**EC2**

1. Your company has a policy of encrypting all data at rest. You host your production environment on EC2 in a bespoke VPC. Attached to your EC2 instances are multiple EBS volumes, and you must ensure this data is encrypted. Which of the following options will allow you to do this? [Select 3]
   1. Install SSL certificates on the servers so as to encrypt your data
   2. Encrypt your data inside your application, before storing it on EBS
   3. EBS volumes are encrypted by default, you do not need to do anything.
   4. Use third party volume encryption tools.
   5. Encrypt the data using native encryption tools available in the OS
2. What is the underlying Hypervisor for EC2 ? [Select 2]
   1. Nitro
   2. ESX
   3. Hyper-V
   4. Xen
   5. OVM
3. For all new accounts, there is a soft limit of 20 EC2 instances per region.
4. When using EC2 instances with Dedicated Hosting, which of the following modes are you able to transition between by stopping the instance and starting it again?
   1. Host and default
   2. Dedicated and Host
   3. Dedicated and default
   4. Non dedicated and dedicated.
5. Which characteristic is shared between a dedicated instance and a dedicated host?
   1. Automatic instance placement.
   2. Target instance placement.
   3. Add capacity using an allocation request.
   4. Per-host billing.
6. A company's application runs on Amazon EC2 instances behind an Application Load Balancer (ALB) The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones On the first day of every month at midnight the application becomes much slower when the month-end financial calculation batch executes This causes the CPU utilization of the EC2 instances to immediately peak to 100%. which disrupts the application What should a solutions architect recommend to ensure the application is able to handle the workload and avoid downtime?
   1. Configure an Amazon CloudFront distribution in front of the ALB
   2. Configure an EC2 Auto Scaling simple scaling policy based on CPU utilization
   3. Configure an EC2 Auto Scaling scheduled scaling policy based on the monthly schedule.
   4. Configure Amazon ElastiCache to remove some of the workload from the EC2 instances
7. A solutions architect wants to design a solution to save costs forAmazonEC2 instances that do not need to run during a 2-week company shutdown. The applications running on the instances store data in instance memory(RAM)that must be present when the instances resume operation.Which approach should the solutions architectrecommend to shut down and resume the instances?
   1. Modify the application to store the data on instance store volumes. Reattach the volumes while restarting them.
   2. Snapshot the instances before stopping them. Restore the snapshot after restarting theinstances.
   3. Run the applications on instances enabled for hibernation. Hibernate the instances before the shutdown.
   4. Note the Availability Zone for each instance before stopping it. Restart the instances in the same Availability Zones after the shutdown.
8. A company uses Reserved Instances to run its data-processing workload. The nightly job typically takes 7 hours to run and must finish within a 10-hour time window. The company anticipates temporary increases in demand at the end of each month that will cause the job to run over the time limit with the capacity of the current resources. Once started, the processing job cannot be interrupted before completion. The company wants to implement a solution that would allow it to provide increased capacity as cost-effectively as possible. What should a solutions architect do to accomplish this?
   1. Deploy On-Demand Instances during periods of high demand.
   2. Create a second Amazon EC2reservation for additional instances.
   3. Deploy Spot Instances during periods of high demand.
   4. Increase the instance size of the instances in the Amazon EC2 reservation to support the increased workload
9. A solutions architect is designing a high performance computing (HPC) workload on Amazon EC2 The EC2 instances need to communicate to each other frequently and require network performance with low latency and high throughput Which EC2 configuration meets these requirements'?
   1. Launch the EC2 instances in a cluster placement group in one Availability Zone
   2. Launch the EC2 instances in a spread placement group in one Availability Zone
   3. Launch the EC2 instances in an Auto Scaling group in two Regions and peer the VPCs
   4. Launch the EC2 instances in an Auto Scaling group spanning multiple Availability Zones
10. A start-up company has a web application based in the us-east-1 Region with multiple Amazon EC2 instances running behind an Application Load Balancer across multiple Availability Zones. As the company’s user base grows in the us-west-1 Region, it needs a solution with low latency and high availability. What should a solutions architect do to accomplish this?
    1. Provision EC2 instances in us-west-1. Switch the Application Load Balancer to a Network Load Balancer to achieve cross-Region load balancing.
    2. Provision EC2 instances and an Application Load Balancer in us-west-1. Make the load balancer distribute the traffic based on the location of the request.
    3. Provision EC2 instances and configure an Application Load Balancer in us-west-1. Create an accelerator in AWS Global Accelerator that uses an endpoint group that includes the load balancer endpoints in both Regions.
    4. Provision EC2 instances and configure an Application Load Balancer in us-west-1. Configure Amazon Route 53 with a weighted routing polic
    5. Create alias records in Route 53 that point to the Application Load Balancer.
11. In the context of AWS support, why must an EC2 instance be unreachable for 20 minutes rather than allowing customers to open tickets immediately?

