review

review questions

Elastic Compute Cloud (EC2)
V2.01

Course title

BackSpace Academy
AWS Certified Associate

Question

Which of the following AWS services can be used to distribute traffic between one or more Amazon EC2 instances?

Answers

A. NAT gateway
B. Elastic Load Balancing
C. Amazon Athena
D. AWS PrivateLink

B

Elastic Load Balancing automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, Lambda functions, and virtual appliances.

https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/concepts.html

Question

What are the ways to reduce the cost of running Amazon EC2 instances? (Choose two.)

Answers

A. Spot Instances for stateless and flexible workloads
B. Memory optimized instances for high-compute workloads
C. On-Demand Instances for high-cost and sustained workloads
D. Reserved Instances for sustained workloads
E. Spend limits set using AWS Budgets

A D

(A) Amazon EC2 Spot Instances let you take advantage of unused EC2 capacity in the AWS cloud. (D) A Reserved Instance is a reservation of resources and capacity, for either one or three years, for a particular Availability Zone within a region.

https://aws.amazon.com/ec2/spot/?cards.sort-by=item.additionalFields.startDateTime&cards.sort-order=asc
https://aws.amazon.com/ec2/pricing/reserved-instances/

Question

Which action should you take if you are planning to launch two additional Amazon EC2 instances to increase availability?

Answers

A. Launch the instances across multiple Availability Zones in a single AWS Region.
B. Launch the instances as EC2 Reserved Instances in the same AWS Region and the same Availability Zone.
C. Launch the instances in multiple AWS Regions, but in the same Availability Zone.
D. Launch the instances as EC2 Spot Instances in the same AWS Region, but in different Availability Zones.

A

Launching across multiple Availability Zones in a single AWS Region is a good approach for availability, as if an availability zone goes down there will be other resources are available in other availability zones to continue the workload.

https://docs.aws.amazon.com/whitepapers/latest/cost-optimization-reservation-models/amazon-ec2-reserved-instances.html

Question

Which pricing option for Amazon EC2 is best suited for applications with short-term, spiky, or unpredictable workloads that cannot be interrupted?

Answers

A. Spot Instances
B. Dedicated Hosts
C. On-Demand Instances
D. Reserved Instances

C

On-Demand Instances are ideal for short-term, irregular workloads that cannot be interrupted. No upfront costs or minimum contracts apply. The instances run continuously until you stop them, and you pay for only the compute time you use.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-on-demand-instances.html

Question

Which Amazon Web Service offers persistent storage for a file system?

Answers

A. Amazon S3
B. Amazon EC2 instance store
C. Amazon Elastic Block Store (Amazon EBS)
D. Amazon ElastiCache

C

Amazon EBS delivers high-availability block-level storage volumes for Amazon Elastic Compute Cloud (EC2) instances. It stores data on a file system which is retained after the EC2 instance is shut down.

https://docs.aws.amazon.com/AmazonECS/latest/bestpracticesguide/intro.html

Question

Which AWS benefit below refers to a customer’s ability to deploy applications that scale up and down the meet variable demand?

Answers

A. Elasticity
B. Agility
C. Security
D. Scalability

A

The ability to acquire resources as you need them and release resources when you no longer need them. In the cloud, you want to do this automatically.

https://wa.aws.amazon.com/wellarchitected/2020-07-02T19-33-23/wat.concept.elasticity.en.html

Question

An Enterprise company wants to set up a highly available workload in AWS with a disaster recovery plan that will allow the company to recover in case of a regional service interruption.
Which configuration below will meet these requirements?

Answers

A. Run on two Availability Zones in one AWS Region, using the additional Availability Zones in the AWS Region for the disaster recovery site.
B. Run on two Availability Zones in one AWS Region, using another AWS Region for the disaster recovery site.
C. Run on two Availability Zones in one AWS Region, using a local AWS Region for the disaster recovery site.
D. Run across two AWS Regions, using a third AWS Region for the disaster recovery site.

B

Disaster Recovery (DR) Using AWS regions: Most organizations try to implement High Availability (HA) instead of DR to guard them against any downtime of services.

https://aws.amazon.com/blogs/startups/large-scale-disaster-recovery-using-aws-regions/

Question

A company is piloting a new customer-facing application on Amazon Elastic Compute Cloud (Amazon EC2) for one month. What would be the appropriate pricing model for it?

