Pricing impact in EC2

- Instance type: Different instance types have different pricing based on their computational power, memory, storage, and networking capabilities.
- Region: Pricing varies by AWS region due to differences in infrastructure costs and demand.Usage hours: EC2 instances are billed based on the duration they run, typically per hour.
- Reserved Instances (RI) or Savings Plans: AWS offers discounts for committing to usage over a period with Reserved Instances or Savings Plans
- .On-Demand vs. Spot Instances: On-Demand instances are billed at a fixed rate per hour, while Spot Instances allow you to bid for unused capacity, potentially reducing costs.

Pricing impact on RDS

- Instance type: Similar to EC2, RDS instances have different types with varying pricing based on CPU, memory, storage, and networking capabilities.
- Multi-AZ deployment: Multi-AZ deployments provide high availability but incur additional costs compared to single-AZ deployments.
- Storage: Charges apply for allocated storage and I/O operations.
- Backup storage: Storing automated backups and manual snapshots incurs additional charges.
- Data transfer: Data transferred out of RDS instances to the internet or other AWS services may incur costs.

To reduce costs

- Use appropriate instance types: Choose instances with the right balance of CPU, memory, storage, and networking resources for your workload to avoid over-provisioning.
- Utilize Reserved Instances or Savings Plans: Commit to a specific usage term to receive discounts compared to On-Demand pricing.
- Optimize storage: Evaluate your storage needs and use efficient storage types (e.g., Amazon EBS Magnetic volumes for infrequently accessed data).
- Monitor and adjust usage: Regularly review your resource utilization and adjust instance sizes, storage allocations, or purchasing options as needed.
- Use Spot Instances or Savings Plans: Take advantage of Spot Instances for fault-tolerant workloads or opt for Savings Plans to receive discounted rates for flexible usage.

To optimize costs

1. Right-size instances: Continuously monitor resource utilization and adjust instance sizes to match workload requirements.
2. Use auto-scaling: Implement auto-scaling policies to dynamically adjust the number of instances based on demand, reducing over-provisioning during low-traffic periods.
3. Enable instance scheduling: Schedule instances to run only during specific hours of the day or week when they are needed.
4. Optimize storage usage: Regularly review and delete unused resources, such as snapshots, unattached volumes, or temporary data, to reduce storage costs.
5. Monitor and analyze cost reports: Use AWS Cost Explorer and other monitoring tools to identify cost drivers, trends, and opportunities for optimization
6. Consider serverless options: Evaluate serverless services like AWS Lambda, Amazon RDS Serverless, or Amazon Aurora Serverless for cost-efficient alternatives to traditional instance-based deployments.