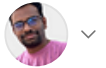




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Mar 27 · 4 min read · [Listen](#)



Save



🔑 **“From Zero to Cloud Hero:”**

Day 5 of the 100-Day Journey to Mastering Cloud Computing.

👉 **Amazon EC2** 👉



**Amazon EC2 know and create
an EC2 instance to host a
simple website : DAY 5**



[Community](#)

[in @manitechy](#)
[@gefkkd](#)

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EC2 Basics:-



 EC2 is one of the most popular AWS offerings.

 EC2 = Elastic Compute Cloud = Infrastructure as a Service

*It mainly consists of **the** capability of :-*

👉 Renting virtual machines (EC2).

👉 Storing data on virtual drives (EBS).

👉 Distributing load across machines (ELB).

👉 Scaling the services using an auto-scaling group (ASG).

👉 Knowing EC2 is fundamental to understanding how the Cloud world.

EC2 sizing & configuration options :-

👉 ***Operating System (OS): Linux, Windows, or Mac OS***

👉 *How much compute power & cores (CPU)*

👉 *How much random-access memory (RAM)*

EC2 sizing & configuration options :

Operating System (OS): Linux, Windows, or Mac OS

👉 How much compute power & cores (CPU)

👉 How much random-access memory (RAM)

👉 How much storage space: Network-attached (EBS & EFS) and

Hardware(EC2 Instance Store)

👉 Network card: speed of the card, Public IP address

👉 Firewall rules: security group

👉 Bootstrap script (configure at first launch): EC2 User Data

Create an EC2 Instance with EC2 User Data to have a Website Hands-On :

🔨 We'll be launching our first virtual server using the AWS Console

🔨 We'll get a first high-level approach to the various parameters

🔨 We'll see that our web server is launched using EC2 user data

🔨 We'll learn how to start/stop/terminate our instance.

Goto EC2 Dashboard: ➡ EC2 ➡ Instances ➡ Launch an instance.

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

My_First_Web_Server

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

🔍 Search our full catalog including 1000s of application and OS images

Recents

Quick Start



🔍
[Browse more AMIs](#)
Including AMIs from
AWS, Marketplace and
the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-00c39f71452c08778 (64-bit (x86), uefi-preferred) / ami-01d9e06b75f9d69c4 (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 AMI 2023.0.20230322.0 x86_64 HVM kernel-6.1

Architecture

64-bit (x86)

Boot mode

uefi-preferred

AMI ID

ami-00c39f71452c08778

Verified provider

Create key New pair I Created with the first web Server

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI
ami-00c39f71452c08778 (64-bit (x86), uefi-preferred) / ami-01d9e06b75f9d69c4 (64-bit (Arm), uefi)
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Architecture

Boot mode

AMI ID

64-bit (x86)

uefi-preferred

ami-00c39f71452c08778

Verified provider

▼ Instance type [Info](#)

Instance type

t2.micro
Family: t2 1 vCPU 1 GiB Memory
On-Demand Windows pricing: 0.0162 USD per Hour
On-Demand SUSE pricing: 0.0116 USD per Hour
On-Demand RHEL pricing: 0.0716 USD per Hour
On-Demand Linux pricing: 0.0116 USD per Hour

Free tier eligible

Compare instance types

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

First Web Server

Create new key pair

click advanced options:-

▼ Network settings Info

Edit

Network Info

vpc-0f02beb86dfa4b1c1 | TESTLAB1

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called 'launch-wizard-6' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere
0.0.0.0/0

☒ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

×

▼ Configure storage Info

Advanced

1x 8 GIB gp3

Root volume (Not encrypted)

ℹ Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

×

Add new volume

Advanced details 🖱 User data — optional put the bash script and click launch Instance.

