Amazon

AWS-Solution-Architect-Associate

AWS Certified Solutions Architect - Associate

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Question AND Answers (PDF)

100% MONEY BACK GUARANTEE

Version: 13.0

Question: 1

A 3-tier e-commerce web application is current deployed on-premises and will be migrated to AWS for greater scalability and elasticity The web server currently shares read-only data using a network distributed file system The app server tier uses a clustering mechanism for discovery and shared session state that depends on IP multicast The database tier uses shared-storage clustering to provide database fall over capability, and uses several read slaves for scaling Data on all servers and the distributed file system directory is backed up weekly to off-site tapes
Which AWS storage and database architecture meets the requirements of the application?

A. Web servers, store read-only data in S3, and copy from S3 to root volume at boot time App servers snare state using a combination or DynamoDB and IP unicast Database use RDS with multi-AZ deployment and one or more Read Replicas Backup web and app servers backed up weekly via Mils database backed up via DB snapshots.
B. Web servers store -read-only data in S3, and copy from S3 to root volume at boot time App servers share state using a combination of DynamoDB and IP unicast Database, use RDS with multi-AZ deployment and one or more read replicas Backup web servers app servers, and database backed up weekly to Glacier using snapshots.
C. Web servers store read-only data In S3 and copy from S3 to root volume at boot time App servers share state using a combination of DynamoDB and IP unicast Database use RDS with multi-AZ deployment Backup web and app servers backed up weekly via AM is. Database backed up via DB snapshots
D. Web servers, store read-only data in an EC2 NFS server, mount to each web server at boot time App servers share state using a combination of DynamoDB and IP multicast Database use RDS with multi-AZ deployment and one or more Read Replicas Backup web and app servers backed up weekly via Mils database backed up via DB snapshots

Answer: B

Question: 2

Your customer wishes to deploy an enterprise application to AWS which will consist of several web servers, several application servers and a small (50GB) Oracle database information is stored, both in the database and the file systems of the various servers. The backup system must support database recovery whole server and whole disk restores, and individual file restores with a recovery time of no more than two hours. They have chosen to use RDS Oracle as the database
Which backup architecture will meet these requirements?

A. Backup RDS using automated daily DB backups Backup the EC2 instances using AMIs and supplement with file-level backup to S3 using traditional enterprise backup software to provide file level restore

B. Backup RDS using a Multi-AZ Deployment Backup the EC2 instances using Amis, and supplement by copying file system data to S3 to provide file level restore.
C. Backup RDS using automated daily DB backups Backup the EC2 instances using EBS snapshots and supplement with file-level backups to Amazon Glacier using traditional enterprise backup software to provide file level restore
D. Backup RDS database to S3 using Oracle RMAN Backup the EC2 instances using Amis, and supplement with EBS snapshots for individual volume restore.

Answer: C

Reference: http://www.boyter.org/wp-content/uploads/2014/12/Backup-And-Recovery-Approaches-Using-Aws.pdf

Question: 3

Your company has HQ in Tokyo and branch offices all over the world and is using a logistics software with a multi-regional deployment on AWS in Japan, Europe and USA. The logistic software has a 3-tier architecture and currently uses MySQL 5.6 for data persistence. Each region has deployed its own database
In the HQ region you run an hourly batch process reading data from every region to compute cross-regional reports that are sent by email to all offices this batch process must be completed as fast as possible to quickly optimize logistics how do you build the database architecture in order to meet the requirements'?

A. For each regional deployment, use RDS MySQL with a master in the region and a read replica in the HQ region
B. For each regional deployment, use MySQL on EC2 with a master in the region and send hourly EBS snapshots to the HQ region
C. For each regional deployment, use RDS MySQL with a master in the region and send hourly RDS snapshots to the HQ region
D. For each regional deployment, use MySQL on EC2 with a master in the region and use S3 to copy data files hourly to the HQ region
E. Use Direct Connect to connect all regional MySQL deployments to the HQ region and reduce network latency for the batch process

Answer: A

Question: 4

A customer has a 10 GB AWS Direct Connect connection to an AWS region where they have a web application hosted on Amazon Elastic Computer Cloud (EC2). The application has dependencies on an on-premises mainframe database that uses a BASE (Basic Available. Sort stale Eventual consistency) rather than an ACID (Atomicity. Consistency isolation. Durability) consistency model. The application is exhibiting undesirable behavior because the database is not able to handle the volume of writes. How can you reduce the load on your on-premises database resources in the most cost-effective way?

