



# AWS Developer DVA-C02 Prep

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## Practice Questions

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**1. A developer needs to identify performance bottlenecks in a distributed application deployed across multiple AWS services. Which AWS service should be used?**

- A. Amazon Inspector
- B. AWS Config
- C. AWS CloudFormation
- D. AWS X-Ray

**2. Which CloudWatch Logs feature should a developer use to extract specific data fields from logs and create metrics from them?**

- A. Log Streams
- B. Log Insights Queries
- C. Metric Filters
- D. Subscription Filters

**3. A Lambda function is sometimes timing out during execution. How can a developer identify the root cause of these timeouts?**

- A. Disable all integrations with other AWS services
- B. Add detailed logging with timestamps throughout the function code
- C. Increase the Lambda function memory allocation to maximum
- D. Change the programming language of the Lambda function

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**4. Which tool should a developer use to analyze and debug latency issues in an application that spans multiple AWS services?**

- A. AWS X-Ray
- B. AWS CloudTrail
- C. Amazon CloudSearch
- D. AWS Amplify



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**5. A developer wants to monitor custom application metrics in real-time. Which approach is most appropriate?**

- A. Create manual dashboards in the AWS Management Console
- B. Install a third-party monitoring agent
- C. Review AWS Cost Explorer reports
- D. Use the CloudWatch PutMetricData API to send custom metrics

**6. Which query language is used in CloudWatch Logs Insights to analyze log data?**

- A. Python
- B. JSON
- C. CloudWatch Logs Insights query language
- D. SQL

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**7. What should a developer implement to handle transient failures when an application interacts with AWS services?**

- A. Fixed one-minute timeout
- B. Exponential backoff with jitter
- C. Immediate retry strategy
- D. Circuit breaker without retry logic

**8. A developer needs to optimize a DynamoDB-based application that is experiencing throttled requests. Which approach should they consider first?**

- A. Enable DynamoDB Auto Scaling
- B. Switch to DynamoDB Standard-Infrequent Access table class
- C. Rewrite the application to use Amazon RDS
- D. Manually increase provisioned capacity to maximum possible values

**9. Which feature helps prevent Lambda functions from overwhelming downstream resources?**

- A. Lambda layers
- B. Execution aliases
- C. Environment variables
- D. Reserved concurrency



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**10. A developer wants to improve the performance of an application that frequently retrieves the same data from DynamoDB. Which service should be implemented?**

- A. Amazon RDS Read Replicas
- B. AWS Global Accelerator
- C. Amazon DynamoDB Accelerator (DAX)
- D. Amazon ElastiCache for Memcached

**11. Which CloudWatch feature can a developer use to create alerts when application errors exceed a certain threshold?**

- A. CloudWatch Contributor Insights
- B. CloudWatch Alarms
- C. CloudWatch Events
- D. CloudWatch Dashboard

**12. When investigating why an AWS Lambda function is taking longer to execute than expected, which metric should a developer analyze first?**

- A. Duration
- B. ConcurrentExecutions
- C. IteratorAge
- D. DeadLetterErrors

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**13. A developer is using AWS X-Ray to trace requests in a microservices application. What must be added to the application code to make this work?**

- A. CloudWatch Logs agent
- B. AWS CLI configuration
- C. IAM user credentials
- D. Instrumentation with the X-Ray SDK



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**14. Which technique can a developer use to improve the cold start performance of a Lambda function?**

- A. Set function timeout to maximum value
- B. Use AWS Batch instead of Lambda
- C. Enable Provisioned Concurrency
- D. Always use Python for Lambda functions

**15. Which CloudWatch Logs feature should a developer use to extract structured data from unstructured logs?**

- A. CloudWatch Log Groups
- B. CloudWatch Logs Insights with JSON parsing
- C. CloudWatch Logs Agent
- D. CloudWatch Export

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**16. Which AWS service can help a developer find unused or underutilized resources to optimize costs?**

- A. AWS Trusted Advisor
- B. Amazon Inspector
- C. AWS CloudHSM
- D. Amazon Kinesis

**17. A developer wants to reduce the latency of an application that frequently reads from an Amazon RDS database. Which caching solution should be implemented?**

- A. Amazon S3 with versioning
- B. AWS AppSync
- C. Amazon MQ
- D. Amazon ElastiCache for Redis

**18. What should a developer implement to correlate log entries across multiple services in a distributed application?**

