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# **Amazon**

**CODE: AWS-SysOps** 

**Exam Name:** AWS Certified SysOps Administrator - Associate Exam

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#### Question: 1

You are currently hosting multiple applications in a VPC and have logged numerous port scans coming in from a specific IP address block. Your security team has requested that all access from the offending IP address block be denied for the next 24 hours.

Which of the following is the best method to quickly and temporarily deny access from the specified IP address block?

- A. Create an AD policy to modify Windows Firewall settings on all hosts in the VPC to deny access from the IP address block
- B. Modify the Network ACLs associated with all public subnets in the VPC to deny access from the IP address block
- C. Add a rule to all of the VPC 5 Security Groups to deny access from the IP address block
- D. Modify the Windows Firewall settings on all Amazon Machine Images (AMIs) that your organization uses in that VPC to deny access from the IP address block

**Answer: B** 

Explanation:

Reference:

http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC\_SecurityGroups.html

#### Question: 2

When preparing for a compliance assessment of your system built inside of AWS. what are three best-practices for you to prepare for an audit?

Choose 3 answers

- A. Gather evidence of your IT operational controls
- B. Request and obtain applicable third-party audited AWS compliance reports and certifications
- C. Request and obtain a compliance and security tour of an AWS data center for a pre-assessment security review
- D. Request and obtain approval from AWS to perform relevant network scans and in-depth penetration tests of your system's Instances and endpoints
- E. Schedule meetings with AWS's third-party auditors to provide evidence of AWS compliance that maps to your control objectives

**Answer: ABD** 

Question: 3



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 (&B) 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

**Answer: B** 

#### Question: 4

You have been asked to leverage Amazon VPC BC2 and SOS to implement an application that submits and receives millions of messages per second to a message queue. You want to ensure your application has sufficient bandwidth between your EC2 instances and SQS

Which option will provide the most scalable solution for communicating between the application and SQS?

- A. Ensure the application instances are properly configured with an Elastic Load Balancer
- B. Ensure the application instances are launched in private subnets with the EBS-optimized option enabled
- C. Ensure the application instances are launched in public subnets with the associate-public-IP-address=true option enabled
- D. Launch application instances in private subnets with an Auto Scaling group and Auto Scaling triggers configured to watch the SQS queue size

**Answer: B** 

Explanation:

Reference:

http://www.cardinalpath.com/autoscaling-your-website-with-amazon-web-services-part-2/

#### **Question: 5**

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?

- A. Add an additional ENI
- B. Change to a larger Instance
- C. Use DirectConnect between EC2 and S3



D. Use EBS PIOPS on the local volume

**Answer: B** 

Explanation:

Reference:

https://media.amazonwebservices.com/AWS\_Amazon\_EMR\_Best\_Practices.pdf

#### Question: 6

When attached to an Amazon VPC which two components provide connectivity with external networks? Choose 2 answers

- A. Elastic IPS (EIP)
- B. NAT Gateway (NAT)
- C. Internet Gateway (IGW)
- D. Virtual Private Gateway (VGW)

Answer: C,D

#### **Question: 7**

Your application currently leverages AWS Auto Scaling to grow and shrink as load Increases/ decreases and has been performing well Your marketing team expects a steady ramp up in traffic to follow an upcoming campaign that will result in a 20x growth in traffic over 4 weeks Your forecast for the approximate number of Amazon EC2 instances necessary to meet the peak demand is 175. What should you do to avoid potential service disruptions during the ramp up in traffic?

- A. Ensure that you have pre-allocated 175 Elastic IP addresses so that each server will be able to obtain one as it launches
- B. Check the service limits in Trusted Advisor and adjust as necessary so the forecasted count remains within limits.
- C. Change your Auto Scaling configuration to set a desired capacity of 175 prior to the launch of the marketing campaign
- D. Pre-warm your Elastic Load Balancer to match the requests per second anticipated during peak demand prior to the marketing campaign

**Answer: D** 

**Question: 8** 



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

**Answer: B** 

#### Explanation:

#### Reference:

http://docs.aws.amazon.com/AutoScaling/latest/DeveloperGuide/as-add-elb-healthcheck.html Add an Elastic Load Balancing Health Check to your Auto Scaling Group

By default, an Auto Scaling group periodically reviews the results of EC2 instance status to determine the health state of each instance. However, if you have associated your Auto Scaling group with an Elastic Load Balancing load balancer, you can choose to use the Elastic Load Balancing health check. In this case, Auto Scaling determines the health status of your instances by checking the results of both the EC2 instance status check and the Elastic Load Balancing instance health check.

