AWS SOLUTION ARCHITECT SAMPLE QUESTIONS FOR PRACTICE

1. You use S3 to store critical data for your company Several users within your group currently have full permissions to your S3 buckets. You need to come up with a solution that does not impact your users and also protect against the accidental deletion of objects. Which two options will address this issue? Choose 2 answers

    a. **Enable versioning on your S3 Buckets**

    b. **Configure your S3 Buckets with MFA delete**

    c. Create a Bucket policy and only allow read only permissions to all users at the bucket level

    d. Enable object life cycle policies and configure the data older than 3 months to be archived in Glacier

2. You are designing a web application that stores static assets in an Amazon Simple Storage Service (S3) bucket. You expect this bucket to immediately receive over 150 PUT requests per second. What should you do to ensure optimal performance?

    a. Use multi-part upload.

    b. **Add a random prefix to the key names.**

    c. Amazon S3 will automatically manage performance at this scale.

    d. Use a predictable naming scheme, such as sequential numbers or date time sequences, in the key names

3. You have an application running on an Amazon Elastic Compute Cloud instance, that uploads 5 GB video objects to Amazon Simple Storage Service (S3). Video uploads are taking longer than expected, resulting in poor application performance. Which method will help improve performance of your application?

    a. Enable enhanced networking

    b. **Use Amazon S3 multipart upload**

    c. Leveraging Amazon CloudFront, use the HTTP POST method to reduce latency.

    d. Use Amazon Elastic Block Store Provisioned IOPs and use an Amazon EBS-optimized instance

4. A user is having access to objects of an S3 bucket, which is not owned by him. If he is trying to set the objects of that bucket public, which of the below mentioned options may be a right fit for this action?

    a. Make the bucket public with full access

    b. Define the policy for the bucket

    c. **Provide ACL on the object**

    d. Create an IAM user with permission

5. A user is enabling logging on a particular bucket. Which of the below mentioned options may be best suitable to allow access to the log bucket?

    a. Create an IAM policy and allow log access

    b. It is not possible to enable logging on the S3 bucket

    c. Create an IAM Role, which has access to the log bucket

    d. **Provide ACL for the logging group**

6. You need to configure an Amazon S3 bucket to serve static assets for your public-facing web application. Which methods ensure that all objects uploaded to the bucket are set to public read? Choose 2 answers

    a. **Set permissions on the object to public read during upload.**

    b. Configure the bucket ACL to set all objects to public read.

    c. **Configure the bucket policy to set all objects to public read.**

    d. Use AWS Identity and Access Management roles to set the bucket to public read.

    e. Amazon S3 objects default to public read, so no action is needed.

7. Which features can be used to restrict access to data in S3? Choose 2 answers

    a. **Set an S3 ACL on the bucket or the object.**

    b. Create a CloudFront distribution for the bucket.

    c. **Set an S3 bucket policy.**

    d. Enable IAM Identity Federation

    e. Use S3 Virtual Hosting

8. A user has enabled server side encryption with S3. The user downloads the encrypted object from S3. How can the user decrypt it?

    a. S3 does not support server side encryption

    b. S3 provides a server side key to decrypt the object

    c. The user needs to decrypt the object using their own private key

    d. **S3 manages encryption and decryption automatically**

9. A customer is leveraging Amazon Simple Storage Service in eu-west-1 to store static content for a web-based property. The customer is storing objects using the Standard Storage class. Where are the customers objects replicated?

    a. A single facility in eu-west-1 and a single facility in eu-central-1

    b. A single facility in eu-west-1 and a single facility in us-east-1

    c. **Multiple facilities in eu-west-1**

    d. A single facility in eu-west-1

10. A user has enabled versioning on an S3 bucket. The user is using server side encryption for data at rest. If the user is supplying his own keys for encryption (SSE-C), what is recommended to the user for the purpose of security?

    a. User should not use his own security key as it is not secure

    b. Configure S3 to rotate the user's encryption key at regular intervals

    c. Configure S3 to store the user's keys securely with SSL

    d. **Keep rotating the encryption key manually at the client side**

11. A user has enabled versioning on an S3 bucket. The user is using server side encryption for data at Rest. If the user is supplying his own keys for encryption (SSE-C) which of the below mentioned statements is true?

    a. The user should use the same encryption key for all versions of the same object

    b. **It is possible to have different encryption keys for different versions of the same object**

    c. AWS S3 does not allow the user to upload his own keys for server side encryption

    d. The SSE-C does not work when versioning is enabled

12. A company is storing data on Amazon Simple Storage Service (S3). The company's security policy mandates that data is encrypted at rest. Which of the following methods can achieve this? Choose 3 answers

    a. **Use Amazon S3 server-side encryption with AWS Key Management Service managed keys**

    b. **Use Amazon S3 server-side encryption with customer-provided keys**

    c. Use Amazon S3 server-side encryption with EC2 key pair.

    d. Use Amazon S3 bucket policies to restrict access to the data at rest.

    e. **Encrypt the data on the client-side before ingesting to Amazon S3 using their own master key**

    f. Use SSL to encrypt the data while in transit to Amazon S3.

13. Which of the below mentioned options can be a good use case for storing content in AWS RRS?

        a. Storing mission critical data Files

        b. Storing infrequently used log files

        c. Storing a video file which is not reproducible

        d. **Storing image thumbnails**

    a. It doesn't exist at all

14. An application is generating a log file every 5 minutes. The log file is not critical but may be required only for verification in case of some major issue. The file should be accessible over the internet whenever required. Which of the below mentioned options is a best possible storage solution for it?

    a. AWS S3

    b. AWS Glacier

    c. AWS RDS

    d. **AWS S3 RRS**

15. What is the durability of S3 RRS?

    a. **99.99%**

    b. 99.95%

c. 99.995%

d. 99.999999999%

16. Company ABCD is running their corporate website on Amazon S3 accessed from http//www.companyabcd.com. Their marketing team has published new web fonts to a separate S3 bucket accessed by the S3 endpoint: https://s3-us-west1.amazonaws.com/abcdfonts. While testing the new web fonts, Company ABCD recognized the web fonts are being blocked by the browser. What should Company ABCD do to prevent the web fonts from being blocked by the browser?

    a. Enable versioning on the abcdfonts bucket for each web font

    b. Create a policy on the abcdfonts bucket to enable access to everyone

    c. Add the Content-MD5 header to the request for webfonts in the abcdfonts bucket from the website

    d. **Configure the abcdfonts bucket to allow cross-origin requests by creating a CORS configuration**

17. A customer wants to track access to their Amazon Simple Storage Service (S3) buckets and also use this information for their internal security and access audits. Which of the following will meet the Customer requirement?

    a. Enable AWS CloudTrail to audit all Amazon S3 bucket access.

    b. **Enable server access logging for all required Amazon S3 buckets**

    c. Enable the Requester Pays option to track access via AWS Billing

    d. Enable Amazon S3 event notifications for Put and Post.

18. You have private video content in S3 that you want to serve to subscribed users on the Internet. User IDs, credentials, and subscriptions are stored in an Amazon RDS database. Which configuration will allow you to securely serve private content to your users?

    a. **Generate pre-signed URLs for each user as they request access to protected S3 content**

    b. Create an IAM user for each subscribed user and assign the GetObject permission to each IAM user

    c. Create an S3 bucket policy that limits access to your private content to only your subscribed users' credentials

    d. Create a CloudFront Origin Identity user for your subscribed users and assign the GetObject permission to this user

19. A company is deploying a two-tier, highly available web application to AWS. Which service provides durable storage for static content while utilizing lower Overall CPU resources for the web tier?

    a. Amazon EBS volume

    b. **Amazon S3**

    c. Amazon EC2 instance store

    d. Amazon RDS instance

20. What are characteristics of Amazon S3? Choose 2 answers

    a. **Objects are directly accessible via a URL**

    b. S3 should be used to host a relational database

    c. S3 allows you to store objects or virtually unlimited size

    d. **S3 allows you to store virtually unlimited amounts of data**

    e. S3 offers Provisioned IOPS

21. You are deploying an application to collect votes for a very popular television show. Millions of users will submit votes using mobile devices. The votes must be collected into a durable, scalable, and highly available data store for real-time public tabulation. Which service should you use?

    a. **Amazon DynamoDB**

    b. Amazon Redshift

    c. Amazon Kinesis

    d. Amazon Simple Queue Service

22. 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 stacks.

