

AWS-Certified-DevOps-Engineer-Professional Dumps

Amazon AWS Certified DevOps Engineer Professional

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NEW QUESTION 1

You run a clustered NoSQL database on AWS EC2 using AWS EBS. You need to reduce latency for database response times. Performance is the most important concern, not availability. You did not perform the initial setup, someone without much AWS knowledge did, so you are not sure if they configured everything optimally. Which of the following is NOT likely to be an issue contributing to increased latency?

- A. The EC2 instances are not EBS Optimized.
- B. The database and requesting system are both in the wrong Availability Zone.
- C. The EBS Volumes are not using PIOPS.
- D. The database is not running in a placement group

Answer: B

Explanation:

For the highest possible performance, all instances in a clustered database like this one should be in a single Availability Zone in a placement group, using EBS optimized instances, and using PIOPS SSD EBS Volumes. The particular Availability Zone the system is running in should not be important, as long as it is the same as the requesting resources.

Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/placement-groups.html>

NEW QUESTION 2

When thinking of AWS Elastic Beanstalk, the 'Swap Environment URLs' feature most directly aids in what?

- A. Immutable Rolling Deployments
- B. Mutable Rolling Deployments
- C. Canary Deployments
- D. Blue-Green Deployments

Answer: D

Explanation:

Simply upload the new version of your application and let your deployment service (AWS Elastic Beanstalk, AWS CloudFormation, or AWS OpsWorks) deploy a new version (green). To cut over to the new version, you simply replace the ELB URLs in your DNS records. Elastic Beanstalk has a Swap Environment URLs feature to facilitate a simpler cutover process.

Reference: <https://d0.awsstatic.com/whitepapers/overview-of-deployment-options-on-aws.pdf>

NEW QUESTION 3

When thinking of DynamoDB, what are true of Global Secondary Key properties?

- A. The partition key and sort key can be different from the table.
- B. Only the partition key can be different from the table.
- C. Either the partition key or the sort key can be different from the table, but not both.
- D. Only the sort key can be different from the table

Answer: A

Explanation:

Global secondary index — an index with a partition key and a sort key that can be different from those on the table. A global secondary index is considered "global" because queries on the index can span all of the data in a table, across all partitions.

Reference: <http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/SecondaryIndexes.html>

NEW QUESTION 4

Your system automatically provisions EIPs to EC2 instances in a VPC on boot. The system provisions the whole VPC and stack at once. You have two of them per VPC. On your new AWS account, your attempt to create a Development environment failed, after successfully creating Staging and Production environments in the same region. What happened?

- A. You didn't choose the Development version of the AMI you are using.
- B. You didn't set the Development flag to true when deploying EC2 instances.
- C. You hit the soft limit of 5 EIPs per region and requested a 6th.
- D. You hit the soft limit of 2 VPCs per region and requested a 3rd

Answer: C

Explanation:

There is a soft limit of 5 EIPs per Region for VPC on new accounts. The third environment could not allocate the 6th EIP.

Reference: http://docs.aws.amazon.com/general/latest/gr/aws_service_limits.html#limits_vpc

NEW QUESTION 5

To monitor API calls against our AWS account by different users and entities, we can use to create a history of calls in bulk for later review, and use for reacting to AWS API calls in real-time.

- A. AWS Config; AWS Inspector
- B. AWS CloudTrail; AWS Config
- C. AWS CloudTrail; CloudWatch Events
- D. AWS Config; AWS Lambda

Answer: C

Explanation:

CloudTrail is a batch API call collection service, CloudWatch Events enables real-time monitoring of calls through the Rules object interface.
Reference: <https://aws.amazon.com/whitepapers/security-at-scale-governance-in-aws/>

NEW QUESTION 6

You run accounting software in the AWS cloud. This software needs to be online continuously during the day every day of the week, and has a very static requirement for compute resources. You also have other, unrelated batch jobs that need to run once per day at any time of your choosing. How should you minimize cost?