A. Use an Amazon Elastic Map Reduce (EMR) S3DistCp as a synchronization mechanism between the on-premises database and a Hadoop cluster on AWS.
B. Modify the application to write to an Amazon SQS queue and develop a worker process to flush the queue to the on-premises database.
C. Modify the application to use DynamoDB to feed an EMR cluster which uses a map function to write to the on-premises database.
D. Provision an RDS read-replica database on AWS to handle the writes and synchronize the two databases using Data Pipeline.

Answer: A

Reference: https://aws.amazon.com/blogs/aws/category/amazon-elastic-map-reduce/

Question: 5

Company B is launching a new game app for mobile devices. Users will log into the game using their existing social media account to streamline data capture. Company B would like to directly save player data and scoring information from the mobile app to a DynamoDS table named Score Data When a user saves their game the progress data will be stored to the Game state S3 bucket. What is the best approach for storing data to DynamoDB and S3?

A. Use an EC2 Instance that is launched with an EC2 role providing access to the Score Data DynamoDB table and the GameState S3 bucket that communicates with the mobile app via web services.
B. Use temporary security credentials that assume a role providing access to the Score Data DynamoDB table and the Game State S3 bucket using web identity federation.
C. Use Login with Amazon allowing users to sign in with an Amazon account providing the mobile app with access to the Score Data DynamoDB table and the Game State S3 bucket.
D. Use an IAM user with access credentials assigned a role providing access to the Score Data DynamoDB table and the Game State S3 bucket for distribution with the mobile app.

Answer: A

Question: 6

Your company plans to host a large donation website on Amazon Web Services (AWS). You anticipate a large and undetermined amount of traffic that will create many database writes. To be certain that you do not drop any writes to a database hosted on AWS. Which service should you use?

A. Amazon RDS with provisioned IOPS up to the anticipated peak write throughput.
B. Amazon Simple Queue Service (SOS) for capturing the writes and draining the queue to write to the database.
C. Amazon ElastiCache to store the writes until the writes are committed to the database.
D. Amazon DynamoDB with provisioned write throughput up to the anticipated peak write throughput.

Answer: A

Reference: http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/CHAP_Storage.html

Question: 7

You have launched an EC2 instance with four (4) 500 GB EBS Provisioned IOPS volumes attached The EC2 Instance Is EBS-Optimized and supports 500 Mbps throughput between EC2 and EBS The two EBS volumes are configured as a single RAID o device, and each Provisioned IOPS volume is provisioned with 4.000 IOPS (4 000 16KB reads or writes) for a total of 16.000 random IOPS on the instance The EC2 Instance initially delivers the expected 16 000 IOPS random read and write performance Sometime later in order to increase the total random I/O performance of the instance, you add an additional two 500 GB EBS Provisioned IOPS volumes to the RAID Each volume Is provisioned to 4.000 IOPs like the original four for a total of 24.000 IOPS on the EC2 instance Monitoring shows that the EC2 instance CPU utilization increased from 50% to 70%. but the total random IOPS measured at the instance level does not increase at all.

What is the problem and a valid solution?

A. Larger storage volumes support higher Provisioned IOPS rates: increase the provisioned volume storage of each of the 6 EBS volumes to 1TB.
B. The EBS-Optimized throughput limits the total IOPS that can be utilized use an EBS-Optimized instance that provides larger throughput.
C. Small block sizes cause performance degradation, limiting the I'O throughput, configure the instance device driver and file system to use 64KB blocks to increase throughput.
D. RAID 0 only scales linearly to about 4 devices, use RAID 0 with 4 EBS Provisioned IOPS volumes but increase each Provisioned IOPS EBS volume to 6.000 IOPS.
E. The standard EBS instance root volume limits the total IOPS rate, change the instant root volume to also be a 500GB 4.000 Provisioned IOPS volume.

Answer: E

Question: 8

You have recently joined a startup company building sensors to measure street noise and air quality in urban areas. The company has been running a pilot deployment of around 100 sensors for 3 months each sensor uploads 1KB of sensor data every minute to a backend hosted on AWS.
During the pilot, you measured a peak or 10 IOPS on the database, and you stored an average of 3GB of sensor data per month in the database.
The current deployment consists of a load-balanced auto scaled Ingestion layer using EC2 instances and a PostgreSQL RDS database with 500GB standard storage.
The pilot is considered a success and your CEO has managed to get the attention or some potential investors. The business plan requires a deployment of at least 1O0K sensors which needs to be supported by the backend. You also need to store sensor data for at least two years to be able to compare year over year Improvements.
To secure funding, you have to make sure that the platform meets these requirements and leaves room for further scaling. Which setup win meet the requirements?

