

AWS-Certified-DevOps-Engineer-Professional Dumps

Amazon AWS Certified DevOps Engineer Professional

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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 ke

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

You are creating an application which stores extremely sensitive financial information. All information in the system must be encrypted at rest and in transit. Which of these is a violation of this policy?

- A. ELB SSL termination.
- B. ELB Using Proxy Protocol v1.
- C. CloudFront Viewer Protocol Policy set to HTTPS redirection.
- D. Telling S3 to use AES256 on the server-side

Answer: A

Explanation:

Terminating SSL terminates the security of a connection over HTTP, removing the S for "Secure" in HTTPS. This violates the "encryption in transit" requirement in the scenario.

Reference:

<http://docs.aws.amazon.com/ElasticLoadBalancing/latest/DeveloperGuide/elb-listener-config.html>

NEW QUESTION 4

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 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

How does Amazon RDS multi Availability Zone model work?

- A. A second, standby database is deployed and maintained in a different availability zone from master, using synchronous replication.
- B. A second, standby database is deployed and maintained in a different availability zone from master using asynchronous replication.
- C. A second, standby database is deployed and maintained in a different region from master using asynchronous replication.
- D. A second, standby database is deployed and maintained in a different region from master using synchronous replication.

Answer: A

Explanation:

In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone.
Reference: <http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.MultiAZ.html>

NEW QUESTION 7

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 8

You need to perform ad-hoc analysis on log data, including searching quickly for specific error codes and reference numbers. Which should you evaluate first?

- A. AWS Elasticsearch Service
- B. AWS RedShift
- C. AWS EMR
- D. AWS DynamoDB

Answer: A

Explanation:

Amazon Elasticsearch Service (Amazon ES) is a managed service that makes it easy to deploy, operate, and scale Elasticsearch clusters in the AWS cloud. Elasticsearch is a popular open-source search and analytics engine for use cases such as log analytics, real-time application monitoring, and click stream analytics.
Reference: <http://docs.aws.amazon.com/elasticsearch-service/latest/developerguide/what-is-amazon-elasticsearch-service.html>

NEW QUESTION 9

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

NEW QUESTION 10

What is the maximum supported single-volume throughput on EBS?

- A. 320I|j|B/s
- B. 160MiB/s
- C. 40MiB/s
- D. 640MiB/s

Answer: A

Explanation:

The ceiling throughput for PIOPS on EBS is 320MiB/s.

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

NEW QUESTION 10

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 13

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 17

For AWS CloudFormation, which stack state refuses UpdateStack calls?

- A. `UPDATE_ROLLBACK_FAILED`
- B. `UPDATE_ROLLBACK_COMPLETE`
- C. `UPDATE_COMPLETE`
- D. `CREATE_COMPLETE`

Answer: A

Explanation:

When a stack is in the `UPDATE_ROLLBACK_FAILED` state, you can continue rolling it back to return it to a working state (to `UPDATE_ROLLBACK_COMPLETE`). You cannot update a stack that is in the `UPDATE_ROLLBACK_FAILED` state. However, if you can continue to roll it back, you can return the stack to its original settings and try to update it again.

Reference:

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

NEW QUESTION 21

Your CTO thinks your AWS account was hacked. What is the only way to know for certain if there was unauthorized access and what they did, assuming your hackers are very sophisticated AWS engineers and doing everything they can to cover their tracks?

- A. Use CloudTrail Log File Integrity Validation.
- B. Use AWS Config SNS Subscriptions and process events in real time.
- C. Use CloudTrail backed up to AWS S3 and Glacier.
- D. Use AWS Config Timeline forensic

Answer: A

Explanation:

You must use CloudTrail Log File Validation (default or custom implementation), as any other tracking method is subject to forgery in the event of a full account compromise by sophisticated enough hackers. Validated log files are invaluable in security and forensic investigations. For example, a validated log file enables you to assert positively that the log file itself has not changed, or that particular user credentials performed specific API activity. The CloudTrail log file integrity validation process also lets you know if a log file has been deleted or changed, or assert positively that no log files were delivered to your account during a given

period of time.

Reference:

<http://docs.aws.amazon.com/awsccloudtrail/latest/userguide/cloudtrail-log-file-validation-intro.html>

NEW QUESTION 24

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 29

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 32

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 Configuration
- B. Create AMIs with all code pre-installed
- C. Assign the new AMI to the second Auto Scaling Launch Configuration
- 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 needed
- 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-installed
- H. Assign the new AMI to the Auto Scaling Launch Configuration, to replace the old one
- 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 code
- 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 Beanstalk
- 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 time
- 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 fleet 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 34

What is required to achieve gigabit network throughput on EC2? You already selected cluster-compute, 10GB instances with enhanced networking, and your workload is already network-bound, but you are not seeing 10 gigabit speeds.