For information about EC2 instance status checks, see Monitor Instances With Status Checks in the Amazon EC2 User Guide for Linux Instances. For information about Elastic Load Balancing health checks, see Health Check in the Elastic Load Balancing Developer Guide.

This topic shows you how to add an Elastic Load Balancing health check to your Auto Scaling group, assuming that you have created a load balancer and have registered the load balancer with your Auto Scaling group. If you have not registered the load balancer with your Auto Scaling group, see Set Up a Scaled and Load-Balanced Application.

Auto Scaling marks an instance unhealthy if the calls to the Amazon EC2 action DescribeInstanceStatus return any state other than running, the system status shows impaired, or the calls to Elastic Load Balancing action DescribeInstanceHealth returns OutOfService in the instance state field.

If there are multiple load balancers associated with your Auto Scaling group, Auto Scaling checks the health state of your EC2 instances by making health check calls to each load balancer. For each call, if the Elastic Load Balancing action returns any state other than InService, the instance is marked as unhealthy. After Auto Scaling marks an instance as unhealthy, it remains in that state, even if subsequent calls from other load balancers return an InService state for the same instance.

#### Question: 9

Which two AWS services provide out-of-the-box user configurable automatic backup-as-a-service and backup rotation options?

Choose 2 answers

A. Amazon S3



- B. Amazon RDS
- C. Amazon EBS
- D. Amazon Red shift

Answer: B,D

#### **Question: 10**

An organization has configured a VPC with an Internet Gateway (IGW). pairs of public and private subnets (each with one subnet per Availability Zone), and an Elastic Load Balancer (ELB) configured to use the public subnets. The application is web tier leverages the ELB. Auto Scaling and a mum-AZ RDS database instance The organization would like to eliminate any potential single points ft failure in this design.

What step should you take to achieve this organization's objective?

- A. Nothing, there are no single points of failure in this architecture.
- B. Create and attach a second IGW to provide redundant internet connectivity.
- C. Create and configure a second Elastic Load Balancer to provide a redundant load balancer.
- D. Create a second multi-AZ RDS instance in another Availability Zone and configure replication to provide a redundant database.

**Answer: A** 

#### Question: 11

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. V Each subnet spans at least 2 Availability zones to provide a high-availability environment

Answer: C, E

#### Question: 12

You are creating an Auto Scaling group whose Instances need to insert a custom metric into CloudWatch.

Which method would be the best way to authenticate your CloudWatch PUT request?



- A. Create an IAM role with the Put MetricData permission and modify the Auto Scaling launch configuration to launch instances in that role
- B. Create an IAM user with the PutMetricData permission and modify the Auto Scaling launch configuration to inject the userscredentials into the instance User Data
- C. Modify the appropriate Cloud Watch metric policies to allow the Put MetricData permission to instances from the Auto Scaling group
- D. Create an IAM user with the PutMetricData permission and put the credentials in a private repository and have applications on the server pull the credentials as needed

**Answer: A** 

#### **Question: 13**

When an EC2 instance that is backed by an S3-based AMI Is terminated, what happens to the data on me root volume?

- A. Data is automatically saved as an E8S volume.
- B. Data is automatically saved as an ESS snapshot.
- C. Data is automatically deleted.
- D. Data is unavailable until the instance is restarted.

**Answer: C** 

Explanation:

Reference:

http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ComponentsAMIs.html

#### **Question: 14**

You have a web application leveraging an Elastic Load Balancer (ELB) In front of the web servers deployed using an Auto Scaling Group Your database is running on Relational Database Service (RDS) The application serves out technical articles and responses to them in general there are more views of an article than there are responses to the article. On occasion, an article on the site becomes extremely popular resulting in significant traffic Increases that causes the site to go down.

