Case Study: Cost-Optimized AWS Infrastructure for Orion Group: Scalable, Resilient, and Efficient Cloud Operations

Case Study Short Description

Graaho Technologies helped Orion Group, one of Bangladesh's largest industrial conglomerates, optimize their AWS infrastructure by reducing costs, modernizing databases, right-sizing resources, and enhancing operational governance through tailored cloud strategies.

Problem Statement / Definition

Orion Group, a leading industrial conglomerate in Bangladesh with 18,000 employees across sectors including pharmaceuticals, infrastructure, and power, faced rising AWS expenses due to decentralized resource usage, inefficient region allocation, and an overreliance on on-demand pricing. Their legacy configurations and underutilized cloud assets contributed to escalating costs and performance bottlenecks, demanding a strategic, scalable optimization approach.

Proposed Solution & Architecture

Graaho Technologies, an AWS Partner, conducted a comprehensive review of Orion Group's AWS infrastructure. The solution focused on:

- **Region Optimization:** Identified unnecessary use of multiple AWS regions and consolidated workloads to cost-effective regions aligned with service requirements.
- **Pricing Model Optimization:** Transitioned from exclusive on-demand usage to a mix of Savings Plans and Reserved Instances (1-year and 3-year terms) for EC2 and RDS.
- **Snapshot Management:** Audited and deleted obsolete EBS snapshots, retaining only tailored snapshots required for compliance and operational recovery.
- **Database Modernization:** Migrated outdated and incompatible databases to modern versions of Amazon RDS for MySQL with savings plans, improving performance and reducing costs.
- **Storage Optimization:** Right-sized EBS volumes and Amazon S3 storage classes, aligning usage with actual application demands.
- **Elastic IP Management:** Released unused Elastic IPs, preventing idle cost leakage.

Architecture Components Used:

- Amazon EC2 with Auto Scaling
- Amazon Elastic Load Balancer (ALB)
- Amazon RDS (MySQL)
- Amazon ElastiCache (Redis)

- Amazon EBS
- Amazon S3
- Amazon VPC
- Amazon CloudFront
- Amazon Route 53
- Amazon CloudWatch
- AWS IAM
- AWS WAF & AWS Shield
- AWS DMS

Outcomes of Project & Success Metrics

- Reduced overall AWS spend by **30%–40%** through the adoption of Savings Plans, Reserved Instances, and elimination of unused services.
- Decreased snapshot-related storage costs by **60%** by removing over **2.9 TB** of redundant data and applying lifecycle policies.
- Improved EC2 cost efficiency by **right-sizing 80%** of instances and shifting workloads to lower-cost instance families (e.g., t3/m5).
- Achieved up to **50%** reduction in network-related costs by decommissioning idle VPN connections and unassigned Elastic IPs.
- Enhanced database performance and stability by migrating to optimized RDS instance types and applying reserved pricing models, resulting in **25–30%** DB cost savings.
- Implemented Auto Scaling Groups with dynamic policies to manage compute workloads based on demand, increasing elasticity and performance.
- Improved operational visibility using CloudWatch dashboards and proactive alerting, enabling real-time resource and cost monitoring.

Total Cost of Ownership (TCO) Analysis Performed

A comprehensive TCO analysis revealed several optimization opportunities across Orion Group's AWS infrastructure:

- High reliance on on-demand instances led to unpredictable compute costs, which were stabilized through long-term pricing commitments.
- Unmanaged snapshot storage resulted in compounding costs, now controlled via retention policies.
- Misaligned compute resources and lack of tagging hindered cost allocation and visibility.
- Post-optimization, the organization saw a TCO reduction exceeding 40%, supported by:
  - Migration to reserved capacity and savings plans.
  - Storage class transitions and EBS volume right-sizing.
  - Service decommissioning and region consolidation.

These improvements resulted in a predictable, scalable, and financially efficient cloud environment aligned with Orion's mission to drive sustainable national development.

Lessons Learned

- Multi-region usage must be aligned with actual business needs to avoid redundancy and additional costs.
- Snapshot lifecycle management is critical to avoid silently compounding storage costs.
- A mix of on-demand and reserved pricing models provides optimal flexibility and savings.
- Even small cost areas like Elastic IPs can cause leakage without governance.
- Continuous monitoring is essential to ensure lasting optimization.

Industry Vertical

Conglomerate / Industrial

Industry (Other)

Manufacturing, Real Estate, Infrastructure, Pharmaceuticals, Power, Retail

Use Case

AWS Cost Optimization, Cloud Migration, Infrastructure Modernization

ISV Tools and Technology Used

AWS native services (CloudWatch, IAM, WAF, Shield, and DMS)

Related Services

- AWS Compute (EC2, Auto Scaling)
- AWS Database (Amazon RDS, ElastiCache)
- AWS Storage (S3, EBS)
- AWS Networking (VPC, ELB, Route 53)
- AWS Security (IAM, WAF, Shield)
- AWS Management & Monitoring (CloudWatch)

Related Competencies

- AWS Cloud Operations
- AWS Migration and Modernization
- AWS Cost Optimization

Customer Testimonial

"Graaho Technologies helped us reduce our AWS spend significantly while improving the stability and performance of our cloud infrastructure. Their in-depth cost optimization strategy was a game-changer for our operations."

– Orion Group

Summary:

Partner: Graaho Technologies

Customer: Orion Group

AWS Competency Areas: Cloud Operations & Cost Optimization

Partner Role: Assessed, planned, and implemented AWS infrastructure optimization and cost-reduction strategies

Key AWS Services: Amazon EC2, RDS, EBS, S3, ElastiCache, CloudFront, CloudWatch, IAM, WAF, Shield, DMS

Business Outcomes: 30–40% cost savings, modernized infrastructure, improved performance, and enhanced operational visibility