

Exam Session - Knowledge Check: Storage (SAA-C03) 2 of 2

 cloudacademy.com/quiz/exam/3791877/results

#1

What is AWS DataSync?



a service that allows you to create a directional business case for AWS to gain visibility into the costs and savings associated with migration strategies



a service that automates, schedules, and tracks incremental replications of live server volumes



a Redis-compatible, durable, in-memory database that delivers ultra-fast performance



a transfer data service from on-premises to AWS or between two different AWS storage services

Explanation

AWS DataSync is a service that allows you to easily and securely transfer data from your on-premises data center to AWS storage services. It can also be used to manage data transfer between two different AWS storage services, too.

 </course/performing-data-transfers-using-aws-datasync-1700/what-is-aws-datasync/>

#2

Which of the following lists correctly names the AWS Snow family of devices, in order from smallest to largest?



Snowcone, Snowball, Snowmobile



Snowball, Snowcone, Snowmobile




Snowmobile, Snowball, Snowcone



Snowball, Snowmobile, Snowcone

Explanation

As you can see from this table, both from a physical and capacity perspective, the Snowcone is the smallest, followed by the Snowball and finally the Snowmobile.

 [/course/running-operations-large-scale-data-transfer-non-aws-environments-aws-snow-family-1741/what-is-the-snow-family/](#)
#3

Which statement about EC2 instance store volumes is incorrect?



The storage cost is included in the EC2 instance price.



Instance store volumes offer very high I/O speed.



The instance store volumes reside on the same hardware as host instance.



They are available for all instance types.

Explanation

Even though EC2 instance store volumes are part of the EC2 service itself, they are not available for all instance types. To see which instance types offer it, be sure to review the documentation closely.

 [https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/InstanceStorage.html](#)
#4

Which AWS solution allows you to centralize and automate the data resilience and restoration processes across numerous AWS services such as Amazon S3, Amazon EBS, Amazon RDS, and Amazon DynamoDB?



AWS Backup



Amazon Data Lifecycle Manager



AWS Config



AWS Resource Groups

Explanation

AWS Backup allows a company to create and enforce policies around backing up numerous data services, and centralizes management of several AWS accounts.

Data Lifecycle Manager enables you to create policies for EBS volume and EBS-backed AMI creation, retention, and deletion.

AWS Config creates policies around creating resources, their approved configuration, and what if any changes are made to existing resources.

AWS Resource Groups allows you to manage numerous related resources as a single resource.



<https://docs.aws.amazon.com/aws-backup/latest/devguide/whatisbackup.html>

#5

You have several EC2 instances deployed in multiple availability zones within a VPC. Some are placed in public subnets while others are placed in private subnets. You are deploying Amazon EFS with a standard storage class. With this resource configuration, how does AWS recommend you deploy Amazon EFS mount targets?



Deploy a mount target for each EC2 instance in an availability zone.



Deploy a mount target into each availability zone within the VPC.



Deploy one mount target for instances in public subnets and another mount target for instances in private subnets.



Deploy a single mount target for the entire VPC.

Explanation

It is possible to deploy a single mount target for the entire VPC, but this is not recommended due to added costs for EFS mount targets communicating with instances in different availability zones. The recommended approach is to deploy a mount target into each availability zone. The subnet types will not be an issue, and one mount target per EC2 instance defeats the purpose of the service's capability to communicate with a large number of instances simultaneously.



<https://docs.aws.amazon.com/efs/latest/ug/accessing-fs.html>

#6

How are costs calculated for Amazon FSx for Windows File Server?



Based on storage capacity, throughput, and backup



Based on storage capacity



Based on storage capacity and storage class




Based on storage capacity and throughput

Explanation

FSx for Windows has 3 price points: Capacity, Throughput, and Backups.

Again, much like EFS, there are no setup fees for the use of this service, however, you do pay for the amount of storage capacity that you consume. This is priced on the average storage provisioned per month and uses the metric of gigabyte-months and offers varied pricing between a single or multi-AZ deployment.