23. You are deploying an application to track GPS coordinates of delivery trucks in the United States. Coordinates are transmitted from each delivery truck once every three seconds. You need to design an architecture that will enable real-time processing of these coordinates from multiple consumers. Which service should you use to implement data ingestion?
    a. **Amazon Kinesis**
    b. AWS Data Pipeline

c. Amazon AppStream
d. Amazon Simple Queue Service

24. You are working with a customer who is using Chef configuration management in their data center. Which service is designed to let the customer leverage existing Chef recipes in AWS?
    a. Amazon Simple Workflow Service
    b. AWS Elastic Beanstalk
    c. AWS CloudFormation
    d. **AWS OpsWorks**

25. In order to optimize performance for a compute cluster that requires low inter-node latency, which feature in the following list should you use?
    a. AWS Direct Connect
    b. **Placement Groups**
    c. VPC private subnets
    d. EC2 Dedicated Instances
    e. Multiple Availability Zones

26. A user has developed an application, which is required to send the data to a NoSQL database. The user wants to decouple the data sending such that the application keeps processing and sending data but does not wait for an acknowledgement of DB. Which of the below mentioned applications helps in this scenario?
    a. AWS Simple Notification Service
    b. AWS Simple Workflow
    c. AWS Simple Query Service
    d. **AWS Simple Queue Service**

27. You are getting a lot of empty receive requests when using Amazon SQS. This is making a lot of unnecessary network load on your instances. What can you do to reduce this load?
    a. Subscribe your queue to an SNS topic instead.
    b. **Use as long of a poll as possible, instead of short polls.**
    c. Alter your visibility timeout to be shorter.
    d. Use <code>sqsd</code> on your EC2 instances.

28. When a Simple Queue Service message triggers a task that takes 5 minutes to complete, which process below will result in successful processing of the message and remove it from the queue while minimizing the chances of duplicate processing?
    a. **Retrieve the message with an increased visibility timeout, process the message, delete the message from the queue**
    b. Retrieve the message with an increased visibility timeout, delete the message from the queue, process the message
    c. Retrieve the message with increased DelaySeconds, process the message, delete the message from the queue
    d. Retrieve the message with increased DelaySeconds, delete the message from the queue, process the message

29. If a message is retrieved from a queue in Amazon SQS, how long is the message inaccessible to other users by default?
    a. 0 seconds

b. 1 hour
c. 1 day
d. forever
e. **30 seconds**

30. A user has setup Auto Scaling with ELB on the EC2 instances. The user wants to configure that whenever the CPU utilization is below 10%, Auto Scaling should remove one instance. How can the user configure this?
    a. The user can get an email using SNS when the CPU utilization is less than 10%. The user can use the desired capacity of Auto Scaling to remove the instance
    b. Use CloudWatch to monitor the data and Auto Scaling to remove the instances using scheduled actions
    c. Configure CloudWatch to send a notification to Auto Scaling Launch configuration when the CPU utilization is less than 10% and configure the Auto Scaling policy to remove the instance
    d. **Configure CloudWatch to send a notification to the Auto Scaling group when the CPU Utilization is less than 10% and configure the Auto Scaling policy to remove the instance**

31. For AWS Auto Scaling, what is the first transition state an instance enters after leaving steady state when scaling in due to health check failure or decreased load?
    a. **Terminating**
    b. Detaching
    c. Terminating:Wait
    d. EnteringStandby

32. To scale up the AWS resources using manual Auto Scaling, which of the below mentioned parameters should the user change?
    a. Maximum capacity
    b. **Desired capacity**
    c. Preferred capacity
    d. Current capacity

33. A user has created an Auto Scaling group with default configurations from CLI. The user wants to setup the CloudWatch alarm on the EC2 instances, which are launched by the Auto Scaling group. The user has setup an alarm to monitor the CPU utilization every minute. Which of the below mentioned statements is true?
    a. It will fetch the data at every minute but the four data points [corresponding to 4 minutes] will not have value since the EC2 basic monitoring metrics are collected every five minutes
    b. **It will fetch the data at every minute as detailed monitoring on EC2 will be enabled by the default launch configuration of Auto Scaling**
    c. The alarm creation will fail since the user has not enabled detailed monitoring on the EC2 instances
    d. The user has to first enable detailed monitoring on the EC2 instances to support alarm monitoring at every minute

34. A user has created a launch configuration for Auto Scaling where CloudWatch detailed monitoring is disabled. The user wants to now enable detailed monitoring. How can the user achieve this?
    a. Update the Launch config with CLI to set InstanceMonitoringDisabled = false
    b. The user should change the Auto Scaling group from the AWS console to enable detailed monitoring
    c. Update the Launch config with CLI to set InstanceMonitoring.Enabled = true
    d. **Create a new Launch Config with detail monitoring enabled and update the Auto Scaling group**
35. A user has created a web application with Auto Scaling. The user is regularly monitoring the application and he observed that the traffic is highest on Thursday and Friday between 8 AM to 6 PM. What is the best solution to handle scaling in this case?
    a. Add a new instance manually by 8 AM Thursday and terminate the same by 6 PM Friday
    b. **Schedule Auto Scaling to scale up by 8 AM Thursday and scale down after 6 PM on Friday**
    c. Schedule a policy which may scale up every day at 8 AM and scales down by 6 PM
    d. Configure a batch process to add a instance by 8 AM and remove it by Friday 6 PM

36. You have started a new job and are reviewing your company's infrastructure on AWS. You notice one web application where they have an Elastic Load Balancer in front of web instances in an Auto Scaling Group. When you check the metrics for the ELB in CloudWatch you see four healthy instances in Availability Zone (AZ) A and zero in AZ B. There are zero unhealthy instances. What do you need to fix to balance the instances across AZs?
    a. Set the ELB to only be attached to another AZ
    b. **Make sure Auto Scaling is configured to launch in both AZs**
    c. Make sure your AMI is available in both AZs
    d. Make sure the maximum size of the Auto Scaling Group is greater than 4

37. A user has setup an Auto Scaling group. The group has failed to launch a single instance for more than 24 hours. What will happen to Auto Scaling in this condition
    a. Auto Scaling will keep trying to launch the instance for 72 hours
    b. **Auto Scaling will suspend the scaling process**
    c. Auto Scaling will start an instance in a separate region
    d. The Auto Scaling group will be terminated automatically

38. An organization has configured Auto Scaling with ELB. There is a memory issue in the application which is causing CPU utilization to go above 90%. The higher CPU usage triggers an event for Auto Scaling as per the scaling policy. If the user wants to find the root cause inside the application without triggering a scaling activity, how can he achieve this?
    a. Stop the scaling process until research is completed
    b. It is not possible to find the root cause from that instance without triggering scaling
    c. Delete Auto Scaling until research is completed
    d. **Suspend the scaling process until research is completed**

39. A user has hosted an application on EC2 instances. The EC2 instances are configured with ELB and Auto Scaling. The application server session time out is 2 hours. The user wants to configure connection draining to ensure that all in-flight requests are supported by ELB even though the

instance is being deregistered. What time out period should the user specify for connection draining?

a. 5 minutes
b. **1 hour**
c. 30 minutes
d. 2 hours

40. You have an Auto Scaling group associated with an Elastic Load Balancer (ELB). You have noticed that instances launched via the Auto Scaling group are being marked unhealthy due to an ELB health check, but these unhealthy instances are not being terminated. What do you need to do to ensure trial instances marked unhealthy by the ELB will be terminated and replaced?
    a. Change the thresholds set on the Auto Scaling group health check
    b. **Add an Elastic Load Balancing health check to your Auto Scaling group**
    c. Increase the value for the Health check interval set on the Elastic Load Balancer
    d. Change the health check set on the Elastic Load Balancer to use TCP rather than HTTP checks

41. A company is building a two-tier web application to serve dynamic transaction-based content. The data tier is leveraging an Online Transactional Processing (OLTP) database. What services should you leverage to enable an elastic and scalable web tier?
    a. **Elastic Load Balancing, Amazon EC2, and Auto Scaling**
    b. Elastic Load Balancing, Amazon RDS with Multi-AZ, and Amazon S3
    c. Amazon RDS with Multi-AZ and Auto Scaling
    d. Amazon EC2, Amazon DynamoDB, and Amazon S3
42. You manually launch a NAT AMI in a public subnet. The network is properly configured. Security groups and network access control lists are property configured. Instances in a private subnet can access the NAT. The NAT can access the Internet. However, private instances cannot access the Internet. What additional step is required to allow access from the private instances?
    a. Enable Source/Destination Check on the private Instances.
    b. Enable Source/Destination Check on the NAT instance.
    c. Disable Source/Destination Check on the private instances
    d. **Disable Source/Destination Check on the NAT instance**

43. A user has created a VPC with public and private subnets. The VPC has CIDR 20.0.0.0/16. The private subnet uses CIDR 20.0.1.0/24 and the public subnet uses CIDR 20.0.0.0/24. The user is planning to host a web server in the public subnet (port 80. and a DB server in the private subnet (port 3306.. The user is configuring a security group of the NAT instance. Which of the below mentioned entries is **not** required for the NAT security group?
    a. For Inbound allow Source: 20.0.1.0/24 on port 80
    b. For Outbound allow Destination: 0.0.0.0/0 on port 80
    c. **For Inbound allow Source: 20.0.0.0/24 on port 80**
    d. For Outbound allow Destination: 0.0.0.0/0 on port 443

44. You have an environment that consists of a public subnet using Amazon VPC and 3 instances that are running in this subnet. These three instances can successfully communicate with other hosts on the Internet. You launch a fourth instance in the same subnet, using the same AMI and security group configuration you used for the others, but find that this instance cannot be accessed from the internet. What should you do to enable Internet access?

a. Deploy a NAT instance into the public subnet.
b. **Assign an Elastic IP address to the fourth instance**
c. Configure a publically routable IP Address in the host OS of the fourth instance.
d. Modify the routing table for the public subnet.