Repo: <https://github.com/gefkkd/From-Zero-to-Cloud-Hero-A-100-Day-Journey-to-Mastering-Cloud-Computing.git>

```
#!/bin/bash
# Use this for your user data (script from top to bottom)
# install httpd (Linux 2 version)
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1 style='color:blue;font-size:30px;'>Hello World from $(hostname -f)</h1>" > /var/www/html/index.html
```

User data - optional [Info](#)
Enter user data in the field.

```
#!/bin/bash
# Use this for your user data (script from top to bottom)
# install httpd (Linux 2 version)
yum update -y
yum install -y httpd
systemctl start httpd
systemctl enable httpd
echo "<h1 style='color:blue;font-size:30px;'>Hello World from $(hostname -f)
</h1>" > /var/www/html/index.html
```

☐ User data has already been base64 encoded

t2.micro

[Firewall \(security group\)](#)

New security group

[Storage \(volumes\)](#)

1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

EC2 > [Instances](#) > Launch an instance



Success

Successfully initiated launch of instance (i-06c2f5c5615feb410)

► [Launch log](#)

Goto EC2 Dashboard: [EC2](#) [Instances](#) :-

EC2 > Instances > i-06c2f5c5615feb410

Instance summary for i-06c2f5c5615feb410 (My_First_Web_Server) info

Updated less than a minute ago

Connect Instance state Actions

Instance ID i-06c2f5c5615feb410 (My_First_Web_Server)	Public IPv4 address 44.213.101.179 open address	Private IPv4 addresses 172.31.8.65
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-44-213-101-179.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-8-63.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-8-63.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address 44.213.101.179 [Public IP]	VPC ID vpc-0f02beb86dfa4b1c1 (TESTLAB1)	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-0e73d1cbe12e218a6	

copy the public lp and put any web browser :

← → ↻ 🏠 ⚠ Not secure | 44.213.101.179

📁 Azuru 📁 AWS 📁 CIG 📁 Linux 📁 Chaos Engg 📁 Favorite 📁 NT 📁 GIT 📁 LR 📁 D

Hello Cloudnoud Community from ip-172-31-8-63.ec2.internal

If stop the instance web site not accessble and continue loading the page

My_First_... i-06c2f5c5615feb410 Stopping t2.micro - No alarms + us-east-1d ec2-44-213-101-179.co... 44.213.101.179 -

Instance: i-06c2f5c5615feb410 (My_First_Web_Server)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary info

Instance ID i-06c2f5c5615feb410 (My_First_Web_Server)	Public IPv4 address 44.213.101.179 open address	Private IPv4 addresses 172.31.8.63
IPv6 address -	Instance state Stopping	Public IPv4 DNS ec2-44-213-101-179.compute-1.amazonaws.com open address
Hostname type	Private IP DNS name (IPv4 only)	



This site can't be reached

44.213.101.179 took too long to respond.

Try:

- Checking the connection
- [Checking the proxy and the firewall](#)
- [Running Windows Network Diagnostics](#)

ERR_CONNECTION_TIMED_OUT

Again restarted Instance the EC2 🖱️ I instances copy the public ip and put any web browser :

The screenshot shows the AWS Management Console interface for an EC2 instance named 'My_First_Web_Server'. The instance ID is i-06c2f5c5615feb410. The public IPv4 address is 34.201.2.25, and the instance state is 'Running'. The private IPv4 address is 172.31.8.63. Below the console, a browser window is shown with the address bar displaying 'Not secure | 34.201.2.25'. The browser tabs include Azuru, AWS, CIG, Linux, Chaos Engg, Favorite, NT, GIT, LR, and D.

Instance ID	Public IPv4 address	Private IPv4 addresses
i-06c2f5c5615feb410 (My_First_Web_Server)	34.201.2.25 open address	172.31.8.63

Instance state: **Running**

Public IPv4 DNS: [ec2-34-201-2-25.compute-1.amazonaws.com | open address](#)

Hello Cloudnload Community from ip-172-31-8-63.ec2.internal

👤 Successfully create an EC2 instance with EC2 user data to host a simple website.