A. Add an SOS queue to the ingestion layer to buffer writes to the RDS instance
B. Ingest data into a DynamoDB table and move old data to a Redshift cluster
C. Replace the RDS instance with a 6 node Redshift cluster with 96TB of storage
D. Keep the current architecture but upgrade RDS storage to 3TB and 10K provisioned IOPS

Answer: C

Question: 9

Your company is in the process of developing a next generation pet collar that collects biometric information to assist families with promoting healthy lifestyles for their pets Each collar will push 30kb of biometric data In JSON format every 2 seconds to a collection platform that will process and analyze the data providing health trending information back to the pet owners and veterinarians via a web portal Management has tasked you to architect the collection platform ensuring the following requirements are met.

Provide the ability for real-time analytics of the inbound biometric data
Ensure processing of the biometric data is highly durable. Elastic and parallel
The results of the analytic processing should be persisted for data mining
Which architecture outlined below win meet the initial requirements for the collection platform?

A. Utilize S3 to collect the inbound sensor data analyze the data from S3 with a daily scheduled Data Pipeline and save the results to a Redshift Cluster.
B. Utilize Amazon Kinesis to collect the inbound sensor data, analyze the data with Kinesis clients and save the results to a Redshift cluster using EMR.
C. Utilize SQS to collect the inbound sensor data analyze the data from SQS with Amazon Kinesis and save the results to a Microsoft SQL Server RDS instance.
D. Utilize EMR to collect the inbound sensor data, analyze the data from EUR with Amazon Kinesis and save me results to DynamoDB.

Answer: B

Question: 10

You need a persistent and durable storage to trace call activity of an IVR (Interactive Voice Response) system. Call duration is mostly in the 2-3 minutes timeframe. Each traced call can be either active or terminated. An external application needs to know each minute the list of currently active calls, which are usually a few calls/second. Put once per month there is a periodic peak up to 1000 calls/second for a few hours. The system is open 24/7 and any downtime should be avoided. Historical data is periodically archived to files. Cost saving is a priority for this project.
What database implementation would better fit this scenario, keeping costs as low as possible?

A. Use RDS Multi-AZ with two tables, one for -Active calls" and one for -Terminated calls". In this way the "Active calls_ table is always small and effective to access.
B. Use DynamoDB with a "Calls" table and a Global Secondary Index on a "IsActive'" attribute that is present for active calls only In this way the Global Secondary index is sparse and more effective.
C. Use DynamoDB with a 'Calls" table and a Global secondary index on a 'State" attribute that can equal to "active" or "terminated" in this way the Global Secondary index can be used for all Items in the table.
D. Use RDS Multi-AZ with a "CALLS" table and an Indexed "STATE* field that can be equal to 'ACTIVE" or -TERMINATED" In this way the SOL query Is optimized by the use of the Index.

Answer: A

Question: 11

A web design company currently runs several FTP servers that their 250 customers use to upload and download large graphic files They wish to move this system to AWS to make it more scalable, but they wish to maintain customer privacy and Keep costs to a minimum.
What AWS architecture would you recommend?

A. ASK their customers to use an S3 client instead of an FTP client. Create a single S3 bucket Create an IAM user for each customer Put the IAM Users in a Group that has an IAM policy that permits access to sub-directories within the bucket via use of the 'username' Policy variable.
B. Create a single S3 bucket with Reduced Redundancy Storage turned on and ask their customers to use an S3 client instead of an FTP client Create a bucket for each customer with a Bucket Policy that permits access only to that one customer.
C. Create an auto-scaling group of FTP servers with a scaling policy to automatically scale-in when minimum network traffic on the auto-scaling group is below a given threshold. Load a central list of ftp users from S3 as part of the user Data startup script on each Instance.
D. Create a single S3 bucket with Requester Pays turned on and ask their customers to use an S3 client instead of an FTP client Create a bucket tor each customer with a Bucket Policy that permits access only to that one customer.

Answer: C

Question: 12

You have been asked to design the storage layer for an application. The application requires disk performance of at least 100,000 IOPS in addition, the storage layer must be able to survive the loss of an individual disk. EC2 instance, or Availability Zone without any data loss. The volume you provide must have a capacity of at least 3 TB. Which of the following designs will meet these objectives'?