- A. Log rotation
- B. Binary logging
- C. Correlation IDs in logs
- D. Service mesh



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**19. Which CloudWatch feature allows a developer to search and analyze log data interactively?**

- A. CloudWatch Container Insights
- B. CloudWatch Logs Insights
- C. CloudWatch Events
- D. CloudWatch Synthetics

**20. A developer needs to profile a Lambda function to identify performance issues. Which AWS service should be used?**

- A. AWS Lambda Power Tuning
- B. AWS Compute Optimizer
- C. Amazon CodeGuru Profiler
- D. AWS Auto Scaling

**21. A developer is building a web application that needs to authenticate users against an existing corporate directory. Which AWS service should be used to implement identity federation?**

- A. AWS IAM
- B. Amazon RDS
- C. AWS AppSync
- D. Amazon Cognito

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**22. Which of the following is a best practice for securing AWS Lambda environment variables containing sensitive information?**

- A. Include them directly in your function code
- B. Hardcode them in your Lambda deployment package
- C. Encrypt them using AWS KMS
- D. Store them in plaintext but use IAM roles



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**23. A developer needs to grant an Amazon S3 bucket access to an AWS Lambda function. Which type of policy should be used?**

- A. Service control policy
- B. Resource-based policy
- C. Identity-based policy
- D. Trust policy

**24. Which AWS service should be used to securely store and automatically rotate database credentials used by an application?**

- A. AWS Secrets Manager
- B. AWS Key Management Service (KMS)
- C. AWS Certificate Manager
- D. Amazon S3

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**25. A developer is implementing OAuth 2.0 authentication in an application. Which type of token is commonly used to securely transmit authentication information between parties?**

- A. SMTP token
- B. XML token
- C. SSH key
- D. JWT (JSON Web Token)

**26. Which AWS service can be used to enforce encryption of data at rest in an Amazon S3 bucket?**

- A. AWS WAF
- B. Amazon Inspector
- C. AWS Key Management Service (KMS)
- D. AWS Shield

**27. A developer needs to implement fine-grained access control for objects in an Amazon S3 bucket. Which S3 feature should be used?**

- A. S3 Intelligent-Tiering
- B. S3 Access Control Lists (ACLs)
- C. S3 Transfer Acceleration
- D. S3 Event Notifications



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**28. Which of the following is a best practice for managing AWS access credentials in a CI/CD pipeline?**

- A. Use IAM roles for EC2 instances or services running the pipeline
- B. Store access keys directly in your code repository
- C. Hardcode credentials in your build scripts
- D. Use the same access key for all environments

**29. When implementing SAML 2.0 federation with AWS, which service acts as the identity provider (IdP)?**

- A. Amazon Cognito
- B. AWS IAM
- C. Amazon API Gateway
- D. The external corporate directory system

**30. A developer needs to secure communication between microservices in an Amazon ECS cluster. Which AWS service should be used?**

- A. Amazon S3
- B. Amazon Cognito
- C. AWS Certificate Manager
- D. AWS Secrets Manager



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## Answer Key & Explanations

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### 1. D — AWS X-Ray

AWS X-Ray provides distributed tracing functionality that helps developers analyze and debug distributed applications. It offers end-to-end visibility of requests as they travel through the application, making it ideal for identifying performance bottlenecks in distributed systems.

### 2. C — Metric Filters

CloudWatch Logs Metric Filters allow developers to define patterns to extract values from logs and convert them into CloudWatch metrics, which can then be used for monitoring, alerting, and visualization.

### 3. B — Add detailed logging with timestamps throughout the function code

Adding detailed logging with timestamps helps track execution progress and identify which operations are taking longer than expected, helping to pinpoint the cause of Lambda timeouts.

### 4. A — AWS X-Ray

AWS X-Ray provides tracing capabilities that help developers analyze and debug latency issues in distributed applications by visualizing the full request path across multiple services.

### 5. D — Use the CloudWatch PutMetricData API to send custom metrics

Using the CloudWatch PutMetricData API allows developers to send custom metrics directly to CloudWatch, enabling real-time monitoring of application-specific data points.

### 6. C — CloudWatch Logs Insights query language

CloudWatch Logs Insights uses its own purpose-built query language designed specifically for querying and analyzing log data stored in CloudWatch Logs.

### 7. B — Exponential backoff with jitter

Implementing exponential backoff with jitter is a best practice for handling transient failures in AWS service interactions by gradually increasing retry intervals and adding randomness to prevent retry storms.