What could you do to help alleviate the pressure on the infrastructure while maintaining availability during these events?

Choose 3 answers

- A. Leverage CloudFront for the delivery of the articles.
- B. Add RDS read-replicas for the read traffic going to your relational database
- C. Leverage ElastiCache for caching the most frequently used data.
- D. Use SOS to gueue up the requests for the technical posts and deliver them out of the gueue.
- E. Use Route53 health checks to fail over to an S3 bucket for an error page.



**Answer: A,C,E** 

**Question: 15** 

The majority of your Infrastructure is on premises and you have a small footprint on AWS Your company has decided to roll out a new application that is heavily dependent on low latency connectivity to LOAP for authentication Your security policy requires minimal changes to the company's existing application user management processes.

What option would you implement to successfully launch this application 1?

- A. Create a second, independent LOAP server in AWS for your application to use for authentication
- B. Establish a VPN connection so your applications can authenticate against your existing on-premises LDAP servers
- C. Establish a VPN connection between your data center and AWS create a LDAP replica on AWS and configure your application to use the LDAP replica for authentication
- D. Create a second LDAP domain on AWS establish a VPN connection to establish a trust relationship between your new and existing domains and use the new domain for authentication

**Answer: D** 

Explanation:

Reference:

http://msdn.microsoft.com/en-us/library/azure/jj156090.aspx

Question: 16

You need to design a VPC for a web-application consisting of an Elastic Load Balancer (ELB). a fleet of web/application servers, and an RDS database The entire Infrastructure must be distributed over 2 availability zones.

Which VPC configuration works while assuring the database 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
- B. One public subnet for ELB two private subnets for the web-servers, two private subnets for RDS
- C. Two public subnets for ELB two private subnets for the web-servers and two private subnets for RDS
- D. Two public subnets for ELB two public subnets for the web-servers, and two public subnets for RDS

**Answer: A** 

**Question: 17** 



An application that you are managing has EC2 instances & Dynamo OB tables deployed to several AWS Regions In order to monitor the performance of the application globally, you would like to see two graphs 1) Avg CPU Utilization across all EC2 instances and 2) Number of Throttled Requests for all DynamoDB tables.

How can you accomplish this?

- A. Tag your resources with the application name, and select the tag name as the dimension in the Cloudwatch Management console to view the respective graphs
- B. Use the Cloud Watch CLI tools to pull the respective metrics from each regional endpoint Aggregate the data offline & store it for graphing in CloudWatch.
- C. Add SNMP traps to each instance and DynamoDB table Leverage a central monitoring server to capture data from each instance and table Put the aggregate data into Cloud Watch for graphing.
- D. Add a CloudWatch agent to each instance and attach one to each DynamoDB table. When configuring the agent set the appropriate application name & view the graphs in CloudWatch.

**Answer: C** 

#### **Question: 18**

When assessing an organization s use of AWS API access credentials which of the following three credentials should be evaluated?

Choose 3 answers

- A. Key pairs
- **B.Console** passwords
- C. Access keys
- D. Signing certificates
- **E.Security Group memberships**

Answer: A,C,D

Explanation:

Reference:

http://media.amazonwebservices.com/AWS Operational Checklists.pdf

Question: 19

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 mat 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 IGWVNAT gateway may not be working properly, causing the "impaired" system status

**Answer: A** 

#### Question: 20

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 nigh 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

**Answer: B** 

Explanation:

Reference:

http://aws.amazon.com/ec2/faqs/

#### Question: 21

Your entire AWS infrastructure lives inside of one Amazon VPC You have an Infrastructure monitoring application running on an Amazon instance in Availability Zone (AZ) A of the region, and another application instance running in AZ B. The monitoring application needs to make use of ICMP ping to confirm network reachability of the instance hosting the application.

Can you configure the security groups for these instances to only allow the ICMP ping to pass from the monitoring instance to the application instance and nothing else" If so how?