A. Instantiate an 12 8xlarge instance in us-east-1a Create a RAID 0 volume using the four 800GB SSD ephemeral disks provided with the instance Provision 3x1 TB EBS volumes attach them to the instance and configure them as a second RAID 0 volume Configure synchronous, block-level replication from the ephemeral-backed volume to the EBS-backed volume.
B. Instantiate an 12 8xlarge instance in us-east-1a create a raid 0 volume using the four 800GB SSD ephemeral disks provide with the Instance Configure synchronous block-level replication to an Identically configured Instance in us-east-1b.
C. Instantiate a c3 8xlarge Instance In us-east-1 Provision an AWS Storage Gateway and configure it for 3 TB of storage and 100 000 IOPS Attach the volume to the instance.
D. Instantiate a c3 8xlarge instance in us-east-i provision 4x1TB EBS volumes, attach them to the instance, and configure them as a single RAID 5 volume Ensure that EBS snapshots are performed every 15 minutes.
E. Instantiate a c3 8xlarge Instance in us-east-1 Provision 3x1TB EBS volumes attach them to the instance, and configure them as a single RAID 0 volume Ensure that EBS snapshots are performed every 15 minutes.

Answer: D

Question: 13

You would like to create a mirror image of your production environment in another region for disaster recovery purposes. Which of the following AWS resources do not need to be recreated in the second region? (Choose 2 answers)

A. Route 53 Record Sets
B. IM1 Roles
C. Elastic IP Addresses (EIP)
D. EC2 Key Pairs
E. Launch configurations
F. Security Groups

Answer: A, C

Reference: http://ltech.com/wp-content/themes/optimize/download/AWS_Disaster_Recovery.pdf (page 6)

Question: 14

Your company runs a customer facing event registration site This site is built with a 3-tier architecture with web and application tier servers and a MySQL database The application requires 6 web tier servers and 6 application tier servers for normal operation, but can run on a minimum of 65% server capacity and a single MySQL database. When deploying this application in a region with three availability zones (AZs) which architecture provides high availability?

A. A web tier deployed across 2 AZs with 3 EC2 (Elastic Compute Cloud) instances in each AZ inside an Auto Scaling Group behind an ELB (elastic load balancer), and an application tier deployed across 2 AZs with 3 EC2 instances in each AZ inside an Auto Scaling Group behind an ELB. and one RDS (Relational Database Service) instance deployed with read replicas in the other AZ.
B. A web tier deployed across 3 AZs with 2 EC2 (Elastic Compute Cloud) instances in each A2 inside an Auto Scaling Group behind an ELB (elastic load balancer) and an application tier deployed across 3 AZs with 2 EC2 instances in each AZ inside an Auto Scaling Group behind an ELB and one RDS (Relational Database Service) Instance deployed with read replicas in the two other AZs.
C. d A web tier deployed across 2 AZs with 3 EC2 (Elastic Compute Cloud) instances in each AZ inside an Auto Scaling Group behind an ELB (elastic load balancer) and an application tier deployed across 2 AZs with 3 EC2 instances m each AZ inside an Auto Scaling Group behind an ELS and a Multi-AZ RDS (Relational Database Service) deployment.
D. A web tier deployed across 3 AZs with 2 EC2 (Elastic Compute Cloud) instances in each AZ Inside an Auto Scaling Group behind an ELB (elastic load balancer). And an application tier deployed across 3 AZs with 2 EC2 instances In each AZ inside an Auto Scaling Group behind an ELB. And a Multi-AZ RDS (Relational Database services) deployment.

Answer: B

Question: 15

Your application is using an ELB in front of an Auto Scaling group of web/application servers deployed across two AZs and a Multi-AZ RDS Instance for data persistence.
The database CPU is often above 80% usage and 90% of I/O operations on the database are reads. To improve performance you recently added a single-node Memcached ElastiCache Cluster to cache frequent DB query results. In the next weeks the overall workload is expected to grow by 30%.
Do you need to change anything in the architecture to maintain the high availability or the application with the anticipated additional load'* Why?

A. Yes. you should deploy two Memcached ElastiCache Clusters in different AZs because the ROS Instance will not Be able to handle the load It me cache node fails.
B. No. if the cache node fails the automated ElastiCache node recovery feature will prevent any availability impact.
C. Yes you should deploy the Memcached ElastiCache Cluster with two nodes in the same AZ as the RDS DB master instance to handle the load if one cache node fails.
D. No if the cache node fails you can always get the same data from the DB without having any availability impact.

Answer: B

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