Answers

A. Reserved Instances
B. Spot Instances
C. On-Demand Instances
D. Dedicated Hosts

C

On-Demand Instances let you pay for compute capacity by the hour or second (minimum of 60 seconds) with no long-term commitments.

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

Question

What is a characteristic of Convertible Reserved Instances (RIs) below?

Answers

A. Users can exchange Convertible RIs for other Convertible RIs from a different instance family.
B. Users can exchange Convertible RIs for other Convertible RIs in different AWS Regions.
C. Users can sell and buy Convertible RIs on the AWS Marketplace.
D. Users can shorten the term of their Convertible RIs by merging them with other Convertible RIs.

A

Convertible RIs give you even more flexibility and offer a significant discount (typically 45% compared to On-Demand). They allow you to change the instance family and other parameters associated with a Reserved Instance at any time.

https://aws.amazon.com/blogs/aws/ec2-reserved-instance-update-convertible-ris-and-regional-benefit/

Question

A user has a stateful workload that will run on Amazon EC2 for the next 3 years.
What is the MOST cost-effective pricing model for this workload?

Answers

A. On-Demand Instances
B. Reserved Instances
C. Dedicated Instances
D. Spot Instances

B

A S3 Intelligent-Tiering is a new Amazon S3 storage class designed for customers who want to optimize storage costs automatically when data access patterns change, without performance impact or operational overhead.

https://support.cloudability.com/hc/en-us/articles/204307758-AWS-101-Reserved-Instances

Question

A user needs an Amazon EC2 instance to launch and run for 7 hours without interruptions.
What is the most suitable and cost-effective option for this task?

Answers

A. On-Demand Instance
B. Reserved Instance
C. Dedicated Host
D. Spot Instance

A

On-Demand Instances let you pay for compute capacity by the hour or second (minimum of 60 seconds) with no long-term commitments. You have full control over its lifecycle—you decide when to launch, stop, hibernate, start, reboot, or terminate it.

https://aws.amazon.com/blogs/compute/best-practices-for-handling-ec2-spot-instance-interruptions/

Question

Which pricing model below would result in maximum Amazon Elastic Compute Cloud (Amazon EC2) savings for a database server that must be online for one year?

Answers

A. Spot Instance
B. On-Demand Instance
C. Partial Upfront Reserved Instance
D. No Upfront Reserved Instance

C

Partial Upfront - A portion of the cost must be paid upfront and the remaining hours in the term are billed at a discounted hourly rate, regardless of whether the Reserved Instance is being used.

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

Question

A user wants to quickly deploy a scalable Node.js application in the AWS Cloud. Which service should be used to deploy the application?

Answers

A. AWS CloudFormation
B. AWS Elastic Beanstalk
C. Amazon EC2
D. AWS OpsWorks

B

AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.

https://aws.amazon.com/elasticbeanstalk/

Question

What are the advantages of deploying an application with Amazon EC2 instances in multiple Availability Zones? (Choose two.)

Answers

A. Preventing a single point of failure
B. Reducing the operational costs of the application
C. Allowing the application to serve cross-region users with low latency
D. Increasing the availability of the application
E. Increasing the load of the application

A D

One of Features of EC2 is Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as Regions and Availability Zones. It is also recommended approach for running enterprise applications that require high availability.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-increase-availability.html

Question

A workload on AWS will run for the foreseeable future by using a consistent number of Amazon EC2 instances. What pricing model below will minimize cost while ensuring that compute resources remain available?

Answers

A. Dedicated Hosts
B. On-Demand Instances
C. Spot Instances
D. Reserved Instances

D

Reserved Instances provide you with significant savings on your Amazon EC2 costs compared to On-Demand Instance pricing. Reserved Instances are not physical instances, but rather a billing discount applied to the use of On-Demand Instances in your account.

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

Question

Which service below allows customers to purchase unused Amazon EC2 capacity at an often discounted rate?

Answers

A. Reserved Instances
B. On-Demand Instances
C. Dedicated Instances
D. Spot Instances

D

Amazon EC2 Spot Instances let you take advantage of unused EC2 capacity in the AWS cloud. Spot Instances are available at up to a 90% discount compared to On-Demand prices.

https://aws.amazon.com/ec2/spot/

Question

An Enterprise company is running a self-managed Oracle database directly on Amazon EC2 for its steady-state database. The company wants to reduce compute costs.
Which option below should the company use to maximize savings over a 3-year term?

