⇒ Go global in minutes

⇒ Connecting with client around the world happens quickly with very low latency.

Amazon Elastic Compute Cloud (Amazon EC2)

Amazon Elastic Compute Cloud (Amazon EC2) provides secure, resizable compute capacity in the cloud as Amazon EC2 instances.

By comparison, with an Amazon EC2 instance you can use a virtual server to run applications in the AWS cloud.

⇒ You can provision and launch an Amazon EC2 instance within minutes.

⇒ You can stop using it when you have finished running a workload.

⇒ You pay only for the compute time you use when an instance is running, not when it is stopped or terminated.

⇒ You can save costs by paying only for server capacity that you need or want.

Amazon EC2 Instance types

⇒ Amazon EC2 instance types are optimized different tasks.

⇒ When selecting an instance type, consider the specific needs of your workloads and applications.

This might include requirements for
- ⇒ compute,
- ⇒ memory, or
- ⇒ storage capabilities.

General purpose instances

⇒ General purpose instance provide a balance of compute, memory, and networking resources.

⇒ You can use them for a variety of workloads, such as:
1. application servers,
2. gaming servers.
3. backend servers for enterprise applications.
4. small and medium databases.

Compute optimized instances

⇒ Compute optimized instances are ideal for compute-bound applications that benefit from high-performance processors.

⇒ Like general purpose instances, you use compute optimized instances for workloads such as web, application, and gaming servers.

You can also use compute optimized instances for batch processing workloads that require processing many transactions in a single group.

Memory optimized instances

⇒ Memory optimized instances are designed to deliver fast performance for workloads that process large datasets in memory.

⇒ In computing, memory is a temporary storage area.

⇒ It holds all the data and instructions that a central processing unit (CPU) needs to be able to complete actions.

⇒ Before a computer program or application is ~~data~~ able to run, it is loaded from storage into memory.

⇒ This preloading process gives the CPU direct access to the computer program.

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AWS Well-Architected Framework

Helps to understand how to design and operate reliable, secure, efficient, and cost-effective systems in AWS cloud.

It provides a way to consistently measure your architecture against best practices and design principles.

Five pillars

=> Operational excellence
=> Security
=> Reliability
=> Performance
=> Cost

Operational excellence

It is the ability to run and monitor system to deliver business value and to continually improve supporting processes and procedures.

Security

It is the ability to protect information, systems, and assets while delivering business value through risk assessments and mitigation strategies.

=> Automate security best practices,
=> Apply security at all layers,
=> Protect data in transit and rest

Reliability

=> Recover from infrastructure or service disruptions
=> Dynamically acquire computing resources to meet demand
=> Mitigate disruptions such as misconfigurations or transient network issues.

It includes testing recovery procedures,
=> scaling horizontally to increase aggregate system availability
Automatically recovering from failure.

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.

Cost Optimization

⇒ Ability to run systems to deliver business value at the lowest price point.

Advantages of Cloud computing

⇒ Trade upfront expense for variable expense.

⇒ Benefit from massive economies of scale.

⇒ Stop guessing capacity.

⇒ Increasing speed and agility.

⇒ Stop spending money running and maintaining data centers.

⇒ Go global in minutes (AWS cloud global footprint)