# Module 9

## Migration strategies

There are 6 most common migration strategies:

1. **Rehosting**

   It is also known as “lift-and-shift” involves moving applications without changes.

   > 💡 In this 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. **Replat-forming**

   It is also known as “lift, tinker and shift” involves making a few cloud optimization to realize a tangible benefit. Optimization is achieved without changing the core architecture of the application.

3. **Refactoring/re-architecting**

   It involves reimaging how an application is architected and developed by using cloud-native features.

4. **Repurchasing**

   It involves moving from a traditional license to a software-as-a-service model

5. **Retaining**

   It consist 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**

   It is the process of removing applications that are no longer needed.

AWS DataSync is a service that enables customers to automate the movement of data between on-premises storage systems and AWS storage services. DataSync can be used to transfer data quickly and securely, with built-in encryption and data validation.

AWS Application Discovery Service is a service that helps customers plan their migration to AWS by identifying applications and workloads running on-premises, and assessing their dependencies and performance characteristics. This service can help customers make informed decisions about which workloads to migrate and how to prioritize their migrations.

AWS Database Migration Service is a service that helps customers migrate databases to AWS, with minimal downtime and disruption. This service supports a range of database platforms, including MySQL, Oracle, and Microsoft SQL Server, and can be used to migrate databases to Amazon RDS, Amazon Aurora, or self-managed databases running on Amazon EC2.

## AWS Snow Family members

The AWS snow family is a collection of physical devices that help to physically transport up to exabytes of data into and out of AWS.

AWS Snowball is a service that enables customers to securely transfer large amounts of data into and out of AWS. Snowball devices are rugged, secure, and portable, and can be used to transfer data between on-premises data centers and AWS.

AWS Snow family is composed of:

1. AWS Snowcone
   a. It is a small, rugged, and secure edge computing and data transfer device.
   b. It features 2 CPUs, 4GB of memory, and 8 TB of usable storage.
2. AWS snowball - Two types

    a. **Snowball Edge Storage optimized** - Device are well suited for large-scale data migrations and recurring transfer workflows, in addition to local computing with higher capacity needs.
    b. **Snowball Edge Compute Optimized** - Provides powerful computing resources for use cases such as machine learning, full motion video analysis, analytics, and local computing stacks.
3. AWS snowmobile
    a. It is a exabyte-scale data transfer service used to move large amount of data to AWS.

# AWS Innovation:

- AWS Innovation is a set of tools and services designed to help customers innovate and build new applications and services on AWS.
- AWS Innovation includes a range of services, such as AWS Lambda, Amazon SageMaker, and Amazon API Gateway, among others, that provide powerful capabilities for building cloud-native applications and services.
- AWS Innovation also provides a variety of development frameworks and best practices, such as serverless architectures and DevOps methodologies, to help customers build and deploy applications more quickly and efficiently.
- AWS Innovation provides a flexible and scalable platform for experimentation and innovation, allowing customers to quickly test and iterate on new ideas and services.
- AWS Innovation also offers a range of partner solutions and accelerators to help customers accelerate their innovation, as well as a range of training and certification programs to help customers build their own innovation capabilities.
- AWS Lambda is a serverless compute service that enables customers to run code in response to events, without having to provision or manage servers. Lambda can be used to build event-driven applications and services that scale automatically in response to changes in demand.
- Amazon SageMaker is a managed service that enables customers to build, train, and deploy machine learning models at scale. SageMaker provides a range of tools and frameworks for building and deploying machine learning models, and can be used to build applications that leverage artificial intelligence and machine learning.
- Amazon API Gateway is a managed service that enables customers to create, publish, and manage APIs for their applications and services. API Gateway can be used to build APIs that connect to AWS services and third-party services, and can be used to build modern, cloud-native applications.
- AWS Step Functions is a service that enables customers to build serverless workflows that orchestrate multiple AWS services and functions. Step Functions can be used to build complex workflows that automate business processes and integrate multiple services, without having to write custom code.