45. You have a load balancer configured for VPC, and all back-end Amazon EC2 instances are in service. However, your web browser times out when connecting to the load balancer's DNS name. Which options are probable causes of this behavior? Choose 2 answers
    a. **The load balancer was not configured to use a public subnet with an Internet gateway configured**
    b. The Amazon EC2 instances do not have a dynamically allocated private IP address
    c. **The security groups or network ACLs are not property configured for web traffic.**
    d. The load balancer is not configured in a private subnet with a NAT instance.
    e. The VPC does not have a VGW configured.

46. You need to design a VPC for a web-application consisting of an ELB a fleet of web application servers, and an RDS DB. The entire infrastructure must be distributed over 2 AZ. Which VPC configuration works while assuring the DB is not available from the Internet?
    a. One Public Subnet for ELB, one Public Subnet for the web-servers, and one private subnet for the DB
    b. One Public Subnet for ELB, two Private Subnets for the web-servers, and two private subnets for the RDS
    c. **Two Public Subnets for ELB, two private Subnet for the web-servers, and two private subnet for the RDS**
    d. Two Public Subnets for ELB, two Public Subnet for the web-servers, and two public subnets for the RDS

47. Which of the following are characteristics of Amazon VPC subnets? Choose 2 answers
    a. **Each subnet maps to a single Availability Zone**
    b. A CIDR block mask of /25 is the smallest range supported
    c. Instances in a private subnet can communicate with the Internet only if they have an Elastic IP.
    d. **By default, all subnets can route between each other, whether they are private or public**
    e. Each subnet spans at least 2 Availability zones to provide a high-availability environment

48. You need to design a VPC for a web-application consisting of an Elastic Load Balancer
You are attempting to connect to an instance in Amazon VPC without success You have already verified that the VPC has an Internet Gateway (IGW) the instance has an associated Elastic IP (EIP) and correct security group rules are in place. Which VPC component should you evaluate next?
    a. The configuration of a NAT instance
    b. **The configuration of the Routing Table**
    c. The configuration of the internet Gateway (IGW)
    d. The configuration of SRC/DST checking

49. A user has created a VPC with CIDR 20.0.0.0/16 using the wizard. The user has created a public subnet CIDR (20.0.0.0/24) and VPN only subnets CIDR (20.0.1.0/24) along with the VPN gateway

(vgw-12345) to connect to the user's data centre. Which of the below mentioned options is a valid entry for the main route table in this scenario?

a. Destination: 20.0.0.0/24 and Target: vgw-12345
b. Destination: 20.0.0.0/16 and Target: ALL
c. Destination: 20.0.1.0/16 and Target: vgw-12345
d. **Destination: 0.0.0.0/0 and Target: vgw-12345**

50. A user has created a VPC with public and private subnets using the VPC wizard. The user has not launched any instance manually and is trying to delete the VPC. What will happen in this scenario?
    a. It will not allow to delete the VPC as it has subnets with route tables
    b. It will not allow to delete the VPC since it has a running route instance
    c. It will terminate the VPC along with all the instances launched by the wizard
    d. **It will not allow to delete the VPC since it has a running NAT instance**

51. A user has created a VPC with CIDR 20.0.0.0/16. The user has created one subnet with CIDR 20.0.0.0/16 in this VPC. The user is trying to create another subnet with the same VPC for CIDR 20.0.0.1/24. What will happen in this scenario?
    a. The VPC will modify the first subnet CIDR automatically to allow the second subnet IP range
    b. It is not possible to create a subnet with the same CIDR as VPC
    c. The second subnet will be created
    d. **It will throw a CIDR overlaps error**

52. A user has created a VPC with the public and private subnets using the VPC wizard. The VPC has CIDR 20.0.0.0/16. The public subnet uses CIDR 20.0.1.0/24. The user is planning to host a web server in the public subnet (port 80) and a DB server in the private subnet (port 3306). The user is configuring a security group for the public subnet (WebSecGrp) and the private subnet (DBSecGrp). Which of the below mentioned entries is required in the private subnet database security group (DBSecGrp)?
    a. **Allow Inbound on port 3306 for Source Web Server Security Group (WebSecGrp)**
    b. Allow Inbound on port 3306 from source 20.0.0.0/16
    c. Allow Outbound on port 3306 for Destination Web Server Security Group (WebSecGrp.
    d. Allow Outbound on port 80 for Destination NAT Instance IP

53. A user has created a VPC with two subnets: one public and one private. The user is planning to run the patch update for the instances in the private subnet. How can the instances in the private subnet connect to the internet?
    a. Use the internet gateway with a private IP
    b. Allow outbound traffic in the security group for port 80 to allow internet updates
    c. The private subnet can never connect to the internet
    d. **Use NAT with an elastic IP**

54. You have an EC2 Security Group with several running EC2 instances. You change the Security Group rules to allow inbound traffic on a new port and protocol, and launch several new instances in the same Security Group. The new rules apply:
    a. **Immediately to all instances in the security group.**
    b. Immediately to the new instances only.

c. Immediately to the new instances, but old instances must be stopped and restarted before the new rules apply.
d. To all instances, but it may take several minutes for old instances to see the changes.

55. What is the difference between a security group in VPC and a network ACL in VPC (chose 3 correct answers)
    a. Security group restricts access to a Subnet while ACL restricts traffic to EC2
    b. **Security group restricts access to EC2 while ACL restricts traffic to a subnet**
    c. Security group can work outside the VPC also while ACL only works within a VPC
    d. **Network ACL performs stateless filtering and Security group provides stateful filtering**
    e. **Security group can only set Allow rule, while ACL can set Deny rule also**

56. Instance A and instance B are running in two different subnets A and B of a VPC. Instance A is not able to ping instance B. What are two possible reasons for this? (Pick 2 correct answers)
    a. The routing table of subnet A has no target route to subnet B
    b. **The security group attached to instance B does not allow inbound ICMP traffic**
    c. The policy linked to the IAM role on instance A is not configured correctly
    d. **The NACL on subnet B does not allow outbound ICMP traffic**

57. A user has configured ELB with SSL using a security policy for secure negotiation between the client and load balancer. The ELB security policy supports various ciphers. Which of the below mentioned options helps identify the matching cipher at the client side to the ELB cipher list when client is requesting ELB DNS over SSL
    a. Cipher Protocol
    b. Client Configuration Preference
    c. **Server Order Preference**
    d. Load Balancer Preference

58. A user has configured ELB with a TCP listener at ELB as well as on the back-end instances. The user wants to enable a proxy protocol to capture the source and destination IP information in the header. Which of the below mentioned statements helps the user understand a proxy protocol with TCP configuration?
    a. **If the end user is requesting behind a proxy server then the user should not enable a proxy protocol on ELB**
    b. ELB does not support a proxy protocol when it is listening on both the load balancer and the back-end instances
    c. Whether the end user is requesting from a proxy server or directly, it does not make a difference for the proxy protocol
    d. If the end user is requesting behind the proxy then the user should add the “isproxy” flag to the ELB Configuration

59. A user has created an ELB with Auto Scaling. Which of the below mentioned offerings from ELB helps the user to stop sending new requests traffic from the load balancer to the EC2 instance when the instance is being deregistered while continuing in-flight requests?
    a. ELB sticky session
    b. ELB deregistration check
    c. **ELB connection draining**

d. ELB auto registration Off

60. A user has launched an ELB which has 5 instances registered with it. The user deletes the ELB by mistake. What will happen to the instances?
    a. ELB will ask the user whether to delete the instances or not
    b. Instances will be terminated
    c. ELB cannot be deleted if it has running instances registered with it
    d. **Instances will keep running**

61. A Sys-admin has created a shopping cart application and hosted it on EC2. The EC2 instances are running behind ELB. The admin wants to ensure that the end user request will always go to the EC2 instance where the user session has been created. How can the admin configure this?
    a. Enable ELB cross zone load balancing
    b. Enable ELB cookie setup
    c. **Enable ELB sticky session**
    d. Enable ELB connection draining

62. Which of the following features ensures even distribution of traffic to Amazon EC2 instances in multiple Availability Zones registered with a Classic load balancer?
    a. Elastic Load Balancing request routing
    b. An Amazon Route 53 weighted routing policy
    c. **Elastic Load Balancing cross-zone load balancing**
    d. An Amazon Route 53 latency routing policy
63. You have a web application running on six Amazon EC2 instances, consuming about 45% of resources on each instance. You are using auto-scaling to make sure that six instances are running at all times. The number of requests this application processes is consistent and does not experience spikes. The application is critical to your business and you want high availability at all times. You want the load to be distributed evenly between all instances. You also want to use the same Amazon Machine Image (AMI) for all instances. Which of the following architectural choices should you make?
    a. Deploy 6 EC2 instances in one availability zone and use Amazon Elastic Load Balancer.
    b. Deploy 3 EC2 instances in one region and 3 in another region and use Amazon Elastic Load Balancer.
    c. **Deploy 3 EC2 instances in one availability zone and 3 in another availability zone and use Amazon Elastic Load Balancer.**
    d. Deploy 2 EC2 instances in three regions and use Amazon Elastic Load Balancer.

