1. Your web application needs four instances to support steady traffic nearly all of the time. On the last day of each month, the traffic triples. What is a cost-effective way to handle this traffic pattern?

    A. Run 12 Reserved Instances all of the time.
    B. Run four On-Demand Instances constantly, then add eight more On-Demand
    C. Instances on the last day of each month.
    D. Run four Reserved Instances constantly, then add eight On-Demand Instances on the last day of each month.
    E. Run four On-Demand Instances constantly, then add eight Reserved Instances on the last day of each month.

2. Your order-processing application processes orders extracted from a queue with two Reserved Instances processing 10 orders/minute. If an order fails during processing, then it is returned to the queue without penalty. Due to a weekend sale, the queues have several hundred orders backed up. While the backup is not catastrophic, you would like to drain it so that customers get their confirmation emails faster. What is a cost-effective way to drain the queue for orders?

    A. Create more queues.
    B. Deploy additional Spot Instances to assist in processing the orders.
    C. Deploy additional Reserved Instances to assist in processing the orders.
    D. Deploy additional On-Demand Instances to assist in processing the orders.

3. Which of the following must be specified when launching a new Amazon Elastic Compute Cloud (Amazon EC2) Windows instance? (Choose 2 answers)

    A. The Amazon EC2 instance ID
    B. Password for the administrator account
    C. Amazon EC2 instance type
    D. Amazon Machine Image (AMI)

4. You have purchased an m3.xlarge Linux Reserved instance in us-east-1a. In which ways can you modify this reservation? (Choose 2 answers)

    A. Change it into two m3.large instances.
    B. Change it to a Windows instance.
    C. Move it to us-east-1b.
    D. Change it to an m4.xlarge.

5. Your instance is associated with two security groups. The first allows Remote Desktop Protocol (RDP) access over port 3389 from Classless Inter-Domain Routing (CIDR) block 72.14.0.0/16. The second allows HTTP access over port 80 from CIDR block 0.0.0.0/0. What traffic can reach your instance?

    A. RDP and HTTP access from CIDR block 0.0.0.0/0
    B. No traffic is allowed.
    C. RDP and HTTP traffic from 72.14.0.0/16
    D. RDP traffic over port 3389 from 72.14.0.0/16 and HTTP traffic over port 80 from 0.0.00/0

6. Which of the following are features of enhanced networking? (Choose 3 answers)

A. More Packets Per Second (PPS)
B. Lower latency
C. Multiple network interfaces
D. Border Gateway Protocol (BGP) routing
E. Less jitter

7. You are creating a High-Performance Computing (HPC) cluster and need very low latency and high bandwidth between instances. What combination of the following will allow this? (Choose 3 answers)

A. Use an instance type with 10 Gbps network performance.
B. Put the instances in a placement group.
C. Use Dedicated Instances.
D. Enable enhanced networking on the instances.
E. Use Reserved Instances.

8. Which Amazon Elastic Compute Cloud (Amazon EC2) feature ensures that your instances will not share a physical host with instances from any other AWS customer?

A. Amazon Virtual Private Cloud (VPC)
B. Placement groups
C. Dedicated Instances
D. Reserved Instances

9. Which of the following are true of instance stores? (Choose 2 answers)

A. Automatic backups
B. Data is lost when the instance stops.
C. Very high IOPS
D. Charge is based on the total amount of storage provisioned.

10. Which of the following are features of Amazon Elastic Block Store (Amazon EBS)? (Choose 2 answers)

A. Data stored on Amazon EBS is automatically replicated within an Availability Zone.
B. Amazon EBS data is automatically backed up to tape.
C. Amazon EBS volumes can be encrypted transparently to workloads on the attached instance.
D. Data on an Amazon EBS volume is lost when the attached instance is stopped.

11. You need to take a snapshot of an Amazon Elastic Block Store (Amazon EBS) volume. How long will the volume be unavailable?

A. It depends on the provisioned size of the volume.
B. The volume will be available immediately.
C. It depends on the amount of data stored on the volume.
D. It depends on whether the attached instance is an Amazon EBS-optimized instance.

12. You are restoring an Amazon Elastic Block Store (Amazon EBS) volume from a snapshot. How long will it be before the data is available?

A. It depends on the provisioned size of the volume.
B. The data will be available immediately.

C. It depends on the amount of data stored on the volume.
D. It depends on whether the attached instance is an Amazon EBS-optimized instance.

