Cloud-native modernization and AWS migration by US Media leader turbocharges innovation and cuts cloud costs

Case Study

SINCLAIR
BROADCAST GROUP

aws partner network | **SaaS Architecture Competency**

Empowering Innovation & Efficiency in US Media

Amidst the dynamic landscape of digital advertising, a prominent US media leader, driven by a mission to revolutionize ad strategies, embarked on a transformative journey.

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INDUSTRY

AdTech, Technology

SOLUTION

Comprehensive modernization plan: migrating to AWS, implementing microservices, and improving security and compliance resulting in increased uptime, infrastructure improvements, and streamlined operations while adhering to AWS best practices.

CLIENT

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Our client, a prominent publicly traded US media conglomerate, acquired a VC-funded tech startup with a successful digital campaign performance & analytics platform. Strong adoption had proved product-market fit via omnichannel support for web, mobile, social, and TV ads for large advertisers. Between one-stop shopping for media buys, bid automation, and incisive analytics, the start-up's agency and brand customers rapidly realized its advantages in pursuit of greater advertising ROI.

Unlocking new potential with existing applications means a targeted, phased approach to resolve three major constraints:

1. Reduce costs and risks of reliance on functionality of legacy;
2. More easily add new features today to meet tomorrow's business opportunities;
3. Enable synergies by lowering barriers to integration between systems developed separately.

Given its strategic importance, M&A shines a bright light on all three of these. The imperative: to make the most of capabilities unique to the business by reinforcing upgrading technologies that made success possible to begin with.

Cloud-Driven Innovation Acceleration

Sinclair Broadcast Group a US media giant revolutionized digital advertising through **AWS migration**. This move enhanced agility, scalability, and cost-efficiency, propelling the company ahead in the digital advertising realm.

Data-Driven Agility

Transformation journey of a prominent US media leader by modernizing its digital campaign performance and analytics platform. Through a strategic migration to AWS and adoption of microservices architecture, the company overcame legacy constraints, streamlined operations, and empowered rapid innovation.

Seamless Integration

Integration of a tech startup with a media giant. See how AWS migration and microservices architecture drove innovation, scalability, and competitive advantage in digital advertising.

CloudGeometry

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The Challenge

As a technical systems integrator, CloudGeometry took on integrating the startup's innovative yet nascent technology with the enterprise best practices of the acquiring company. A particular challenge: the rapidly expanding backlog of desired feature changes. Informal decisions taken across multiple pivots in pursuit of product-market fit prior to the acquisition unintentionally created a level of technical debt incompatible with accelerated business innovation, such as: Onboarding a new customer required manual configuration, testing, and deployment.

- New feature asks were backlogged for months, undermining competitive differentiation.

- Hard limits to scalability too often caused downtime rooted in single points of failure.

- Self-serve applications' UI/UX was outdated compared to industry expectations.