Answers

A. EC2 Dedicated Instances
B. EC2 Spot Instances
C. EC2 Reserved Instances
D. EC2 On-Demand Instances

C

Amazon EC2 Reserved Instances (RI) provide a significant discount (up to 72%) compared to On-Demand pricing and provide a capacity reservation when used in a specific Availability Zone.

https://aws.amazon.com/ec2/pricing/reserved-instances/

Question

An Enterprise company is expecting a short-term spike in internet traffic for its application. During the traffic increase, the application cannot be interrupted. The company also needs to minimize cost and maximize flexibility. Which Amazon EC2 instance type should the company use to meet these requirements?

Answers

A. On-Demand Instances
B. Spot Instances
C. Reserved Instances
D. Dedicated Hosts

A

On-Demand Instances let you pay for compute capacity by the hour or second (minimum of 60 seconds) with no long-term commitments. This frees you from the costs and complexities of planning, purchasing, and maintaining hardware and transforms what are commonly large fixed costs into much smaller variable costs.

https://aws.amazon.com/ec2/pricing/on-demand/

Question

How can AWS enable a company to control expenses as an application’s usage changes unpredictably?

Answers

A. AWS will refund the cost difference if a customer moves to larger servers.
B. The application can be built to scale up or down automatically as resources are needed
C. Spot instances will automatically be used if the price is lower than on-demand instances.
D. Amazon CloudWatch will automatically predict what resources are needed.

B

Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html

Question

Which service below automatically handles application health monitoring?

Answers

A. Amazon API Gateway
B. AWS Elastic Beanstalk
C. AWS Lambda
D. AWS Config

B

You can simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health monitoring.

https://aws.amazon.com/elasticbeanstalk/

Question

A user would like to use AWS Identity and Access Management (IAM), what can be attached to an Amazon EC2 instance to make service requests?

Answers

A. Group
B. Role
C. Policy
D. Access key

B

We designed IAM roles so that your applications can securely make API requests from your instances, without requiring you to manage the security credentials that the applications use. Instead of creating and distributing your AWS credentials, you can delegate permission to make API requests using IAM roles you can attach a single IAM role to multiple instances.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/iam-roles-for-amazon-ec2.html

Question

How to achieve a high availability for a web application hosted on AWS?

Answers

A. Use a Classic Load Balancer across multiple AWS Regions.
B. Use an Application Load Balancer across multiple Availability Zones in one AWS Region.
C. Set up automatic scaling and load balancing with another application instance running on premises.
D. Use the AWS Region with the highest number of Availability Zones.

B

We recommend enabling multiple Availability Zones for all load balancers. With an Application Load Balancer however, it is a requirement that you enable at least two or more Availability Zones. This configuration helps ensure that the load balancer can continue to route traffic. If one Availability Zone becomes unavailable or has no healthy targets, the load balancer can route traffic to the healthy targets in another Availability Zone.

https://docs.aws.amazon.com/elasticloadbalancing/latest/userguide/how-elastic-load-balancing-works.html#availability-zones

Question

An Enterprise company would like to host its MySQL databases on AWS and maintain full control over the operating system, database installation, and configuration. Which service below should the company use to host the databases?

Answers

A. Amazon RDS
B. Amazon EC2
C. Amazon DynamoDB
D. Amazon Aurora

B

Running a self-managed Oracle Database directly on Amazon Elastic Compute Cloud (Amazon EC2). This option gives you full control over the setup of the infrastructure and database environment. Running the database on Amazon EC2 is very similar to running the database on your own server. You have full control of the database and have operating system-level access, so you can run monitoring and management agents and use your choice of tools for data replication, backup, and restoration

https://d1.awsstatic.com/whitepapers/best-practices-for-running-oracle-database-on-aws.pdf

Question

Which service below does AWS Snowball Edge natively support?

Answers

A. AWS Server Migration Service (AWS SMS)
B. Amazon Aurora
C. AWS Trusted Advisor
D. Amazon EC2

D

An AWS Snowball Edge device, a ruggedized device that does not require built up data center space to run. You can run cloud native services like Amazon S3, Amazon EC2, Amazon EBS, AWS IoT Greengrass, and a Network File System (NFS) interface for data ingestion.

https://aws.amazon.com/blogs/storage/building-a-linux-edge-computing-solution-with-aws-snowball-edge-and-amazon-ec2/

Question

When a user wants to utilize their existing per-socket, per-core, or per-virtual machine software licenses for a Microsoft Windows server running on AWS, which Amazon EC2 instance type is required?