64. Which of the following services natively encrypts data at rest within an AWS region?Choose 2 answers
    a. **AWS Storage Gateway**
    b. Amazon DynamoDB
    c. Amazon CloudFront
    d. **Amazon Glacier**
    e. Amazon Simple Queue Service

65. A customer has a single 3-TB volume on-premises that is used to hold a large repository of images and print layout files. This repository is growing at 500 GB a year and must be presented as a single logical volume. The customer is becoming increasingly constrained with their local storage capacity

and wants an off-site backup of this data, while maintaining low-latency access to their frequently accessed data. Which AWS Storage Gateway configuration meets the customer requirements?

a. **Gateway-Cached volumes with snapshots scheduled to Amazon S3**
b. Gateway-Stored volumes with snapshots scheduled to Amazon S3
c. Gateway-Virtual Tape Library with snapshots to Amazon S3
d. Gateway-Virtual Tape Library with snapshots to Amazon Glacier

66. Read Replicas require a transactional storage engine and are only supported for the _____ storage engine
    a. OracleISAM
    b. MSSQLDB
    c. **InnoDB**
    d. MyISAM

67. A user is configuring the Multi-AZ feature of an RDS DB. The user came to know that this RDS DB does not use the AWS technology, but uses server mirroring to achieve replication. Which DB is the user using right now?
    a. MySQL
    b. Oracle
    c. **MS SQL**
    d. PostgreSQL

68. If I have multiple Read Replicas for my master DB Instance and I promote one of them, what happens to the rest of the Read Replicas?
    a. **The remaining Read Replicas will still replicate from the older master DB Instance**
    b. The remaining Read Replicas will be deleted
    c. The remaining Read Replicas will be combined to one read replica

69. Which of these is not a reason a Multi-AZ RDS instance will failover?
    a. An Availability Zone outage
    b. A manual failover of the DB instance was initiated using Reboot with failover
    c. To autoscale to a higher instance class (Refer link)
    d. **Master database corruption occurs**
    e. The primary DB instance fails

70. 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.

71. A customer is running an application in US-West (Northern California) region and wants to setup disaster recovery failover to the Asian Pacific (Singapore) region. The customer is interested in achieving a low Recovery Point Objective (RPO) for an Amazon RDS multi-AZ MySQL database instance. Which approach is best suited to this need?
    a. Synchronous replication
    b. **Asynchronous replication**

c. Route53 health checks
d. Copying of RDS incremental snapshots

72. A user is using a small MySQL RDS DB. The user is experiencing high latency due to the Multi AZ feature. Which of the below mentioned options may not help the user in this situation?
    a. Schedule the automated back up in non-working hours
    b. Use a large or higher size instance
    c. Use PIOPS
    d. **Take a snapshot from standby Replica**

73. Are Reserved Instances available for Multi-AZ Deployments?
    a. Only for Cluster Compute instances
    b. **Yes for all instance types**
    c. Only for M3 instance types

74. My Read Replica appears "stuck" after a Multi-AZ failover and is unable to obtain or apply updates from the source DB Instance. What do I do?
    a. **You will need to delete the Read Replica and create a new one to replace it.**
    b. You will need to disassociate the DB Engine and re associate it.
    c. The instance should be deployed to Single AZ and then moved to Multi- AZ once again
    d. You will need to delete the DB Instance and create a new one to replace it.

75. What is the charge for the data transfer incurred in replicating data between your primary and standby?
    a. **No charge. It is free.**
    b. Double the standard data transfer charge
    c. Same as the standard data transfer charge
    d. Half of the standard data transfer charge

76. In the shared security model, AWS is responsible for which of the following security best practices (check all that apply) :
    a. **Penetration testing**
    b. Operating system account security management
    c. **Threat modeling**
    d. User group access management
    e. **Static code analysis**

77. You are running a web-application on AWS consisting of the following components an Elastic Load Balancer (ELB) an Auto-Scaling Group of EC2 instances running Linux/PHP/Apache, and Relational DataBase Service (RDS) MySQL. Which security measures fall into AWS's responsibility?
    a. Protect the EC2 instances against unsolicited access by enforcing the principle of least-privilege access
    b. **Protect against IP spoofing or packet sniffing**
    c. Assure all communication between EC2 instances and ELB is encrypted
    d. Install latest security patches on ELB. RDS and EC2 instances

78. In AWS, which security aspects are the customer's responsibility? Choose 4 answers
    a. Controlling physical access to compute resource
    b. **Patch management on the EC2 instances operating system**

c. **Encryption of EBS (Elastic Block Storage) volumes**
d. **Life-cycle management of IAM credentials**
e. Decommissioning storage devices
f. **Security Group and ACL (Access Control List) settings**

79. Per the AWS Acceptable Use Policy, penetration testing of EC2 instances:
    a. May be performed by AWS, and will be performed by AWS upon customer request.
    b. May be performed by AWS, and is periodically performed by AWS.
    c. Are expressly prohibited under all circumstances.
    d. **May be performed by the customer on their own instances with prior authorization from AWS.**
    e. May be performed by the customer on their own instances, only if performed from EC2 instances

80. Which is an operational process performed by AWS for data security?
    a. AES-256 encryption of data stored on any shared storage device
    b. **Decommissioning of storage devices using industry-standard practices**
    c. Background virus scans of EBS volumes and EBS snapshots Replication of data across multiple AWS Regions
    d. Secure wiping of EBS data when an EBS volume is unmounted

81. A photo-sharing service stores pictures in Amazon Simple Storage Service (S3) and allows application sign-in using an OpenID Connect-compatible identity provider. Which AWS Security Token Service approach to temporary access should you use for the Amazon S3 operations?

    a. SAML-based Identity Federation
    b. Cross-Account Access
    c. AWS IAM users
    d. **Web Identity Federation**

82. Which technique can be used to integrate AWS IAM (Identity and Access Management) with an on-premise LDAP (Lightweight Directory Access Protocol) directory service?
    a. Use an IAM policy that references the LDAP account identifiers and the AWS credentials.
    b. Use SAML (Security Assertion Markup Language) to enable single sign-on between AWS and LDAP
    c. **Use AWS Security Token Service from an identity broker to issue short-lived AWS credentials**.
    d. Use IAM roles to automatically rotate the IAM credentials when LDAP credentials are updated.

83. What is web identity federation?
    a. Use of an identity provider like Google or Facebook to become an AWS IAM User.
    b. **Use of an identity provider like Google or Facebook to exchange for temporary AWS security credentials.**
    c. Use of AWS IAM User tokens to log in as a Google or Facebook user.
    d. Use of AWS STS Tokens to log in as a Google or Facebook user.

84. Games-R-Us is launching a new game app for mobile devices. Users will log into the game using their existing Facebook account and the game will record player data and scoring information directly to a DynamoDB table. What is the most secure approach for signing requests to the DynamoDB API?

a. Create an IAM user with access credentials that are distributed with the mobile app to sign the requests
b. Distribute the AWS root account access credentials with the mobile app to sign the requests
c. **Request temporary security credentials using web identity federation to sign the requests**
d. Establish cross account access between the mobile app and the DynamoDB table to sign the requests

85. A company is building software on AWS that requires access to various AWS services. Which configuration should be used to ensure that AWS credentials (i.e., Access Key ID/Secret Access Key combination) are not compromised?
    a. Enable Multi-Factor Authentication for your AWS root account.
    b. **Assign an IAM role to the Amazon EC2 instance**
    c. Store the AWS Access Key ID/Secret Access Key combination in software comments.
    d. Assign an IAM user to the Amazon EC2 Instance.

86. An organization is planning to use AWS for their production roll out. The organization wants to implement automation for deployment such that it will automatically create a LAMP stack, download the latest PHP installable from S3 and setup the ELB. Which of the below mentioned AWS services meets the requirement for making an orderly deployment of the software?
    a. **AWS Elastic Beanstalk**
    b. AWS CloudFront
    c. AWS CloudFormation
    d. AWS DevOps

87. What does Amazon Elastic Beanstalk provide?
    a. A scalable storage appliance on top of Amazon Web Services.
    b. **An application container on top of Amazon Web Services**
    c. A service by this name doesn't exist.
    d. A scalable cluster of EC2 instances

88. A company is preparing to give AWS Management Console access to developers. Company policy mandates identity federation and role-based access control. Roles are currently assigned using groups in the corporate Active Directory. What combination of the following will give developers access to the AWS console? (Select 2) Choose 2 answers
    a. **AWS Directory Service AD Connector**
    b. AWS Directory Service Simple AD
    c. AWS Identity and Access Management groups
    d. **AWS identity and Access Management roles**
    e. AWS identity and Access Management users

89. Which of the following are use cases for Amazon DynamoDB? Choose 3 answers
    a. Storing BLOB data.
    b. **Managing web sessions**
    c. **Storing JSON documents**
    d. **Storing metadata for Amazon S3 objects**
    e. Running relational joins and complex updates.

f. Storing large amounts of infrequently accessed data.