A. Because most reachability issues are resolved by automated processes in less than 20 minutes

B. Because all EC2 instances are unreachable for 20 minutes every day when AWS does routine maintenance

C. Because all EC2 instances are unreachable for 20 minutes when first launched

D. Because of all the reasons listed here

12. To specify a resource in a policy statement, in Amazon EC2, can you use its Amazon Resource Name (ARN)?

A. Yes, you can.

B. No, you can't because EC2 is not related to ARN.

C. No, you can't because you can't specify a particular Amazon EC2 resource in an IAM policy.

D. Yes, you can but only for the resources that are not affected by the action

1. A user is launching an EC2 instance in the US East region. Which of the below mentioned options is recommended by AWS with respect to the selection of the availability zone?

A. Always select the AZ while launching an instance

B. Always select the US-East-1-a zone for HA

C. Do not select the AZ; instead let AWS select the AZ

D. The user can never select the availability zone while launching an instance

1. A user wants to use an EBS-backed Amazon EC2 instance for a temporary job. Based on the input data, the job is most likely to finish within a week. Which of the following steps should be followed to terminate the instance automatically once the job is finished?

A. Configure the EC2 instance with a stop instance to terminate it.

B. Configure the EC2 instance with ELB to terminate the instance when it remains idle.

C. Configure the CIoudWatch alarm on the instance that should perform the termination action once the instance is idle.

D. Configure the Auto Scaling schedule actMty that terminates the instance after 7 day

1. In EC2, what happens to the data in an instance store if an instance reboots (either intentionally or unintentionally)?

A. Data is deleted from the instance store for security reasons.

B. Data persists in the instance store.

C. Data is partially present in the instance store.

D. Data in the instance store will be lost.

1. Which of the below mentioned options is not available when an instance is launched by Auto Scaling with EC2 Classic?

A. Public IP

B. Elastic IP

C. Private DNS

D. Private IP

1. A user needs to run a batch process which runs for 10 minutes. This will only be run once, or at maximum twice, in the next month, so the processes will be temporary only. The process needs 15 X-Large instances. The process downloads the code from S3 on each instance when it is launched, and then generates a temporary log file. Once the instance is terminated, all the data will be lost. Which of the below mentioned pricing models should the user choose in this case?

A. Spot instance.

B. Reserved instance.

C. On-demand instance.

D. EBS optimized instance

1. Select the correct statement: Within Amazon EC2, when using Linux instances, the device name /dev/sda1 is .

A. reserved for EBS volumes

B. recommended for EBS volumes

C. recommended for instance store volumes

D. reserved for the root device

1. An EC2 instance is connected to an ENI (Elastic Network Interface) in one subnet. What happens when you attach an ENI of a different subnet to this EC2 instance?

A. The EC2 instance follows the rules of the older subnet

B. The EC2 instance follows the rules of both the subnets

C. Not possible, cannot be connected to 2 ENIs

D. The EC2 instance follows the rules of the newer subnet.

1. A user has configured a website and launched it using the Apache web server on port 80. The user is using ELB with the EC2 instances for Load Balancing. What should the user do to ensure that the EC2 instances accept requests only from ELB?

A. Configure the security group of EC2, which allows access to the ELB source security group

B. Configure the EC2 instance so that it only listens on the ELB port

C. Open the port for an ELB static IP in the EC2 security group

D. Configure the security group of EC2, which allows access only to the ELB listener.

1. Identify a true statement about the On-Demand instances purchasing option provided by Amazon EC2.

A. Pay for the instances that you use by the hour, with no long-term commitments or up-front payments.

B. Make a low, one-time, up-front payment for an instance, reserve it for a one- or three-year term, and pay a significantly lower hourly rate for these instances.

C. Pay for the instances that you use by the hour, with long-term commitments or up-front payments.

D. Make a high, one-time, all-front payment for an instance, reserve it for a one- or three-year term, andpay a significantly higher hourly rate for these instance.

