

# Amazon

## Exam Questions AWS-Certified-DevOps-Engineer-Professional

Amazon AWS Certified DevOps Engineer Professional



**NEW QUESTION 1**

You are building a game high score table in DynamoDB. You will store each user's highest score for each game, with many games, all of which have relatively similar usage levels and numbers of players. You need to be able to look up the highest score for any game. What's the best DynamoDB key structure?

- A. HighestScore as the hash / only key.
- B. GameID as the hash key, HighestScore as the range key.
- C. GameID as the hash / only key.
- D. GameID as the range / only key

**Answer: B**

**Explanation:**

Since access and storage for games is uniform, and you need to have ordering within each game for the scores (to access the highest value), your hash (partition) key should be the GameID, and there should be a range key for HighestScore.

Reference: <http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/GuidelinesForTables.html#GuidelinesForTables.Partitions>

**NEW QUESTION 2**

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 3**

Fill the blanks: helps us track AWS API calls and transitions, helps to understand what resources we have now, and allows auditing credentials and logins.

- A. AWS Config, CloudTrail, IAM Credential Reports
- B. CloudTrail, IAM Credential Reports, AWS Config
- C. CloudTrail, AWS Config, IAM Credential Reports
- D. AWS Config, IAM Credential Reports, CloudTrail

**Answer: C**

**Explanation:**

You can use AWS CloudTrail to get a history of AWS API calls and related events for your account. This includes calls made by using the AWS Management Console, AWS SDKs, command line tools, and higher-level AWS services.

Reference: <http://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudtrail-user-guide.html>

**NEW QUESTION 4**

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 5**

You need to process long-running jobs once and only once. How might you do this?

- A. Use an SNS queue and set the visibility timeout to long enough for jobs to process.
- B. Use an SQS queue and set the reprocessing timeout to long enough for jobs to process.
- C. Use an SQS queue and set the visibility timeout to long enough for jobs to process.
- D. Use an SNS queue and set the reprocessing timeout to long enough for jobs to process

**Answer: C**

**Explanation:**

The message timeout defines how long after a successful receive request SQS waits before allowing jobs to be seen by other components, and proper

configuration prevents duplicate processing.

Reference: <http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/MessageLifecycle.html>

#### NEW QUESTION 6

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](http://docs.aws.amazon.com/general/latest/gr/aws_service_limits.html#limits_vpc)

#### NEW QUESTION 7

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 8

Which of these is not an intrinsic function in AWS CloudFormation?

- A. Fn::Equals
- B. Fn::If
- C. Fn::Not
- D. Fn::Parse

**Answer: D**

#### Explanation:

This is the complete list of Intrinsic Functions...: Fn::Base64, Fn::And, Fn::Equals, Fn::If, Fn::Not, Fn::Or, Fn::FindInMap, Fn::GetAtt, Fn::GetAZs, Fn::Join, Fn::Select, Ref

Reference:

<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference.html>

#### NEW QUESTION 9

You need to create a simple, holistic check for your system's general availability and uptime. Your system presents itself as an HTTP-speaking API. What is the most simple tool on AWS to achieve this with?

- A. Route53 Health Checks
- B. CloudWatch Health Checks
- C. AWS ELB Health Checks
- D. EC2 Health Checks

**Answer: A**

#### Explanation:

You can create a health check that will run into perpetuity using Route53, in one API call, which will ping your service via HTTP every 10 or 30 seconds.

Amazon Route 53 must be able to establish a TCP connection with the endpoint within four seconds. In addition, the endpoint must respond with an HTTP status code of 200 or greater and less than 400 within two seconds after connecting.

Reference:

<http://docs.aws.amazon.com/Route53/latest/DeveloperGuide/dns-failover-determining-health-of-endpoints.html>

#### NEW QUESTION 10

What is the scope of an EC2 security group?