- A. Purchase a Heavy Utilization Reserved Instance to run the accounting softwar
- B. Turn it off after hour
- C. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- D. Purchase a Medium Utilization Reserved Instance to run the accounting softwar
- E. Turn it off after hour
- F. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- G. Purchase a Light Utilization Reserved Instance to run the accounting softwar
- H. Turn it off after hour
- I. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- J. Purchase a Full Utilization Reserved Instance to run the accounting softwar
- K. Turn it off after hour
- L. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.

Answer: A

Explanation:

Because the instance will always be online during the day, in a predictable manner, and there are a sequence of batch jobs to perform at any time, we should run the batch jobs when the account software is off. We can achieve Heavy Utilization by alternating these times, so we should purchase the reservation as such, as this represents the lowest cost. There is no such thing a "Full" level utilization purchases on EC2.
Reference: https://d0.awsstatic.com/whitepapers/Cost_Optimization_with_AWS.pdf

NEW QUESTION 7

Which status represents a failure state in AWS CloudFormation?

- A. `UPDATE_COMPLETE_CLEANUP_IN_PROGRESS`
- B. `DELETE_COMPLETE_WITH_ARTIFACTS`
- C. `ROLLBACK_IN_PROGRESS`
- D. `ROLLBACK_FAILED`

Answer: C

Explanation:

ROLLBACK_IN_PROGRESS means an UpdateStack operation failed and the stack is in the process of trying to return to the valid, pre-update state.
UPDATE_COMPLETE_CLEANUP_IN_PROGRESS means an update was successful, and CloudFormation is deleting any replaced, no longer used resources.
ROLLBACK_FAILED is not a CloudFormation state (but UPDATE_ROLLBACK_FAILED is). DELETE_COMPLETE_WITH_ARTIFACTS does not exist at all.
Reference:
<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/using-cfn-updating-stacks.html>

NEW QUESTION 8

You are getting a lot of empty receive requests when using Amazon SQS. This is making a lot of unnecessary network load on your instances. What can you do to reduce this load?

- A. Subscribe your queue to an SNS topic instead.
- B. Use as long of a poll as possible, instead of short polls.
- C. Alter your visibility timeout to be shorter.
- D. Use `sqsd` on your EC2 instance

Answer: B

Explanation:

One benefit of long polling with Amazon SQS is the reduction of the number of empty responses, when there are no messages available to return, in reply to a ReceiveMessage request sent to an Amazon SQS queue. Long polling allows the Amazon SQS service to wait until a message is available in the queue before sending a response.

Reference:

<http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-long-polling.html>

NEW QUESTION 9

You run operations for a company that processes digital wallet payments at a very high volume. One second of downtime, during which you drop payments or are otherwise unavailable, loses you on average USD 100. You balance the financials of the transaction system once per day. Which database setup is best suited to address this business risk?

- A. A multi-AZ RDS deployment with synchronous replication to multiple standbys and read-replicas for fast failover and ACID properties.
- B. A multi-region, multi-master, active-active RDS configuration using database-level ACID design principles with database trigger writes for replication.
- C. A multi-region, multi-master, active-active DynamoDB configuration using application control-level BASE design principles with change-stream write queue buffers for replication.
- D. A multi-AZ DynamoDB setup with changes streamed to S3 via AWS Kinesis, for highly durable storage and BASE properties.

Answer: C

Explanation:

Only the multi-master, multi-region DynamoDB answer makes sense. Multi-AZ deployments do not provide sufficient availability when a business loses USD 360,000 per hour of unavailability. As RDS does not natively support multi-region, and ACID does not perform well/at all over large distances between regions, only the DynamoDB answer works. Reference:

<http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Streams.CrossRegionRepl.html>

NEW QUESTION 10

When thinking of DynamoDB, what are true of Local Secondary Key properties?