90. A client application requires operating system privileges on a relational database server. What is an appropriate configuration for highly available database architecture?
    a. A standalone Amazon EC2 instance
    b. Amazon RDS in a Multi-AZ configuration
    c. Amazon EC2 instances in a replication configuration utilizing a single Availability Zone
    d. **Amazon EC2 instances in a replication configuration utilizing two different Availability Zones**

91. In the basic monitoring package for EC2, Amazon CloudWatch provides the following metrics:
    a. Web server visible metrics such as number failed transaction requests
    b. Operating system visible metrics such as memory utilization
    c. Database visible metrics such as number of connections
    d. **Hypervisor visible metrics such as CPU utilization**

92. Which of the following requires a custom CloudWatch metric to monitor?
    a. **Memory Utilization of an EC2 instance**
    b. CPU Utilization of an EC2 instance
    c. Disk usage activity of an EC2 instance
    d. Data transfer of an EC2 instance

93. A user has configured CloudWatch monitoring on an EBS backed EC2 instance. If the user has not attached any additional device, which of the below mentioned metrics will always show a 0 value?
    a. **DiskReadBytes**
    b. NetworkIn
    c. NetworkOut
    d. CPUUtilization

94. A user is running a batch process on EBS backed EC2 instances. The batch process starts a few instances to process Hadoop Map reduce jobs, which can run between 50 – 600 minutes or sometimes for more time. The user wants to configure that the instance gets terminated only when the process is completed. How can the user configure this with CloudWatch?
    a. **Setup the CloudWatch action to terminate the instance when the CPU utilization is less than 5%**
    b. Setup the CloudWatch with Auto Scaling to terminate all the instances
    c. Setup a job which terminates all instances after 600 minutes
    d. It is not possible to terminate instances automatically

95. An AWS account owner has setup multiple IAM users. One IAM user only has CloudWatch access. He has setup the alarm action, which stops the EC2 instances when the CPU utilization is below the threshold limit. What will happen in this case?
    a. It is not possible to stop the instance using the CloudWatch alarm
    b. CloudWatch will stop the instance when the action is executed
    c. The user cannot set an alarm on EC2 since he does not have the permission
    d. **The user can setup the action but it will not be executed if the user does not have EC2 rights**

96. A user has launched an EC2 instance. The instance got terminated as soon as it was launched. Which of the below mentioned options is not a possible reason for this?
    a. **The user account has reached the maximum EC2 instance limit** (Refer link)
    b. The snapshot is corrupt
    c. The AMI is missing. It is the required part
    d. The user account has reached the maximum volume limit

97. If you're unable to connect via SSH to your EC2 instance, which of the following should you check and possibly correct to restore connectivity?
    a. Adjust Security Group to permit egress traffic over TCP port 443 from your IP.
    b. Configure the IAM role to permit changes to security group settings.
    c. Modify the instance security group to allow ingress of ICMP packets from your IP.
    d. **Adjust the instance's Security Group to permit ingress traffic over port 22 from your IP**
    e. Apply the most recently released Operating System security patches.

98. You try to connect via SSH to a newly created Amazon EC2 instance and get one of the following error messages: "Network error: Connection timed out" or "Error connecting to [instance], reason: -> Connection timed out: connect," You have confirmed that the network and security group rules are configured correctly and the instance is passing status checks. What steps should you take to identify the source of the behavior? Choose 2 answers
    a. **Verify that the private key file corresponds to the Amazon EC2 key pair assigned at launch.**
    b. Verify that your IAM user policy has permission to launch Amazon EC2 instances.
    c. **Verify that you are connecting with the appropriate user name for your AMI.**
    d. Verify that the Amazon EC2 Instance was launched with the proper IAM role.
    e. Verify that your federation trust to AWS has been established

99. A user has launched an EBS backed EC2 instance in the us-east-1a region. The user stopped the instance and started it back after 20 days. AWS throws up an 'Insufficient Instance Capacity' error. What can be the possible reason for this?
    a. **AWS does not have sufficient capacity in that availability zone**
    b. AWS zone mapping is changed for that user account
    c. There is some issue with the host capacity on which the instance is launched
    d. The user account has reached the maximum EC2 instance limit

100. A user is trying to connect to a running EC2 instance using SSH. However, the user gets an Unprotected Private Key File error. Which of the below mentioned options can be a possible reason for rejection?
    a. **The private key file has the wrong file permission**
    b. The ppk file used for SSH is read only
    c. The public key file has the wrong permission
    d. The user has provided the wrong user name for the OS login

101. A user has launched an EC2 instance. However, due to some reason the instance was terminated. If the user wants to find out the reason for termination, where can he find the details?
    a. It is not possible to find the details after the instance is terminated
    b. **The user can get information from the AWS console, by checking the Instance description under the State transition reason label**

c. The user can get information from the AWS console, by checking the Instance description under the Instance Status Change reason label
d. The user can get information from the AWS console, by checking the Instance description under the Instance Termination reason label

102. You have a Linux EC2 web server instance running inside a VPC. The instance is in a public subnet and has an EIP associated with it so you can connect to it over the Internet via HTTP or SSH. The instance was also fully accessible when you last logged in via SSH and was also serving web requests on port 80. Now you are not able to SSH into the host nor does it respond to web requests on port 80, that were working fine last time you checked. You have double-checked that all networking configuration parameters (security groups route tables, IGW, EIP. NACLs etc.) are properly configured and you haven't made any changes to those anyway since you were last able to reach the Instance). You look at the EC2 console and notice that system status check shows "impaired." Which should be your next step in troubleshooting and attempting to get the instance back to a healthy state so that you can log in again?
a. **Stop and start the instance so that it will be able to be redeployed on a healthy host system that most likely will fix the "impaired" system status**
b. Reboot your instance so that the operating system will have a chance to boot in a clean healthy state that most likely will fix the 'impaired" system status
c. Add another dynamic private IP address to me instance and try to connect via that new path, since the networking stack of the OS may be locked up causing the "impaired" system status.
d. Add another Elastic Network Interface to the instance and try to connect via that new path since the networking stack of the OS may be locked up causing the "impaired" system status
e. un-map and then re-map the EIP to the instance, since the IGW/NAT gateway may not be working properly, causing the "impaired" system status

103. A user is trying to connect to a running EC2 instance using SSH. However, the user gets a connection time out error. Which of the below mentioned options is not a possible reason for rejection?
a. **The access key to connect to the instance is wrong**
b. The security group is not configured properly
c. The private key used to launch the instance is not correct
d. The instance CPU is heavily loaded

104. A user is trying to connect to a running EC2 instance using SSH. However, the user gets a Host key not found error. Which of the below mentioned options is a possible reason for rejection?
a. **The user has provided the wrong user name for the OS login**
b. The instance CPU is heavily loaded
c. The security group is not configured properly
d. The access key to connect to the instance is wrong

105. A customer is running a multi-tier web application farm in a virtual private cloud (VPC) that is not connected to their corporate network. They are connecting to the VPC over the Internet to manage all of their Amazon EC2 instances running in both the public and private subnets. They have only authorized the bastion-security-group with Microsoft Remote Desktop Protocol (RDP)

access to the application instance security groups, but the company wants to further limit administrative access to all of the instances in the VPC. Which of the following Bastion deployment scenarios will meet this requirement?

a. Deploy a Windows Bastion host on the corporate network that has RDP access to all instances in the VPC.
b. Deploy a Windows Bastion host with an Elastic IP address in the public subnet and allow SSH access to the bastion from anywhere.
c. Deploy a Windows Bastion host with an Elastic IP address in the private subnet, and restrict RDP access to the bastion from only the corporate public IP addresses.
d. **Deploy a Windows Bastion host with an auto-assigned Public IP address in the public subnet, and allow RDP access to the bastion from only the corporate public IP addresses.**

106. You are designing a system that has a Bastion host. This component needs to be highly available without human intervention. Which of the following approaches would you select?

a. Run the bastion on two instances one in each AZ
b. Run the bastion on an active Instance in one AZ and have an AMI ready to boot up in the event of failure
c. **Configure the bastion instance in an Auto Scaling group Specify the Auto Scaling group to include multiple AZs but have a min-size of 1 and max-size of 1**
d. Configure an ELB in front of the bastion instance

107. You are tasked with setting up a Linux bastion host for access to Amazon EC2 instances running in your VPC. Only clients connecting from the corporate external public IP address 72.34.51.100 should have SSH access to the host. Which option will meet the customer requirement?

a. **Security Group Inbound Rule: Protocol – TCP. Port Range – 22, Source 72.34.51.100/32**
b. Security Group Inbound Rule: Protocol – UDP, Port Range – 22, Source 72.34.51.100/32
c. Network ACL Inbound Rule: Protocol – UDP, Port Range – 22, Source 72.34.51.100/32
d. Network ACL Inbound Rule: Protocol – TCP, Port Range-22, Source 72.34.51.100/0

108. What is a placement group?

a. A collection of Auto Scaling groups in the same Region
b. **Feature that enables EC2 instances to interact with each other via high bandwidth, low latency connections**
c. A collection of Elastic Load Balancers in the same Region or Availability Zone
d. A collection of authorized Cloud Front edge locations for a distribution

109. In order to optimize performance for a compute cluster that requires low inter-node latency, which feature in the following list should you use?

a. AWS Direct Connect
b. **Placement Groups**
c. VPC private subnets
d. EC2 Dedicated Instances
e. Multiple Availability Zones

110. 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.