- A. Availability Zone
- B. Placement Group
- C. Region
- D. VPC

**Answer: C**

**Explanation:**

A security group is tied to a region and can be assigned only to instances in the same region. You can't enable an instance to communicate with an instance outside its region using security group rules. Traffic from an instance in another region is seen as WAN bandwidth.  
Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/resources.html>

**NEW QUESTION 10**

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 12**

For AWS Auto Scaling, what is the first transition state an existing instance enters after leaving steady state in Standby mode?

- A. Detaching
- B. Terminating:Wait
- C. Pending
- D. EnteringStandby

**Answer:** C

**Explanation:**

You can put any instance that is in an InService state into a Standby state. This enables you to remove the instance from service, troubleshoot or make changes to it, and then put it back into service. Instances in a Standby state continue to be managed by the Auto Scaling group. However, they are not an active part of your application until you put them back into service.  
Reference: <http://docs.aws.amazon.com/AutoScaling/latest/DeveloperGuide/AutoScalingGroupLifecycle.html>

**NEW QUESTION 14**

When thinking of AWS Elastic Beanstalk's model, which is true?

- A. Applications have many deployments, deployments have many environments.
- B. Environments have many applications, applications have many deployments.
- C. Applications have many environments, environments have many deployments.
- D. Deployments have many environments, environments have many application

**Answer:** C

**Explanation:**

Applications group logical services. Environments belong to Applications, and typically represent different deployment levels (dev, stage, prod, fo forth). Deployments belong to environments, and are pushes of bundles of code for the environments to run.  
Reference: <http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/Welcome.html>

**NEW QUESTION 15**

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 16**

There are a number of ways to purchase compute capacity on AWS. Which orders the price per compute or memory unit from LOW to HIGH (cheapest to most expensive), on average?  
(A) On-Demand (B) Spot (C) Reserved

- A. A, B, C
- B. C, B, A
- C. B, C, A
- D. A, C, B

**Answer:** C

**Explanation:**

Spot instances are usually many, many times cheaper than on-demand prices. Reserved instances, depending on their term and utilization, can yield approximately 33% to 66% cost savings. On-Demand prices are the baseline price and are the most expensive way to purchase EC2 compute time. Reference: [https://d0.awsstatic.com/whitepapers/Cost\\_Optimization\\_with\\_AWS.pdf](https://d0.awsstatic.com/whitepapers/Cost_Optimization_with_AWS.pdf)

**NEW QUESTION 20**

Which deployment method, when using AWS Auto Scaling Groups and Auto Scaling Launch Configurations, enables the shortest time to live for individual servers?

- A. Pre-baking AMIs with all code and configuration on deploys.
- B. Using a Dockerfile bootstrap on instance launch.
- C. Using UserData bootstrapping scripts.
- D. Using AWS EC2 Run Commands to dynamically SSH into fleet

**Answer:** A

**Explanation:**

Note that the bootstrapping process can be slower if you have a complex application or multiple applications to install. Managing a fleet of applications with several build tools and dependencies can be a challenging task during rollouts. Furthermore, your deployment service should be designed to do faster rollouts to take advantage of Auto Scaling. Prebaking is a process of embedding a significant portion of your application artifacts within your base AMI. During the deployment process you can customize application installations by using EC2 instance artifacts such as instance tags, instance metadata, and Auto Scaling groups.

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

**NEW QUESTION 22**

Which major database needs a BYO license?

- A. PostgreSQL
- B. MariaDB
- C. MySQL
- D. Oracle

**Answer:** D

**Explanation:**

Oracle is not open source, and requires a bring your own license model.

Reference: [http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP\\_Oracle.html](http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_Oracle.html)

**NEW QUESTION 25**

For AWS Auto Scaling, what is the first transition state a new instance enters after leaving steady state when scaling out due to increased load?

- A. EnteringStandby
- B. Pending
- C. Terminating:Wait
- D. Detaching

**Answer:** B

**Explanation:**

When a scale out event occurs, the Auto Scaling group launches the required number of EC2 instances, using its assigned launch configuration. These instances start in the Pending state. If you add a lifecycle hook to your Auto Scaling group, you can perform a custom action here. For more information, see Lifecycle Hooks.