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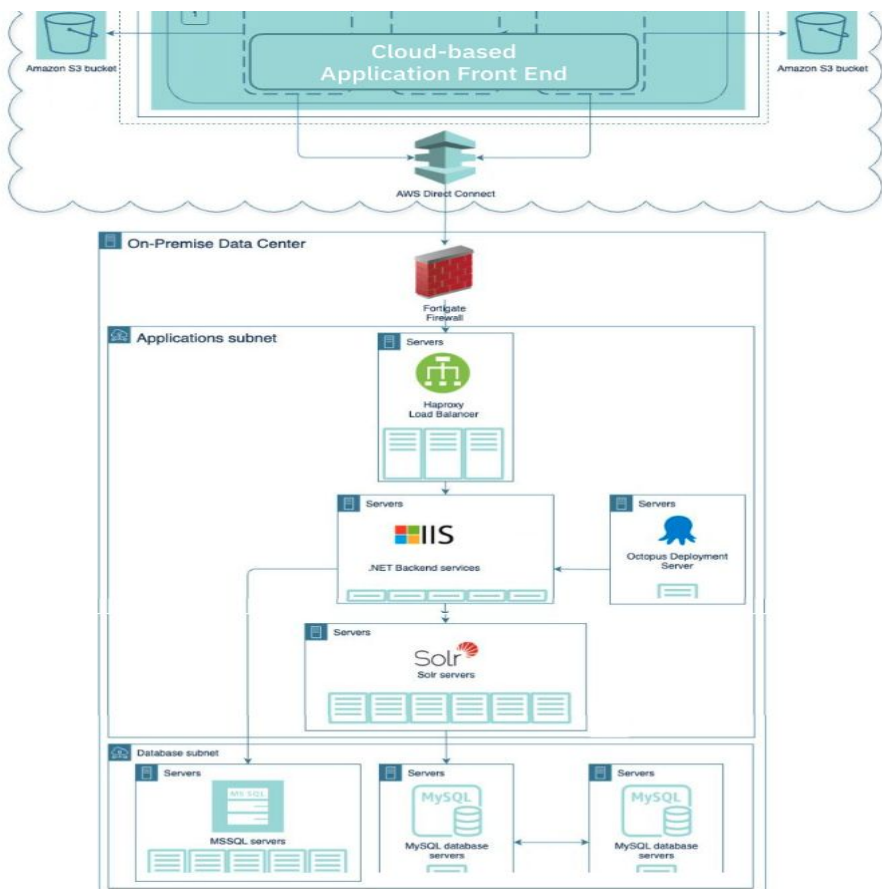
The Challenge

Behind these limitations were numerous technical constraints, with components not suited for scaling out new development of cloud applications.

- A monolithic architecture with components developed in mix-and-match programming languages, including Python, NodeJS, C++/.NET, and Go.

- Non-SQL data growth compounded scalability and reliability problems.

- Design limitations were not suited to the increasing variety of data consumers and data science research initiatives.

- Conflicting infrastructure constraints created needless fragility, stemming from different approaches to solving the same problem in different ways.

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The Solution

CloudGeometry engineers and systems architects crafted a roadmap for navigating the complex terrain of platform modernization, application upgrade, enterprise-grade compliance, and security. The technological overhaul emphasized a strategic migration to AWS, focusing on adopting microservices architecture to enhance scalability and agility. The plan aimed to both eliminate existing bottlenecks & create a foundation for future-proofing the platform for rapid innovation.

- **Migrating from the legacy physical data center infrastructure to AWS:** Eliminated the significant administrative burden of database management, as well as single points of failure tied to data movement & machine reliability, using AWS-hosted SQL Server instances, using High-Availability best practices boosting business uptime to 99.9%.