In addition to the actual storage that you use there is also a cost of for the amount of throughput that you configure for your file systems, this metric is based upon MBps-months. Again, cost variations exist between single and multi-AZ deployment. One point to bear in mind is that any data transfer costs when using multi-AZ is included in the pricing you see for the multi-AZ deployment.

 [/course/understanding-optimizing-costs-with-aws-storage-services/amazon-fsx/](#)
#7

In which of the following scenarios will data be lost from an EC2 instance store? (Choose 2 answers)



The instance stops



Disk drive failure



The instance reboots



Network failure

Explanation

An instance store provides temporary block-level storage for your instance. This storage is located on disks that are physically attached to the host computer. Instance store is ideal for temporary storage of information that changes frequently, such as buffers, caches, scratch data, and other temporary content, or for data that is replicated across a fleet of instances, such as a load-balanced pool of web servers.

Data in the instance store is lost under the following circumstances:

- The underlying disk drive fails
- The instance stops
- The instance terminates

If the instance reboots (either intentionally or unintentionally) the data persists.

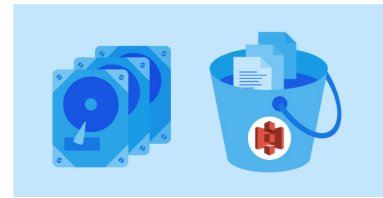
 <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/InstanceStorage.html>

Covered in this lecture
EC2 Instance Storage

4m



#8



Which EBS volume type is ideal for applications requiring I/O intensive workloads?



General Purpose SSD volume (GP2)



Provisioned IOPS SSD volume (IO1)



Cold HDD (SC1)



Throughput Optimized HDD (ST1)

Explanation

Provisioned IOPS SSD volumes deliver enhanced predictable performance for applications requiring I/O intensive workloads. They also have the ability to specify IOPS rate during the creation of a new EBS volume. And when the volume is attached to an EBS-optimized instance, EBS will deliver the IOPS defined and required within 10%, 99.9% of the time throughout the year. And the volumes range from four to sixteen terabytes in size. Per volume, the maximum IOPS possible is set to 20,000 IOPS.

/course/introduction-ebs-instance-storage/amazon-elastic-block-store-ebs-1/?context_resource=lp&context_id=954

Covered in this lecture

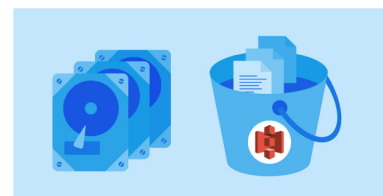
Amazon Elastic Block Store (EBS)

Course:Storage Fundamentals for AWS

10m



#9



Which EBS volume type is ideal for large workloads that are accessed infrequently?



General Purpose SSD volume (GP2)



Provisioned IOPS SSD volume (IO1)



Cold HDD (SC1)



Throughput Optimized HDD (ST1)

Explanation

The cold HDD volumes offer the lowest cost compared to all other EBS volumes types. They are suited for workloads that are large in size and accessed infrequently. Their key performance attribute is its throughput capabilities in megabytes per second. It also has the ability to burst up to 80 megabits per second per terabyte, with a maximum burst capacity for each volume set at 250 megabytes per second. It will deliver the expected throughput 99% of the time over a given year, and due to the nature of these volumes, it's not possible to use these as boot volumes for your EC2 instances.

 /course/introduction-ebs-instance-storage/amazon-elastic-block-store-ebs-1/?context_resource=lp&context_id=954

Covered in this lecture

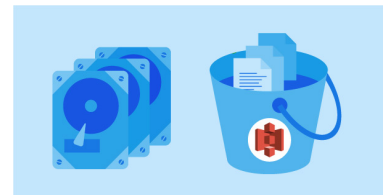
Amazon Elastic Block Store (EBS)

Course:Storage Fundamentals for AWS

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#10



In Amazon Elastic File System (EFS), which of the following performance modes is ideal for applications where thousands of Elastic Compute Cloud (EC2) instances access a file system?



General Purpose mode



Provisioned IOPS mode



Enhanced Throughput mode



Max I/O mode

Explanation

Amazon EFS offers two performance modes: General Purpose mode and Max I/O mode. The performance mode is selected when the file system is created. The Max I/O performance mode is best suited for applications where multiple EC2 instances access the file system, as it can scale to higher levels of aggregate throughput and operations per second with a tradeoff of negligibly higher latencies for file operations.

