

# Exam Session - Knowledge Check: Compute (SAA-C03) 1 of 2

 [cloudacademy.com/quiz/exam/3770295/results](https://cloudacademy.com/quiz/exam/3770295/results)

#1

Which statement best describes an Amazon Machine Image (AMI)?



A temporary virtual machine created during horizontal scaling



A virtual machine backup file on a local server hard drive



A preconfigured template for your EC2 instances



A VMware configuration file for any network deployment

Explanation

Amazon EC2 provides Amazon Machine Images (AMIs), which are preconfigured templates for your instances.

 <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIs.html>

#2

Which of the following statements about event sources in AWS Lambda is true?



For poll-based event sources, the mapping is maintained within the event source.



For push-based event sources, the mapping is maintained within the Lambda function.




For poll-based event sources, the invocation type is always synchronous.



For push-based event sources, the invocation type is always asynchronous.

Explanation

For poll-based event sources, the invocation type is always synchronous.

 [/course/understanding-aws-lambda-to-run-scale-code/understanding-event-source-mapping/](#)

Covered in this lecture

Understanding Event Source Mapping

Course: Understanding AWS Lambda to Run & Scale Your Code



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#3

The control plane does all of the following tasks within Amazon EKS except for which one?



Scheduling containers onto nodes



Continuous monitoring of all Kubernetes objects



Placing containers onto nodes based on compute requirements



Provision and maintain worker nodes

Explanation

The control plane schedules containers onto nodes. The term scheduling does not refer to time in this context. Scheduling, in this case, refers to the decision process of placing containers onto nodes in accordance with their declared, compute requirements. The Control Plane also tracks the state of all Kubernetes objects by continually monitoring the objects. So in EKS, AWS is responsible for provisioning, scaling and managing the control plane and they do this by utilizing multiple availability zones for additional resilience.

 [/course/compute-saa-co3/eks-elastic-container-service-kubernetes/](#)

#4

Which Amazon EC2 instance family offers SSD-backed instance storage for high I/O performance?



Storage-optimized



Compute-optimized



Memory-optimized



Accelerated-computing

Explanation

Storage optimized; as expected, these are optimized for enhanced storage. Instances in this family use SSD-backed instance storage for low latency and very high input/output performance, including very high IOPS, which stands for input-output operations per second. These are great for analytic workloads and NoSQL databases, data file systems and log processing applications.



<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/storage-optimized-instances.html>

#5

If you have to host a server with a specific region and availability zone for a year, the cheapest way to start that instance is to use the \_\_\_\_\_.



EBS-optimized instance



Spot instance



Dedicated instance



Reserved Instance

## Explanation

Amazon EC2 Reserved Instances can be a powerful and cost-saving strategy for running your business. Amazon EC2 Reserved Instances allow you to reserve Amazon EC2 computing capacity for 1 or 3 years, in exchange for a significant discount (up to 75%) compared to On-Demand instance pricing. Reserved Instances can significantly lower your computing costs for your workloads and provide a capacity reservation so that you can have confidence in your ability to launch the number of instances you have reserved when you need them.

 <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-reserved-instances.html>

#6

Which Amazon EC2 instance family is ideal for applications that manage real-time unstructured data processing, or distributed web cache stores?



Memory-optimized



Compute-optimized




Storage-optimized



General Purpose

## Explanation

Memory-optimized instance types are primarily used for large-scale, enterprise-class, in-memory applications, such as performing real-time processing of unstructured data or for in-memory databases such as SAP HANA.

 <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/memory-optimized-instances.html>

#7

How can you change between different versions of an AWS Lambda function?



By assigning each version a concurrency limit of zero



By creating an environment variable for each version



By using the Lambda qualifiers section



By selecting the Throttle option

Explanation

Using the Lambda qualifiers section allows you to change between different versions of your function.

 [/course/understanding-aws-lambda-to-run-scale-code/demo-creating-a-lambda-function/](#)

[Covered in this lecture](#)

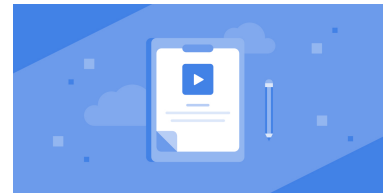
[Summary](#)

[Course:Understanding AWS Lambda to Run & Scale Your Code](#)

[8m](#)



#8



When using Amazon EKS, the \_\_\_\_\_ is a tool that allows you to use AWS IAM credentials to authenticate against Kubernetes clusters.



AWS IAM authenticator



Kubernetes API



AWS Key Management Service



EC2 access keys

Explanation

So those unfamiliar with kubectl, kubectl is a command line interface, for running commands against Kubernetes clusters. The AWS IAM authenticator is a tool that allows you to use AWS IAM credentials to authenticate against Kubernetes clusters. And eksctl provides a nice abstraction for creating clusters.