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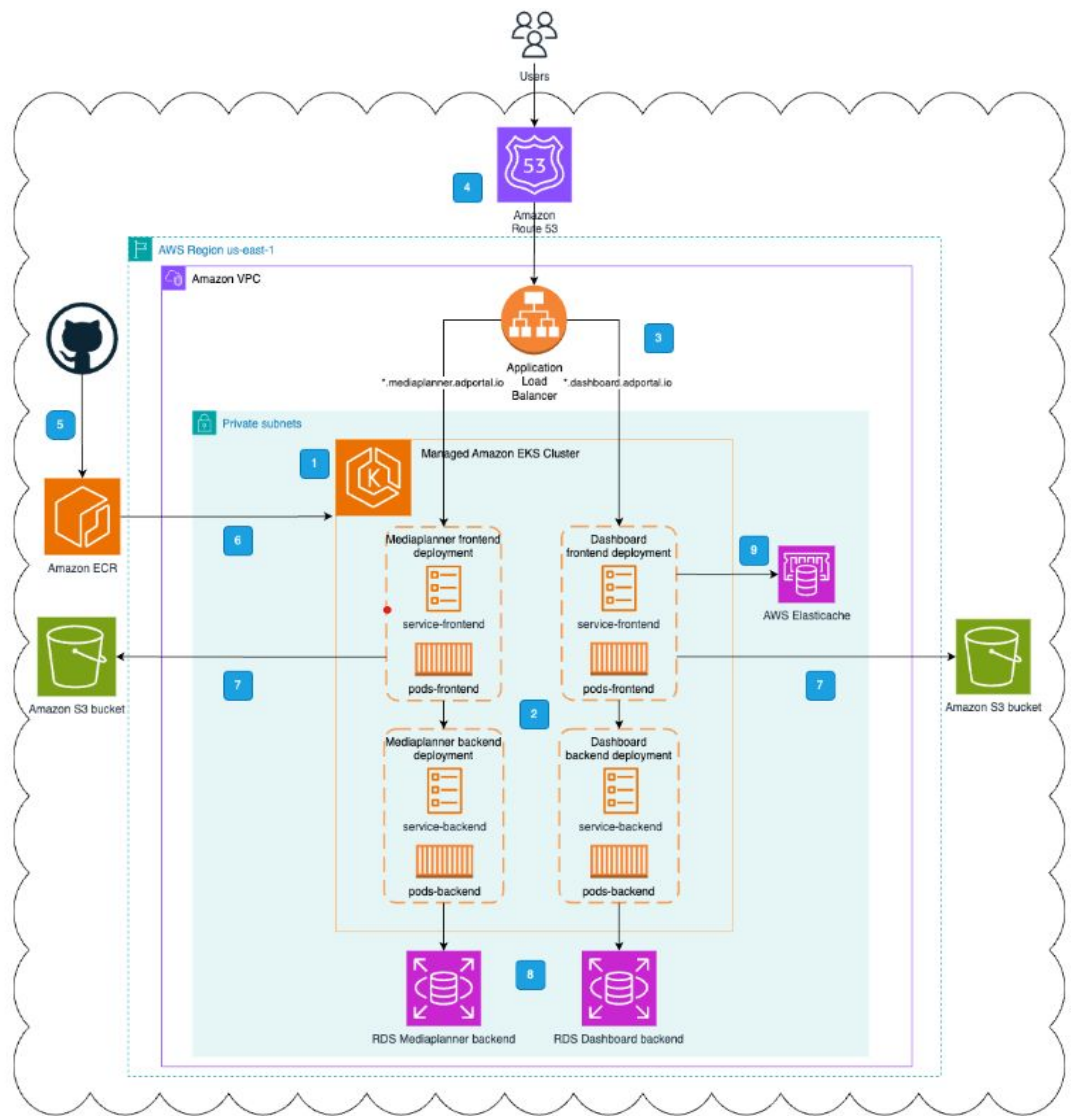
The Solution

- **Replatforming back-end data servers to a data lakehouse:** The business data team rewrote data processing rules with DataBricks Spark libraries. New pipelines were validated for data integrity and performance against previous methods.

- **New data analytics services:** By consolidating loosely organized, server-based .Net and multiple programming languages written over more than a decade, CloudGeometry reapplied updated business requirements into a cloud-ready platform. A new **AWS RDS MySQL** RDBMS backend publishes modern graphQL APIs, with **NodeJS** running on **AWS Lambda** to cut costs, running only as needed.

- **New integration-ready enterprise-grade services offering:** Building with node.js and GraphQL APIs retrofitted enterprise readiness with secure multi-tenancy and SSO for compliance supporting the launch of a new subscription-based digital advertising service for both small advertisers and large agencies.

- **Infrastructure re architected to eliminate systems-level risks to business value** Using the best practices of the AWS Well-Architected Framework, CloudGeometry remediated systems vulnerabilities via proven up-to-date technical strategies:

Security: Integration of security checks in CI/CD; Least privilege IAM configurations to apply zero trust to internal cloud services.
Cost Optimization: Guardrails for upstream Dev, QA, Stage to flag idle services; streamline access to lower cost "golden configs" outside production.
Reliability: Infrastructure as Code for better governance of changes, avoidance of snowflake configs; logging standards for faster, more transparent root-cause.
Performance efficiency: Resource feedback loop for compute, storage, and network, via **AWS-managed Prometheus** monitoring, alerting and autoscaling.
Operational excellence: Rapid assimilation of lessons learned across teams & SDLC processes, delivering via GitOps w/ ArgoCD integration in end-to-end CI/CD.