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

111. How can software determine the public and private IP addresses of the Amazon EC2 instance that it is running on?
a. **Query the local instance metadata**
b. Query the appropriate Amazon CloudWatch metric.
c. Query the local instance userdata.
d. Use ipconfig or ifconfig command.

112. The base URI for all requests for instance metadata is _____
a. http://254.169.169.254/latest/
b. http://169.169.254.254/latest/
c. http://127.0.0.1/latest/
d. **http://169.254.169.254/latest/**

113. Which Amazon Elastic Compute Cloud feature can you query from within the instance to access instance properties?
a. Instance user data
b. Resource tags
c. **Instance metadata**
d. Amazon Machine Image

114. You need to pass a custom script to new Amazon Linux instances created in your Auto Scaling group. Which feature allows you to accomplish this?

a. **User data**
b. EC2Config service
c. IAM roles
d. AWS Config

115. By default, when an EBS volume is attached to a Windows instance, it may show up as any drive letter on the instance. You can change the settings of the _____ Service to set the drive letters of the EBS volumes per your specifications.

1. EBSConfig Service
2. AMIConfig Service
3. **EC2Config Service**
4. Ec2-AMIConfig Service

116. How can software determine the public and private IP addresses of the Amazon EC2 instance that it is running on?

a. Query the appropriate Amazon CloudWatch metric.
b. Use ipconfig or ifconfig command.
c. Query the local instance userdata.
d. **Query the local instance metadata.**

117. A user has launched an EC2 instance from an instance store backed AMI. The infrastructure team wants to create an AMI from the running instance. Which of the below mentioned credentials is not required while creating the AMI?

a. AWS account ID
b. 509 certificate and private key
c. **AWS login ID to login to the console**
d. Access key and secret access key

118. A user has launched an EC2 Windows instance from an instance store backed AMI. The user wants to convert the AMI to an EBS backed AMI. How can the user convert it?

a. Attach an EBS volume to the instance and unbundle all the AMI bundled data inside the EBS
b. **A Windows based instance store backed AMI cannot be converted to an EBS backed AMI**

c. It is not possible to convert an instance store backed AMI to an EBS backed AMI
d. Attach an EBS volume and use the copy command to copy all the ephemeral content to the EBS Volume

119. A user has launched two EBS backed EC2 instances in the US-East-1a region. The user wants to change the zone of one of the instances. How can the user change it?

a. Stop one of the instances and change the availability zone
b. The zone can only be modified using the AWS CLI
c. From the AWS EC2 console, select the Actions – > Change zones and specify new zone
d. **Create an AMI of the running instance and launch the instance in a separate AZ**

120. A user has launched a large EBS backed EC2 instance in the US-East-1a region. The user wants to achieve Disaster Recovery (DR) for that instance by creating another small instance in Europe. How can the user achieve DR?

a. Copy the running instance using the "Instance Copy" command to the EU region
b. **Create an AMI of the instance and copy the AMI to the EU region. Then launch the instance from the EU AMI**
c. Copy the instance from the US East region to the EU region
d. Use the "Launch more like this" option to copy the instance from one region to another

121. A user has launched an EC2 instance store backed instance in the US-East-1a zone. The user created AMI #1 and copied it to the Europe region. After that, the user made a few updates to the application running in the US-East-1a zone. The user makes an AMI#2 after the changes. If the user launches a new instance in Europe from the AMI #1 copy, which of the below mentioned statements is true?

a. The new instance will have the changes made after the AMI copy as AWS just copies the reference of the original AMI during the copying. Thus, the copied AMI will have all the updated data
b. The new instance will have the changes made after the AMI copy since AWS keeps updating the AMI
c. It is not possible to copy the instance store backed AMI from one region to another
d. **The new instance in the EU region will not have the changes made after the AMI copy**

122. George has shared an EC2 AMI created in the US East region from his AWS account with Stefano. George copies the same AMI to the US West region. Can Stefano access the copied AMI of George's account from the US West region?

a. **No, copy AMI does not copy the permission**
b. It is not possible to share the AMI with a specific account

c. Yes, since copy AMI copies all private account sharing permissions
d. Yes, since copy AMI copies all the permissions attached with the AMI

123. EC2 instances are launched from Amazon Machine images (AMIS). A given public AMI can:

a. be used to launch EC2 Instances in any AWS region.
b. only be used to launch EC2 instances in the same country as the AMI is stored.
c. **only be used to launch EC2 instances in the same AWS region as the AMI is stored.** (An AMI is tied to the region where its files are located within Amazon S3)
d. only be used to launch EC2 instances in the same AWS availability zone as the AMI is stored.

124. Which of the following instance types are available as Amazon EBS-backed only? Choose 2 answers

a. **General purpose T2**
b. General purpose M3
c. **Compute-optimized C4**
d. Compute-optimized C3
e. Storage-optimized 12

125. A t2.medium EC2 instance type must be launched with what type of Amazon Machine Image (AMI)?

a. An Instance store Hardware Virtual Machine AMI
b. An Instance store Paravirtual AMI
c. **An Amazon EBS-backed Hardware Virtual Machine AMI**
d. An Amazon EBS-backed Paravirtual AMI

126. You have identified network throughput as a bottleneck on your m1.small EC2 instance when uploading data Into Amazon S3 In the same region. How do you remedy this situation? Add an additional ENI

a. **Change to a larger Instance**
b. Use DirectConnect between EC2 and S3
c. Use EBS PIOPS on the local volume

127. You are using an m1.small EC2 Instance with one 300 GB EBS volume to host a relational database. You determined that write throughput to the database needs to be increased. Which of the following approaches can help achieve this? Choose 2 answers

a. **Use an array of EBS volumes**
b. Enable Multi-AZ mode.
c. Place the instance in an Auto Scaling Groups
d. Add an EBS volume and place into RAID 5

e. **Increase the size of the EC2 Instance.**
f. Put the database behind an Elastic Load Balancer.

128. By default, EBS volumes that are created and attached to an instance at launch are deleted when that instance is terminated. You can modify this behavior by changing the value of the flag_____ to false when you launch the instance
   a. **DeleteOnTermination**
   b. RemoveOnDeletion
   c. RemoveOnTermination
   d. TerminateOnDeletion

129. Your company policies require encryption of sensitive data at rest. You are considering the possible options for protecting data while storing it at rest on an EBS data volume, attached to an EC2 instance. Which of these options would allow you to encrypt your data at rest? (Choose 3 answers)
   a. **Implement third party volume encryption tools**
   b. Do nothing as EBS volumes are encrypted by default
   c. **Encrypt data inside your applications before storing it on EBS**
   d. **Encrypt data using native data encryption drivers at the file system level**
   e. Implement SSL/TLS for all services running on the server

130. Which of the following are true regarding encrypted Amazon Elastic Block Store (EBS) volumes? Choose 2 answers
   a. **Supported on all Amazon EBS volume types**
   b. **Snapshots are automatically encrypted**
   c. Available to all instance types
   d. Existing volumes can be encrypted
   e. Shared volumes can be encrypted

131. How can you secure data at rest on an EBS volume?
   a. Encrypt the volume using the S3 server-side encryption service
   b. Attach the volume to an instance using EC2's SSL interface.
   c. Create an IAM policy that restricts read and write access to the volume.
   d. Write the data randomly instead of sequentially.
   e. **Use an encrypted file system on top of the EBS volume**

132. A user has deployed an application on an EBS backed EC2 instance. For a better performance of application, it requires dedicated EC2 to EBS traffic. How can the user achieve this?
    a. Launch the EC2 instance as EBS dedicated with PIOPS EBS
    b. Launch the EC2 instance as EBS enhanced with PIOPS EBS
    c. Launch the EC2 instance as EBS dedicated with PIOPS EBS
    d. **Launch the EC2 instance as EBS optimized with PIOPS EBS**

