

# EC2 Instance Types Basics

## EC2 Instance Types - Overview

- You can use different types of EC2 instances that are optimised for different use cases (<https://aws.amazon.com/ec2/instance-types/>)

General Purpose
Compute Optimized
Memory Optimized
Accelerated Computing
Storage Optimized
Instance Features
Measuring Instance Performance

we have seven different type of EC2 instances .

you can check out this website

<https://aws.amazon.com/ec2/instance-type/>

- AWS has the following naming convention:

m5.2xlarge

- m: instance class
- 5: generation (AWS improves them over time)
- 2xlarge: size within the instance class

### 1. General purpose instance type :-

Great for a diversity of workloads such as web servers or code repositories

Balance between :

- . Compute
- . Memory
- . Networking

- In the course, we will be using the t2.micro which is a General Purpose EC2 instance

#### General Purpose

General purpose instances provide a balance of compute, memory and networking resources, and can be used for a variety of diverse workloads. These instances are ideal for applications that use these resources in equal proportions such as web servers and code repositories.



## 2. Compute optimized

- Great for compute-intensive tasks that require high performance processors:
  - Batch processing workloads
  - Media transcoding
  - High performance web servers
  - High performance computing (HPC)
  - Scientific modeling & machine learning
  - Dedicated gaming servers

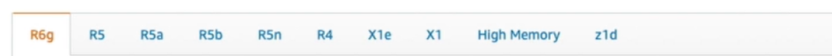
## 3. Memory optimized

### EC2 Instance Types – Memory Optimized

- Fast performance for workloads that process large data sets in memory
- Use cases:
  - High performance, relational/non-relational databases
  - Distributed web scale cache stores
  - In-memory databases optimized for BI (business intelligence)
  - Applications performing real-time processing of big unstructured data

#### Memory Optimized

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



R stands for RAM

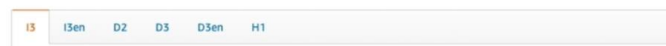
## 4. Storage optimized

# EC2 Instance Types – Storage Optimized

- Great for storage-intensive tasks that require high, sequential read and write access to large data sets on local storage
- Use cases:
  - High frequency online transaction processing (OLTP) systems
  - Relational & NoSQL databases
  - Cache for in-memory databases (for example, Redis)
  - Data warehousing applications
  - Distributed file systems

## Storage Optimized

Storage optimized instances are designed for workloads that require high, sequential read and write access to very large data sets on local storage. They are optimized to deliver tens of thousands of low-latency, random I/O operations per second (IOPS) to applications.



# EC2 Instance Types: example

Instance	vCPU	Mem (GiB)	Storage	Network Performance	EBS Bandwidth (Mbps)
t2.micro	1	1	EBS-Only	Low to Moderate	
t2.xlarge	4	16	EBS-Only	Moderate	
c5d.4xlarge	16	32	1 x 400 NVMe SSD	Up to 10 Gbps	4,750
r5.16xlarge	64	512	EBS Only	20 Gbps	13,600
m5.8xlarge	32	128	EBS Only	10 Gbps	6,800