 <http://docs.aws.amazon.com/efs/latest/ug/performance.html>

Covered in this lecture

Summary

Course: Using Amazon EFS to Create Elastic File Systems for Linux-Based Workloads



7m



#11

When should you use an AWS Snowcone over a Snowball?



when you require the Snow device to be HIPAA compliant



when you need to perform online data transfer to AWS




when you need to transfer data using S3 APIs



when you require the use of usable SSD storage

Explanation

You would use the Snowcone if you needed the ability to perform online data transfer using AWS DataSync, preventing you the need to send the Snowcone back to AWS for an off-line data transfer.

 [/course/running-operations-large-scale-data-transfer-non-aws-environments-aws-snow-family-1741/which-snow-device-do-i-need/](#)

#12

You have decided to use AWS Storage Gateway, but want all data within the gateway to be retrievable to on-premise employees with minimal latency. You've decided to use block storage that backs up EBS snapshots. Which type of storage gateway would best suit you?



S3 File gateway



Volume gateway



FSx File Gateway



Tape gateway

Explanation

Both file gateways and cached volume gateways provide local caches to store frequently accessed data. Stored volume gateways keep all files locally, so all stored data can be retrieved with low latency, and so is the best option in this case.



<https://docs.aws.amazon.com/storagegateway/latest/userguide/StorageGatewayConcepts.html>

#13

Which of the following options is not one of the three elements that must be configured when performing data transfer from on-premises using AWS DataSync?



location



service




agent



task

Explanation

When performing data transfer from on-premises, then we need to configure an agent, a location, and a task.

 [/course/performing-data-transfers-using-aws-datasync-1700/aws-datasync-architecture/](#)
#14

Which type of AWS Storage gateway offers an unlimited amount of total storage per gateway?
(Choose 2 answers)



Tape gateway



File gateway



Stored volume gateway




Cached volume gateway

Explanation

File gateways and tape gateways are directly connected to Amazon S3, and Amazon Glacier by extension. As such, each gateway has unlimited total storage capacity, although other factors limit the workload these gateways are able to support.

Volume gateways, as the name implies, are stored on block storage volumes, similar to Amazon EBS. The volumes offer a limited amount of storage, even though the volumes can be stored in Amazon S3. Virtual tape for the tape gateways has a maximum size of 5 TB.

 <https://aws.amazon.com/storagegateway/faqs/>
Covered in this lecture
Using AWS Storage Gateway for on-premise data backup



9m



#15

Which feature designates the frequency, storage, replication, and tagging of backups managed by AWS Backup?



The Backup plan



The Backup vault



The Backup framework



The Backup storage class

Explanation

When using AWS Backup you will need to create backup policies or backup plans. These simply determine the exact requirements that you need for your backups and contain information such as:

- A backup schedule
- Backup window
- Lifecycle rules, such as the transition of data to cold storage after a set period
- A backup vault, which is where your backups are stored and encrypted through the use of KMS encryption keys
- Regional copies
- Tags

Once you have created your backup plans, you can assign resources to them. This allows you to create multiple backup plans each with different criteria to meet the backup needs of different types of resources. Through the use of tags, you can associate multiple resources at once using tag-based backup policies, this ensures you capture all of the required resources at once within your plan.

#16

As a member of the data management team, you are reviewing which Amazon EFS storage classes for the company's various data types. Application backup files need to be stored but only accessed in the event of a critical failure, which rarely occurs. The files are critical to system recovery, and it is important to mitigate data loss as much as possible. Which EFS storage class would be most effective for storing these application backup files?



EFS Standard



EFS Standard-Infrequent Access (IA)



EFS One Zone



EFS One Zone-Infrequent Access (IA)

Explanation

The Standard-IA storage class reduces storage costs for files that are not accessed every day. It does this without sacrificing the high availability, high durability, elasticity, and POSIX file system access that Amazon EFS provides.

We recommend Standard-IA storage if you need your full dataset to be readily accessible and want to automatically save on storage costs for files that are less frequently accessed.