22. You have a Business support plan with AWS. One of your EC2 instances is running Mcrosoft Windows Server 2008 R2 and you are having problems with the software. Can you receive support from AWS for this software?

A. Yes

B. No, AWS does not support any third-party software.

C. No, Mcrosoft Windows Server 2008 R2 is not supported.

D. No, you need to be on the enterprise support plan

23. A user has launched one EC2 instance in the US West region. The user wants to access the RDS instance launched in the US East region from that EC2 instance. How can the user configure the access for that EC2 instance?

A. Configure the IP range of the US West region instance as the ingress security rule of RDS

B. It is not possible to access RDS of the US East region from the US West region

C. Open the security group of the US West region in the RDS security group’s ingress rule

D. Create an IAM role which has access to RDS and launch an instance in the US West region with it

24. Can you move a Reserved Instance from one Availability Zone to another?

A. Yes, but each Reserved Instance is associated with a specific Region that cannot be changed.

B. Yes, only in US-West-2.

C. Yes, only in US-East-1.

D. No

25. An application hosted at the EC2 instance receives an HTTP request from ELB. The same request has an X-Forvvarded-For header, which has three IP addresses. Which system's IP will be a part of this header?

A. Previous Request IP address.

B. Client IP address.

C. All of the answers listed here.

D. Load Balancer IP address.

26. When controlling access to Amazon EC2 resources, each Amazon EBS Snapshot has a attribute that controls which AWS accounts can use the snapshot.

A. createVoIumePermission

B. LaunchPermission

C. SharePermission

D. RequestPermission

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

A. Route 53 Record Sets

B. IM Roles

C. Elastic IP Addresses (EIP)

D. EC2 Key Pairs

E. Launch configurations

F. Security Groups

28. In Amazon EC2, while sharing an Amazon EBS snapshot, can the snapshots with AWS IV|arketpIace product codes be public?

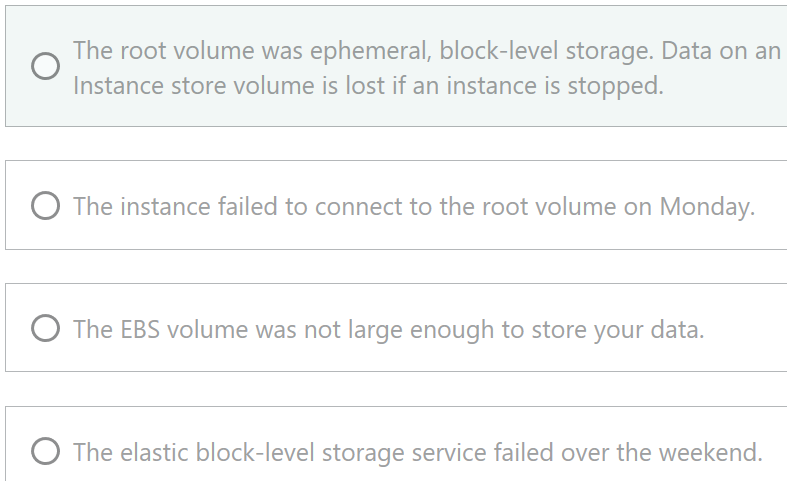
A. Yes, but only for US-based providers.

B. Yes, they can be public.

C. No, they cannot be made public.

D. Yes, they are automatically made public by the system

29. To save money, you quickly stored some data on the root volume of an EC2 instance and stopped it for the weekend. When you returned on Monday and restarted your instance, you discovered that your data was gone. Why might that be?



1. The risk with spot instances is that you are not guaranteed use of the resource for as long as you might want. Which of the following are scenarios under which AWS might execute a forced shutdown? [Select 4]
   1. AWS sends a notification of termination and you receive it 120 seconds before the intended force shutdown.
   2. AWS sends a notification of termination and you receive it 120 seconds before the intended force shutdown, but AWS do not action the shutdown.
   3. AWS sends a notification of termination and you receive it 120 seconds before the intended force shutdown, but you block the shutdown because you used “termination protection” when you initialized the instance.
   4. AWS sends a notification of termination and you receive it 120 seconds before the intended force shutdown, but the normal lease expired before the forced shutdown.
   5. AWS send a notification of termination but you do not receive it within 120 seconds and the instance is shutdown.
   6. AWS sends a notification of termination and you receive it 120 seconds before the intended force shutdown and you delay it by sending a “delay 300” instruction before the forced shutdown takes effect.
2. When copying an AMI, which of the following types of information must be manually copied to the new instance? [Select 3]
   1. S3 bucket permissions.
   2. User data
   3. Launch permissions.
   4. User-defined Tags.
3. You have been ask to deploy a clustered application on a small number of EC2 instances. The application must be placed across multiple Availability Zones, have high speed, low latency communication between each of the nodes, and should also minimise the chance of underlying hardware failure. Which of the following options would provide this solution?
   1. Deploy the EC2 servers in a Cluster Placement Group.
   2. Deploy the EC2 servers in a Spread Placement Group.
   3. The application should deployed as a service in ECS
   4. Create a new VPC with the tenancy type of host and deploy the instances in the VPC.