13. You have a workload that requires 15,000 consistent IOPS for data that must be durable. What combination of the following steps do you need? (Choose 2 answers)

A. Use an Amazon Elastic Block Store (Amazon EBS)-optimized instance.
B. Use an instance store.
C. Use a Provisioned IOPS SSD volume.
D. Use a magnetic volume.

14. Which of the following can be accomplished through bootstrapping?

A. Install the most current security updates.
B. Install the current version of the application.
C. Configure Operating System (OS) services.
D. All of the above.

15. How can you connect to a new Linux instance using SSH?

A. Decrypt the root password.
B. Using a certificate
C. Using the private half of the instance's key pair
D. Using Multi-Factor Authentication (MFA)

16. VM Import/Export can import existing virtual machines as: (Choose 2 answers)

A. Amazon Elastic Block Store (Amazon EBS) volumes
B. Amazon Elastic Compute Cloud (Amazon EC2) instances
C. Amazon Machine Images (AMIs)
D. Security groups

17. Which of the following can be used to address an Amazon Elastic Compute Cloud

(Amazon EC2) instance over the web? (Choose 2 answers)

A. Windows machine name
B. Public DNS name
C. Amazon EC2 instance ID
D. Elastic IP address

18. Using the correctly decrypted Administrator password and RDP, you cannot log in to a Windows instance you just launched. Which of the following is a possible reason?

A. There is no security group rule that allows RDP access over port 3389 from your IP address.
B. The instance is a Reserved Instance.
C. The instance is not using enhanced networking.
D. The instance is not an Amazon EBS-optimized instance.

19. You have a workload that requires 1 TB of durable block storage at 1,500 IOPS during normal use. Every night there is an Extract, Transform, Load (ETL) task that requires 3,000 IOPS for 15 minutes. What is the most appropriate volume type for this workload?

  A. Use a Provisioned IOPS SSD volume at 3,000 IOPS.
  B. Use an instance store.
  C. Use a general-purpose SSD volume.
  D. Use a magnetic volume.

20. How are you billed for elastic IP addresses?

  A. Hourly when they are associated with an instance
  B. Hourly when they are not associated with an instance
  C. Based on the data that flows through them
  D. Based on the instance type to which they are attached.

21. Which of the following are required elements of an Auto Scaling group? (Choose 2 answers)

  A. Minimum size
  B. Health checks
  C. Desired capacity
  D. Launch configuration

22. You have created an Elastic Load Balancing load balancer listening on port 80, and you registered it with a single Amazon Elastic Compute Cloud (Amazon EC2) instance also listening on port 80. A client makes a request to the load balancer with the correct protocol and port for the load balancer. In this scenario, how many connections does the balancer maintain?

  A. 1
  B. 2
  C. 3
  D. 4

23. How long does Amazon CloudWatch keep metric data?

  A. 1 day
  B. 2 days
  C. 1 week
  D. 2 weeks

24. Which of the following are the minimum required elements to create an Auto Scaling launch configuration?

  A. Launch configuration name, Amazon Machine Image (AMI), and instance type
  B. Launch configuration name, AMI, instance type, and key pair
  C. Launch configuration name, AMI, instance type, key pair, and security group
  D. Launch configuration name, AMI, instance type, key pair, security group, and block device mapping

25. You are responsible for the application logging solution for your company's existing applications running on multiple Amazon EC2 instances. Which of the following is the best approach for aggregating the application logs within AWS?

    A. Amazon CloudWatch custom metrics
    B. Amazon CloudWatch Logs Agent
    C. An Elastic Load Balancing listener
    D. An internal Elastic Load Balancing load balancer

26. Which of the following must be configured on an Elastic Load Balancing load balancer to accept incoming traffic?

    A. A port
    B. A network interface
    C. A listener
    D. An instance

27. You create an Auto Scaling group in a new region that is configured with a minimum size value of 10, a maximum size value of 100, and a desired capacity value of 50. However, you notice that 30 of the Amazon Elastic Compute Cloud (Amazon EC2) instances within the Auto Scaling group fail to launch. Which of the following is the cause of this behavior?

    A. You cannot define an Auto Scaling group larger than 20.
    B. The Auto Scaling group maximum value cannot be more than 20.
    C. You did not attach an Elastic Load Balancing load balancer to the Auto Scaling group.
    D. You have not raised your default Amazon EC2 capacity (20) for the new region.