Examples include keeping files accessible to satisfy audit requirements, performing historical analysis, or performing backup and recovery. Standard-IA storage is compatible with all Amazon EFS features, and is available in all AWS Regions where Amazon EFS is available.

#17

Which of the following AWS solutions, through integration with AWS Organizations, allows a company to set policies for when EBS volumes and EBS-backed Amazon Machine Images (AMIs) are created, retained, and deleted?



Amazon Data Lifecycle Manager



AWS Backup



EBS Recycle Bin



AWS Config

Explanation

Data Lifecycle Manager enables you to create policies for EBS volume and EBS-backed AMI creation, retention, and deletion.

EBS Recycle Bin allows you to restore snapshots that have been deleted accidentally.

AWS Backup allows a company to create and enforce policies around backing up EBS volumes, which deals with creating the snapshots, not managing or undoing their deletion.

AWS Config creates policies around creating resources, their approved configuration, and what if any changes are made to existing resources.



<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/snapshot-lifecycle.html>

#18

An Amazon EC2 instance store provides temporary block-level storage for your instance. Ephemeral storage is ideal for _____.



persistent data



storing critical system files



high-performance storage of user files



non-persistent data

Explanation

An Amazon EC2 Instance Store provides temporary block-level storage for your instance. An instance store is ideal for temporary storage of information that changes frequently, such as buffers, caches, scratch data, and other temporary content. Ephemeral storage is ideal for non-persistent data.

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/InstanceStorage.html>

Covered in this lecture

AWS Cloud Practitioner & Amazon Elastic Compute Cloud (EC2)

Course: Compute Fundamentals of AWS for Cloud Practitioner



16m



#19

You need a shared file system that integrates with Amazon S3, supports multiple connections simultaneously, and is ideal for compute-intensive workloads, such as high-performance computing. Which AWS service should you use?



Amazon FSx for Windows File Server



Amazon Elastic File Service (EFS)



Amazon FSx for Lustre



Amazon Elastic Block Storage (EBS)

Explanation

Amazon FSx for Lustre is a fully managed file system designed for compute-intensive workloads, for example, Machine Learning and high-performance computing. It has the ability to process massive data sets. Performance can run up to hundreds of GB per second of throughput, millions of IOPS, and sub-millisecond latencies. It has integration with Amazon S3 and supports and supports cloud-bursting workloads from on-premises over Direct Connect and VPN connections.

</course/understanding-optimizing-costs-with-aws-storage-services/amazon-fsx/>

#20

Which AWS Storage Gateway configuration allows you to use Amazon Glacier for archiving data?



Gateway Virtual Tape Library



Media Changer



File gateways



Cached volume gateways

Explanation

Gateway Virtual Tape Library (VTL) allows you to back up your data to S3 from your own corporate data center and leverage Amazon Glacier for data archiving.

Media Changer is a virtual device that manages tapes to and from the tape drive to your VTL.

File gateways allow you to securely store your files as objects within S3. Using as a type of file share which allows you to mount on map drives to an S3 bucket as if the share was held locally on your own corporate network. However, they related to localized storage rather than virtualized storage.

Cached volume gateways store data on Amazon S3 rather than your own local storage, and they do not use Amazon Glacier for data archiving.

 [/course/using-aws-storage-for-on-premise-backup/using-aws-storage-gateway-for-on-premise-data-bkup-1/](#)

#21

Which types of AWS Storage Gateway offer local caches for frequently accessed data, with infrequently accessed data stored in the cloud? (Choose 2 answers)



File gateways



Cached volume gateways



Stored volume gateways



Tape gateways

Explanation

Both file gateways and cached volume gateways provide local caches to store frequently accessed data. Stored volume gateways keep all files locally, so all stored data can be retrieved with reduced latency. Tape gateways are an archival method, and not ideal for data that needs to be readily available.



<https://docs.aws.amazon.com/storagegateway/latest/userguide/StorageGatewayConcepts.html>

Covered in this lecture

Summary

Course: Using AWS Storage for On-Premises Backup & Disaster

Recovery



12m



#22

Which of the following statements about AWS DataSync is false?



