



Developer Associate Certification - Thoughts

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Comparison with SAA-C03

DVA-C02 goes deeper into:

- Serverless development
- Service integration
- Deployment automation
- Observability & optimization

Assumes you already know: IAM, VPC, S3, RDS, HA

Shift the angle: less architecture, more code + integration patterns



Comparison in short

| Dimension | SAA-C03 | DVA-C02 |
|--------------------------|--|---|
| Focus | Architecture, design, resilience | Development, integration, deployment |
| Typical questions | High availability, networking, storage, security | Lambda patterns, API Gateway, DynamoDB, CI/CD |
| Technical level | Broad, generalist | Deep in serverless & runtime |
| Skills required | Infrastructure + cloud design | Code, events, SDKs, IaC |
| Key services | EC2, ALB/NLB, RDS, VPC | Lambda, API Gateway, DynamoDB, SQS/SNS, EventBridge |
| Mindset | How to design it | How to build, integrate and operate it |

Conclusion:

- SAA = *how to design the system*
- DVA = *how to build and integrate the system*

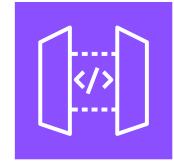
Services you must master

3 page of services, really ?:

- AWS Lambda
- API Gateway (REST + HTTP + WebSocket)
- DynamoDB (partition key, sort key, GSIs, LSI, streams)
- SQS / SNS
- EventBridge
- CloudWatch / X-Ray
- IaC tools: SAM / CloudFormation



AWS Lambda



Amazon API Gateway



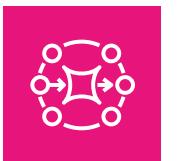
Amazon DynamoDB



Amazon Simple Notification Service (Amazon SNS)



Amazon Simple Queue Service (Amazon SQS)



Amazon MQ

DVA-C02 Exam Guide

The exam also validates a candidate's ability to complete the following tasks:

- Develop and optimize applications on AWS.
- Package and deploy by using continuous integration and continuous delivery (CI/CD) workflows.
- Secure application code and data.
- Identify and resolve application issues.

Target candidate description

The target candidate should have 1 or more years of hands-on experience in developing and maintaining applications by using AWS services.

Recommended AWS knowledge

The target candidate should be able to complete the following tasks:

- Develop and secure applications by using AWS service APIs, the AWS Command Line Interface (AWS CLI), and SDKs.
- Use a CI/CD pipeline to deploy applications on AWS.



Review
Description

Developing on AWS - Course

Course objectives

In this course, you will learn to:

- Set up the AWS SDK and developer credentials for Java, C#/.NET, and Python
- Interact with AWS services and develop solutions by using the AWS SDK
- Use AWS Identity and Access Management (IAM) for service authentication
- Use Amazon Simple Storage Service (Amazon S3) and Amazon DynamoDB as data stores
- Integrate applications and data by using AWS Lambda, Amazon API Gateway, SQS, SNS, and AWS Step Functions
- Use Amazon Cognito for user authentication
- Use Amazon ElastiCache to improve application scalability
- Leverage the CI/CD pipeline to deploy applications on AWS



Developing on AWS - Outline

Day 1

Module 0: Course Overview

Module 1: Introduction to AWS: Infrastructure overview, Introduction to AWS foundation services

Module 2: Introduction to Developing on AWS: Introduction to developer tools, management tools

Module 3: Introduction to AWS Identity and Access Management: IAM, AuthN&AuthZ

Module 4: Introduction to the Lab Environment

Module 5: Developing Storage Solutions with S3: Troubleshooting

Day 2

Module 6: Developing Flexible NoSQL Solutions with Amazon DynamoDB: Best practices, Troubleshooting

Module 7: Developing Event-Driven Solutions with AWS Lambda: How Lambda works, Use cases, Best practices

Module 8: Developing Solutions with Amazon API Gateway: Developing with API Gateway, Best practices, Introduction to SAM

Module 9: Developing Solutions with AWS Step Functions: Use cases

Day 3

Module 10: Developing Solutions with SQS and SNS: Developing SQS, SNS; Developing with Amazon MQ

Module 11: Caching Information with Amazon ElastiCache: Caching strategies

Module 12: Developing Secure Applications

Module 13: Deploying Applications: Devops, Deployment and testing strategies, AWS Elastic Beanstalk

