Reducing AWS Costs by 25% for World of Books

Challenges

As World of Books grew, they noticed a steady increase in their AWS expenses, impacting their budget and operational goals. Key issues contributing to these costs included:

- **Underutilized and Unused Resources:** Instances, storage, and services that were under or not fully utilized, leading to significant wastage.
- **Scaling Inefficiencies:** Spikes in website traffic were not optimized, resulting in unnecessary costs during off-peak periods.
- **Outdated Architecture and Redundant Backups:** Legacy resources and backup practices led to higher costs without added value.
- **Unmonitored Data Transfers:** Cross-region data transfers were incurring high costs without an optimized transfer plan.

World of Books turned to Hex Networks for a solution that could streamline their AWS infrastructure, optimize usage, and significantly reduce costs without affecting performance or scalability.

Solution Provided by Hex Networks

Hex Networks deployed a targeted, multi-phase cost optimization plan to help World of Books reduce AWS costs by 25%. This solution encompassed resource management, architecture modifications, and automation enhancements.

Resource Cleanup and Architecture Modification

- **Removing Unused Resources:** A comprehensive audit identified and removed unused EC2 instances, redundant backups, and unnecessary snapshots, instantly reducing costs.
- **Architecture Optimization:** We made modifications to the architecture to align better with World of Books' actual needs, simplifying the infrastructure to reduce complexity and cost.
- **Enhanced Resource Visibility:** Tools were implemented to improve resource tracking, so unused resources could be detected and addressed immediately.
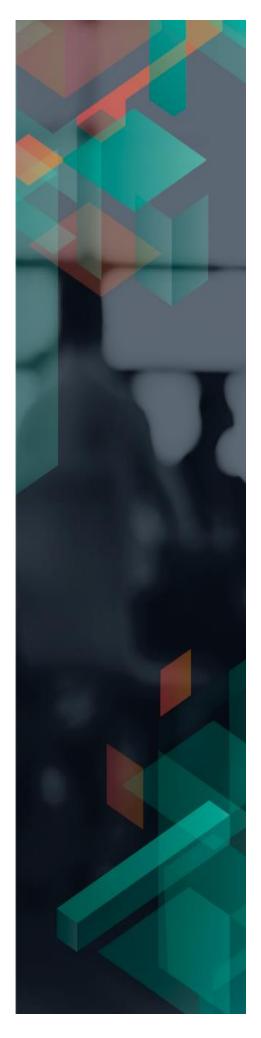
Right-Sizing with AWS EC2 Optimizer

- **EC2-Optimizer Tool:** Hex Networks used AWS's EC2-Optimizer to analyze instance usage, adjusting instance sizes and types based on actual workload needs.
- **Resource Adjustment:** Based on the EC2-Optimizer findings, Hex Networks switched to smaller or more cost-effective instance types, achieving an optimal configuration for each workload.
- **Continuous Monitoring:** Automated monitoring was established to ensure right-sizing adjustments could be maintained over time as demand fluctuates.

Scheduling for EC2 and RDS Instances

- **AWS EventBridge Automation:** Using Amazon EventBridge, we scheduled start and stop times for EC2 and RDS instances, particularly for development and testing environments.
- **Automated Cost Savings:** Instances would automatically stop during off-hours, reducing manual intervention and cutting idle-time costs.
- **Flexible Scheduling Options:** Custom scheduling was set up to adjust times based on business needs, ensuring resources were available only when necessary.

Reserved Instances (RIs) and Savings Plans

- **Reserved Instances for Predictable Workloads:** Reserved Instances were implemented for consistent, predictable workloads to secure lower rates.
- **Customized Savings Plans:** Based on historical usage data, Hex Networks created Savings Plans that covered fluctuating workloads, providing additional flexibility and savings.
- **Cost Analysis and Forecasting:** A detailed cost analysis helped ensure that both RIs and Savings Plans were optimized to deliver long-term value without overcommitting.

Backup and Snapshot Optimization

- **Efficient Backup Policy:** Hex Networks implemented a streamlined backup policy, reducing redundant snapshots and setting up automated deletions.
- **Lifecycle Policies for Snapshot Management:** Automatic lifecycle policies were created for backups, minimizing storage usage and saving costs by retaining only essential data.
- **Cloud Storage Optimization:** Data that required long-term storage was moved to AWS Glacier and Infrequent Access tiers, further reducing storage expenses.

Data Transfer Analysis and Optimization

- **Cross-Region Data Transfer Analysis:** We analyzed cross-region transfers to identify areas where data transfer costs were unnecessarily high.
- **Data Consolidation:** Redundant data transfer paths were consolidated ensuring cost-effective data movement.
- **Optimized Data Transfer Strategy:** Strategies were implemented to reduce frequent inter-region transfers, ensuring data remained within low-cost boundaries when possible.

Results and Impact

Through Hex Networks' holistic and automated approach, **World of Books achieved a 25% reduction in their AWS costs** within six months. Other key outcomes included:

- **Increased Efficiency:** The optimized architecture and automated scaling cut idle resources by 30%.
- **Enhanced Cost Visibility and Governance:** With monitoring and alerts in place, World of Books could maintain control over their cloud expenses and prevent unforeseen cost spikes.
- **Simplified Maintenance:** Automation of start/stop processes and backup management reduced the administrative overhead for their IT team.

Conclusion

This case study exemplifies Hex Networks' commitment to helping businesses optimize cloud costs through a data-driven, automated, and highly tailored approach. By focusing on efficient resource management, automated scaling, and smart cost planning, Hex Networks empowered World of Books to reduce expenses and achieve greater operational sustainability.

About Hex Networks

Hex Networks is focused on creating reliable and secure environments to solve issues quickly and efficiently. We identify areas of opportunity in IT systems to manage overall efficiency while reducing costs via implementing tested and reliable solutions.