**Stuffs**

**Instance store lifetime**

You can specify instance store volumes for an instance only when you launch it. You can't detach an instance store volume from one instance and attach it to a different instance.

The data in an instance store persists only during the lifetime of its associated instance. If an instance reboots (intentionally or unintentionally), data in the instance store persists. However, data in the instance store is lost under any of the following circumstances:

The underlying disk drive fails

The instance stops

The instance hibernates

The instance terminates

Therefore, do not rely on instance store for valuable, long-term data. Instead, use more durable data storage, such as Amazon S3, Amazon EBS, or Amazon EFS.

When you stop, hibernate, or terminate an instance, every block of storage in the instance store is reset. Therefore, your data cannot be accessed through the instance store of another instance.

If you create an AMI from an instance, the data on its instance store volumes isn't preserved and isn't present on the instance store volumes of the instances that you launch from the AMI.

I want to know how I am billed for my Amazon Elastic Compute Cloud (Amazon EC2) instances.

**Resolution**

Your Amazon EC2 usage is calculated by either the hour or the second based on the size of the instance, operating system, and the AWS Region where the instances are launched. Pricing is per instance-hour consumed for each instance, from the time an instance is launched until it is terminated or stopped.

Each partial instance-hour consumed is billed per-second for instances launched in Linux, Windows, SQL Server, and Ubuntu.

Each partial instance-hour is billed as a full hour for all other instance types.

When reviewing your Amazon EC2 usage, consider the following:

If your instance is billed by the hour, then you're billed for a minimum of one hour each time a new instance is started—that is, when it enters the running state.

If your instance is billed by the second, then you're billed for a minimum of 60 seconds each time a new instance is started—that is, when it enters the running state.

An instance stays in the running state while being rebooted.

Instances that are in any other state aren't billed.