Reference: <http://docs.aws.amazon.com/AutoScaling/latest/DeveloperGuide/AutoScalingGroupLifecycle.html>

**NEW QUESTION 30**

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

#### NEW QUESTION 32

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](http://docs.aws.amazon.com/general/latest/gr/aws_service_limits.html#limits_lambda)

#### NEW QUESTION 34

You need to migrate 10 million records in one hour into DynamoDB. All records are 1.5KB in size. The data is evenly distributed across the partition key. How many write capacity units should you provision during this batch load?

- A. 6667
- B. 4166
- C. 5556
- D. 2778

**Answer: C**

#### Explanation:

You need 2 units to make a 1.5KB write, since you round up. You need 20 million total units to perform this load. You have 3600 seconds to do so. Divide and round up for 5556.

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

#### NEW QUESTION 37

Your API requires the ability to stay online during AWS regional failures. Your API does not store any state, it only aggregates data from other sources - you do not have a database. What is a simple but effective way to achieve this uptime goal?

- A. Use a CloudFront distribution to serve up your API
- B. Even if the region your API is in goes down, the edge locations CloudFront uses will be fine.
- C. Use an ELB and a cross-zone ELB deployment to create redundancy across datacenter
- D. Even if a region fails, the other AZ will stay online.
- E. Create a Route53 Weighted Round Robin record, and if one region goes down, have that region redirect to the other region.
- F. Create a Route53 Latency Based Routing Record with Failover and point it to two identical deployments of your stateless API in two different regions
- G. Make sure both regions use Auto Scaling Groups behind ELBs.

**Answer: D**

#### Explanation:

standard volumes, or Magnetic volumes, are best for: Cold workloads where data is infrequently accessed, or scenarios where the lowest storage cost is important.

Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

#### NEW QUESTION 41

You need to deploy an AWS stack in a repeatable manner across multiple environments. You have selected CloudFormation as the right tool to accomplish this, but have found that there is a resource type you need to create and model, but is unsupported by CloudFormation. How should you overcome this challenge?

- A. Use a CloudFormation Custom Resource Template by selecting an API call to proxy for create, update, and delete action
- B. CloudFormation will use the AWS SDK, CLI, or API method of your choosing as the state transition function for the resource type you are modeling.
- C. Submit a ticket to the AWS Forum
- D. AWS extends CloudFormation Resource Types by releasing tooling to the AWS Labs organization on GitHub
- E. Their response time is usually 1 day, and they complete requests within a week or two.
- F. Instead of depending on CloudFormation, use Chef, Puppet, or Ansible to author Heat templates, which are declarative stack resource definitions that operate over the OpenStack hypervisor and cloud environment.
- G. Create a CloudFormation Custom Resource Type by implementing create, update, and delete functionality, either by subscribing a Custom Resource Provider to an SNS topic, or by implementing the logic in AWS Lambda.

**Answer: D**

#### Explanation:

Custom resources provide a way for you to write custom provisioning logic in AWS CloudFormation template and have AWS CloudFormation run it during a stack operation, such as when you create, update or delete a stack. For more information, see Custom Resources.

Reference:

<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/template-custom-resources.html>

#### NEW QUESTION 46

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](http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/create_deploy_Ruby_rails.html)

#### NEW QUESTION 49

You are building a mobile app for consumers to post cat pictures online. You will be storing the images in AWS S3. You want to run the system very cheaply and simply. Which one of these options allows you to build a photo sharing application without needing to worry about scaling expensive uploads processes, authentication/authorization and so forth?

- A. Build the application out using AWS Cognito and web identity federation to allow users to log in using Facebook or Google Account
- B. Once they are logged in, the secret token passed to that user is used to directly access resources on AWS, like AWS S3.
- C. Use JWT or SANIL compliant systems to build authorization policie
- D. Users log in with a username and password, and are given a token they can use indefinitely to make calls against the photo infrastructure.
- E. Use AWS API Gateway with a constantly rotating API Key to allow access from the client-sid
- F. Construct a custom build of the SDK and include S3 access in it.
- G. Create an AWS oAuth Service Domain ad grant public signup and access to the domai
- H. During setup, add at least one major social media site as a trusted Identity Provider for users.

