# AWS

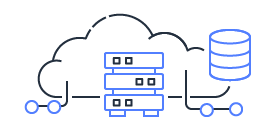
Amazon Web Service is a cloud computing service.

Cloud computing is the on-demand delivery of IT resources over the Internet with pay-as-you-go pricing. Instead of buying, owning, and maintaining physical data centers and servers, you can access technology services, such as computing power, storage, and databases, on an as-needed basis from a cloud provider like Amazon Web Services (AWS) The three cloud computing deployment models are

* Cloud-based,
* On-premises,
* Hybrid.

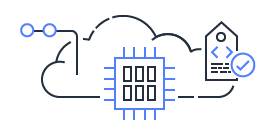
### **Cloud Computing Models**

There are three main models for cloud computing. Each model represents a different part of the cloud computing stack.



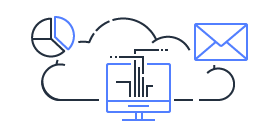
### **Infrastructure as a Service (IaaS)**

Infrastructure as a Service, sometimes abbreviated as IaaS, contains the basic building blocks for cloud IT and typically provide access to networking features, computers (virtual or on dedicated hardware), and data storage space. Infrastructure as a Service provides you with the highest level of flexibility and management control over your IT resources and is most similar to existing IT resources that many IT departments and developers are familiar with today.



### **Platform as a Service (PaaS)**

Platforms as a service remove the need for organizations to manage the underlying infrastructure (usually hardware and operating systems) and allow you to focus on the deployment and management of your applications. This helps you be more efficient as you don’t need to worry about resource procurement, capacity planning, software maintenance, patching, or any of the other undifferentiated heavy lifting involved in running your application.



### **Software as a Service (SaaS)**

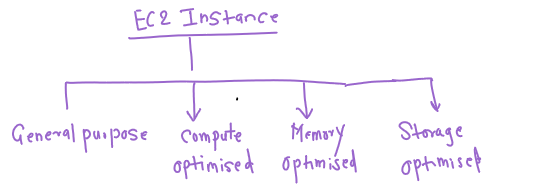
Software as a Service provides you with a completed product that is run and managed by the service provider. In most cases, people referring to Software as a Service are referring to end-user applications. With a SaaS offering you do not have to think about how the service is maintained or how the underlying infrastructure is managed; you only need to think about how you will use that particular piece of software. A common example of a SaaS application is web-based email where you can send and receive email without having to manage feature additions to the email product or maintaining the servers and operating systems that the email program is running on.

# Amazon Elastic Compute Cloud (Amazon EC2)

[Amazon Elastic Compute Cloud (Amazon EC2)](https://aws.amazon.com/ec2/) provides secure, resizable compute capacity in the cloud as Amazon EC2 instances.

It is a basic virtual machine with customizable hardware and an OS.

[Amazon EC2 instance types](https://aws.amazon.com/ec2/instance-types/) are optimized for 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

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**General purpose instances** provide a balance of compute, memory, and networking resources. You can use them for a variety of workloads, such as:

* application servers
* gaming servers
* backend servers for enterprise applications
* 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 can use compute optimized instances for workloads such as web, application, and gaming servers.

the difference is compute optimized applications are ideal for high-performance web servers, compute-intensive applications servers, and dedicated gaming servers.

## 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 able to run, it is loaded from storage into memory. This preloading process gives the CPU direct access to the computer program.

## Storage optimized instances

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**Storage optimized instances** are designed for workloads that require high, sequential read and write access to large datasets on local storage. Examples of workloads suitable for storage optimized instances include distributed file systems, data warehousing applications, and high-frequency online transaction processing (OLTP) systems.