- A. Either the partition key or the sort key can be different from the table, but not both.
- B. Only the sort key can be different from the table.
- C. The partition key and sort key can be different from the table.
- D. Only the partition key can be different from the table.

Answer: B

Explanation:

Global secondary index — an index with a partition key and a sort key that can be different from those on the table. A global secondary index is considered "global" because queries on the index can span all of the data in a table, across all partitions.

Reference: <http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/SecondaryIndexes.html>

NEW QUESTION 10

You need to grant a vendor access to your AWS account. They need to be able to read protected messages in a private S3 bucket at their leisure. They also use AWS. What is the best way to accomplish this?

- A. Create an IAM User with API Access Key
- B. Grant the User permissions to access the bucket
- C. Give the vendor the AWS Access Key ID and AWS Secret Access Key for the User.
- D. Create an EC2 Instance Profile on your account
- E. Grant the associated IAM role full access to the bucket
- F. Start an EC2 instance with this Profile and give SSH access to the instance to the vendor.
- G. Create a cross-account IAM Role with permission to access the bucket, and grant permission to use the Role to the vendor AWS account.
- H. Generate a signed S3 PUT URL and a signed S3 GET URL, both with wildcard values and 2 year duration
- I. Pass the URLs to the vendor.

Answer: C

Explanation:

When third parties require access to your organization's AWS resources, you can use roles to delegate access to them. For example, a third party might provide a service for managing your AWS resources. With IAM roles, you can grant these third parties access to your AWS resources without sharing your AWS security credentials. Instead, the third party can access your AWS resources by assuming a role that you create in your AWS account.

Reference:

http://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles_common-scenarios_third-party.html

NEW QUESTION 11

Your serverless architecture using AWS API Gateway, AWS Lambda, and AWS DynamoDB experienced a large increase in traffic to a sustained 400 requests per second, and dramatically increased in failure rates. Your requests, during normal operation, last 500 milliseconds on average. Your DynamoDB table did not exceed 50% of provisioned throughput, and Table primary keys are designed correctly. What is the most likely issue?

- A. Your API Gateway deployment is throttling your requests.
- B. Your AWS API Gateway Deployment is bottlenecking on request (de)serialization.
- C. You did not request a limit increase on concurrent Lambda function executions.
- D. You used Consistent Read requests on DynamoDB and are experiencing semaphore lock

Answer: C

Explanation:

AWS API Gateway by default throttles at 500 requests per second steady-state, and 1000 requests per second at spike. Lambda, by default, throttles at 100 concurrent requests for safety. At 500 milliseconds (half of a second) per request, you can expect to support 200 requests per second at 100 concurrency. This is less than the 400 requests per second your system now requires. Make a limit increase request via the AWS Support Console.

AWS Lambda: Concurrent requests safety throttle per account -> 100

Reference: http://docs.aws.amazon.com/general/latest/gr/aws_service_limits.html#limits_lambda

NEW QUESTION 15

You meet once per month with your operations team to review the past month's data. During the meeting, you realize that 3 weeks ago, your monitoring system which pings over HTTP from outside AWS recorded a large spike in latency on your 3-tier web service API.

You use DynamoDB for the database layer, ELB, EBS, and EC2 for the business logic tier, and SQS, ELB, and EC2 for the presentation layer.

Which of the following techniques will NOT help you figure out what happened?

- A. Check your CloudTrail log history around the spike's time for any API calls that caused slowness.
- B. Review CloudWatch Metrics graphs to determine which component(s) slowed the system down.
- C. Review your ELB access logs in S3 to see if any ELBs in your system saw the latency.
- D. Analyze your logs to detect bursts in traffic at that time

Answer: B

Explanation:

Metrics data are available for 2 weeks. If you want to store metrics data beyond that duration, you can retrieve it using our GetMetricStatistics API as well as a number of applications and tools offered by AWS partners.

Reference: <https://aws.amazon.com/cloudwatch/faqs/>

NEW QUESTION 16

Which of these is not a CloudFormation Helper Script?