133. A user is planning to schedule a backup for an EBS volume. The user wants security of the snapshot data. How can the user achieve data encryption with a snapshot?
    a. **Use encrypted EBS volumes so that the snapshot will be encrypted by AWS**
    b. While creating a snapshot select the snapshot with encryption
    c. By default the snapshot is encrypted by AWS
    d. Enable server side encryption for the snapshot using S3

134. A user has launched an EBS backed EC2 instance. The user has rebooted the instance. Which of the below mentioned statements is not true with respect to the reboot action?
    a. The private and public address remains the same
    b. The Elastic IP remains associated with the instance
    c. The volume is preserved
    d. **The instance runs on a new host computer**

135. A user has launched an EBS backed EC2 instance. What will be the difference while performing the restart or stop/start options on that instance?
    a. **For restart it does not charge for an extra hour, while every stop/start it will be charged as a separate hour**
    b. Every restart is charged by AWS as a separate hour, while multiple start/stop actions during a single hour will be counted as a single hour
    c. For every restart or start/stop it will be charged as a separate hour
    d. For restart it charges extra only once, while for every stop/start it will be charged as a separate hour

136. A user has launched an EBS backed instance. The user started the instance at 9 AM in the morning. Between 9 AM to 10 AM, the user is testing some script. Thus, he stopped the instance twice and restarted it. In the same hour the user rebooted the instance once. For how many instance hours will AWS charge the user?
    a. **3 hours**
    b. 4 hours
    c. 2 hours
    d. 1 hour

137. You are running a database on an EC2 instance, with the data stored on Elastic Block Store (EBS) for persistence At times throughout the day, you are seeing large variance in the response times of the database queries Looking into the instance with the isolate command you see a lot of wait time on the disk volume that the database's data is stored on. What two ways can you improve the performance of the database's storage while maintaining the current persistence of the data? Choose 2 answers

a. Move to an SSD backed instance
b. **Move the database to an EBS-Optimized Instance**
c. **Use Provisioned IOPs EBS**
d. Use the ephemeral storage on an m2.4xLarge Instance Instead

138. An organization wants to move to Cloud. They are looking for a secure encrypted database storage option. Which of the below mentioned AWS functionalities helps them to achieve this?

a. AWS MFA with EBS
b. **AWS EBS encryption**
c. Multi-tier encryption with Redshift
d. AWS S3 server-side storage

139. A user has stored data on an encrypted EBS volume. The user wants to share the data with his friend's AWS account. How can user achieve this?

a. Create an AMI from the volume and share the AMI
b. **Copy the data to an unencrypted volume and then share**
c. Take a snapshot and share the snapshot with a friend
d. If both the accounts are using the same encryption key then the user can share the volume directly

140. A user is using an EBS backed instance. Which of the below mentioned statements is true?

1. The user will be charged for volume and instance only when the instance is running
2. **The user will be charged for the volume even if the instance is stopped**
3. The user will be charged only for the instance running cost
4. The user will not be charged for the volume if the instance is stopped

141. A user is planning to use EBS for his DB requirement. The user already has an EC2 instance running in the VPC private subnet. How can the user attach the EBS volume to a running instance?

a. The user must create EBS within the same VPC and then attach it to a running instance.
b. **The user can create EBS in the same zone as the subnet of instance and attach that EBS to instance.**

c. It is not possible to attach an EBS to an instance running in VPC until the instance is stopped.
d. The user can specify the same subnet while creating EBS and then attach it to a running instance.

142. A user is creating an EBS volume. He asks for your advice. Which advice mentioned below should you not give to the user for creating an EBS volume?
a. Take the snapshot of the volume when the instance is stopped
b. Stripe multiple volumes attached to the same instance
c. **Create an AMI from the attached volume**
d. Attach multiple volumes to the same instance

143. An EC2 instance has one additional EBS volume attached to it. How can a user attach the same volume to another running instance in the same AZ?
a. Terminate the first instance and only then attach to the new instance
b. Attach the volume as read only to the second instance
c. **Detach the volume first and attach to new instance**
d. No need to detach. Just select the volume and attach it to the new instance, it will take care of mapping internally

144. What is the scope of an EBS volume?
a. VPC
b. Region
c. Placement Group
d. **Availability Zone**

145. Please select the most correct answer regarding the persistence of the Amazon Instance Store
a. **The data on an instance store volume persists only during the life of the associated Amazon EC2 instance**
b. The data on an instance store volume is lost when the security group rule of the associated instance is changed.
c. The data on an instance store volume persists even after associated Amazon EC2 instance is deleted

146. A user has launched an EC2 instance from an instance store backed AMI. The user has attached an additional instance store volume to the instance. The user wants to create an AMI from the running instance. Will the AMI have the additional instance store volume data?

a. **Yes, the block device mapping will have information about the additional instance store volume**
b. No, since the instance store backed AMI can have only the root volume bundled
c. It is not possible to attach an additional instance store volume to the existing instance store backed AMI instance
d. No, since this is ephemeral storage it will not be a part of the AMI

147. When an EC2 instance that is backed by an S3-based AMI Is terminated, what happens to the data on the root volume?
a. Data is automatically saved as an EBS volume.
b. Data is automatically saved as an EBS snapshot.
c. **Data is automatically deleted**
d. Data is unavailable until the instance is restarted.

148. A user has launched an EC2 instance from an instance store backed AMI. If the user restarts the instance, what will happen to the ephemeral storage data?
a. All the data will be erased but the ephemeral storage will stay connected
b. All data will be erased and the ephemeral storage is released
c. It is not possible to restart an instance launched from an instance store backed AMI
d. **The data is preserved**

149. When an EC2 EBS-backed instance is stopped, what happens to the data on any ephemeral store volumes?
a. **Data will be deleted and will no longer be accessible**
b. Data is automatically saved in an EBS volume.
c. Data is automatically saved as an EBS snapshot
d. Data is unavailable until the instance is restarted

150. A user has launched an EC2 Windows instance from an instance store backed AMI. The user has also set the Instance initiated shutdown behavior to stop. What will happen when the user shuts down the OS?
a. It will not allow the user to shutdown the OS when the shutdown behavior is set to Stop
b. **It is not possible to set the termination behavior to Stop for an Instance store backed AMI instance**
c. The instance will stay running but the OS will be shutdown
d. The instance will be terminated

151. Which of the following will occur when an EC2 instance in a VPC (Virtual Private Cloud) with an associated Elastic IP is stopped and started? (Choose 2 answers)

a. The Elastic IP will be dissociated from the instance
b. **All data on instance-store devices will be lost**
c. All data on EBS (Elastic Block Store) devices will be lost
d. The ENI (Elastic Network Interface) is detached
e. **The underlying host for the instance is changed**

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152. An existing application stores sensitive information on a non-boot Amazon EBS data volume attached to an Amazon Elastic Compute Cloud instance. Which of the following approaches would protect the sensitive data on an Amazon EBS volume?
    a. Upload your customer keys to AWS CloudHSM. Associate the Amazon EBS volume with AWS CloudHSM. Remount the Amazon EBS volume.
    b. **Create and mount a new, encrypted Amazon EBS volume. Move the data to the new volume. Delete the old Amazon EBS volume.**
    c. Unmount the EBS volume. Toggle the encryption attribute to True. Re-mount the Amazon EBS volume.
    d. Snapshot the current Amazon EBS volume. Restore the snapshot to a new, encrypted Amazon EBS volume. Mount the Amazon EBS volume

153. Is it possible to access your EBS snapshots?
    a. Yes, through the Amazon S3 APIs.
    b. **Yes, through the Amazon EC2 APIs**
    c. No, EBS snapshots cannot be accessed; they can only be used to create a new EBS volume.
    d. EBS doesn't provide snapshots.

154. Which of the following approaches provides the lowest cost for Amazon Elastic Block Store snapshots while giving you the ability to fully restore data?
    a. Maintain two snapshots: the original snapshot and the latest incremental snapshot
    b. Maintain a volume snapshot; subsequent snapshots will overwrite one another
    c. **Maintain a single snapshot the latest snapshot is both Incremental and complete**
    d. Maintain the most current snapshot, archive the original and incremental to Amazon Glacier.

155. Which procedure for backing up a relational database on EC2 that is using a set of RAIDed EBS volumes for storage minimizes the time during which the database cannot be written to and results in a consistent backup?
    a. Detach EBS volumes, 2. Start EBS snapshot of volumes, 3. Re-attach EBS volumes
    b. Stop the EC2 Instance. 2. Snapshot the EBS volumes
    c. Suspend disk I/O, 2. Create an image of the EC2 Instance, 3. Resume disk I/O
    d. Suspend disk I/O, 2. Start EBS snapshot of volumes, 3. Resume disk I/O
    e. **Suspend disk I/O, 2. Start EBS snapshot of volumes, 3. Wait for snapshots to complete, 4. Resume disk I/O**

156. How can an EBS volume that is currently attached to an EC2 instance be migrated from one Availability Zone to another?
    a. Detach the volume and attach it to another EC2 instance in the other AZ.
    b. Simply create a new volume in the other AZ and specify the original volume as the source.
    c. **Create a snapshot of the volume, and create a new volume from the snapshot in the other AZ**
    d. Detach the volume, then use the ec2-migrate-volume command to move it to another AZ.