28. You want to host multiple Hypertext Transfer Protocol Secure (HTTPS) websites on a fleet of Amazon EC2 instances behind an Elastic Load Balancing load balancer with a single X.509 certificate. How must you configure the Secure Sockets Layer (SSL) certificate so that clients connecting to the load balancer are not presented with a warning when they connect?

    A. Create one SSL certificate with a Subject Alternative Name (SAN) value for each website name.
    B. Create one SSL certificate with the Server Name Indication (SNI) value checked.
    C. Create multiple SSL certificates with a SAN value for each website name.
    D. Create SSL certificates for each Availability Zone with a SAN value for each website name.

29. Your web application front end consists of multiple Amazon Compute Cloud (Amazon EC2) instances behind an Elastic Load Balancing load balancer. You have configured the load balancer to perform health checks on these Amazon EC2 instances. If an instance fails to pass health checks, which statement will be true?

    A. The instance is replaced automatically by the load balancer.
    B. The instance is terminated automatically by the load balancer.
    C. The load balancer stops sending traffic to the instance that failed its health check.
    D. The instance is quarantined by the load balancer for root cause analysis.

30. In the basic monitoring package for Amazon Elastic Compute Cloud (Amazon EC2), what

Amazon CloudWatch metrics are available?

A. Web server visible metrics such as number of 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

31. A cell phone company is running dynamic-content television commercials for a contest. They want their website to handle traffic spikes that come after a commercial airs. The website is interactive, offering personalized content to each visitor based on location, purchase history, and the current commercial airing. Which architecture will configure Auto Scaling to scale out to respond to spikes of demand, while minimizing costs during quiet periods?

A. Set the minimum size of the Auto Scaling group so that it can handle high traffic volumes without needing to scale out.
B. Create an Auto Scaling group large enough to handle peak traffic loads, and then stop some instances. Configure Auto Scaling to scale out when traffic increases using the stopped instances, so new capacity will come online quickly.
C. Configure Auto Scaling to scale out as traffic increases. Configure the launch configuration to start new instances from a preconfigured Amazon Machine Image (AMI).
D. Use Amazon CloudFront and Amazon Simple Storage Service (Amazon S3) to cache changing content, with the Auto Scaling group set as the origin. Configure Auto Scaling to have sufficient instances necessary to initially populate CloudFront and Amazon ElastiCache, and then scale in after the cache is fully populated.

32. For an application running in the ap-northeast-1 region with three Availability Zones (apnortheast-1a, ap-northeast-1b, and ap-northeast-1c), which instance deployment provides high availability for the application that normally requires nine running Amazon Elastic Compute Cloud (Amazon EC2) instances but can run on a minimum of 65 percent capacity while Auto Scaling launches replacement instances in the remaining Availability Zones?

A. Deploy the application on four servers in ap-northeast-1a and five servers in apnortheast- 1b, and keep five stopped instances in ap-northeast-1a as reserve.
B. Deploy the application on three servers in ap-northeast-1a, three servers in apnortheast- 1b, and three servers in ap-northeast-1c.
C. Deploy the application on six servers in ap-northeast-1b and three servers in apnortheast-1c.
D. Deploy the application on nine servers in ap-northeast-1b, and keep nine stopped instances in ap-northeast-1a as reserve.

33. Which of the following are characteristics of the Auto Scaling service on AWS? (Choose 3 answers)

A. Sends traffic to healthy instances
B. Responds to changing conditions by adding or terminating Amazon Elastic Compute
C. Cloud (Amazon EC2) instances
D. Collects and tracks metrics and sets alarms
E. Delivers push notifications
F. Launches instances from a specified Amazon Machine Image (AMI)

G. Enforces a minimum number of running Amazon EC2 instances

34. Why is the launch configuration referenced by the Auto Scaling group instead of being part of the Auto Scaling group?