- A. cfn-signal
- B. cfn-hup
- C. cfn-request
- D. cfn-get-metadata

Answer: C

Explanation:

This is the complete list of CloudFormation Helper Scripts: cfn-init, cfn-signal, cfn-get-metadata, cfn-hup Reference: <http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/cfn-helper-scripts-reference.html>

NEW QUESTION 18

Your team wants to begin practicing continuous delivery using CloudFormation, to enable automated builds and deploys of whole, versioned stacks or stack layers. You have a 3-tier, mission-critical system. Which of the following is NOT a best practice for using CloudFormation in a continuous delivery environment?

- A. Use the AWS CloudFormation `ValidateTemplate` call before publishing changes to AWS.
- B. Model your stack in one template, so you can leverage CloudFormation's state management and dependency resolution to propagate all changes.
- C. Use CloudFormation to create brand new infrastructure for all stateless resources on each push, and run integration tests on that set of infrastructure.
- D. Parametrize the template and use `Mappings` to ensure your template works in multiple Regions.

Answer: B

Explanation:

Putting all resources in one stack is a bad idea, since different tiers have different life cycles and frequencies of change. For additional guidance about organizing your stacks, you can use two common frameworks: a multi-layered architecture and service-oriented architecture (SOA).

Reference:

<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/best-practices.html#organizingstack>

NEW QUESTION 23

You are building a Ruby on Rails application for internal, non-production use which uses IV|ySQL as a database. You want developers without very much AWS experience to be able to deploy new code with a single command line push. You also want to set this up as simply as possible. Which tool is ideal for this setup?

- A. AWS CloudFormation
- B. AWS OpsWorks
- C. AWS ELB + EC2 with CLI Push
- D. AWS Elastic Beanstalk

Answer: D

Explanation:

Elastic Beanstalk's primary mode of operation exactly supports this use case out of the box. It is simpler than all the other options for this question.

With Elastic Beanstalk, you can quickly deploy and manage applications in the AWS cloud without worrying about the infrastructure that runs those applications.

AWS Elastic Beanstalk reduces management complexity without restricting choice or control. You simply upload your application, and Elastic Beanstalk automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring.

Reference: http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_Ruby_rails.html

NEW QUESTION 24

Your CTO has asked you to make sure that you know what all users of your AWS account are doing to change resources at all times. She wants a report of who is doing what over time, reported to her once per week, for as broad a resource type group as possible. How should you do this?

- A. Create a global AWS CloudTrail Trail
- B. Configure a script to aggregate the log data delivered to S3 once per week and deliver this to the CTO.
- C. Use CloudWatch Events Rules with an SNS topic subscribed to all AWS API call
- D. Subscribe the CTO to an email type delivery on this SNS Topic.
- E. Use AWS IAM credential reports to deliver a CSV of all uses of IAM User Tokens over time to the CTO.
- F. Use AWS Config with an SNS subscription on a Lambda, and insert these changes over time into a DynamoDB table
- G. Generate reports based on the contents of this table.

Answer: A

Explanation:

This is the ideal use case for AWS CloudTrail.

CloudTrail provides visibility into user activity by recording API calls made on your account. CloudTrail records important information about each API call, including the name of the API, the identity of the caller, the time of the API call, the request parameters, and the response elements returned by the AWS service. This information helps you to track changes made to your AWS resources and to troubleshoot operational issues. CloudTrail makes it easier to ensure compliance with internal policies and regulatory standards. Reference: <https://aws.amazon.com/Cloudtrail/faqs/>

NEW QUESTION 29

You work for a company that automatically tags photographs using artificial neural networks (ANNs), which run on GPUs using C++. You receive millions of images at a time, but only 3 times per day on average. These images are loaded into an AWS S3 bucket you control for you in a batch, and then the customer publishes a JSON-formatted manifest into another S3 bucket you control as well. Each image takes 10 milliseconds to process using a full GPU. Your neural network software requires 5 minutes to bootstrap. Image tags are JSON objects, and you must publish them to an S3 bucket.

