AWS Module 9 - Migration & Innovation

Six core perspectives of the Cloud Adoption Framework

- The **Business Perspective** ensures that IT aligns with business needs and that IT investments link to key business results.
- Use the People Perspective to evaluate organizational structures and roles, new skill and process requirements, and identify gaps. This helps prioritize training, staffing, and organizational changes.
- Use the Governance Perspective to understand how to update the staff skills and processes necessary to ensure business governance in the cloud. Manage and measure cloud investments to evaluate business outcomes.
- Use a variety of architectural models to understand and communicate the structure of IT systems and their relationships. Describe the architecture of the target state environment in detail
- Use the AWS CAF to structure the selection and implementation of security controls that meet the organization's needs.
- The **Operations Perspective** helps you to enable, run, use, operate, and recover IT workloads to the level agreed upon with your business stakeholders.

Six strategies for migration

1. **Rehosting** also known as "lift-and-shift" involves moving applications without changes.
   In the scenario of a large legacy migration, in which the company is looking to implement its migration and scale quickly to meet a business case, the majority of applications are rehosted.
2. **Replatforming**, also known as "lift, tinker, and shift," involves making a few cloud optimizations to realize a tangible benefit. Optimization is achieved without changing the core architecture of the application.
3. **Refactoring** (also known as **re-architecting**) involves reimagining how an application is architected and developed by using cloud-native features. Refactoring is driven by a strong business need to add features, scale, or performance that would otherwise be difficult to achieve in the application's existing environment.
4. **Repurchasing** involves moving from a traditional license to a software-as-a-service model. For example, a business might choose to implement the repurchasing strategy by migrating from a customer relationship management (CRM) system to Salesforce.com.
5. **Retaining** consists of keeping applications that are critical for the business in the source environment. This might include applications that require major refactoring before they can be migrated, or, work that can be postponed until a later time.
6. **Retiring** is the process of removing applications that are no longer needed.

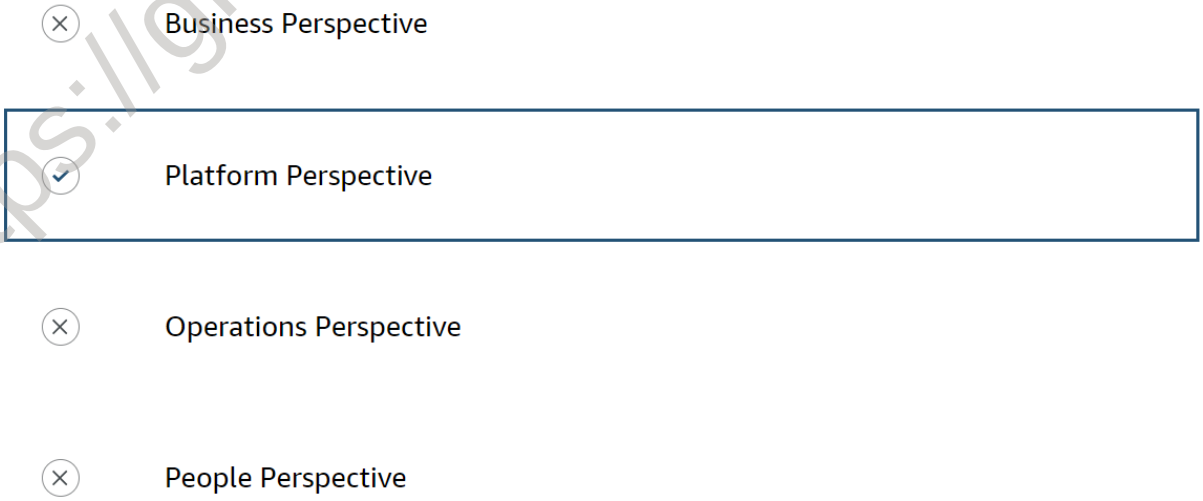
AWS Snow Family members

- It is a collection of physical devices that help to physically transport up to exabytes of data into and out of AWS.

- AWS Snow Family is composed of **AWS Snowcone** , **AWS Snowball**, and **AWS Snowmobile**.