Module 14: Course wrap-up

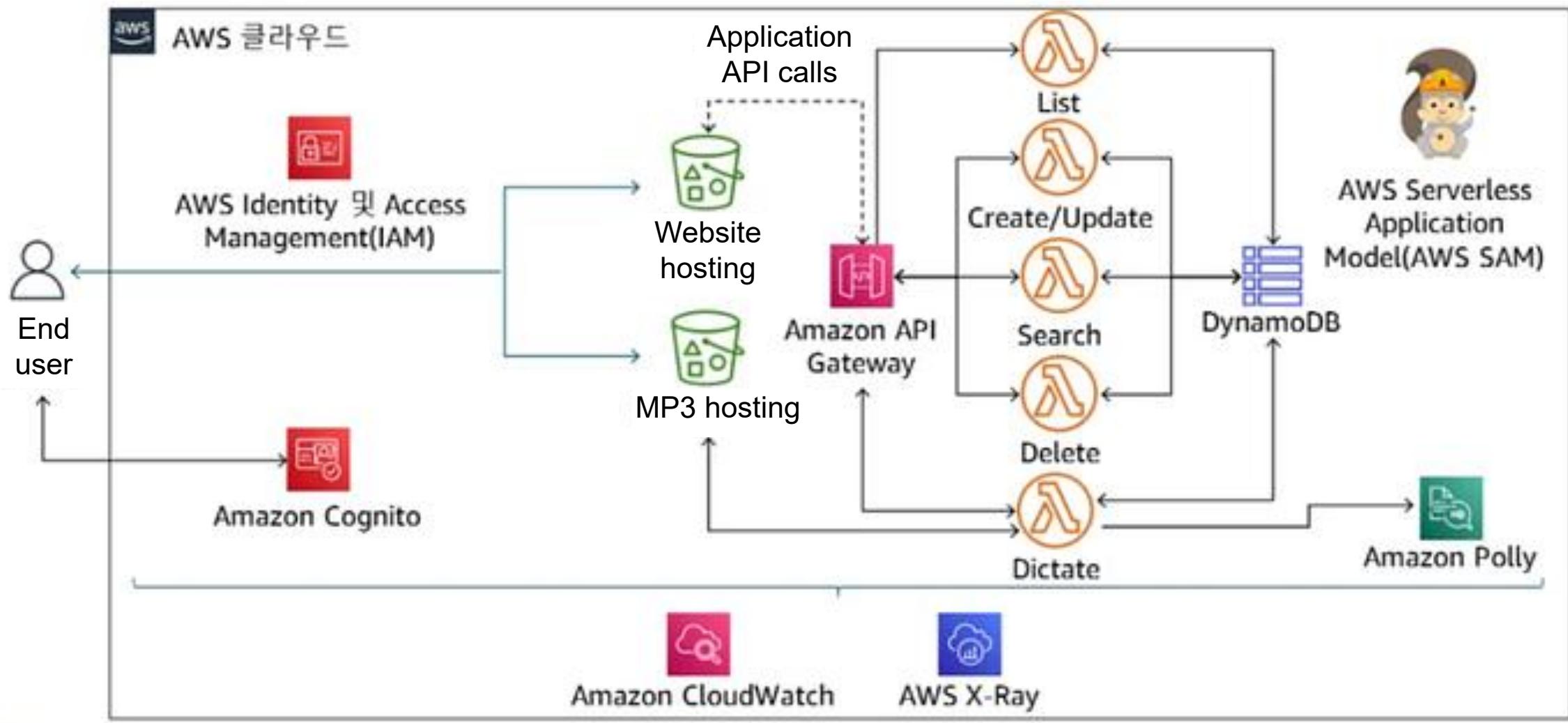


Frequent Patterns

- API Gateway → Lambda → DynamoDB
- Event-driven architectures: SQS, SNS, EventBridge
- Retries, Dead Letter Queues (DLQs)
- Deployment strategies: Lambda versions & aliases, blue/green
- Observability: Logs, metrics, tracing
- Serverless best practices (for DVA-C02)



Proposed Lab



Types of questions & how to answer them

Focus on:

- Managed services vs self-managed
- Serverless vs servers
- Scalability & HA
- Limits, tuning, troubleshooting, error handler

Approach:

- Think in terms of best practice within AWS ecosystem
- Confusing IAM roles vs policies
- Overlooking idempotency in functions
- Ignoring DLQ / retry logic
- Poor design in DynamoDB: hot partitions, inefficient queries

Study
Plan

- W1: Dive into Lambda, API Gateway, DynamoDB — hands-on labs
- W2: Infrastructure as Code, CI/CD, SAM
- W3: Practice with mock exams, identify weaknesses
- W4: Final review, simulated exam conditions

