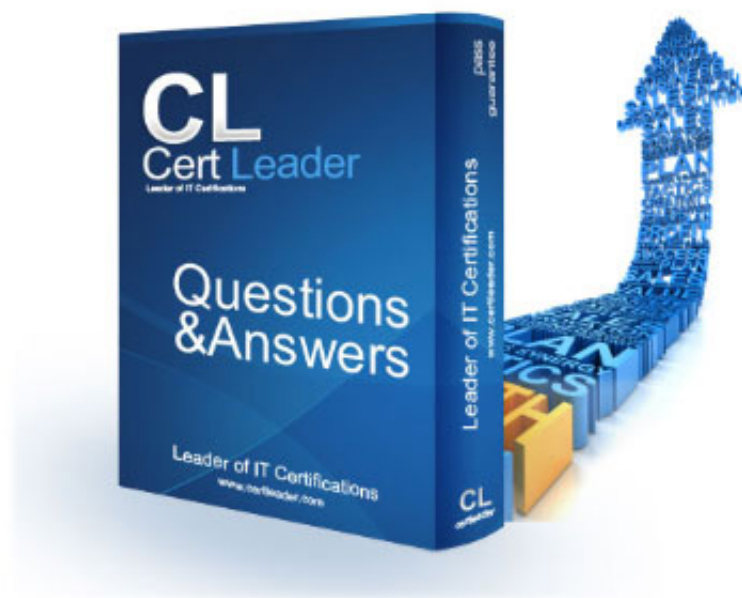


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NEW QUESTION 1

Your application consists of 10% writes and 90% reads. You currently service all requests through a Route53 Alias Record directed towards an AWS ELB, which sits in front of an EC2 Auto Scaling Group. Your system is getting very expensive when there are large traffic spikes during certain news events, during which many more people request to read similar data all at the same time. What is the simplest and cheapest way to reduce costs and scale with spikes like this?

- A. Create an S3 bucket and asynchronously replicate common requests responses into S3 object
- B. When a request comes in for a precomputed response, redirect to AWS S3.
- C. Create another ELB and Auto Scaling Group layer mounted on top of the other system, adding a tier to the system
- D. Serve most read requests out of the top layer.
- E. Create a CloudFront Distribution and direct Route53 to the Distribution
- F. Use the ELB as an Origin and specify Cache Behaviours to proxy cache requests which can be served late.
- G. Create a Memcached cluster in AWS ElastiCache
- H. Create cache logic to serve requests which can be served late from the in-memory cache for increased performance.

Answer: C

Explanation:

CloudFront is ideal for scenarios in which entire requests can be served out of a cache and usage patterns involve heavy reads and spikiness in demand. A cache behavior is the set of rules you configure for a given URL pattern based on file extensions, file names, or any portion of a URL path on your website (e.g., *.jpg). You can configure multiple cache behaviors for your web distribution. Amazon CloudFront will match incoming viewer requests with your list of URL patterns, and if there is a match, the service will honor the cache behavior you configure for that URL pattern. Each cache behavior can include the following Amazon CloudFront configuration values: origin server name, viewer connection protocol, minimum expiration period, query string parameters, cookies, and trusted signers for private content.

Reference: <https://aws.amazon.com/Cloudfront/dynamic-content/>

NEW QUESTION 2

You need to perform ad-hoc business analytics queries on well-structured data. Data comes in constantly at a high velocity. Your business intelligence team can understand SQL. What AWS service(s) should you look to first?

- A. Kinesis Firehose + RDS
- B. Kinesis Firehose + RedShift
- C. EMR using Hive
- D. EMR running Apache Spark

Answer: B

Explanation:

Kinesis Firehose provides a managed service for aggregating streaming data and inserting it into RedShift. RedShift also supports ad-hoc queries over well-structured data using a SQL-compliant wire protocol, so the business team should be able to adopt this system easily.

Reference: <https://aws.amazon.com/kinesis/firehose/details/>

NEW QUESTION 3

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 4

You need your CI to build AMIs with code pre-installed on the images on every new code push. You need to do this as cheaply as possible. How do you do this?

- A. Bid on spot instances just above the asking price as soon as new commits come in, perform all instance configuration and setup, then create an AMI based on the spot instance.
- B. Have the CI launch a new on-demand EC2 instance when new commits come in, perform all instance configuration and setup, then create an AMI based on the on-demand instance.
- C. Purchase a Light Utilization Reserved Instance to save money on the continuous integration machine
- D. Use these credits whenever you create AMIs on instances.
- E. When the CI instance receives commits, attach a new EBS volume to the CI machine
- F. Perform all setup on this EBS volume so you don't need a new EC2 instance to create the AMI.

Answer: A

Explanation:

Spot instances are the cheapest option, and you can use minimum run duration if your AMI takes more than a few minutes to create.

Spot instances are also available to run for a predefined duration — in hourly increments up to six hours in length — at a significant discount (30-45%) compared to On-Demand pricing plus an additional 5% during off-peak times for a total of up to 50% savings.