**Answer:** A

#### Explanation:

The short answer is that Amazon Cognito is a superset of the functionality provided by web identity federation. It supports the same providers, and you configure your app and authenticate with those providers in the same way. But Amazon Cognito includes a variety of additional features. For example, it enables your users to start using the app as a guest user and later sign in using one of the supported identity providers.

Reference:

<https://blogs.aws.amazon.com/security/post/Tx3SYCORF5EKRCO/How-Does-Amazon-Cognito-Relate-to-Existing-Web-Identity-Federatio>

#### NEW QUESTION 54

You need to deploy a new application version to production. Because the deployment is high-risk, you need to roll the new version out to users over a number of hours, to make sure everything is working correctly. You need to be able to control the proportion of users seeing the new version of the application down to the percentage point.

You use ELB and EC2 with Auto Scaling Groups and custom AMIs with your code pre-installed assigned to Launch Configurations. There are no database-level changes during your deployment. You have been told you cannot spend too much money, so you must not increase the number of EC2 instances much at all during the deployment, but you also need to be able to switch back to the original version of code quickly if something goes wrong. What is the best way to meet these requirements?

- A. Create a second ELB, Auto Scaling Launch Configuration, and Auto Scaling Group using the Launch Configuratio
- B. Create AMIs with all code pre-installe
- C. Assign the new AMI to the second Auto Scaling Launch Configuratio
- D. Use Route53 Weighted Round Robin Records to adjust the proportion of traffic hitting the two ELBs.
- E. Use the Blue-Green deployment method to enable the fastest possible rollback if neede
- F. Create a full second stack of instances and cut the DNS over to the new stack of instances, and change the DNS back if a rollback is needed.
- G. Create AMIs with all code pre-installe
- H. Assign the new AMI to the Auto Scaling Launch Configuration, to replace the old on
- I. Gradually terminate instances running the old code (launched with the old Launch Configuration) and allow the new AMIs to boot to adjust the traffic balance to the new cod
- J. On rollback, reverse the process by doing the same thing, but changing the AMI on the Launch Config back to the original code.
- K. Migrate to use AWS Elastic Beanstal
- L. Use the established and well-tested Rolling Deployment setting AWS provides on the new Application Environment, publishing a zip bundle of the new code and adjusting the wait period to spread the deployment over tim
- M. Re-deploy the old code bundle to rollback if needed.

**Answer:** A

#### Explanation:

Only Weighted Round Robin DNS Records and reverse proxies allow such fine-grained tuning of traffic splits. The Blue-Green option does not meet the requirement that we mitigate costs and keep overall EC2 fileet size consistent, so we must select the 2 ELB and ASG option with WRR DNS tuning. This method is called A/B deployment and/or Canary deployment.

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

#### NEW QUESTION 59

If I want CloudFormation stack status updates to show up in a continuous delivery system in as close to real time as possible, how should I achieve this?

- A. Use a long-poll on the Resources object in your CloudFormation stack and display those state changes in the UI for the system.
- B. Use a long-poll on the `ListStacks` API call for your CloudFormation stack and display those state changes in the UI for the system.
- C. Subscribe your continuous delivery system to an SNS topic that you also tell your CloudFormation stack to publish events into.
- D. Subscribe your continuous delivery system to an SQS queue that you also tell your CloudFormation stack to publish events into.

**Answer:** C

**Explanation:**

Use NotificationARNs.member.N when making a CreateStack call to push stack events into SNS in nearly real-time.

Reference:

<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/using-cfn-updating-stacks-monitor-stack.html>

**NEW QUESTION 61**

Which of these is not a reason a Multi-AZ RDS instance will failover?