Which API SDK have to use

SDK types

- Low-level API
- High-level API

Example of a low-level API: **Get a list of S3 buckets.**

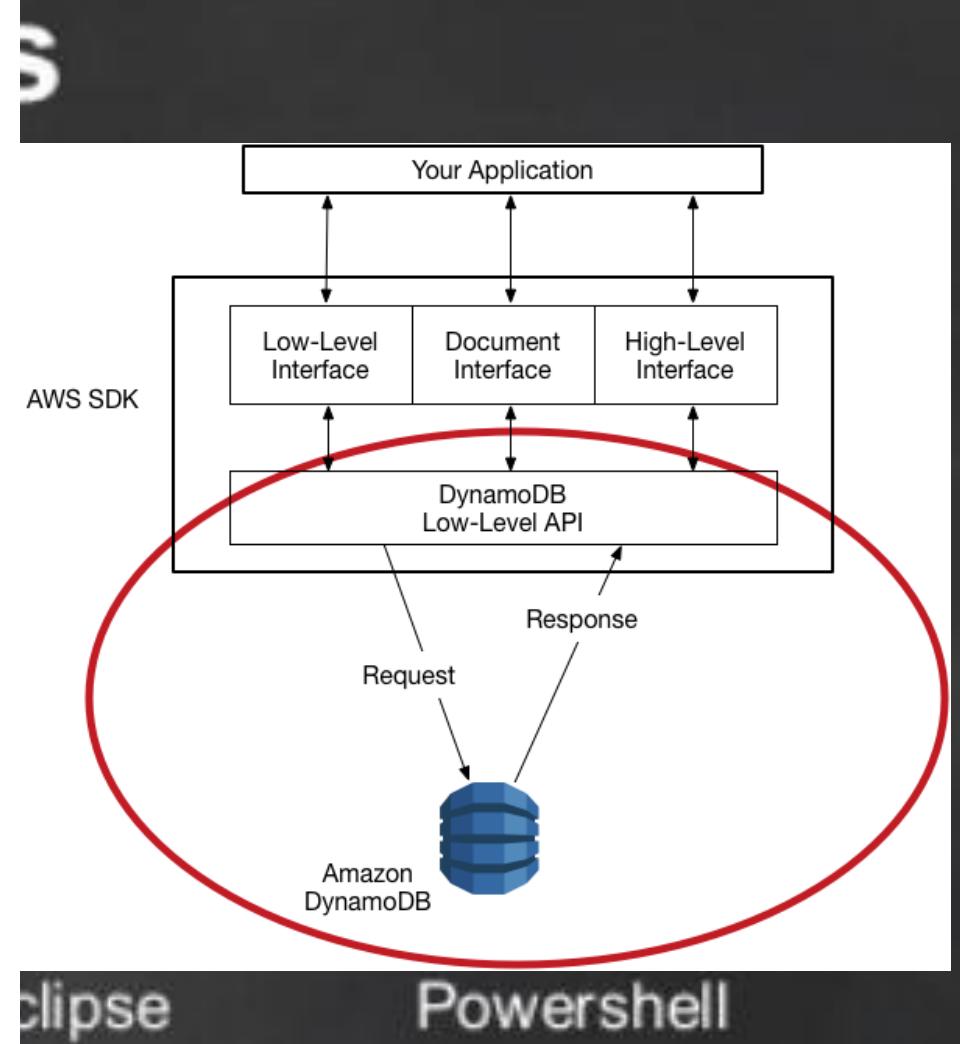
```
# Retrieve the list of existing buckets
s3 = boto3.client('s3')
response = s3.list_buckets_v2(Bucket='mybucket')

for content in response['Contents']:
    print(f' {content["Key"]} : {content["LastModified"]}')
```

Example of a high-level API: Retrieving a list of S3 buckets (same functionality as above). It can be used more concisely through abstraction, and can be accessed and used like a Method/Member rather than accessing it directly as a structure (JSON).

```
# Retrieve the list of existing buckets
s3 = boto3.resource('s3')
bucket = s3.Bucket('mybucket')

for obj in bucket.objects.all():
    print(f' {obj.key} : {obj.last_modified}')
```



Resources

AWS Developer Associate – Official Page

<https://aws.amazon.com/certification/certified-developer-associate/>

Exam Guide (DVA-C02 PDF)

https://d1.awsstatic.com/training-and-certification/docs-dev-associate/AWS-Certified-Developer-Associate_Exam-Guide.pdf

AWS Digital Training (Skill Builder)

