#Deliverables :-

1. Amazon Elastic compute cloud (EC2):-

→ Description - EC2 provides scalabale, on-demand virtual servers (instances) in the cloud. You can choose from a wide range of operating systems, instances types, and configuration to meet the specific needs of your applications.

→ Use cases - Hosting web applications, running backend processes, deploying development & testing environments, building high performance computing clusters.

→ Benefit - Scalability (pay only for what you use), flexibility (choose the right instance type), cost-effectiveness, reliability.

→ Challenges - Managing resources & costs, security configurations.

2. Amazon Elastic Container Service (ECS):-

→ Description - ECS manages Docker container for deploying & scaling containerized applications. It simplifies container orchestration, scheduling & scaling.

→ Use cases - Building & deploying microservices architectures, deploying serverless applications, managing containerized workloads at scale.

→ Benefits - Faster Development cycle, simpler deployments, efficient resources utilization, portability across different environments.

→ Challenges - Requires knowledges of container technology (Docker), managing container security, monitoring & troubleshooting containerized applications.

3. Amazon Lambda :-

→ Description - Lambda is a serverless computer service that allows you to run code without managing servers. you pay only for the code that executes & resources it consumes.

→ Use cases - Building event-driven applications, processing data streams, running background tasks, implementing serverless APIs.

→ Benefits - Reduced operational overhead, simplified scaling, cost-efficiency (pay-per-use) high availability & scalability.

→ Challenges Debugging code execution, limited control underlying infrastructure.

4. Amazon Simple Storage Service (S3)-

→ Description - S3 offer object storage for a wide range of data, from static website content to large media files. It is highly scalable, durable & cost-effective.

→ Use cases - Storing application data, backups, archives, to hosting static website content, media libraries.

→ Benefits - Scalability, durability, cost-effectiveness, easy access.

→ Challenges - Managing access control for objects, potential egress costs for data retrieval.

5. Amazon Elastic Block Store (EBS) :-

→ Description - EBS provides persistent block storage volumes for use with EC2 instances. you can attach EBS volumes to instances & use them like traditional hard drives.

→ Use cases → Hosting databases, storing applications data that needs persistance, running high-performance computing applications.

→ Benefits - High availability, scalability, persistance

6. Amazon Elastic File System (EFS):-

→ Descriptive - EFS provides a scalable file storage services for use with EC2 instances. It allows multiple instances to access a shared file system concurrently.

→ Use cases - Hosting content management system (CMS), sharing application data between instances in a cluster, building distributed file systems.

→ Benefits - Scalability, performance, ease of use.

→ Challenges - Limited availability zones compared to other services, potential for higher costs for frequently accessed data, managing accessed control for files.

7. Amazon Virtual private cloud (VPC):-

→ Description - VPC allows you to create a logically isolated network within the AWS cloud. you can define subnets, security groups & route tables to control how traffic flows within your PVCs.

→ Use cases - Building secure & isolated cloud environments, Controlling network traffic between resources, meeting compliance requirements

→ Benefits - Increased security, flexibility, improved manageability. of

→ Challenges - Requires understanding of networking concepts, managing complexity as network grows.

8. Amazon Elastic load Balancing (ELB):-

→ Description - ELB distributes incoming traffic across multiple EC2 instances in a load balancer. It ensures high availability & scalability for your applications.