- A. An Availability Zone outage
- B. A manual failover of the DB instance was initiated using Reboot with failover
- C. To autoscale to a higher instance class
- D. The primary DB instance fails

**Answer:** C

**Explanation:**

The primary DB instance switches over automatically to the standby replica if any of the following conditions occur: An Availability Zone outage, the primary DB instance fails, the DB instance's server type is changed, the operating system of the DB instance is undergoing software patching, a manual failover of the DB instance was initiated using Reboot with failover

Reference: <http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html>

**NEW QUESTION 62**

Your company wants to understand where cost is coming from in the company's production AWS account. There are a number of applications and services running at any given time. Without expending too much initial development time, how best can you give the business a good understanding of which applications cost the most per month to operate?

- A. Create an automation script which periodically creates AWS Support tickets requesting detailed intra-month information about your bill.
- B. Use custom CloudWatch Metrics in your system, and put a metric data point whenever cost is incurred.
- C. Use AWS Cost Allocation Tagging for all resources which support it.
- D. Use the Cost Explorer to analyze costs throughout the month.
- E. Use the AWS Price API and constantly running resource inventory scripts to calculate total price based on multiplication of consumed resources over time.

**Answer:** C

**Explanation:**

Cost Allocation Tagging is a built-in feature of AWS, and when coupled with the Cost Explorer, provides a simple and robust way to track expenses.

You can also use tags to filter views in Cost Explorer. Note that before you can filter views by tags in Cost Explorer, you must have applied tags to your resources and activate them, as described in the following sections. For more information about Cost Explorer, see Analyzing Your Costs with Cost Explorer. Reference:

<http://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/cost-alloc-tags.html>

**NEW QUESTION 65**

What is a circular dependency in AWS CloudFormation?

- A. When a Template references an earlier version of itself.
- B. When Nested Stacks depend on each other.
- C. When Resources form a DependsOn loop.
- D. When a Template references a region, which references the original Template

**Answer:** C

**Explanation:**

To resolve a dependency error, add a DependsOn attribute to resources that depend on other resources in your template. In some cases, you must explicitly declare dependencies so that AWS CloudFormation can create or delete resources in the correct order. For example, if you create an Elastic IP and a VPC with an Internet gateway in the same stack, the Elastic IP must depend on the Internet gateway attachment. For additional information, see DependsOn Attribute.

Reference: <http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/troubleshooting.html#troubleshooting-errors-dependence-error>

**NEW QUESTION 70**

You need to run a very large batch data processing job one time per day. The source data exists entirely in S3, and the output of the processing job should also be written to S3 when finished. If you need to version control this processing job and all setup and teardown logic for the system, what approach should you use?

- A. Model an AWS EMR job in AWS Elastic Beanstalk.
- B. Model an AWS EMR job in AWS CloudFormation.
- C. Model an AWS EMR job in AWS OpsWorks.
- D. Model an AWS EMR job in AWS CLI Compose

**Answer:** B

**Explanation:**

To declaratively model build and destroy of a cluster, you need to use AWS CloudFormation. OpsWorks and Elastic Beanstalk cannot directly model EMR Clusters. The CLI is not declarative, and CLI Composer does not exist.

Reference:



<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-emr-cluster.html>

#### NEW QUESTION 72

What is true of the way that encryption works with EBS?

- A. Snapshotting an encrypted volume makes an encrypted snapshot; restoring an encrypted snapshot creates an encrypted volume when specified / requested.
- B. Snapshotting an encrypted volume makes an encrypted snapshot when specified / requested; restoring an encrypted snapshot creates an encrypted volume when specified / requested.
- C. Snapshotting an encrypted volume makes an encrypted snapshot; restoring an encrypted snapshot always creates an encrypted volume.
- D. Snapshotting an encrypted volume makes an encrypted snapshot when specified / requested; restoring an encrypted snapshot always creates an encrypted volume.

**Answer: C**

#### Explanation:

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected. For more information, see Amazon EBS Encryption.

Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSEncryption.html>

#### NEW QUESTION 74

You are designing a system which needs, at minimum, 8 m4.large instances operating to service traffic. When designing a system for high availability in the us-east-1 region, which has 6 Availability Zones, you company needs to be able to handle death of a full availability zone. How should you distribute the servers, to save as much cost as possible, assuming all of the EC2 nodes are properly linked to an ELB? Your VPC account can utilize us-east-1's AZ's a through f, inclusive.

- A. 3 servers in each of AZ's a through d, inclusive.
- B. 8 servers in each of AZ's a and b.
- C. 2 servers in each of AZ's a through e, inclusive.
- D. 4 servers in each of AZ's a through c, inclusive.

**Answer: C**

#### Explanation:

You need to design for N+1 redundancy on Availability Zones.  $ZONE\_COUNT = (REQUIRED\_INSTANCES / INSTANCE\_COUNT\_PER\_ZONE) + 1$ . To minimize cost, spread the instances across as many possible zones as you can. By using a through e, you are allocating 5 zones. Using 2 instances, you have 10 total instances. If a single zone fails, you have 4 zones left, with 2 instances each, for a total of 8 instances. By spreading out as much as possible, you have increased cost by only 25% and significantly de-risked an availability zone failure.

Reference:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html#concepts-regions-availability-zones>

#### NEW QUESTION 78

You were just hired as a DevOps Engineer for a startup. Your startup uses AWS for 100% of their infrastructure. They currently have no automation at all for deployment, and they have had many failures while trying to deploy to production. The company has told you deployment process risk mitigation is the most important thing now, and you have a lot of budget for tools and AWS resources.

Their stack: 2-tier API

Data stored in DynamoDB or S3, depending on type Compute layer is EC2 in Auto Scaling Groups They use Route53 for DNS pointing to an ELB

An ELB balances load across the EC2 instances

The scaling group properly varies between 4 and 12 EC2 instances.

Which of the following approaches, given this company's stack and their priorities, best meets the company's needs?

- A. Model the stack in AWS Elastic Beanstalk as a single Application with multiple Environments
- B. Use Elastic Beanstalk's Rolling Deploy option to progressively roll out application code changes when promoting across environments.
- C. Model the stack in 3 CloudFormation templates: Data layer, compute layer, and networking layer
- D. Write stack deployment and integration testing automation following Blue-Green methodologies.
- E. Model the stack in AWS OpsWorks as a single Stack, with 1 compute layer and its associated ELB
- F. Use Chef and App Deployments to automate Rolling Deployment.
- G. Model the stack in 1 CloudFormation template, to ensure consistency and dependency graph resolution
- H. Write deployment and integration testing automation following Rolling Deployment methodologies.

**Answer: B**

#### Explanation:

AWS recommends Blue-Green for zero-downtime deploys. Since you use DynamoDB, and neither AWS OpsWorks nor AWS Elastic Beanstalk directly supports DynamoDB, the option selecting CloudFormation and Blue-Green is correct.

You use various strategies to migrate the traffic from your current application stack (blue) to a new version of the application (green). This is a popular technique for deploying applications with zero downtime. The deployment services like AWS Elastic Beanstalk, AWS CloudFormation, or AWS OpsWorks are particularly useful as they provide a simple way to clone your running application stack. You can set up a new version of your application (green) by simply cloning current version of the application (blue). Reference: <https://d0.awsstatic.com/whitepapers/overview-of-deployment-options-on-aws.pdf>

#### NEW QUESTION 82

What is the scope of an EBS snapshot?

- A. Availability Zone
- B. Placement Group
- C. Region
- D. VPC

**Answer: C**

**Explanation:**

An EBS snapshot is tied to its region and can only be used to create volumes in the same region. You can copy a snapshot from one region to another. For more information, see Copying an Amazon EBS Snapshot.

Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/resources.html>

**NEW QUESTION 87**

When thinking of AWS Elastic Beanstalk, which statement is true?