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The Benefits

By leaning into both application modernization and cloud migration, the combined entity of the startup and the acquiring company achieved successful integration at both systems and business levels. As the technical systems integrator, CloudGeometry played an essential enablement role. Key benefits included:

- An overhaul of **proprietary connectors and scripts**, providing modular and maintainable connectors to cutting-edge Demand Side Platforms (DSP) like Google AdWords, Facebook, and Groundtruth.
- **Improved application development productivity** by more than an order of magnitude, thanks to a microservices architecture designed for tenant context reference.
- Unified data **infrastructure eliminating conflicting business operations tools**, ensuring a consistent system for evaluating business performance and customer operations.

This strategic approach to modernization **enabled the client to unlock new business opportunities** and establish a durable competitive edge in digital advertising.

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Technology Solutions & Services
to build, optimize and run your cloud software and operations.

CloudGeometry

TECHNOLOGY SOLUTIONS

APPLICATION MODERNIZATION
Transform Legacy Systems
for Future-Ready Innovation

CLOUD COST MANAGEMENT
Optimize Cloud Spending
for Maximum ROI and Efficiency

AI & DATA
Achieve breakthrough automation and analytic
insights via cutting-edge data strategies

SECURITY AND COMPLIANCE
Reinforce your cloud infra, workload,
operations, and development end-to-end

FOUNDATION SERVICES

CLOUD INFRA & OPS
Robust Infrastructure Solutions for Seamless
Operations

- DevOps as a Service
- Managed Cloud Operations
- Cloud Spend Optimization
- Resilience, Continuity & Backup
- AWS Well-Architected

MODERNIZATION & MIGRATION
Smooth Transitions to Modern Architectures
with Minimal Disruption

- Application Modernization
- Kubernetes Adoption
- AWS Database Migration
- Data Engineering Operations
- Data Integration
- Data Migration
- Cloud Migration & Adoption

ADVANCED SERVICES

CLOUD-NATIVE DEVELOPMENT
Build Scalable, Resilient Applications with
Cloud-Native Technologies

- CI/CD
- Multi- Platform App Design &
  Development
- Cloud-Ready Teams
- Enterprise SaaS Modernization
- Multi-Tenancy SaaS
- B2B Customer Success Engineering

CLOUD-NATIVE OPERATIONS
Streamline Operations with Advanced
Cloud-Native Practices

- Platform Engineering
- Workload Management
- Monitoring & Observability
- Infrastructure Management

AI/ML & DATA SERVICES

AI/ML & DATA
Leverage Advanced Analytics and Machine
Learning to achieve exponential acceleration in
the ROI of your data assets

- AI/ML Engineering for Data Analytics
- Generative AI
- Traditional ML for Data Analytics
- AI/ML Development and and Data Science
- Data Engineering for MLOps

CloudGeometry

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Prague
Cluj-Napoca
Montenegro
New York
San Francisco
Tel Aviv

CloudGeometry delivers expert technical services, helping our clients unlock the full potential of cloud-native open source tooling and commercial platform technologies.

With roots in Silicon Valley, we've seen firsthand what works (and what doesn't). Count on CloudGeometry to accelerate application modernization, Kubernetes adoption, developer enablement, secure multi-tenancy, AI/MLOps, DevOps automation and more.

- As **AWS Advanced Consulting** partners, our certified solution architects and platform engineers help address the range of challenges facing enterprise innovators and venture funded startups alike.

- The **Cloud Native Computing Foundation** has accredited us as a **Kubernetes Certified Service Provider**.

- We serve as charter contributors to the **Linux Foundation Data & AI Commons** (LF Data & AI), supporting a diverse, sustainable ecosystem for open source data and AI technologies.

Over the last decade, we've built and deployed hundreds of big, fast full-stack apps with well-engineered cloud infrastructure across industries: Financial Services, Industrial Automation, Healthcare, AdTech, Consumer-grade Mobile, smart devices, and more.

From enterprise upgrades to data engineering to cloud-native scale-out, CloudGeometry helps you plot the shortest path across all dimensions of modern cloud software engineering.

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