

# Summary Report

The AWS Academy Cloud Foundations Module 6 focuses on Compute services provided by AWS. It covers various compute options, including Amazon EC2, AWS Lambda, AWS Elastic Beanstalk, and container services like Amazon ECS and Amazon EKS. Here's a summary of the key topics:

## 1. **Amazon EC2**:

- 1 Provides resizable virtual machines in the cloud.
- 1 Offers flexibility in choosing instance types, operating systems, and configurations.
- 1 Includes features like security groups, key pairs, and Elastic IP addresses.
- 1 Supports cost optimization through pricing models like On-Demand, Reserved, and Spot Instances.
- 1 Hands-on labs guide users through launching, monitoring, and managing EC2 instances.

## 2. **Container Services**:

- 1 Containers are lightweight, portable, and efficient for running applications.
- 1 Docker is a platform for packaging applications into containers.
- 1 Amazon ECS orchestrates Docker containers, while Amazon EKS manages Kubernetes clusters.
- 1 Amazon ECR is a registry for storing and managing Docker container images.

## 3. **AWS Lambda**:

- 1 A serverless compute service that runs code in response to events or schedules.
- 1 Users pay only for the compute time consumed.
- 1 Supports multiple programming languages and integrates with various AWS services.
- 1 Hands-on activities demonstrate creating Lambda functions for tasks like stopping EC2 instances.

## 4. **AWS Elastic Beanstalk**:

- 1 A Platform-as-a-Service (PaaS) that simplifies deploying and managing web applications.
- 1 Supports multiple programming languages and frameworks.
- 1 Automates deployment, scaling, and monitoring of applications.
- 1 Users pay only for the underlying AWS resources used.

5. **Cost Optimization**:

- 1 Focuses on right-sizing instances, increasing elasticity, choosing optimal pricing models, and optimizing storage.
- 1 Tools like AWS Cost Explorer and AWS Trusted Advisor help monitor and improve cost efficiency.

6. **Hands-On Activities**:

- 1 Labs and activities provide practical experience with EC2, Lambda, and Elastic Beanstalk.
- 1 Users learn to launch instances, configure security groups, and deploy applications.

7. **Knowledge Check and Exam Preparation**:

- 1 Includes a knowledge check to test understanding of key concepts.
- 1 Sample exam questions help prepare for AWS certification.

The module emphasizes the importance of choosing the right compute service based on specific use cases and optimizing costs while maintaining performance and scalability. Additional resources are provided for further learning, including AWS documentation, workshops, and cost optimization guides.