- A. Worker tiers pull jobs from SNS.
- B. Worker tiers pull jobs from HTTP.
- C. Worker tiers pull jobs from JSON.
- D. Worker tiers pull jobs from SQ

**Answer:** D

**Explanation:**

Elastic Beanstalk installs a daemon on each Amazon EC2 instance in the Auto Scaling group to process Amazon SQS messages in the worker environment. The daemon pulls data off the Amazon SQS queue, inserts it into the message body of an HTTP POST request, and sends it to a user-configurable URL path on the local host. The content type for the message body within an HTTP POST request is application/json by default.

Reference:

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

**NEW QUESTION 88**

Your company needs to automate 3 layers of a large cloud deployment. You want to be able to track this deployment's evolution as it changes over time, and carefully control any alterations. What is a good way to automate a stack to meet these requirements?

- A. Use OpsWorks Stacks with three layers to model the layering in your stack.
- B. Use CloudFormation Nested Stack Templates, with three child stacks to represent the three logical layers of your cloud.
- C. Use AWS Config to declare a configuration set that AWS should roll out to your cloud.
- D. Use Elastic Beanstalk Linked Applications, passing the important DNS entries between layers using the metadata interface.

**Answer:** B

**Explanation:**

Only CloudFormation allows source controlled, declarative templates as the basis for stack automation. Nested Stacks help achieve clean separation of layers while simultaneously providing a method to control all layers at once when needed.

Reference:

<https://blogs.aws.amazon.com/application-management/post/TxIT9JYOOS8AB9I/Use-Nested-Stacks-to-Create-Reusable-Templates-and-Support-Role-Specialization>

**NEW QUESTION 91**

You need the absolute highest possible network performance for a cluster computing application. You already selected homogeneous instance types supporting 10 gigabit enhanced networking, made sure that your workload was network bound, and put the instances in a placement group. What is the last optimization you can make?

- A. Use 9001 MTU instead of 1500 for Jumbo Frames, to raise packet body to packet overhead ratios.
- B. Segregate the instances into different peered VPCs while keeping them all in a placement group, so each one has its own Internet Gateway.
- C. Bake an AMI for the instances and relaunch, so the instances are fresh in the placement group and don't have noisy neighbors.
- D. Turn off SYN/ACK on your TCP stack or begin using UDP for higher throughput

**Answer:** A

**Explanation:**

For instances that are colocated inside a placement group, jumbo frames help to achieve the maximum network throughput possible, and they are recommended in this case. For more information, see Placement Groups.

Reference: [http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/network\\_mtu.html#jumbo\\_frame\\_instances](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/network_mtu.html#jumbo_frame_instances)

**NEW QUESTION 94**

You have a high security requirement for your AWS accounts. What is the most rapid and sophisticated setup you can use to react to AWS API calls to your account?

- A. Subscription to AWS Config via an SNS Topic
- B. Use a Lambda Function to perform in-flight analysis and react to changes as they occur.
- C. Global AWS CloudTrail setup delivering to S3 with an SNS subscription to the deliver notifications, pushing into a Lambda, which inserts records into an ELK stack for analysis.
- D. Use a CloudWatch Rule ScheduleExpression to periodically analyze IAM credential log
- E. Push the deltas for events into an ELK stack and perform ad-hoc analysis there.
- F. CloudWatch Events Rules which trigger based on all AWS API calls, submitting all events to an AWS Kinesis Stream for arbitrary downstream analysis.

**Answer:** D

**Explanation:**

CloudWatch Events allow subscription to AWS API calls, and direction of these events into Kinesis Streams. This allows a unified, near real-time stream for all API calls, which can be analyzed with any tool(s) of your choosing downstream.

Reference: [http://docs.aws.amazon.com/AmazonCloudWatch/latest/DeveloperGuide/EventTypes.html#api\\_event\\_type](http://docs.aws.amazon.com/AmazonCloudWatch/latest/DeveloperGuide/EventTypes.html#api_event_type)

**NEW QUESTION 97**

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