EC2 Instance Types — Overview:-

You can use different types of EC2 instances that are optimized for

www.linkedin.com/in/manitechy

different use cases (<https://aws.amazon.com/ec2/instance-types/>)

AWS has the following naming convention: m5.2xlarge

👉m: instance class

👉5: generation (AWS improves them over time)

👉2xlarge: size within the instance class.

EC2 Instance Types — General Purpose

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

The balance between Compute Memory Networking

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

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

M7g Mac M6g M6i M6in M6a M5 M5n M5zn M5a M4 A1 T4g

T3 T3a **T2**

[Amazon EC2 T2 instances](#) are Burstable Performance Instances that provide a baseline level of CPU performance with the ability to burst above the baseline.

T2 Unlimited instances can sustain high CPU performance for as long as a workload needs it. For most general-purpose workloads, T2 Unlimited instances will provide ample performance without any additional charges. If the instance needs to run at higher CPU utilization for a prolonged period, it can also do so at a flat additional charge of 5 cents per vCPU-hour.

The baseline performance and ability to burst are governed by CPU Credits. T2 instances receive CPU Credits continuously at a set rate depending on the instance size, accumulating CPU Credits when they are idle, and consuming CPU credits when they are active. T2 instances are a good choice for a variety of general-purpose workloads including micro-services, low-latency interactive applications, small and medium databases, virtual desktops, development, build and stage environments, code repositories, and product prototypes. For more information see [Burstable Performance Instances](#).

Features:

- Up to 3.3 GHz Intel Xeon Scalable processor (Haswell E5-2676 v3 or Broadwell E5-2686 v4)
- High frequency Intel Xeon processors
- Burstable CPU, governed by CPU Credits, and consistent baseline performance
- Low-cost general purpose instance type, and Free Tier eligible*
- Balance of compute, memory, and network resources

* t2.micro only. If configured as T2 Unlimited, charges may apply if average CPU utilization exceeds the baseline of the instance. See [documentation](#) for more details.

Instance	vCPU*	CPU Credits / hour	Mem (GiB)	Storage	Network Performance
t2.nano	1	3	0.5	EBS-Only	Low
t2.micro	1	6	1	EBS-Only	Low to Moderate
t2.small	1	12	2	EBS-Only	Low to Moderate
t2.medium	2	24	4	EBS-Only	Low to Moderate
t2.large	2	36	8	EBS-Only	Low to Moderate
t2.xlarge	4	54	16	EBS-Only	Moderate

EC2 Instance Types — 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

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

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

t2.micro is part of the AWS free tier (up to 750 hours per month)

Great website: <https://instances.vantage.sh>

Instances

EC2RDElastiCacheRedshiftOpenSearch

Optimize MongoDB Atlas costs across projects, clusters and resources →

Slack

Region

Asia-Pacific (Hyderabad)

Pricing Unit

Instance

Cost

Hourly

Reserved

1-year - No Upfront

Columns

Compare Selected

Clear Filters

Export

Search...

