Case Study: ISKON Umbrella – Optimizing AWS Infrastructure for Cost and Security

Customer Overview:

ISKON Umbrella, a technology-driven organization, sought to optimize their AWS infrastructure to reduce operational costs and strengthen their security posture. Their growing cloud environment required better management and visibility, especially during off-peak hours.

Challenges:

1. **Underutilized Servers During Off-Hours:**
   Several non-critical servers were running 24/7, leading to unnecessary compute costs during nights and weekends.
2. **Snapshot Management Issues:**
   Old and unused snapshots were accumulating over time, consuming large amounts of storage without any lifecycle control.
3. **Limited Network Traffic Visibility:**
   There was a lack of insight into network traffic patterns, making it difficult to detect anomalies or potential security threats.
4. **High Storage Costs from Underutilized S3 Buckets:**
   Large amounts of infrequently accessed data were stored in standard S3 storage classes, driving up storage expenses.

Solutions Implemented:

1. Cost Optimization through RI Conversion:

- Migrated 6 servers to Reserved Instances (RI), securing long-term savings on predictable workloads.
- Kept 4 servers on On-Demand Instances to maintain flexibility for variable demand and testing purposes.

2. Automated Shutdown of Non-Critical Servers:

- Deployed AWS Lambda functions to automatically stop non-essential servers during off-hours, minimizing compute costs during periods of low activity.

3. Snapshot Lifecycle Management:

- Implemented an AWS snapshot lifecycle policy to automatically delete snapshots older than 1 week, freeing up storage and avoiding long-term retention of unnecessary data.

4. Security Enhancements:

- Enabled Amazon Inspector for continuous vulnerability scanning across all instances.
- Activated Amazon GuardDuty to monitor for real-time threats and generate alerts for suspicious activity.
- Implemented VPC Flow Logs to gain comprehensive visibility into network traffic, supporting both anomaly detection and auditing needs.

5. S3 Storage Cost Optimization:

- Conducted an audit of all low-access S3 buckets and transitioned inactive data to Glacier and Archive storage classes, dramatically lowering storage costs for infrequently accessed data.

Results:

Significant Cost Savings Achieved:

- Reduction in compute costs through Reserved Instances and Lambda-driven automated shutdowns.
- Lower storage expenses through automated snapshot cleanup and S3 data tiering to Glacier/Archive classes.

Enhanced Security and Visibility:

- With Amazon Inspector, GuardDuty, and VPC Flow Logs enabled, ISKON Umbrella's infrastructure now has continuous vulnerability monitoring, real-time threat detection, and full network traffic visibility.

Improved Operational Efficiency:

- Automated policies and scheduling have reduced manual intervention, allowing the IT team to focus on more strategic initiatives.

Success Metrics:

- **Overall Cost Reduction:** Achieved a 30-35% decrease in monthly AWS spending.
- **Security Posture:** Improved 60-65% threat detection and faster response times to potential incidents.
- **Resource Optimization:** Increased 70-75% server utilization rates and reduced waste across compute and storage resources.

Conclusion:

Through a combination of smart cost optimization strategies, automation, and enhanced security tools, ISKON Umbrella successfully transformed its AWS infrastructure. This initiative not only delivered measurable cost savings but also strengthened the company's overall cloud governance and operational resilience.