Which of these is the best system architectures for this system?

- A. Create an OpsWorks Stack with two Layer

- B. The first contains lifecycle scripts for launching and bootstrapping an HTTP API on G2 instances for ANN image processing, and the second has an always-on instance which monitors the S3 manifest bucket for new file
- C. When a new file is detected, request instances to boot on the ANN laye
- D. When the instances are booted and the HTTP APIs are up, submit processing requests to indMdual instances.
- E. Make an S3 notification configuration which publishes to AWS Lambda on the manifest bucke
- F. Make the Lambda create a CloudFormation Stack which contains the logic to construct an autoscaling worker tier of EC2 G2 instances with the ANN code on each instanc
- G. Create an SQS queue of the images in the manifes
- H. Tear the stack down when the queue is empty.
- I. Deploy your ANN code to AWS Lambda as a bundled binary for the C++ extensio
- J. Make an S3 notification configuration on the manifest, which publishes to another AWS Lambda running controller cod
- K. This controller code publishes all the images in the manifest to AWS Kinesi
- L. Your ANN code Lambda Function uses the Kinesis as an Event Sourc
- M. The system automatically scales when the stream contains image events.
- N. Create an Auto Scaling, Load Balanced Elastic Beanstalk worker tier Application and Environmen
- O. Deploy the ANN code to G2 instances in this tie
- P. Set the desired capacity to 1. Make the code periodically check S3 for new manifest
- Q. When a new manifest is detected, push all of the images in the manifest into the SQS queue associated with the Elastic Beanstalk worker tier.

Answer: B

Explanation:

The Elastic Beanstalk option is incorrect because it requires a constantly-polling instance, which may break and costs money.

The Lambda fileet option is incorrect because AWS Lambda does not support GPU usage.

The OpsWorks stack option both requires a constantly-polling instance, and also requires complex timing and capacity planning logic.

The CloudFormation option requires no polling, has no always-on instances, and allows arbitrarily fast processing by simply setting the instance count as high as needed.

Reference: <http://docs.aws.amazon.com/lambda/latest/dg/current-supported-versions.html>

NEW QUESTION 31

You need to create a Route53 record automatically in CloudFormation when not running in production during all launches of a Template. How should you implement this?

- A. Use a `Parameter` for `environment`, and add a `Condition` on the Route53 `Resource` in the template to create the record only when `environment` is not `production`.
- B. Create two templates, one with the Route53 record value and one with a null value for the recor
- C. Use the one without it when deploying to production.
- D. Use a `Parameter` for `environment`, and add a `Condition` on the Route53 `Resource` in the template to create the record with a null string when `environment` is `production`.
- E. Create two templates, one with the Route53 record and one without i
- F. Use the one without it when deploying to production.

Answer: A

Explanation:

The best way to do this is with one template, and a Condition on the resource. Route53 does not allow null strings for records.

Reference:

<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/conditions-section-structure.html>

NEW QUESTION 36

If you're trying to configure an AWS Elastic Beanstalk worker tier for easy debugging if there are problems finishing queue jobs, what should you configure?

- A. Configure Rolling Deployments.
- B. Configure Enhanced Health Reporting
- C. Configure Blue-Green Deployments.
- D. Configure a Dead Letter Queue

Answer: D

Explanation:

Elastic Beanstalk worker environments support Amazon Simple Queue Service (SQS) dead letter queues. A dead letter queue is a queue where other (source) queues can send messages that for some reason could not be successfully processed. A primary benefit of using a dead letter queue is the ability to sideline and isolate the unsuccessfully processed messages. You can then analyze any messages sent

to the dead letter queue to try to determine why they were not successfully processed. Reference:

<http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-tiers.html#worker-deadletter>

NEW QUESTION 40

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