- A. Enable biplane networking on your servers, so packets are non-blocking in both directions and there's no switching overhead.
- B. Ensure the instances are in different VPCs so you don't saturate the Internet Gateway on any one VPC.
- C. Select PIOPS for your drives and mount several, so you can provision sufficient disk throughput.
- D. Use a placement group for your instances so the instances are physically near each other in the same Availability Zone.

Answer: D

Explanation:

You are not guaranteed 10gigabit performance, except within a placement group.

A placement group is a logical grouping of instances within a single Availability Zone. Using placement groups enables applications to participate in a low-latency, 10 Gbps network. Placement groups are recommended for applications that benefit from low network latency, high network throughput, or both. Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/placement-groups.html>

NEW QUESTION 35

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 37

What does it mean if you have zero IOPS and a non-empty I/O queue for all EBS volumes attached to a running EC2 instance?

- A. The I/O queue is buffer flushing.
- B. Your EBS disk head(s) is/are seeking magnetic stripes.
- C. The EBS volume is unavailable.
- D. You need to re-mount the EBS volume in the O

Answer: C

Explanation:

This is the definition of Unavailable from the EC2 and EBS SLA.

"Unavailable" and "Unavailability" mean... For Amazon EBS, when all of your attached volumes perform zero read write IO, with pending IO in the queue.

Reference: <https://aws.amazon.com/ec2/s/a/>

NEW QUESTION 38

You need to create an audit log of all changes to customer banking data. You use DynamoDB to store this customer banking data. It's important not to lose any information due to server failures. What is an elegant way to accomplish this?

- A. Use a DynamoDB StreamSpecification and stream all changes to AWS Lambda
- B. Log the changes to AWS CloudWatch Logs, removing sensitive information before logging.
- C. Before writing to DynamoDB, do a pre-write acknowledgment to disk on the application server, removing sensitive information before logging
- D. Periodically rotate these log files into S3.
- E. Use a DynamoDB StreamSpecification and periodically flush to an EC2 instance store, removing sensitive information before putting the object
- F. Periodically flush these batches to S3.
- G. Before writing to DynamoDB, do a pre-write acknowledgment to disk on the application server, removing sensitive information before logging
- H. Periodically pipe these files into CloudWatch Logs.

Answer: A

Explanation:

All suggested periodic options are sensitive to server failure during or between periodic flushes. Streaming to Lambda and then logging to CloudWatch Logs will make the system resilient to instance and Availability Zone failures.

Reference: <http://docs.aws.amazon.com/lambda/latest/dg/with-ddb.html>

NEW QUESTION 41

Which of the following tools does not directly support AWS OpsWorks, for monitoring your stacks?

- A. AWS Config
- B. Amazon CloudWatch Metrics
- C. AWS CloudTrail
- D. Amazon CloudWatch Logs

Answer: A

Explanation:

You can monitor your stacks in the following ways: AWS OpsWorks uses Amazon CloudWatch to provide thirteen custom metrics with detailed monitoring for each instance in the stack; AWS OpsWorks integrates with AWS CloudTrail to log every AWS OpsWorks API call and store the data in an Amazon S3 bucket; You can use Amazon CloudWatch Logs to monitor your stack's system, application, and custom logs. Reference: <http://docs.aws.amazon.com/opsworks/latest/userguide/monitoring.html>

NEW QUESTION 44

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, your 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 48

You have been asked to de-risk deployments at your company. Specifically, the CEO is concerned about outages that occur because of accidental inconsistencies between Staging and Production, which sometimes cause unexpected behaviors in Production even when Staging tests pass.

You already use Docker to get high consistency between Staging and Production for the application environment on your EC2 instances. How do you further de-risk the rest of the execution environment, since in AWS, there are many service components you may use beyond EC2 virtual machines?

- A. Develop models of your entire cloud system in CloudFormation.
- B. Use this model in Staging and Production to achieve greater parity.
- C. Use AWS Config to force the Staging and Production stacks to have configuration parity.
- D. Any differences will be detected for you so you are aware of risks.
- E. Use AMLs to ensure the whole machine, including the kernel of the virtual machines, is consistent, since Docker uses Linux Container (LXC) technology, and we need to make sure the container environment is consistent.
- F. Use AWS ECS and Docker clustering.
- G. This will make sure that the AMLs and machine sizes are the same across both environments.

Answer: A

Explanation:

Only CloudFormation's JSON Templates allow declarative version control of repeatably deployable models of entire AWS clouds.

Reference: <https://blogs.aws.amazon.com/application-management/blog/category/Best+practices>

NEW QUESTION 50

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 SQS.

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 51

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 53

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