

➤ **Vendor: Amazon**

➤ **Exam Code: AWS Certified DevOps Engineer - Professional**

➤ **Exam Name: Amazon AWS Certified DevOps Engineer - Professional**

➤ **Question 61 – Question 80**

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QUESTION 61

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

QUESTION 62

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

QUESTION 63

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.

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

QUESTION 64

You need to scale an RDS deployment. You are operating at 10% writes and 90% reads, based on your logging. How best can you scale this in a simple way?

- A. Create a second master RDS instance and peer the RDS groups.
- B. Cache all the database responses on the read side with CloudFront.
- C. Create read replicas for RDS since the load is mostly reads.
- D. Create a Multi-AZ RDS installs and route read traffic to standby.

Answer: C

Explanation:

The high-availability feature is not a scaling solution for read-only scenarios; you cannot use a standby replica to serve read traffic. To service read-only traffic, you should use a Read Replica. For more information, see Working with PostgreSQL, MySQL, and MariaDB Read Replicas.

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

QUESTION 65

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.

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

QUESTION 66

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.

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

QUESTION 67

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.

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

QUESTION 68

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 software. Turn it off after hours. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- B. Purchase a Medium Utilization Reserved Instance to run the accounting software. Turn it off after hours. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- C. Purchase a Light Utilization Reserved Instance to run the accounting software. Turn it off after hours. Run the batch jobs with the same instance class, so the Reserved Instance credits are also applied to the batch jobs.
- D. Purchase a Full Utilization Reserved Instance to run the accounting software. Turn it off after hours. 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 as a "Full" level utilization purchases on EC2.

https://d0.awsstatic.com/whitepapers/Cost_Optimization_with_AWS.pdf

QUESTION 69

Which EBS volume type is best for high performance NoSQL cluster deployments?

- A. io1
- B. gp1
- C. standard
- D. gp2

Answer: A

Explanation:

io1 volumes, or Provisioned IOPS (PIOPS) SSDs, are best for: Critical business applications that require sustained IOPS performance, or more than 10,000 IOPS or 160 MiB/s of throughput per volume, like large database workloads, such as MongoDB.

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

QUESTION 70

You are building out a layer in a software stack on AWS that needs to be able to scale out to react to increased demand as fast as possible. You are running the code on EC2 instances in an Auto Scaling Group behind an ELB. Which application code deployment method should you use?

- A. SSH into new instances that come online, and deploy new code onto the system by pulling it from an S3 bucket, which is populated by code that you refresh from source control on new pushes.
- B. Bake an AMI when deploying new versions of code, and use that AMI for the Auto Scaling Launch Configuration.
- C. Create a Dockerfile when preparing to deploy a new version to production and publish it to S3. Use UserData in the Auto Scaling Launch configuration to pull down the Dockerfile from S3 and run it when new instances launch.
- D. Create a new Auto Scaling Launch Configuration with UserData scripts configured to pull the latest code at all times.

Answer: B

Explanation:

... 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.

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

QUESTION 71

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.

<http://docs.aws.amazon.com/elasticsearch-service/latest/developerguide/what-is-amazon-elasticsearch-service.html>

QUESTION 72

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.

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

QUESTION 73

What is the scope of an EC2 EIP?

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

Answer: C

Explanation:

An Elastic IP address is tied to a region and can be associated only with an instance in the same region.

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

QUESTION 74

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.

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

QUESTION 75

You want to pass queue messages that are 1GB each. How should you achieve this?

- A. Use Kinesis as a buffer stream for message bodies. Store the checkpoint id for the placement in the Kinesis Stream in SQS.
- B. Use the Amazon SQS Extended Client Library for Java and Amazon S3 as a storage mechanism for message bodies.
- C. Use SQS's support for message partitioning and multi-part uploads on Amazon S3.
- D. Use AWS EFS as a shared pool storage medium. Store filesystem pointers to the files on disk in the SQS message bodies.

Answer: B

Explanation:

You can manage Amazon SQS messages with Amazon S3. This is especially useful for storing and retrieving messages with a message size of up to 2 GB. To manage Amazon SQS messages with Amazon S3, use the Amazon SQS Extended Client Library for Java.

<http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/s3-messages.html>

QUESTION 76

You are designing a service that aggregates clickstream data in batch and delivers reports to subscribers via email only once per week. Data is extremely spikey, geographically distributed, high-scale, and unpredictable. How should you design this system?

- A. Use a large RedShift cluster to perform the analysis, and a fleet of Lambdas to perform record inserts into the RedShift tables. Lambda will scale rapidly enough for the traffic spikes.
- B. Use a CloudFront distribution with access log delivery to S3. Clicks should be recorded as querystring GETs to the distribution. Reports are built and sent by periodically running EMR jobs over the access logs in S3.
- C. Use API Gateway invoking Lambdas which PutRecords into Kinesis, and EMR running Spark performing GetRecords on Kinesis to scale with spikes. Spark on EMR outputs the analysis to S3, which are sent out via email.
- D. Use AWS Elasticsearch service and EC2 Auto Scaling groups. The Autoscaling groups scale based on click throughput and stream into the Elasticsearch domain, which is also scalable. Use Kibana to generate reports periodically.

Answer: B

Explanation:

Because you only need to batch analyze, anything using streaming is a waste of money. CloudFront is a Gigabit-Scale HTTP(S) global request distribution service, so it can handle scale, geo-spread, spikes, and unpredictability. The Access Logs will contain the GET data and work just fine for batch analysis and email using EMR. Can I use Amazon CloudFront if I expect usage peaks higher than 10 Gbps or 15,000 RPS? Yes. Complete our request for higher limits here, and we will add more capacity to your account within two business days.

<https://aws.amazon.com/cloudfront/faqs/>

QUESTION 77

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.

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

QUESTION 78

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.

<https://aws.amazon.com/whitepapers/security-at-scale-governance-in-aws/>

QUESTION 79

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.

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

QUESTION 80

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

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

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