|  |  |  |
| --- | --- | --- |
| No | Answer | Explanation |
| 1 | B, D, E | EBS volumes can be encrypted, but they are not encrypted by default. SSL certificates will only be useful to encrypt data in transit, not data at rest. |
| 2 | A, D |  |
| 4 | B | The tenancy of an instance can only be change between variants of ‘dedicated' tenancy hosting. It cannot be changed from or to default tenancy hosting |
| 5 | A |  |
| 6 | C |  |
| 7 | C | Hibernating an instance saves the contents of RAM to the Amazon EBS root volume. When the instance restarts, the RAM contents are reloaded |
| 8 | A | While Spot Instances would be the least costly option, they are not suitable for jobs that cannot be interrupted or must complete within a certain time period. On-Demand Instances would be billed for the number of seconds they are running. |
| 9 | A |  |
|  |  |  |
| 11 | A | An EC2 instance must be unreachable for 20 minutes before opening a ticket, because most reachability issues are resolved by automated processes in less than 20 minutes and will not require any action on the part of the customer. If the instance is still unreachable after this time frame has passed, then you should open a case with support. |
| 12 | A |  |
| 13 | C | When launching an instance with EC2, AWS recommends not to select the availability zone (AZ). AWS specifies that the default Availability Zone should be accepted. This is because it enables AWS to select the best Availability Zone based on the system health and available capacity. If the user launches  additional instances, only then an Availability Zone should be specified. This is to specify the same or different AZ from the running instances |
| 14 | c | Auto Scaling can start and stop the instance at a pre-defined time. Here, the total running time is unknown. Thus, the user has to use the CIoudWatch alarm, which monitors the CPU utilization. The user can create an alarm that is triggered when the average CPU utilization percentage has been  lower than 10 percent for 24 hours, signaling that it is idle and no longer in use. When the utilization is below the threshold limit, it will terminate the instance as a part of the instance action. |
| 15 | B | The data in an instance store persists only during the lifetime of its associated instance. If an instance reboots (intentionally or unintentionally), data in the instance store persists. However, data on instance store volumes is lost under the following circumstances.  Failure of an underlying drive  Stopping an Amazon EBS-backed instance Terminating an instance |
| 16 | B | Auto Scaling supports both EC2 classic and EC2-VPC. When an instance is launched as a part of EC2 classic, it will have the public IP and DNS as well as the private IP and DNS |
| 17 | A | In Amazon Web Services, the spot instance is useful when the user wants to run a process temporarily. The spot instance can terminate the instance if the other user outbids the existing bid. In this case all storage is temporary and the data is not required to be persistent. Thus, the spot instance is a  good option to save money |
| 18 | d | Within Amazon EC2, when using a Linux instance, the device name /dev/sda1 is reserved for the root device. |
| 19 | B | AWS allows you create an elastic network interface (ENI), attach an ENI to an EC2 instance, detach an ENI from an EC2 instance and attach this ENI to another EC2 instance. The attributes of a network traffic follow the ENI which is attached to an EC2 instance or detached from an EC2 instance. When you  move an ENI from one EC2 instance to another, network traffic is redirected to the new EC2 instance. You can create and attach additional ENIs to an EC2 instance.  Attaching multiple network interfaces (ENIs) to an EC2 instance is useful to: Create a management network.  Use network and security appliances in your VPC.  Create dual-homed instances with workloads/roles on distinct subnets Create a low-budget, high-availability solution |
| 20 | A | When a user is configuring ELB and registering the EC2 instances with it, ELB will create a source security group. If the user wants to allow traffic only from ELB, he should remove all the rules set for the other requests and open the port only for the ELB source security group. |
| 21 | A | On-Demand instances allow you to pay for the instances that you use by the hour, with no long-term commitments or up-front payments |
| 22 | A | Third-party software support is available only to AWS Support customers enrolled for Business or Enterprise Support. Third-party support applies only to software running on Amazon EC2 and does not extend to assisting with on-premises software. An exception to this is a VPN tunnel configuration running  supported devices for Amazon VPC |
| 23 | A | The user cannot authorize an Amazon EC2 security group if it is in a different AWS Region than the RDS DB instance. The user can authorize an IP range or specify an Amazon EC2 security group in the same region that refers to an IP address in another region |
| 24 | A | Each Reserved Instance is associated with a specific Region, which is fixed for the lifetime of the reservation and cannot be changed. Each reservation can, however, be used in any of the available AZs within the associated Region |
| 25 | C | When a user sends a request to ELB over HTTP/HTTPS, the request header log at the instance will only receive the IP of ELB. This is because ELB is the interceptor between the EC2 instance and the client request. To get the client IP, use the header X-Forvvarded-For in header. The client IP address in the  X-Fonzvarded-For request header is followed by the IP addresses of each successive proxy that passes along the request. The last IP address is the IP address that connects to the back-end application instance. e.g. if the HTTP request already has a header when it reaches the Load Balancer, the IP address from whichthe request came is appended at the end of the header followed by the IP address of the Load Balancer. In such cases, the X-Forvvarded-For request header  takes the following form:  X-Fonzvarded-For: cIientIPAddress, previousRequestIPAddress, LoadBaIancerIPAddress |
| 26 | A | Each Amazon EBS Snapshot has a createVoIumePermission attribute that you can set to one or more AWS Account IDs to share the AM with those AWS Accounts. To allow several AWS Accounts to use a particular EBS snapshot, you can use the snapshots's createVoIumePermission attribute to include a list  of the accounts that can use it. |
| 27 | AC |  |
| 28 | C | Snapshots with AWS Marketplace product codes can't be made public |
| 29 | A | he most likely answer is that the EC2 instance was backed by an instance store volume. Instance store volumes are ephemeral, meaning that they exist ONLY in conjunction with their accompanying EC2 instance. |
| 30 | B, C, E, F |  |
| 31 | A, C, D | Launch permissions, S3 bucket permissions, and user-defined tags must be copied manually to an instance based on an AMI. User data is part of the AMI, itself, and does not need to be copied manually |
| 32 | B | Spread Placement Groups are recommended for applications that have a small number of critical instances which need to be kept separate from each other. Launching instances in a Spread Placement Group reduces the risk of simultaneous failures that might occur when instances share the same underlying hardware. Spread Placement Groups provide access to distinct hardware, and are therefore suitable for mixing instance types or launching instances over time. In this case, deploying the EC2 instances in a Spread Placement Group is the only correct option |