A. It allows you to change the Amazon Elastic Compute Cloud (Amazon EC2) instance type and Amazon Machine Image (AMI) without disrupting the Auto Scaling group.
B. It facilitates rolling out a patch to an existing set of instances managed by an Auto Scaling group.
C. It allows you to change security groups associated with the instances launched without having to make changes to the Auto Scaling group.
D. All of the above
E. None of the above

35. An Auto Scaling group may use: (Choose 2 answers)

A. On-Demand Instances
B. Stopped instances
C. Spot Instances
D. On-premises instances
E. Already running instances if they use the same Amazon Machine Image (AMI) as the Auto Scaling group's launch configuration and are not already part of another Auto Scaling group

36. Amazon CloudWatch supports which types of monitoring plans? (Choose 2 answers)

A. Basic monitoring, which is free
B. Basic monitoring, which has an additional cost
C. Ad hoc monitoring, which is free
D. Ad hoc monitoring, which has an additional cost
E. Detailed monitoring, which is free
F. Detailed monitoring, which has an additional cost

37. Elastic Load Balancing health checks may be: (Choose 3 answers)

A. A ping
B. A key pair verification
C. A connection attempt
D. A page request
E. An Amazon Elastic Compute Cloud (Amazon EC2) instance status check

38. When an Amazon Elastic Compute Cloud (Amazon EC2) instance registered with an Elastic Load Balancing load balancer using connection draining is deregistered or unhealthy, which of the following will happen? (Choose 2 answers)

A. Immediately close all existing connections to that instance.
B. Keep the connections open to that instance, and attempt to complete in-flight requests.
C. Redirect the requests to a user-defined error page like "Oops this is embarrassing" or "Under Construction."
D. Forcibly close all connections to that instance after a timeout period.
E. Leave the connections open as long as the load balancer is running.

39. Elastic Load Balancing supports which of the following types of load balancers? (Choose 3 answers)

A. Cross-region
B. Internet-facing
C. Interim
D. Itinerant
E. Internal
F. Hypertext Transfer Protocol Secure (HTTPS) using Secure Sockets Layer (SSL)

40. Auto Scaling supports which of the following plans for Auto Scaling groups? (Choose 3 answers)

A. Predictive
B. Manual
C. Preemptive
D. Scheduled
E. Dynamic
F. End-user request driven
G. Optimistic

EBS Snapshots are backed up to S3 in what manner?

1. Incrementally
2. Exponentally
3. Decreasintly
4. EBS snapshots are not stored on s3

Do Amazon EBS volumes persist independently from the life of an Amazon EC2 instance, for example, if I terminated an EC2 instance, would that EBS volume remain?

1. Yes
2. No
3. If only instructed when created
4. Depend on the region

Can I delete a snapshot of an EBS Volume that is used as the root device of a registered AMI?

1. No
2. Yes
3. Via CLI

4. Via API

A placement group can be deployed across multiple Availability Zones.

1. True
2. False

Can you attach an EBS volume to more than one EC2 instance at the same time?

1. Yes
2. No
3. Depends on region
4. EC2 volume is part of an AMI

A placement group is ideal for

1. High N/w throughput and low latency across a single availability zone
2. High N/w throughput and low latency across a multiple availability zone

Using the console, I can add a role to an EC2 instance, after that instance has been created and powered up.

1. True
2. False

I can change the permissions to a role, even if that role is already assigned to an existing EC2 instance, and these changes will take effect immediately.

