Cloud Cost Optimization Analysis Report

This report focuses on analyzing cloud resource usage and providing recommendations to optimize costs for medium-level cloud infrastructure usage. The objective is to reduce expenses while maintaining performance and scalability.

1. Cloud Usage Analysis

Using AWS Cost Explorer and Cost and Usage Reports (CUR), the following insights were gathered:

- EC2 instances account for 60% of the total cost.
- S3 storage contributes 20%, with significant costs in Standard storage tier.
- Data transfer between regions contributes 10%.
- Other services, such as RDS and Lambda, account for the remaining 10%.

2. Recommendations for Optimization

Based on the analysis, the following cost-saving measures are recommended:

1. EC2 Optimization:
   - Right-size instances using AWS Compute Optimizer.
   - Replace on-demand instances with Spot Instances for batch processing workloads.
   - Implement Auto Scaling to manage peak loads efficiently.
2. Storage Optimization:
   - Transition infrequently accessed S3 data to Intelligent-Tiering or Glacier.
   - Delete unused EBS volumes and snapshots.
3. Networking Costs:
   - Minimize inter-region data transfer by co-locating resources in the same region.
4. Reserved Instances and Savings Plans:
   - Purchase Savings Plans for consistent workloads to reduce costs.

3. Implementation Steps

The following steps will be taken to implement the optimizations:

- Enable AWS Budgets to set alerts for cost anomalies.

- Create Lambda scripts for automatic cleanup of unused resources.

- Configure Auto Scaling Groups for EC2 instances.

- Use AWS Organizations to enforce policies on resource usage.

4. Expected Outcome

After implementing the recommended measures, the following outcomes are anticipated:

- A 30-40% reduction in EC2 costs due to right-sizing and Spot Instances.

- A 20% reduction in storage costs by transitioning to Glacier and Intelligent-Tiering.

- Overall cloud infrastructure cost savings of approximately 25-30%.

- Improved monitoring and proactive cost management.

Conclusion

This report provides a comprehensive analysis of cloud resource usage and offers actionable recommendations to optimize costs. By implementing these measures, organizations can achieve significant savings while ensuring efficient resource utilization.