- A. No Two instances in two different AZ's can't talk directly to each other via ICMP ping as that protocol is not allowed across subnet (iebroadcast) boundaries
- B. Yes Both the monitoring instance and the application instance have to be a part of the same security group, and that security group needs to allow inbound ICMP
- C. Yes, The security group for the monitoring instance needs to allow outbound ICMP and the application instance's security group needs to allow Inbound ICMP
- D. Yes, Both the monitoring instance's security group and the application instance's security group need to allow both inbound and outbound ICMP ping packets since ICMP is not a connection-oriented protocol

**Answer: D** 

#### **Question: 22**

You have two Elastic Compute Cloud (EC2) instances inside a Virtual Private Cloud (VPC) in the same Availability Zone (AZ) but in different subnets. One instance is running a database and the other instance an application that will interface with the database. You want to confirm that they can talk to each other for your application to work properly.

Which two things do we need to confirm in the VPC settings so that these EC2 instances can communicate inside the VPC?

Choose 2 answers

- A. A network ACL that allows communication between the two subnets.
- B. Both instances are the same instance class and using the same Key-pair.
- C. That the default route is set to a NAT instance or internet Gateway (IGW) for them to communicate.
- D. Security groups are set to allow the application host to talk to the database on the right port/protocol.

Answer: A, D

#### Question: 23

Which services allow the customer to retain full administrative privileges of the underlying EC2 instances?

Choose 2 answers

- A. Amazon Elastic Map Reduce
- B. Elastic Load Balancing
- C. AWS Elastic Beanstalk
- D. Amazon Elasticache
- E. Amazon Relational Database service

Answer: A, C



#### Question: 24

You have a web-style application with a stateless but CPU and memory-intensive web tier running on a cc2 8xlarge EC2 instance inside of a VPC The instance when under load is having problems returning requests within the SLA as defined by your business The application maintains its state in a DynamoDB table, but the data tier is properly provisioned and responses are consistently fast.

How can you best resolve the issue of the application responses not meeting your SLA?

- A. Add another cc2 8xlarge application instance, and put both behind an Elastic Load Balancer
- B. Move the cc2 8xlarge to the same Availability Zone as the DynamoDB table
- C. Cache the database responses in ElastiCache for more rapid access
- E. Move the database from DynamoDB to RDS MySQL in scale-out read-replica configuration

**Answer: B** 

Explanation:

Reference:

http://aws.amazon.com/elasticmapreduce/faqs/

#### **Question: 25**

You are managing a legacy application Inside VPC with hard coded IP addresses in its configuration. Which two mechanisms will allow the application to failover to new instances without the need for reconfiguration? Choose 2 answers

- A. Create an ELB to reroute traffic to a failover instance
- B. Create a secondary ENI that can be moved to a failover instance
- C. Use Route53 health checks to fail traffic over to a failover instance
- D. Assign a secondary private IP address to the primary ENIO that can be moved to a failover instance

Answer: A,D

#### Question: 26

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

**Answer: C** 

### Question: 27

Which of the following statements about this S3 bucket policy is true?

```
"Id": "IPAllowPolicy",
"Statement":
  "Sid": "IPAllow",
  "Action": "s3:"",
  "Effect": "Allow",
  "Resource": "arn:aws:s3:::mybucket/x",
  "Condition": {
   "lpAddress": {
     "aws: Sourcelp": "192.168.100.0/24"
   1
   "NotipAddress": {
     "aws:Sourcelp": "192.168.100.188/32"
   )
  "Principal": {
   "AWS": [
```

A. Denies the server with the IP address 192 168 100 0 full access to the "mybucket" bucket



- B. Denies the server with the IP address 192 168 100 188 full access to the "mybucket" bucket
- C. Grants all the servers within the 192 168 100 0/24 subnet full access to the "mybucket" bucket
- D. Grants all the servers within the 192 168 100 188/32 subnet full access to the "mybucket" bucket

**Answer: B** 

**Question: 28** 

Which of the following requires a custom CloudWatch metric to monitor?