1. True
2. False

ANSWERS

1. C. Reserved Instances provide cost savings when you can commit to running instances full time, such as to handle the base traffic. On-Demand Instances provide the flexibility to handle traffic spikes, such as on the last day of the month.
2. B. Spot Instances are a very cost-effective way to address temporary compute needs that are not urgent and are tolerant of interruption. That's exactly the workload described here. Reserved Instances are inappropriate for temporary workloads. On-Demand Instances are good for temporary workloads, but don't offer the cost savings of Spot Instances. Adding more queues is a non-responsive answer as it would not address the problem.
3. C, D. The Amazon EC2 instance ID will be assigned by AWS as part of the launch process. The administrator password is assigned by AWS and encrypted via the public key. The instance type defines the virtual hardware and the AMI defines the initial software state. You must specify both upon launch.
4. A, C. You can change the instance type only within the same instance type family, or you can change the Availability Zone. You cannot change the operating system nor the instance type family.
5. D. When there are multiple security groups associated with an instance, all the rules are aggregated.
6. A, B, E. These are the benefits of enhanced networking.
7. A, B, D. The other answers have nothing to do with networking.
8. C. Dedicated Instances will not share hosts with other accounts.
9. B, C. Instance stores are low-durability, high-IOPS storage that is included for free with the hourly cost of an instance.
10. A, C. There are no tapes in the AWS infrastructure. Amazon EBS volumes persist when the instance is stopped. The data is automatically replicated within an Availability Zone. Amazon EBS volumes can be encrypted upon creation and used by an instance in the same manner as if they were not encrypted.
11. B. There is no delay in processing when commencing a snapshot.
12. B. The volume is created immediately but the data is loaded lazily. This means that the volume can be accessed upon creation, and if the data being requested has not yet been restored, it will be restored upon first request.
13. A, C. B and D are incorrect because an instance store will not be durable and a magnetic volume offers an average of 100 IOPS. Amazon EBS-optimized instances reserve network bandwidth on the instance for IO, and Provisioned IOPS SSD volumes provide the highest consistent IOPS.
14. D. Bootstrapping runs the provided script, so anything you can accomplish in a script you can accomplish during bootstrapping.
15. C. The public half of the key pair is stored on the instance, and the private half can then be used to connect via SSH.
16. B, C. These are the possible outputs of VM Import/Export.
17. B, D. Neither the Windows machine name nor the Amazon EC2 instance ID can be resolved into an IP address to access the instance.
18. A. None of the other options will have any effect on the ability to connect.
19. C. A short period of heavy traffic is exactly the use case for the bursting nature of general-purpose SSD volumes—the rest of the day is more than enough time to build up enough IOPS credits to handle the nightly task. Instance stores are not durable, magnetic volumes cannot provide enough IOPS, and to set up a Provisioned IOPS SSD volume to handle the peak would mean spending money for more IOPS than you need.

20. B. There is a very small hourly charge for allocated elastic IP addresses that are not associated with an instance.
21. A, D. An Auto Scaling group must have a minimum size and a launch configuration defined in order to be created. Health checks and a desired capacity are optional.
22. B. The load balancer maintains two separate connections: one connection with the client and one connection with the Amazon EC2 instance.
23. D. Amazon CloudWatch metric data is kept for 2 weeks.
24. A. Only the launch configuration name, AMI, and instance type are needed to create an Auto Scaling launch configuration. Identifying a key pair, security group, and a block device mapping are optional elements for an Auto Scaling launch configuration.
25. B. You can use the Amazon CloudWatch Logs Agent installer on existing Amazon EC2 instances to install and configure the CloudWatch Logs Agent.
26. C. You configure your load balancer to accept incoming traffic by specifying one or more listeners.
27. D. The default Amazon EC2 instance limit for all regions is 20.
28. A. An SSL certificate must specify the name of the website in either the subject name or listed as a value in the SAN extension of the certificate in order for connecting clients to not receive a warning.
29. C. When Amazon EC2 instances fail the requisite number of consecutive health checks, the load balancer stops sending traffic to the Amazon EC2 instance.
30. D. Amazon CloudWatch metrics provide hypervisor visible metrics.
31. C. Auto Scaling is designed to scale out based on an event like increased traffic while being cost effective when not needed.
32. B. Auto Scaling will provide high availability across three Availability Zones with three Amazon EC2 instances in each and keep capacity above the required minimum capacity, even in the event of an entire Availability Zone becoming unavailable.
33. B, E, F. Auto Scaling responds to changing conditions by adding or terminating instances, launches instances from an AMI specified in the launch configuration associated with the Auto Scaling group, and enforces a minimum number of instances in the min-size parameter of the Auto Scaling group.
34. D. A, B, and C are all true statements about launch configurations being loosely coupled and referenced by the Auto Scaling group instead of being part of the Auto Scaling group.
35. A, C. An Auto Scaling group may use On-Demand and Spot Instances. An Auto Scaling group may not use already stopped instances, instances running someplace other than AWS, and already running instances not started by the Auto Scaling group itself.
36. A, F. Amazon CloudWatch has two plans: basic, which is free, and detailed, which has an additional cost. There is no ad hoc plan for Amazon CloudWatch.
37. A, C, D. An Elastic Load Balancing health check may be a ping, a connection attempt, or a page that is checked.
38. B, C. When connection draining is enabled, the load balancer will stop sending requests to a deregistered or unhealthy instance and attempt to complete in-flight requests until a connection draining timeout period is reached, which is 300 seconds by default.
39. B, E, F. Elastic Load Balancing supports Internet-facing, internal, and HTTPS load balancers.
40. B, D, E. Auto Scaling supports maintaining the current size of an Auto Scaling group using four plans: maintain current levels, manual scaling, scheduled scaling, and dynamic scaling.