1. **AWS Snowcone** is a small, rugged, and secure edge computing and data transfer device.
2. **Snowball Edge Storage Optimized** devices are well suited for large-scale data migrations and recurring transfer workflows, in addition to local computing with higher capacity needs.
   - Storage: 80 TB of hard disk drive (HDD) capacity for block volumes and Amazon S3 compatible object storage, and 1 TB of SATA solid state drive (SSD) for block volumes.
   - Compute: 40 vCPUs, and 80 GiB of memory to support Amazon EC2 sbe1 instances (equivalent to C5).
     Snowball Edge Compute Optimized provides powerful computing resources for use cases such as machine learning, full motion video analysis, analytics, and local computing stacks.
   - Storage: 80-TB usable HDD capacity for Amazon S3 compatible object storage or Amazon EBS compatible block volumes and 28 TB of usable NVMe SSD capacity for Amazon EBS compatible block volumes.
   - Compute: 104 vCPUs, 416 GiB of memory, and an optional NVIDIA Tesla V100 GPU. Devices run Amazon EC2 sbe-c and sbe-g instances, which are equivalent to C5, M5a, G3, and P3 instances.
3. **AWS Snowmobile** is an exabyte-scale data transfer service used to move large amounts of data to AWS. You can transfer up to 100 petabytes of data per Snowmobile, a 45-foot long ruggedized shipping container, pulled by a semi trailer truck.It features 2 CPUs, 4 GB of memory, and up to 14 TB of usable storage.

Which Perspective of the AWS Cloud Adoption Framework helps you design, implement, and optimize your AWS infrastructure based on your business goals and perspectives?



The Platform Perspective of the AWS Cloud Adoption Framework also includes principles for implementing new solutions and migrating on-premises workloads to the cloud.

The other response options are incorrect because:

- The Business Perspective helps you to move from a model that separates business and IT strategies into a business model that integrates IT strategy.
- The Operations Perspective focuses on operating and recovering IT workloads to meet the requirements of your business stakeholders.
- The People Perspective helps Human Resources (HR) employees prepare their teams for cloud adoption by updating organizational processes and staff skills to include cloud-based competencies.

Which migration strategy involves moving to a different product?

- ✗ Refactoring
- ✗ Retiring
- ✗ Replatforming
- ✓ Repurchasing

Correct

The correct response option is **Repurchasing**.

Repurchasing involves replacing an existing application with a cloud-based version, such as software found in AWS Marketplace.

The other response options are incorrect because:

- Refactoring involves changing how an application is architected and developed, typically by using cloud-native features.
- Retiring involves removing an application that is no longer used or that can be turned off.
- Replatforming involves selectively optimizing aspects of an application to achieve benefits in the cloud without changing the core architecture of the application. It is also known as "lift, tinker, and shift."

What is the storage capacity of Snowball Edge Storage Optimized?

- ✗ 40 TB
- ✗ 60 TB
- ✓ 80 TB
- ✗ 100 TB

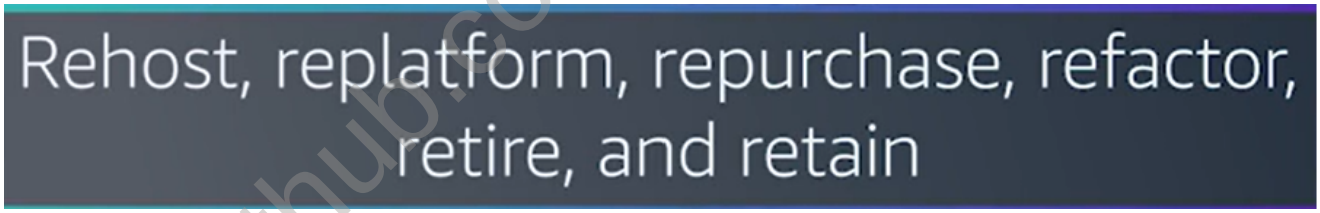
Correct

The correct response option is **Amazon SageMaker**.

With Amazon SageMaker, you can quickly and easily begin working on machine learning projects. You do not need to follow the traditional process of manually bringing together separate tools and workflows.

The other response options are incorrect because:

- Amazon Textract is a machine learning service that automatically extracts text and data from scanned documents.
- Amazon Lex is a service that enables you to build conversational interfaces using voice and text.
- AWS DeepRacer is an autonomous 1/18 scale race car that you can use to test reinforcement learning models.