<https://skillbuilder.aws/>

AWS Documentation Homepage

<https://docs.aws.amazon.com/>

AWS SaaS / Serverless Patterns Collection

<https://serverlessland.com/patterns>

Tutorial Dojo

<https://tutorialsdojo.com/aws-certified-developer-associate-exam-guide-study-path-dva-c02/>

Jayendra's Cloud Certification Blog

<https://jayendrapatil.com/aws-certified-developer-associate-dva-c02-exam-learning-path/>

Resources

AWS Lambda Hands-On Workshop

<https://catalog.workshops.aws/lambda/en-US>

DynamoDB Workshop

<https://catalog.workshops.aws/dynamodb/en-US>

API Gateway Workshop

<https://catalog.workshops.aws/apigateway/en-US>

AWS SAM Workshop

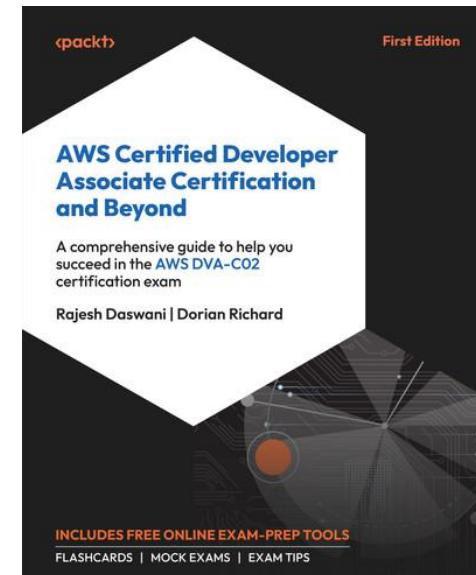
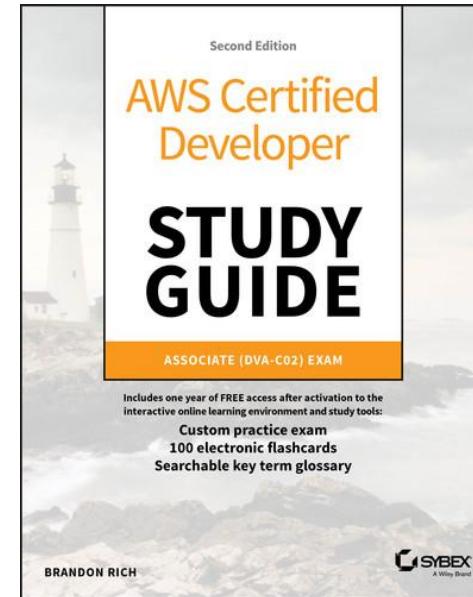
<https://catalog.workshops.aws/serverless-sam/en-US>

AWS CodePipeline / CI-CD Workshop

<https://catalog.workshops.aws/codepipeline/en-US>

O'Reilly Books

<https://learning-oreilly-com.ez.unisabana.edu.co/library/view/aws-certified-developer/9781394274802/>



Question 1

Una función Lambda procesa eventos desde una cola SQS Standard. Algunos mensajes fallan repetidamente por datos corruptos. Se requiere evitar bloqueos y garantizar que los mensajes fallidos no se reprocesen indefinidamente.

¿Qué solución es la *más adecuada*?

- A. Configurar un *visibility timeout* más largo
- B. Configurar una DLQ en SQS y un máximo de reintentos
- C. Aumentar el timeout de Lambda para que procese mensajes más grandes
- D. Crear una nueva función Lambda que valide mensajes antes del procesamiento

Question 1 - Answer

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Porque?

DLQ + máximo de reintentos evita loops infinitos y permite aislar mensajes corruptos. Es el patrón estándar para SQS + Lambda.

Question 2

Una función Lambda debe conectarse a una base de datos en RDS dentro de una VPC privada. Se ha notado que las primeras invocaciones tardan varios segundos. ¿Cuál es la causa más probable?

- A. Falta de memoria asignada
- B. Falta de permisos IAM para RDS
- C. Latencia causada por la creación de ENI (Elastic Network Interface) durante el cold start
- D. IAM Role muy grande

Question 2 - Answer

Una función Lambda debe conectarse a una base de datos en RDS dentro de una VPC privada. Se ha notado que las primeras invocaciones tardan varios segundos. ¿Cuál es la causa más probable?

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- B. Falta de permisos IAM para RDS
- C. Latencia causada por la creación de ENI (Elastic Network Interface) durante el cold start**
- D. IAM Role muy grande

Porque?

Cuando Lambda está dentro de una VPC, el cold start implica crear ENIs, lo que genera latencia inicial. Es uno de los escenarios clave del examen.