[!\[\]\(d0a1791f26d167e866e44ebbf83efebe\_img.jpg\) /course/introduction-to-aws-eks/](#)

Covered in this lecture

Course Introduction

Course:Introduction to AWS EKS

5m



#9



Which statement regarding Amazon ECS is correct?



ECS now manages all EC2 instances for ECS clusters. If you wish to manage instances yourself, you may deploy IaaS EC2 instances and install and run Docker directly.



ECS can manage all EC2 instances for all ECS clusters but also allows you to manage instances directly through the ECS service.



When deploying ECS clusters, an AWS user must always manage the EC2 instances directly.



Amazon ECS can manage instances through multiple integrated AWS services, including OpsWorks, Beanstalk and Systems Manager.

Explanation

Amazon ECS allows you two deployment options, a Fargate launch and an EC2 launch. In a Fargate launch, the user defines the service requirements, and the service manages the rest. In an EC2 launch, the user is responsible for patching and scaling instances, and must specify the instance type and number of containers in a cluster.

[!\[\]\(111c5272ee3f91361f0d2e3665dd6ad0\_img.jpg\) /course/compute-fundamentals-for-aws/ecs-ec2-container-service/](#)

Covered in this lecture

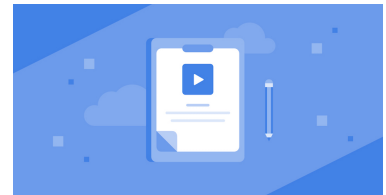
ECS - Elastic Container Service

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#10



You are managing a VPC for a client in the marketing industry. They have several tasks, such as flyer and coupon creation, which are not mission-critical and can just be restarted if the application terminates. You recommend using spot instances for the greatest cost savings. Under what circumstances will a spot instance terminate? (Choose 2 answers)



The customer terminates them.



The customer is outbid by another customer.



The instance workload is complete.



There is not enough unused capacity to meet the demand for spot instances.

Explanation

Spot instances can be terminated by the customer if there is not enough unused capacity to meet the demand for spot instances. Spot instances are billed hourly, but you will not be charged for the hour if the instance is terminated by AWS. If you terminate the instance yourself, you will be charged for the full hour in which the termination occurred.

 <https://aws.amazon.com/ec2/faqs/#spot-instances>

Covered in this lecture

Components of EC2 Auto Scaling

Course: Using Elastic Load Balancing & EC2 Auto Scaling to Support AWS Workloads



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#11

Considering Amazon EC2, which purchase option below allows customers to select and control a specific, physical server within an AWS data center solely for their use?



dedicated host instances



dedicated instances



on-demand instances



reserved instances

Explanation

When you launch instances on a Dedicated Host, the instances run on a physical server that is dedicated for your use. While Dedicated instances also run on dedicated hardware, Dedicated Hosts provide further visibility and control by allowing you to place your instances on a specific, physical server. This enables you to deploy instances using configurations that help address corporate compliance and regulatory requirements.



<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/dedicated-hosts-overview.html>

#12

What is the difference between Amazon Elastic Container Service (ECS) and Amazon Elastic Container Registry (ECR)?



ECR stores Docker images to be deployed by ECS.



ECR is a failover and backup service for ECS clusters.



ECR is a central data storage service for stateless ECS clusters.



ECR manages EC2 instances and Docker containers deployed by ECS.

Explanation



Elastic Container Registry is a secure location to store and manage Docker images. It is a fully managed service. Elastic Container Service can pull images from registries withing ECR and deploy them within ECS clusters.

 </course/compute-fundamentals-for-aws/ecr-elastic-container-registry/>

Covered in this lecture

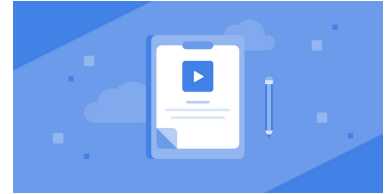
ECR - Elastic Container Registry

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#13



You want to create an application that only runs when your shop is open from 9 am to 5 pm Monday through Thursday. Which payment option would offer the greatest cost savings?



Reserved Instances



On-demand Capacity Reservations



Spot Instances



Dedicated Instances

Explanation

On-Demand Capacity Reservations enable you to reserve compute capacity for your Amazon EC2 instances in a specific Availability Zone for any duration. This gives you the ability to create and manage Capacity Reservations independently from the billing discounts offered by Savings Plans or Regional Reserved Instances.