The agent is simply a virtual machine supported by VMware ESXi, KVM, or Microsoft Hyper-V hypervisors.



Every time you create a DataSync task you will need to specify the source location and the destination location, dictating where you want to move data from and to.




The task contains the locations that were created and specified for both the source and destination, in addition to the configuration and conditions of how the data transfer will take place.



Tasks copy your storage data, file system permissions, and settings.

Explanation

When performing data transfer from on-premises, then we need to configure an agent, a location, and a task. The agent will be used on the customer side, so it sits outside of AWS, and it's just a virtual machine supported by VMware ESXi, KVM, or Microsoft Hyper-V hypervisors, so it should be compatible with your existing infrastructure. The location identifies the endpoint of a DataSync task. So as a result, every time you create a DataSync task you will need to specify the source location and the destination location, dictating where you want to move data from and to. The task contains the details of the operation that you are trying to carry out and perform with DataSync, so it will contain the locations that were created and specified for both the source and destination, in addition to the configuration and conditions of how the data transfer will take place. Before I move on, I just want to highlight that the DataSync tasks will only copy your storage data; it doesn't include any file systems permissions or settings.

 [/course/performing-data-transfers-using-aws-datasync-1700/aws-datasync-architecture/](#)
#23

In testing your new EFS file system, your application's baseline workload quickly exhausts the standard EFS mebibyte per second limits. What configuration adjustments would allow EFS to provide unlimited mebibytes per second for as long as your application requires?



Change from Bursting Throughput mode to Provisioned Throughput.



Change from Provisioned Throughput mode to Bursting Throughput.



Change from General Purpose performance mode to Max I/O.




Change from Max I/O performance mode to General Purpose.

Explanation

EFS also provides two different throughput modes, and throughput is measured by the rate of mebibytes. The two modes offered are Bursting Throughput and Provisioned Throughput.

With the Bursting Throughput mode, which is the default mode, the amount of throughput scales as your file system grows. So the more you store, the more throughput is available to you. The default throughput available is capable of bursting to 100 mebibytes per second. However, with the standard storage class, this can burst to 100 mebibytes per second per tebibyte of storage used within the file system.

If you are finding that you're running out of burst credits too often, you might need to consider using the Provisioned Throughput mode. Provisioned Throughput allows you to burst above your allocated allowance, which is based on your file system size. So if your file system was relatively small but the use case for your file system required a high throughput rate, then the default bursting throughput options may not be able to process your request quickly enough.

 [/course/storage-saa-co3/storage-classes-and-performance-options/](#)

#24

The AWS Snow family consists of a range of _____ that are all designed to enable you to transfer data into AWS from the edge or beyond the cloud.



physical hardware devices



cloud compute instances




virtual servers



managed relational databases

Explanation

The Snow family consists of a range of physical hardware devices that are all designed to enable you to transfer data into AWS from the edge or beyond the cloud, such as your data center, but they can also be used to transfer data out of AWS too, for example, from Amazon S3 back to your data center.

 [/course/running-operations-large-scale-data-transfer-non-aws-environments-aws-snow-family-1741/what-is-the-snow-family/](#)

#25

Which of the following statements regarding data deduplication in Amazon FSx is correct?



Data deduplication will be obvious to your connected users/clients.



Data deduplication significantly affects the performance of the file system.



Data deduplication occurs automatically.



Data deduplication runs as a frontend, manual process.

Explanation

This deduplication can run as a background process, which will not significantly affect the performance of the file system. It also is a transparent part of the file system and will not be obvious to your connected users or clients. Data deduplication is automatic and will continue to scan your file systems in the background, looking for any extra copies of data.



[/course/running-highly-performant-file-systems-amazon-fsx/amazon-fsx/](#)

#26

How does AWS Backup actually back up the data for the different AWS services it supports?



It uses each service's specific backup method.



It uses file systems to back up all services.



It uses tables to back up all services.



It uses snapshots to back up all services.

Explanation

AWS Backup uses backup features from existing services, so for example, if you were to manage your EBS backups, AWS Backup would manage these through the EBS Snapshot feature as a way of performing the backup.

 [/course/storage-saa-co3/amazon-backup/](#)