

## AWS – Solution Architect Associate

<b>MODULE 1 - DESIGN RESILIENT ARCHITECTURES</b>	
<b>CHAPTER 1</b>	<b>DESIGN A MULTI-TIER ARCHITECTURE SOLUTION</b>
<ul style="list-style-type: none"><li>• Determine a solution design based on access patterns.</li><li>• Determine a scaling strategy for components used in a design. Select an appropriate database based on requirements.</li><li>• Select an appropriate compute and storage service based on requirements</li></ul>	
<b>CHAPTER 2</b>	<b>DESIGN HIGHLY AVAILABLE AND/OR FAULT-TOLERANT ARCHITECTURES</b>
<ul style="list-style-type: none"><li>• Determine the amount of resources needed to provide a fault-tolerant architecture across Availability Zones.</li><li>• Select a highly available configuration to mitigate single points of failure.</li><li>• Apply AWS services to improve the reliability of legacy applications when application changes are not possible.</li><li>• Select an appropriate disaster recovery strategy to meet business requirements. Identify key performance indicators to ensure the high availability of the solution</li></ul>	
<b>CHAPTER 3</b>	<b>DESIGN DECOUPLING MECHANISMS USING AWS SERVICES</b>
<ul style="list-style-type: none"><li>• Determine which AWS services can be leveraged to achieve loose coupling of components. Determine when to leverage serverless technologies to enable decoupling.</li></ul>	
<b>CHAPTER 4</b>	<b>CHOOSE APPROPRIATE RESILIENT STORAGE</b>
<ul style="list-style-type: none"><li>• Define a strategy to ensure the durability of data.</li><li>• Identify how data service consistency will affect the operation of the application. Select data services that will meet the access requirements of the application.</li><li>• Identify storage services that can be used with hybrid or non-cloud-native applications</li></ul>	

## MODULE 2 - DESIGN HIGH-PERFORMING ARCHITECTURES

### CHAPTER 1

#### IDENTIFY ELASTIC AND SCALABLE COMPUTE SOLUTIONS FOR A WORKLOAD

- Select the appropriate instance(s) based on compute, storage, and networking requirements.
- Choose the appropriate architecture and services that scale to meet performance requirements.
- Identify metrics to monitor the performance of the solution

### CHAPTER 2

#### SELECT HIGH-PERFORMING AND SCALABLE STORAGE SOLUTIONS FOR A WORKLOAD

- Select a storage service and configuration that meets performance demands.
- Determine storage services that can scale to accommodate future needs.

### CHAPTER 3

#### SELECT HIGH-PERFORMING NETWORKING SOLUTIONS FOR A WORKLOAD

- Select appropriate AWS connectivity options to meet performance demands.
- Select appropriate features to optimize connectivity to AWS public services.
- Determine an edge caching strategy to provide performance benefits.
- Select appropriate data transfer service for migration and/or ingestion

### CHAPTER 4

#### CHOOSE HIGH-PERFORMING DATABASE SOLUTIONS FOR A WORKLOAD

- Select an appropriate database scaling strategy.
- Determine when database caching is required for performance improvement.
- Choose a suitable database service to meet performance needs.

## MODULE 3 - DESIGN SECURE APPLICATIONS AND ARCHITECTURES

### CHAPTER 1

#### DESIGN SECURE ACCESS TO AWS RESOURCES

- Determine when to choose between users, groups, and roles. Interpret the net effect of a given access policy.
- Select appropriate techniques to secure a root account.
- Determine ways to secure credentials using features of AWS IAM.
- Determine the secure method for an application to access AWS APIs.
- Select appropriate services to create traceability for access to AWS resources.



<b>CHAPTER 2</b>	<b>DESIGN SECURE APPLICATION TIERS</b>
<ul style="list-style-type: none"><li>• Given traffic control requirements, determine when and how to use security groups and network ACLs.</li><li>• Determine a network segmentation strategy using public and private subnets.</li><li>• Select the appropriate routing mechanism to securely access AWS service endpoints or internet-based resources from Amazon VPC.</li><li>• Select appropriate AWS services to protect applications from external threats.</li></ul>	
<b>CHAPTER 3</b>	<b>SELECT APPROPRIATE DATA SECURITY OPTIONS</b>
<ul style="list-style-type: none"><li>• Determine the policies that need to be applied to objects based on access patterns.</li><li>• Select appropriate encryption options for data at rest and in transit for AWS services.</li><li>• Select appropriate key management options based on requirements.</li></ul>	

<b>MODULE 4 - DESIGN COST-OPTIMIZED ARCHITECTURES</b>	
<b>CHAPTER 1</b>	<b>IDENTIFY COST-EFFECTIVE STORAGE SOLUTIONS</b>
<ul style="list-style-type: none"><li>• Determine the most cost-effective data storage options based on requirements.</li><li>• Apply automated processes to ensure that data over time is stored on storage tiers that minimize costs</li></ul>	

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