By creating Capacity Reservations, you ensure that you always have access to EC2 capacity when you need it, for as long as you need it. You can create Capacity Reservations at any time, without entering into a one-year or three-year term commitment. The capacity becomes available and billing starts as soon as the Capacity Reservation is provisioned in your account. When you no longer need it, cancel the Capacity Reservation to release the capacity and to stop incurring charges.

 <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-capacity-reservations.html>

#14

How is the worker environment different from the webserver environment in Elastic Beanstalk?



The worker environment applies mainly to backend processes, while the webserver environment is associated with HTTP requests.



The worker environment is used for authenticating security groups, while the webserver environment is used for routing traffic.



The worker environment is used to process SQS queues, while the webserver environment is used for authenticating IAM service roles.



The worker environment applies to the configuration of services, while the webserver environment stores the code used to create applications.

Explanation

When using Elastic Beanstalk, the worker environment applies mainly to backend processes while the webserver environment is associated with HTTP requests.

 <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.html>

#15

Which AWS service enables AWS users to run containers on Amazon ECS without provisioning and managing the host EC2 instances?



AWS Fargate



AWS Auto Scaling



AWS OpsWorks Chef



AWS Systems Manager

Explanation

When using the Fargate launch type with tasks within your cluster, Amazon ECS manages your cluster resources.



[/course/compute-fundamentals-for-aws/ecs-ec2-container-service/](#)

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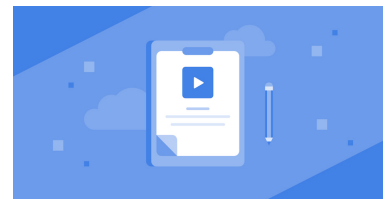
ECS - Elastic Container Service

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#16



An AWS Lambda function \_\_\_\_\_ is an operation from an event source that causes the function to invoke.



trigger



event



log



stream

Explanation

A trigger is essentially an operation from an event source that causes the function to invoke, and so essentially is triggering that function.



[/course/understanding-aws-lambda-to-run-scale-code/demo-creating-a-lambda-function/](#)

Covered in this lecture

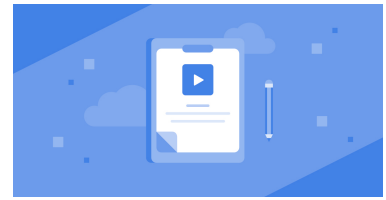
## An Overview of AWS Lambda

### Course: Understanding AWS Lambda to Run & Scale Your Code

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#17



What does selecting the Throttle option do in AWS Lambda?



sets the reserve concurrency limit of a Lambda function to zero



provides entry points to the Lambda function



associates the Lambda function to a particular project, department, or solution



sets the unreserved concurrency of an AWS Lambda account to zero

Explanation

The Throttle option is closely linked to the concurrency setting that we just talked about. Selecting this option sets the reserve concurrency limit of your function to zero.

 [/course/understanding-aws-lambda-to-run-scale-code/demo-creating-a-lambda-function/](#)

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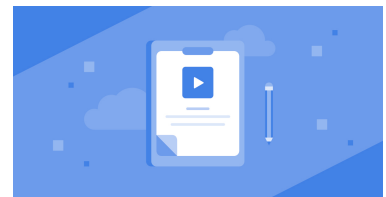
Demo: Creating a Lambda Function

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#18



Which pricing model is the best choice to reduce your Amazon EC2 spend on backend processing jobs that can withstand interruptions?



On-Demand Instances



Spot-Instances



Reserved Instances



Savings Plans

Explanation

Spot Instances utilizes spare computing capacity for up to 90% savings over On-Demand instances. There are four general categories of time-flexible and interruption-tolerant tasks that work well with Spot Instances: delayable tasks, optional tasks, tasks that can be sped up by adding additional computing power, and tasks that require a large number of compute instances that you can't access any other way.

On-Demand instances are cost-effective if you want to run short-term, unpredictable workloads that cannot be interrupted.

Reserved Instances must be purchased for a minimum of 1-3 year terms and are best for long-term, predictable workloads.

Savings plans offer flexible pricing on EC2 and Fargate usage but in exchange for a commitment to a consistent amount of usage.

 <https://aws.amazon.com/ec2/pricing/>

Covered in this lecture

Amazon EC2

Course: Amazon Elastic Compute Cloud (EC2)

28m



#19



When installing tools for operations in Amazon EKS, what is kubectl?



A command-line tool for communicating with the cluster API server



a tool that allows you to use AWS IAM credentials to authenticate against Kubernetes clusters



A command-line interface tool that simplifies creating and managing clusters



A graphical user interface that allows you to create, manage and communicate with your clusters

Explanation

The kubectl tool is a command-line interface, for running commands against Kubernetes clusters.