Name	API Name	Instance Memory	vCPUs	Instance Storage	Network Performance	Linux On Demand cost
Filter...	Filter...	Min Mem: 0	Min vCPUs: 0	Min Storage: 0	Filter...	Filter...
T4g Nano	t4g.nano	0.5 GiB	2 vCPUs for a 1h 12m burst	EBS only	Up to 5 Gigabit	\$0.0028 hourly
T3 Nano	t3.nano	0.5 GiB	2 vCPUs for a 1h 12m burst	EBS only	Up to 5 Gigabit	\$0.0056 hourly
T4g Micro	t4g.micro	1.0 GiB	2 vCPUs for a 2h 24m burst	EBS only	Up to 5 Gigabit	\$0.0056 hourly
T3 Micro	t3.micro	1.0 GiB	2 vCPUs for a 2h 24m burst	EBS only	Up to 5 Gigabit	\$0.0112 hourly
T4g Small	t4g.small	2.0 GiB	2 vCPUs for a 4h 48m burst	EBS only	Up to 5 Gigabit	\$0.0112 hourly
C6g Medium	c6g.medium	2.0 GiB	1 vCPUs	EBS only	Up to 10 Gigabit	\$0.0213 hourly
T3 Small	t3.small	2.0 GiB	2 vCPUs for a 4h 48m burst	EBS only	Up to 5 Gigabit	\$0.0224 hourly
T4g Medium	t4g.medium	4.0 GiB	2 vCPUs for a 4h 48m burst	EBS only	Up to 5 Gigabit	\$0.0224 hourly
M6g Medium	m6g.medium	4.0 GiB	1 vCPUs	EBS only	Up to 10 Gigabit	\$0.0253 hourly
M6gd Medium	m6gd.medium	4.0 GiB	1 vCPUs	59 GB NVMe SSD	Up to 10 Gigabit	\$0.0302 hourly
R6g Medium	r6g.medium	8.0 GiB	1 vCPUs	EBS only	Up to 10 Gigabit	\$0.0325 hourly
C6g Large	c6g.large	4.0 GiB	2 vCPUs	EBS only	Up to 10 Gigabit	\$0.0426 hourly
T3 Medium	t3.medium	4.0 GiB	2 vCPUs for a 4h 48m burst	EBS only	Up to 5 Gigabit	\$0.0448 hourly

Instances

EC2RDElastiCacheRedshiftOpenSearch

Optimize MongoDB Atlas costs across projects, clusters and resources →

Slack

Region

Asia-Pacific (Mumbai)

Pricing Unit

Instance

Cost

Hourly

Reserved

3-year - No Upfront

Columns

Compare Selected

Clear Filters

Export

Search...

We can export the cost report on expert share with the clients

A	B	C	D	E	F	G	H	I	J	K
Name	API Name	Instance Memory	vCPUs	Instance S	Network Performance	Linux On Demand cost	Linux Reserved cost	Linux Spot Minimum cost	Windows On Demand cost	Windows Reser
T2 Nano	t2.nano	0.5 GiB	1 vCPUs	EBS only	Low to Moderate	\$0.0062 hourly	\$0.0037 hourly	unavailable	\$0.0085 hourly	\$0.0059 hourly
T2 Micro	t2.micro	1.0 GiB	1 vCPUs	EBS only	Low to Moderate	\$0.0124 hourly	\$0.0072 hourly	\$0.0037 hourly	\$0.0170 hourly	\$0.0118 hourly
T2 Small	t2.small	2.0 GiB	1 vCPUs	EBS only	Low to Moderate	\$0.0248 hourly	\$0.0144 hourly	\$0.0080 hourly	\$0.0340 hourly	\$0.0236 hourly
T2 Medium	t2.medium	4.0 GiB	2 vCPUs	EBS only	Low to Moderate	\$0.0496 hourly	\$0.0289 hourly	\$0.0159 hourly	\$0.0676 hourly	\$0.0468 hourly
T2 Large	t2.large	8.0 GiB	2 vCPUs	EBS only	Low to Moderate	\$0.0992 hourly	\$0.0576 hourly	\$0.0298 hourly	\$0.1272 hourly	\$0.0857 hourly
T2 Extra L	t2.xlarge	16.0 GiB	4 vCPUs	EBS only	Moderate	\$0.1984 hourly	\$0.1154 hourly	\$0.0595 hourly	\$0.2394 hourly	\$0.1564 hourly
T2 Double	t2.2xlarge	32.0 GiB	8 vCPUs	EBS only	Moderate	\$0.3968 hourly	\$0.2308 hourly	\$0.1190 hourly	\$0.4588 hourly	\$0.2928 hourly

Sources: [AWS](#).

That’s it, thank you for reading.

<https://github.com/gefkkd/From-Zero-to-Cloud-Hero-A-100-Day-Journey-to-Mastering-Cloud-Computing.git>

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👉 In case you would like to continue the discussion, you can always reach out to me on [Twitter](#) or on LinkedIn for professional networking, if you feel like following me on [GitHub](#) you can also do that.

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