need for upgraded Node.js framework and CI/CD automation



Deliverable 3

Proposal for application decomposition to support scalability

PHASE 2: DEEP CODE REVIEW & REFACTOR PLANNING

In Phase 2, LEAP developed a clear roadmap to modernize the client's platform. By moving from an unsupported backend to a MVC architecture, we introduced best practices in modular design and testing—laying the foundation for faster innovation and smarter scaling.

Result

Equipped the client's team with a clear modernization roadmap that accelerates delivery and strengthens long-term scalability.



Deliverable 1

Separation of concerns using Models, Repositories, Services, and Controllers



Deliverable 2

Detailed engineering plan for the migration



Deliverable 3

Post-migration plan for improved performance, observability, and maintainability

PHASE 3: PERFORMANCE TESTING & MONITORING DESIGN

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In Phase 3, LEAP designed a path toward stronger resilience by scoping a performance testing framework and monitoring strategy. By defining observability and baseline metrics for real-time system health, we encouraged the client to detect issues earlier and respond with greater speed and confidence.

Result

Empowered the organization with proactive monitoring and testing strategies to safeguard reliability and performance.



Deliverable 1

Performance testing framework using test scenarios for load/stress testing



Deliverable 2

Baseline performance report to analyze performance across three business scenarios



Deliverable 3

Monitoring design package, including the necessary architecture for proactive system monitoring

Does this story resonate with the challenges you are navigating?

We want to hear from YOU!

Transformation is a partnership, not a one-time fix. At Leap, we know that every organization encounters moments of disruption, and we specialize in helping leaders turn those moments into opportunities for growth. Let us help you get it right and get there *Faster*.

Like what you see? Contact starthere@leapcg.com or visit leapcg.com

Why Leap?

Our team of industry veterans and subject-matter experts bring decades of hands-on experience to every partnership to accelerate growth and maximize impact.

Drawing on a deep understanding of operational complexities and market demands, we'll position you for success, whether you're scaling up from current momentum or just starting to break ground.

Leadership



JOSH
Managing Partner



ANTONY
Head of Delivery



RAINA
Practice Lead



STEVEN
Practice Principal



HEATHER
Practice Principal



YURIY
SME Consultant



SADE
Practice Principal



DEBRA
External Affairs

50+

Professionals, led by
industry & domain experts

8

Full-time
Practice Leads

25

Full-time
Engineering Professionals

INDUSTRIES

DIAGNOSTICS &
LIFE SCIENCES

TELECOM
& MOBILE

BANKING & INSURANCE

SAAS &
Cloud ISVs

DIGITAL CXO ADVISORY SERVICES

SUPPLY	DEMAND	CONNECTIVITY	PLATFORMS	ARCHITECTURES	INFO SEC & COMP	GOVERNANCE	M & A
- Functional Groups - Leaders - Skillsets & Teams - Staff Aug & Vendors - On Shore/Off-Shore	- Clients & Sponsors - Sources of Demand - Demand Planning - Track Commitments	- Voice & Data Telco - LAN/WAN/VAN - Client & Vendor EDI - Remote Work & CTI	- Colo vs. Cloud - IaaS vs. PaaS - Custom vs. COTS - Infra & Cloud Ops	- Biz & Data Arch. - Enterprise Arch. - System Arch. - Event & Data Maps	- Perimeter Security - Identities & Access - Apps & Storage - Audit & Docs	- Strategic Goals - Roadmaps Release - Plans Mgmt - Reporting	- Diligence - Plan - Integrate

TURNKEY TECHNOLOGY DELIVERY SERVICES

Needs Assessment	Requirements	Sourcing & RFPs	Program Management	Prototyping PoCs	Hardware Build	Mobile Native Apps
Incubation Ideation	Tech Design	Consumer Web	Vendor Management	Release Planning	Enterprise S/W	Org. Change Mgmt & Go-to-Market

Want To See How Fast You Can Move?

Let's talk about your roadmap.

Contact us at starthere@leapcg.com
or visit leapcg.com to schedule a
30-minute strategy session with
LEAP's transformation team.