</course/introduction-to-aws-eks/installing-eka-cli-tools/>

Covered in this lecture

Installing EKS CLI Tools

Course: Introduction to AWS EKS

7m



#20



What is an environment in Elastic Beanstalk?



A section of deployable code that points to Amazon S3



A collection of AWS resources running an application version



An EC2 instance containing an application's code



A combination of components in which you can build your application

Explanation

An AWS Elastic Beanstalk *environment* is a collection of AWS resources running an application version. You can deploy multiple environments when you need to run multiple versions of an application. For example, you might have development, integration, and production environments. An application version is a very specific reference to a section of deployable code. The application version, not the environment, will point typically to S3, where the deployable code may reside. An environment is the application version deployed on AWS resources and not just an EC2 instance with your uploaded code. The platform is a culmination of components in which you can build your application upon using Elastic Beanstalk.

 <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.environments.html>

#21

Which statement describes the correct relationship between ECR components?



An ECR registry contains multiple repositories, which contain multiple Docker images.



An ECR repository contains multiple registries, which contain multiple EC2 instances.



An ECR registry contains multiple Docker images, which contain multiple containers.



An ECR repository contains ECS clusters, which contain multiple Docker images.

Explanation

The correct statement is that ECR registries contain multiple repositories, which contain multiple Docker images.

 </course/compute-fundamentals-for-aws/ecr-elastic-container-registry/>

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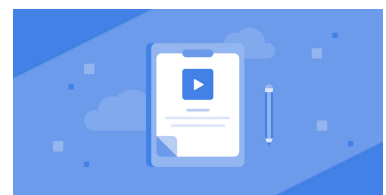
ECR - Elastic Container Registry

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#22



What do ECR repository policies control? (Choose 2 answers)



User access to the ECR repositories



User actions within an ECR repository



Authenticate AWS users to communicate with Docker CLI



User actions with ECS clusters

Explanation

While IAM policies control access to ECR a service, repository policies control what read/write actions can be performed within an ECR repository.



[/course/compute-fundamentals-for-aws/ecr-elastic-container-registry/](#)

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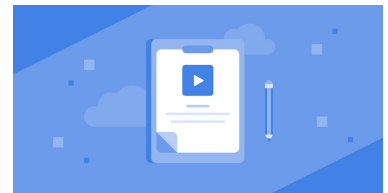
ECR - Elastic Container Registry

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#23



A video production company currently uses “local transcoding” and relies on video editing and compression software to transcode files on a user’s computer. They have encountered latency in the editing process due to hardware limitations. Which of the following instance types would be recommended to solve the problem of processing latency?



Storage-optimized



General-purpose



Compute-optimized





Memory-optimized

Explanation

Compute-optimized instances would be the best solution for avoiding processing latency because this family of instances has the highest performing processors installed and are used in high-performance applications such as video encoding. While Storage-optimized instances offer low latency because they have SSD-backed instant storage and very high I/O, input/output performance, including very high input/output operations per second, they are best used for high capacity analytic workloads, such as data file systems and log processing applications. General-purpose, instance types have a balanced mix of CPU memory and storage making them ideal for small to medium databases, tests, development servers, and back-end servers. Memory-optimized, instance types are primarily used for large-scale enterprise-class in-memory applications, such as performing real-time processing of unstructured data, for example, applications such as Microsoft Sharepoint.

 <https://aws.amazon.com/ec2/instance-types/>

#24

What is the role of a Task definition within Amazon Elastic Container Service (ECS)?



To specify one or more containers for a task



To launch and terminate Docker containers



To schedule long-running applications, services, and batch jobs



To distribute task traffic across your containers

Explanation

Amazon Elastic Container Service allows you to define tasks through a declarative JSON template called a Task Definition. Within a Task Definition you can specify one or more containers required for your task, including the Docker repository and image, memory and CPU requirements, shared data volumes, and how the containers are linked to each other.

You can launch as many tasks as you want from a single Task Definition file that you can register with the service. Task Definition files also allow you to version control your application specification.

 <https://aws.amazon.com/ecs/details/>

#25

Regarding AWS Elastic Beanstalk, \_\_\_\_\_ identifies a collection of parameters and settings that define how an environment and its associated resources behave.

✗

An application

✓

An environment configuration

✗

An application Version

✗

An environment

Explanation

In AWS Elastic Beanstalk, an environment configuration identifies a collection of parameters and settings that define how an environment and its associated resources behave. When you update an environment's configuration settings, AWS Elastic Beanstalk automatically applies the changes to existing resources or deletes and deploys new resources (depending on the type of change).

 <http://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.components.html>

Covered in this lecture

What is AWS Elastic Beanstalk?

Course: Deployment Orchestration with AWS Elastic Beanstalk

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