- A. Data transfer of an EC2 instance
- B. Disk usage activity of an EC2 instance
- C. Memory Utilization of an EC2 instance
- D. CPU Utilization of an EC2 instance

**Answer: C** 

Explanation:

Reference:

http://aws.amazon.com/cloudwatch/

Question: 29

You run a web application where web servers on EC2 Instances are In an Auto Scaling group Monitoring over the last 6 months shows that 6 web servers are necessary to handle the minimum load During the day up to 12 servers are needed Five to six days per year, the number of web servers required might go up to 15.

What would you recommend to minimize costs while being able to provide hill availability?

- A. 6 Reserved instances (heavy utilization). 6 Reserved instances (medium utilization), rest covered by On-Demand instances
- B.6 Reserved instances (heavy utilization). 6 On-Demand instances, rest covered by Spot Instances
- C. 6 Reserved instances (heavy utilization) 6 Spot instances, rest covered by On-Demand instances
- D. 6 Reserved instances (heavy utilization) 6 Reserved instances (medium utilization) rest covered by Spot instances

**Answer: B** 

**Question: 30** 

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. Route53 record sets with weighted routing policy
- B. Route53 record sets with latency based routing policy
- C. Auto Scaling with scheduled scaling actions set
- D. Elastic Load Balancing with health checks enabled

**Answer: D** 

Explanation:

Reference:

http://docs.aws.amazon.com/ElasticLoadBalancing/latest/DeveloperGuide/TerminologyandKeyConcept s.html

#### **Question: 31**

You have set up Individual AWS accounts for each project. You have been asked to make sure your AWS Infrastructure costs do not exceed the budget set per project for each month.

Which of the following approaches can help ensure that you do not exceed the budget each month?

- A. Consolidate your accounts so you have a single bill for all accounts and projects
- B. Set up auto scaling with CloudWatch alarms using SNS to notify you when you are running too many Instances in a given account
- C. Set up CloudWatch billing alerts for all AWS resources used by each project, with a notification occurring when the amount for each resource tagged to a particular project matches the budget allocated to the project.
- D. Set up CloudWatch billing alerts for all AWS resources used by each account, with email notifications when it hits 50%. 80% and 90% of its budgeted monthly spend

**Answer: C** 

**Question: 32** 

When creation of an EBS snapshot Is initiated but not completed the EBS volume?

- A. Cannot De 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 me snapshot Is in progress
- D. Cannot be used until the snapshot completes

Answer: C

Explanation:



#### Reference:

http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-copy-snapshot.html

#### **Question: 33**

You are using ElastiCache Memcached to store session state and cache database queries in your infrastructure. You notice in CloudWatch that Evictions and GetMisses are Doth very high.

What two actions could you take to rectify this?

Choose 2 answers

- A. Increase the number of nodes in your cluster
- B. Tweak the max\_item\_size parameter
- C. Shrink the number of nodes in your cluster
- D. Increase the size of the nodes in the duster

Answer: B,D

#### **Question: 34**

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. T Use Provisioned IOPs EBS
- D. Use the ephemeral storage on an m2 4xiarge Instance Instead

Answer: A,B

#### **Question: 35**

Your EC2-Based Multi-tier application includes a monitoring instance that periodically makes application -level read only requests of various application components and if any of those fail more than three times 30 seconds calls CloudWatch lo fire an alarm, and the alarm notifies your operations team by email and SMS of a possible application health problem. However, you also need to watch the watcher - the monitoring instance itself - and be notified if it becomes unhealthy.

Which of the following is a simple way to achieve that goal?



A. Run another monitoring instance that pings the monitoring instance and fires a could watch alarm mat notifies your operations teamshould the primary monitoring instance become unhealthy.

B. Set a CloudWatch alarm based on EC2 system and instance status checks and have the alarm notify your operations team of any detected problem with the monitoring instance.

C. Set a CloudWatch alarm based on the CPU utilization of the monitoring instance and nave the alarm notify your operations team if C r the CPU usage exceeds 50% few more than one minute: then have your monitoring application go into a CPU-bound loop should it Detect any application problems.

D. Have the monitoring instances post messages to an SOS queue and then dequeue those messages on another instance should the queue cease to have new messages, the second instance should first terminate the original monitoring instance start anotherbackup monitoring instance and assume (he role of the previous monitoring instance and beginning adding messages to the SQSqueue.

**Answer: D** 





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