Which Perspective of the AWS Cloud Adoption Framework helps you structure the selection and implementation of permissions?

- ✗ Governance Perspective
- ✓ Security Perspective
- ✗ Operations Perspective
- ✗ Business Perspective

Correct

The correct response option is **Security Perspective**.

The Security Perspective of the AWS Cloud Adoption Framework also helps you to identify areas on non-compliance and plan ongoing security initiatives.

The other response options are incorrect because:

- The Governance Perspective helps you to identify and implement best practices for IT governance and support business processes with technology.
- The Operations Perspective focuses on operating and recovering IT workloads to meet the requirements of your business stakeholders.
- The Business Perspective helps you to move from a model that separates business and IT strategies into a business model that integrates IT strategy.

Which strategies are included in the six strategies for application migration? (Select TWO.)

- [ ] Revisiting
- [x] Retaining
- [ ] Remembering
- [ ] Redeveloping
- [x] Rehosting

What is the storage capacity of AWS Snowmobile?

- ✗ 40 PB
- ✗ 60 PB
- ✗ 80 PB
- ✓ 100 PB

✗

Incorrect

The correct response option is **100 PB**.

AWS Snowmobile is a service that is used for transferring up to 100 PB of data to AWS. Each Snowmobile is a 45-foot long shipping container that is pulled by a semi trailer truck.

Which statement best describes Amazon Lex?

- [x] A service that enables you to build conversational interfaces using voice and text
- [ ] A machine learning service that automatically extracts text and data from scanned documents
- [ ] A document database service that supports MongoDB workloads
- [ ] A service that enables you to identify potentially fraudulent online activities

Correct

The correct response option is **Reliability**.

The other response options are incorrect because:

- The Operational Excellence pillar includes the ability to run workloads effectively, gain insights into their operations, and continuously improve supporting processes to deliver business value.
- The Performance Efficiency pillar focuses on using computing resources efficiently to meet system requirements, and to maintain that efficiency as demand changes and technologies evolve.
- The Security pillar includes protecting data, systems, and assets, and using cloud technologies to improve the security of your workloads.

Which pillar of the AWS Well-Architected Framework focuses on the ability of a workload to consistently and correctly perform its intended functions?

- ✗ Operational Excellence
- ✗ Performance Efficiency
- ✗ Security
- ✓ Reliability

Which process is an example of benefiting from massive economies of scale?

- ✗ Deploying an application in multiple Regions around the world
- ✓ Receiving lower pay-as-you-go prices as the result of AWS customers' aggregated usage of services
- ✗ Paying for compute time as you use it instead of investing upfront costs in data centers
- ✗ Scaling your infrastructure capacity in and out to meet demand

The correct response option is: **Receiving lower pay-as-you-go prices as the result of AWS customers' aggregated usage of services**.

Because usage from hundreds of thousands of customers is aggregated in the cloud, providers such as AWS can achieve higher economies of scale. The economies of scale translate into lower pay-as-you-go prices.

The other response options are incorrect because:

- Deploying an application in multiple Regions around the world: This process is an example of *Go global in minutes*.
- Paying for compute time as you use it instead of investing upfront costs in data centers: This process is an example of *Trade upfront expense for variable expense*.
- Scaling your infrastructure capacity in and out to meet demand: This process is an example of *Stop guessing capacity*.

Which pillar of the AWS Well-Architected Framework includes the ability to run workloads effectively and gain insights into their operations?

- ✗ Cost Optimization
- ✓ Operational Excellence
- ✗ Performance Efficiency
- ✗ Reliability

✗

Incorrect

The correct response option is **Operational Excellence**.

The other response options are incorrect because:

- The Cost Optimization pillar focuses on the ability to run systems to deliver business value at the lowest price point.
- The Performance Efficiency pillar focuses on using computing resources efficiently to meet system requirements and to maintain that efficiency as demand changes and technologies evolve.
- The Reliability pillar focuses on the ability of a workload to consistently and correctly perform its intended functions.

What are the benefits of cloud computing? (Select TWO.)

- [x] Increase speed and agility.
- [ ] Benefit from smaller economies of scale.
- [ ] Trade variable expense for upfront expense.
- [ ] Maintain infrastructure capacity.
- [x] Stop spending money running and maintaining data centers.