Answers

A. Spot Instances
B. Dedicated Instances
C. Dedicated Hosts
D. Reserved Instances

C

Dedicated Hosts allow you to use your existing per-socket, per-core, or per-VM software licenses. When you bring your own license, you are responsible for managing your own licenses. However, Amazon EC2 has features that help you maintain license compliance, such as instance affinity and targeted placement.

https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/dedicated-hosts-overview.html

Question

A solutions architect needs to maintain a fleet of Amazon EC2 instances so that any impaired instances are replaced with new ones. Which service below should the solutions architect use?

Answers

A. Amazon Elastic Container Service (Amazon ECS)
B. Amazon GuardDuty
C. AWS Shield
D. AWS Auto Scaling

D

Amazon EC2 Auto Scaling is a fully managed service designed to launch or terminate Amazon EC2 instances automatically to help ensure you have the correct number of Amazon EC2 instances available to handle the load for your application. Amazon EC2 Auto Scaling helps you maintain application availability through fleet management for EC2 instances, which detects and replaces unhealthy instances, and by scaling your Amazon EC2 capacity up or down automatically according to conditions you define

https://aws.amazon.com/ec2/autoscaling/faqs/

Question

There is an application deployed in the AWS Cloud has unpredictable usage patterns and is running workloads that cannot be interrupted. What is the MOST cost-effective Amazon EC2 pricing option for this application?

Answers

A. Dedicated Instances
B. Spot Instances
C. Reserved Instances
D. On-Demand Instances

D

On-Demand Instances let you pay for compute capacity by the hour or second (minimum of 60 seconds) with no long-term commitments. This frees you from the costs and complexities of planning, purchasing, and maintaining hardware and transforms what are commonly large fixed costs into much smaller variable costs.

https://aws.amazon.com/ec2/pricing/on-demand/

Question

Which pricing model below will interrupt a running Amazon EC2 instance if capacity becomes temporarily unavailable?

Answers

A. On-Demand Instances
B. Standard Reserved Instances
C. Spot Instances
D. Convertible Reserved Instances

C

Spot Fleets are set to maintain target capacity by launching replacement instances after Spot Instances in the fleet are terminated. You can submit a Spot Fleet as a one-time request, which does not persist after the instances have been terminated. You can include On-Demand Instance requests in a Spot Fleet request.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/spot-fleet.html

Question

A user can optimize Amazon EC2 costs by performing which of the following tasks? (Choose two.)

Answers

A. Implementing Auto Scaling groups to add and remove instances based on demand.
B. Creating a policy to restrict IAM users from creating new instances.
C. Setting a budget to limit spending on EC2 instances using AWS Budgets.
D. Purchasing Reserved Instances.
E. Adding EC2 instances to a second AWS Region that is geographically close to the end users.

A D

EC2 Auto Scaling can then help you scale your compute capacity up and down based on observed demand. Cost optimization allows you to respond quickly to changing customer needs and invest savings back into your organization, resulting in faster innovation.

Save up to 90% on EC2 costs by using Spot Instances and save up to 72% with AWS Savings Plans

https://aws.amazon.com/ec2/cost-and-capacity/

Question

Which of the following are advantages of using Amazon EC2 instances over traditional on-premises servers? (Choose two.)

Answers

A. Pay-as-you-go pricing
B. Automation
C. Self-maintenance of servers
D. Agility
E. Access to physical hosts

A D

Pay only for the resources that you actually consume, like instance-hours or data transfer.

Amazon EC2 instances that enables customers to run HPC applications requiring high levels of inter-instance communications, like computational fluid dynamics, weather modeling, and reservoir simulation, at scale on AWS.

https://aws.amazon.com/ec2/features/

Question

An Enterprise company uses Amazon EC2 infrastructure to host steady-state workloads and needs to achieve significant cost savings. Which EC2 instance pricing model below should the company select?

Answers

A. Reserved Instances
B. On-Demand Instances
C. Spot Instances
D. Dedicated Hosts

A

Reserved Instances – Standard Reserved Instances provide a discount of up to 75% compared to On-Demand Instances. Reserved Instances could be a good choice for you if you have stable and predictable traffic, or if you know you will need your instances for at least a year. As another benefit, you can apply Reserved Instances to a specific Availability Zone, enabling you to launch the instances when you need them.

https://aws.amazon.com/blogs/startups/optimizing-your-costs-for-aws-services-part-1/