### 8. A — Enable DynamoDB Auto Scaling

DynamoDB Auto Scaling automatically adjusts provisioned throughput capacity in response to traffic patterns, which can help prevent throttling due to capacity limitations.

### 9. D — Reserved concurrency

Reserved concurrency sets a limit on the maximum number of concurrent executions for a Lambda function, which helps prevent overwhelming downstream resources by controlling the rate of requests.

### 10. C — Amazon DynamoDB Accelerator (DAX)

DAX (DynamoDB Accelerator) is an in-memory cache specifically designed for DynamoDB that can dramatically improve read performance for frequently accessed data.

### 11. B — CloudWatch Alarms

CloudWatch Alarms can monitor metrics over specified time periods and trigger actions when thresholds are



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exceeded, making them ideal for alerting on application error rates.

**12. A — Duration**

The Duration metric provides information about how long a Lambda function execution takes, making it the most relevant metric to investigate execution time issues.

**13. D — Instrumentation with the X-Ray SDK**

The X-Ray SDK must be integrated into application code to capture and send trace data to the X-Ray service, enabling distributed tracing functionality.

**14. C — Enable Provisioned Concurrency**

Provisioned Concurrency keeps Lambda functions initialized and ready to respond to requests, effectively eliminating cold starts for the specified concurrency level.

**15. B — CloudWatch Logs Insights with JSON parsing**

CloudWatch Logs Insights supports JSON parsing using specialized syntax that can extract structured data from JSON-formatted logs, enabling analysis of specific fields.

**16. A — AWS Trusted Advisor**

AWS Trusted Advisor provides recommendations for optimizing AWS resources, including identifying idle or underutilized resources to help reduce costs.

**17. D — Amazon ElastiCache for Redis**

Amazon ElastiCache for Redis provides an in-memory data store that can be placed in front of RDS to cache frequently accessed data, reducing latency and database load.

**18. C — Correlation IDs in logs**

A correlation ID is a unique identifier passed between services that allows log entries from different components to be connected, facilitating troubleshooting across service boundaries.

**19. B — CloudWatch Logs Insights**

CloudWatch Logs Insights is a fully integrated query and visualization tool that allows developers to interactively search and analyze log data in CloudWatch Logs.

**20. A — AWS Lambda Power Tuning**

AWS Lambda Power Tuning is an AWS Solution that helps developers optimize Lambda functions by running performance tests across different memory configurations to find the optimal settings.

**21. D — Amazon Cognito**

Amazon Cognito supports identity federation with external identity providers including SAML, OIDC, Facebook, Google, etc., allowing users to authenticate with existing credentials while accessing AWS resources.

**22. C — Encrypt them using AWS KMS**

AWS KMS should be used to encrypt sensitive environment variables in Lambda functions, providing an additional layer of security for sensitive data beyond the default encryption that Lambda provides.

**23. B — Resource-based policy**

Resource-based policies are attached directly to the resource (in this case, the S3 bucket) and define who has access to that resource and what actions they can perform.



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## 24. A — AWS Secrets Manager

AWS Secrets Manager is designed to protect access to applications, services, and IT resources without hardcoding credentials. It offers automatic rotation of secrets for supported services.

## 25. D — JWT (JSON Web Token)

JSON Web Tokens (JWT) are an open standard for securely transmitting information between parties as a JSON object. They're commonly used with OAuth 2.0 to represent claims between two parties.

## 26. C — AWS Key Management Service (KMS)

AWS Key Management Service (KMS) manages encryption keys and integrates with S3 to enforce server-side encryption of objects stored in S3 buckets.

## 27. B — S3 Access Control Lists (ACLs)

Amazon S3 Access Control Lists (ACLs) provide fine-grained control over specific objects within buckets, allowing you to manage permissions at the object level.

## 28. A — Use IAM roles for EC2 instances or services running the pipeline

IAM roles provide temporary credentials that automatically rotate, making them more secure than using long-term access keys in CI/CD environments.

## 29. D — The external corporate directory system

In a SAML 2.0 federation with AWS, the external corporate directory (like Active Directory or another SAML-compatible identity system) acts as the identity provider, authenticating users and providing assertions to AWS.

## 30. C — AWS Certificate Manager

AWS Certificate Manager provides, manages, and deploys public and private SSL/TLS certificates for use with AWS services, making it the appropriate choice for securing communication between microservices.



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