# AWS Module 10 - The Cloud Journey

# The AWS Well-Architected Framework

The Well-Architected Framework is based on six pillars:

1. Operational excellence:
   - **Operational excellence** is the ability to run and monitor systems to deliver business value and to continually improve supporting processes and procedures.
   - Design principles for operational excellence in the cloud include performing operations as code, annotating documentation, anticipating failure, and frequently making small, reversible changes.
2. Security:
   - The **Security** pillar is the ability to protect information, systems, and assets while delivering business value through risk assessments and mitigation strategies.
   - When considering the security of your architecture, apply these best practices:
     - Automate security best practices when possible.
     - Apply security at all layers.
     - Protect data in transit and at rest.
3. **Reliability**:
   - It is the ability of a system to do the following:
   - Recover from infrastructure or service disruptions
   - Dynamically acquire computing resources to meet demand
   - Mitigate disruptions such as misconfigurations or transient network issues
4. **Performance efficiency** :
   - It is the ability to use computing resources efficiently to meet system requirements and to maintain that efficiency as demand changes and technologies evolve.
   - Evaluating the performance efficiency of your architecture includes experimenting more often, using serverless architectures, and designing systems to be able to go global in minutes.
5. **Cost optimization**:
   - It is the ability to run systems to deliver business value at the lowest price point.
   - Cost optimization includes adopting a consumption model, analyzing and attributing expenditure, and using managed services to reduce the cost of ownership.
6. Sustainability:
   - It is the ability to continually improve sustainability impacts by reducing energy consumption and increasing efficiency across all components of a workload by maximizing the benefits from the provisioned resources and minimizing the total resources required.

**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.