157. How are the EBS snapshots saved on Amazon S3?
    a. Exponentially
    b. **Incrementally**
    c. EBS snapshots are not stored in the Amazon S3
    d. Decrementally

158. EBS Snapshots occur _____
    a. **Asynchronously**
    b. Synchronously
    c. Weekly

159. What will be the status of the snapshot until the snapshot is complete?
    a. Running
    b. Working
    c. Progressing
    d. **Pending**

160. Before I delete an EBS volume, what can I do if I want to recreate the volume later?
    a. Create a copy of the EBS volume (not a snapshot)
    b. **Create and Store a snapshot of the volume**
    c. Download the content to an EC2 instance
    d. Back up the data in to a physical disk

161. Which of the following are true regarding encrypted Amazon Elastic Block Store (EBS) volumes? Choose 2 answers
    a. **Supported on all Amazon EBS volume types**
    b. **Snapshots are automatically encrypted**
    c. Available to all instance types
    d. Existing volumes can be encrypted
    e. Shared volumes can be encrypted

162. Amazon EBS snapshots have which of the following two characteristics? (Choose 2.) Choose 2 answers
    a. **EBS snapshots only save incremental changes from snapshot to snapshot**
    b. **EBS snapshots can be created in real-time without stopping an EC2 instance**
    c. EBS snapshots can only be restored to an EBS volume of the same size or smaller
    d. EBS snapshots can only be restored and mounted to an instance in the same Availability Zone as the original EBS volume

163. A user is planning to schedule a backup for an EBS volume. The user wants security of the snapshot data. How can the user achieve data encryption with a snapshot?
    a. **Use encrypted EBS volumes so that the snapshot will be encrypted by AWS**
    b. While creating a snapshot select the snapshot with encryption
    c. By default the snapshot is encrypted by AWS
    d. Enable server side encryption for the snapshot using S3

164. A sys admin is trying to understand EBS snapshots. Which of the below mentioned statements will not be useful to the admin to understand the concepts about a snapshot?
    a. **Snapshot is synchronous**
    b. It is recommended to stop the instance before taking a snapshot for consistent data
    c. Snapshot is incremental
    d. Snapshot captures the data that has been written to the hard disk when the snapshot command was executed

165. When creation of an EBS snapshot is initiated but not completed, the EBS volume
    a. Cannot be detached or attached to an EC2 instance until me snapshot completes
    b. Can be used in read-only mode while me snapshot is in progress
    c. **Can be used while the snapshot is in progress**
    d. Cannot be used until the snapshot completes

166. You have a server with a 5O0GB Amazon EBS data volume. The volume is 80% full. You need to back up the volume at regular intervals and be able to re-create the volume in a new Availability Zone in the shortest time possible. All applications using the volume can be paused for a period of a few minutes with no discernible user impact. Which of the following backup methods will best fulfill your requirements?
    a. **Take periodic snapshots of the EBS volume**
    b. Use a third-party Incremental backup application to back up to Amazon Glacier
    c. Periodically back up all data to a single compressed archive and archive to Amazon S3 using a parallelized multi-part upload
    d. Create another EBS volume in the second Availability Zone attach it to the Amazon EC2 instance, and use a disk manager to mirror me two disks

167. A user is creating a snapshot of an EBS volume. Which of the below statements is incorrect in relation to the creation of an EBS snapshot?
    a. Its incremental
    b. It can be used to launch a new instance
    c. **It is stored in the same AZ as the volume**
    d. It is a point in time backup of the EBS volume

168. A user has created a snapshot of an EBS volume. Which of the below mentioned usage cases is not possible with respect to a snapshot?
    a. Mirroring the volume from one AZ to another AZ
    b. Launch an instance
    c. **Decrease the volume size**
    d. Increase the size of the volume

169. What is true of the way that encryption works with EBS?
    a. Snapshotting an encrypted volume makes an encrypted snapshot; restoring an encrypted snapshot creates an encrypted volume when specified / requested.
    b. Snapshotting an encrypted volume makes an encrypted snapshot when specified / requested; restoring an encrypted snapshot creates an encrypted volume when specified / requested.
    c. **Snapshotting an encrypted volume makes an encrypted snapshot; restoring an encrypted snapshot always creates an encrypted volume.**
    d. Snapshotting an encrypted volume makes an encrypted snapshot when specified / requested; restoring an encrypted snapshot always creates an encrypted volume.

170. Why are more frequent snapshots of 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 hardware. Snapshotting the first time forces full block range allocation, so the second snapshot doesn't need to perform the allocation phase and is faster.
    b. **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.**
    c. AWS provisions more disk throughput for burst capacity during snapshots if the drive has been pre-warmed by snapshotting and reading all blocks.
    d. 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.

171. Which is not a restriction on AWS EBS Snapshots?
    a. **Snapshots which are shared cannot be used as a basis for other snapshots**
    b. You cannot share a snapshot containing an AWS Access Key ID or AWS Secret Access Key
    c. You cannot share encrypted snapshots
    d. Snapshot restorations are restricted to the region in which the snapshots are created

172. There is a very serious outage at AWS. EC2 is not affected, but your EC2 instance deployment scripts stopped working in the region with the outage. What might be the issue?
    a. The AWS Console is down, so your CLI commands do not work.
    b. **S3 is unavailable, so you can't create EBS volumes from a snapshot you use to deploy new volumes.**
    c. AWS turns off the <code>DeployCode</code> API call when there are major outages, to protect from system floods.
    d. None of the other answers make sense. If EC2 is not affected, it must be some other issue.

173. What does Amazon SWF stand for?
    a. Simple Web Flow
    b. **Simple Work Flow**
    c. Simple Wireless Forms
    d. Simple Web Form

174. What does Amazon Route53 provide?
    a. A global Content Delivery Network.
    b. None of these.

c. **A scalable Domain Name System**
d. An SSH endpoint for Amazon EC2.

175. Does Amazon Route 53 support NS Records?
a. Yes, it supports Name Service records.
b. No
c. It supports only MX records.
d. **Yes, it supports Name Server records.**

176. Does Route 53 support MX Records?
a. **Yes**
b. It supports CNAME records, but not MX records.
c. No
d. Only Primary MX records. Secondary MX records are not supported.

177. Which of the following statements are true about Amazon Route 53 resource records? Choose 2 answers
a. **An Alias record can map one DNS name to another Amazon Route 53 DNS name.**
b. A CNAME record can be created for your zone apex.
c. **An Amazon Route 53 CNAME record can point to any DNS record hosted anywhere.**
d. TTL can be set for an Alias record in Amazon Route 53.
e. An Amazon Route 53 Alias record can point to any DNS record hosted anywhere.

178. Which statements are true about Amazon Route 53? (Choose 2 answers)
a. Amazon Route 53 is a region-level service
b. **You can register your domain name**
c. **Amazon Route 53 can perform health checks and failovers to a backup site in the even of the primary site failure**
d. Amazon Route 53 only supports Latency-based routing

179. A customer is hosting their company website on a cluster of web servers that are behind a public-facing load balancer. The customer also uses Amazon Route 53 to manage their public DNS. How should the customer configure the DNS zone apex record to point to the load balancer?
a. Create an A record pointing to the IP address of the load balancer
b. Create a CNAME record pointing to the load balancer DNS name.
c. Create a CNAME record aliased to the load balancer DNS name.
d. **Create an A record aliased to the load balancer DNS name**

180. A user has configured ELB with three instances. The user wants to achieve High Availability as well as redundancy with ELB. Which of the below mentioned AWS services helps the user achieve this for ELB?
a. **Route 53**
b. AWS Mechanical Turk
c. Auto Scaling
d. AWS EMR

181. How can the domain's zone apex for example "myzoneapexdomain com" be pointed towards an Elastic Load Balancer?

a. By using an AAAA record
b. By using an A record
c. By using an Amazon Route 53 CNAME record
d. **By using an Amazon Route 53 Alias record**

182. You have been asked to propose a multi-region deployment of a web-facing application where a controlled portion of your traffic is being processed by an alternate region. Which configuration would achieve that goal?
a. **Route 53 record sets with weighted routing policy**
b. Route 53 record sets with latency based routing policy
c. Auto Scaling with scheduled scaling actions set
d. Elastic Load Balancing with health checks enabled

183. Your company is moving towards tracking web page users with a small tracking image loaded on each page. Currently you are serving this image out of us-east, but are starting to get concerned about the time it takes to load the image for users on the west coast. What are the two best ways to speed up serving this image? Choose 2 answers
a. **Use Route 53's Latency Based Routing and serve the image out of us-west-2 as well as us-east-1**
b. **Serve the image out through CloudFront**
c. Serve the image out of S3 so that it isn't being served of your web application tier
d. Use EBS PIOPs to serve the image faster out of your EC2 instances