Reference: <https://aws.amazon.com/ec2/spot/pricing/>

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 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-endpoint s.html>

NEW QUESTION 7

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 tabl

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 8

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

- A. 320IV|iB/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/EBSVo|umeTypes.htm| IIIIEZIIII HWS-IIIEIII|\]S-EII\\$iii|}}|I'-PI'OI|}SSiOIiiii EIIIEIII](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVo|umeTypes.htm| IIIIEZIIII HWS-IIIEIII|]S-EII$iii|}}|I'-PI'OI|}SSiOIiiii EIIIEIII)

NEW QUESTION 9

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 bucke
- 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 accoun
- E. Grant the associated IAM role full access to the bucke
- 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 PUT 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 10

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 loc

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 10

Why are more frequent snapshots or EBS Volumes faster?

- A. Blocks in EBS Volumes are allocated lazily, since while logically separated from other EBS Volumes, Volumes often share the same physical hardwar
- B. Snapshotting the first time forces full block range allocation, so the second snapshot doesn't need to perform the allocation phase and is faster.
- C. The snapshots are incremental so that only the blocks on the device that have changed after your last snapshot are saved in the new snapshot.
- D. AWS provisions more disk throughput for burst capacity during snapshots if the drive has been pre-warmed by snapshotting and reading all blocks.
- E. The drive is pre-warmed, so block access is more rapid for volumes when every block on the device has already been read at least one time.

Answer: B

Explanation:

After writing data to an EBS volume, you can periodically create a snapshot of the volume to use as a baseline for new volumes or for data backup. If you make periodic snapshots of a volume, the snapshots are incremental so that only the blocks on the device that have changed after your last snapshot are saved in the new snapshot. Even though snapshots are saved incrementally, the snapshot deletion process is designed so that you need to retain only the most recent snapshot in order to restore the volume.

Reference: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-creating-snapshot.html>

NEW QUESTION 11

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. DMde and round up for 5556.

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

NEW QUESTION 16

Which of these is not a Pseudo Parameter in AWS CloudFormation?

- A. AWS::StackName
- B. AWS::AccountId
- C. AWS::StackArn
- D. AWS::NotificationARNs

Answer: C

Explanation:

This is the complete list of Pseudo Parameters: AWS::AccountId, AWS::NotificationARNs, AWS::NoValue, AWS::Region, AWS::StackId, AWS::StackName

Reference:

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

NEW QUESTION 20

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

- A. Fn::Split
- B. Fn::FindInMap
- C. Fn::Select
- D. Fn::GetAZs

Answer: A

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 24

For AWS CloudFormation, which is true?

- A. Custom resources using SNS have a default timeout of 3 minutes.
- B. Custom resources using SNS do not need a `ServiceToken` property.
- C. Custom resources using Lambda and `Code.ZipFile` allow inline nodejs resource composition.
- D. Custom resources using Lambda do not need a `ServiceToken` property

Answer: C

Explanation:

Code is a property of the AWS::Lambda::Function resource that enables to you specify the source code of an AWS Lambda (Lambda) function. You can point to a file in an Amazon Simple Storage Service (Amazon S3) bucket or specify your source code as inline text (for nodejs runtime environments only). Reference:

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

NEW QUESTION 29

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 32

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 36

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 bplex 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 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 "Unavail|ability" 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

Which of these configuration or deployment practices is a security risk for RDS?

- A. Storing SQL function code in plaintext
- B. Non-Multi-AZ RDS instance
- C. Having RDS and EC2 instances exist in the same subnet
- D. RDS in a public subnet

Answer: D

Explanation:

Making RDS accessible to the public internet in a public subnet poses a security risk, by making your database directly addressable and spamnable.

DB instances deployed within a VPC can be configured to be accessible from the Internet or from EC2 instances outside the VPC. If a VPC security group specifies a port access such as TCP port 22, you would not be able to access the DB instance because the firewall for the DB instance provides access only via the IP addresses specified by the DB security groups the instance is a member of and the port defined when the DB instance was created.

Reference: <http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Overview.RDSSecurityGroups.html>

NEW QUESTION 43

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 44

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 46

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 DependOn 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 50

When thinking of AWS OpsWorks, which of the following is true?

- A. Stacks have many layers, layers have many instances.
- B. Instances have many stacks, stacks have many layers.
- C. Layers have many stacks, stacks have many instances.
- D. Layers have many instances, instances have many stack

Answer: A

Explanation:

The stack is the core AWS OpsWorks component. It is basically a container for AWS resources—Amazon EC2 instances, Amazon RDS database instances, and so on—that have a common purpose and should be logically managed together. You define the stack's constituents by adding one or more layers. A layer represents a set of Amazon EC2 instances that serve a particular purpose, such as serving applications or hosting a database server. An instance represents a single computing resource, such as an Amazon EC2 instance.

Reference: <http://docs.aws.amazon.com/opsworks/latest/userguide/welcome.html>

NEW QUESTION 54

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 56

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 61

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