

# EC2 Instance Launch and Web Server Setup

## 1. Launching an EC2 Instance

### Name and Tags

The instance is named `http-server`, making it easily identifiable for management and organization purposes.

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

**Name and tags** [Info](#)

Name

[Add additional tags](#)

### Amazon Machine Image (AMI)

The operating system selected is Amazon Linux, using the Amazon Linux 2023 kernel-6.1 AMI. The AMI ID is `ami-0fa3fe0fa7920f68e`, which is a 64-bit x86 architecture image and is eligible for the AWS Free Tier.

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat


Red Hat

SUSE Linux

SUSE

Debian

debian

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

**Amazon Machine Image (AMI)**

Amazon Linux 2023 kernel-6.1 AMI

Free tier eligible

ami-0fa3fe0fa7920f68e (64-bit (x86), uefi-preferred) / ami-0dda28e5df2d25176 (64-bit (Arm), uefi)

Virtualization: hvm   ENA enabled: true   Root device type: ebs

### Instance Type

A `t2.micro` instance was chosen, featuring 1 vCPU and 1 GiB of memory. This instance type is also Free Tier eligible, making it cost-effective for basic web server setups.

**▼ Instance type** [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2   1 vCPU   1 GiB Memory   Current generation: true   On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour   On-Demand SUSE base pricing: 0.0116 USD per Hour

On-Demand RHEL base pricing: 0.026 USD per Hour   On-Demand Linux base pricing: 0.0116 USD per Hour

☒ All generations

[Compare instance types](#)

[Additional costs apply for AMIs with pre-installed software](#)

## Key Pair and Access

The key pair `http-ssh-key` was specified for SSH access, with the corresponding private key file named `http-ssh-key.pem`.

### ▼ 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*

`http-ssh-key`

[↻ Create new key pair](#)

## Network Settings and Security Groups

A security group named `http-ssh-sg` was configured to allow incoming traffic on port 22 (SSH) and port 80 (HTTP) from any IP address. This setup ensures remote management and public web access:

- SSH (TCP, Port 22) - 0.0.0.0/0
- HTTP (TCP, Port 80) - 0.0.0.0/0

Security group name - *required*

`http-ssh-sg`

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters and `._-:/()#,@[]+=&;{}!$*`

Description - *required* | [Info](#)

`allows traffic through port 80 & 22`

**Inbound Security Group Rules**

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

## User Data Script

During launch, a user data script was provided to automate the installation and configuration of the Apache web server. The script performs the following actions:

- Updates the system and installs the Apache HTTP server (`httpd`).
- Starts and enables the Apache service, compatible with both Amazon Linux 2 and 2023.
- Includes fallback commands for older versions of Amazon Linux 2.
- Fetches the instance's public IP address using IMDSv2 for future compatibility.
- Creates a default `index.html` page displaying the public IP address.
- Creates a `health.html` file containing "ok" for health checks.

```
#!/bin/bash

# Update and install Apache
yum update -y
yum install -y httpd

# Start and enable httpd (works on both Amazon Linux 2 and 2023)
systemctl start httpd
systemctl enable httpd

# For older Amazon Linux 2 (fallback, harmless if already enabled)
service httpd start 2>/dev/null || true
chkconfig httpd on 2>/dev/null || true

# Get public IP using IMDSv2 (required and future-proof)
```

## 2. Instance Details After Launch

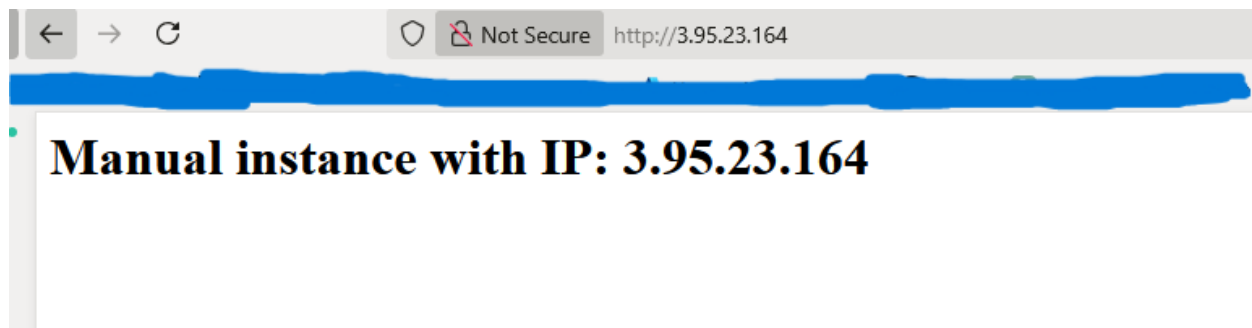
Property	Value
Instance ID	i-0bd3fc89fbb587a8a
Instance State	Running
Instance Type	t2.micro
Availability Zone	us-east-1b
Public IPv4	3.95.23.164
Public DNS	ec2-3-95-23-164.compute-1.amazonaws.com

## 3. Verification Steps

### Web Server Access

The web server was successfully accessed by visiting <http://3.95.23.164> in a browser. The displayed page showed:

Manual instance with IP: 3.95.23.164



## SSH Access

SSH connectivity was tested using the following command:

```
ssh -i folder/http-ssh-key.pem ec2-user@3.95.23.164
```

This confirmed successful login to the Amazon Linux 2023 instance.

```
chmod 400 http-ssh-key.pem  
ssh -i ~/http-ssh-key.pem ec2-user@3.95.23.164  
' can't be established.
```

```
#_
~\_####_      Amazon Linux 2023
~~\_#####\
~~\####|
~~\#/____      https://aws.amazon.com/linux/amazon-linux-2023
~~V~' '->
    ~~~
    ~~-.-.-
        _/_/_/_
        _/m/'
```

```
[ec2-user@ip-172-31-24-69 ~]$ |
```

## File Verification

Verification of web server files confirmed the creation of the following content:

index.html:

Manual instance with IP: 3.95.23.164

```
[ec2-user@ip-172-31-24-69 ~]$ cat /var/www/html/index.html
<h1>Manual instance with IP: 3.95.23.164</h1>
```

health.html:

ok

the default instance with IP: 54.90.23.164/12

```
[ec2-user@ip-172-31-24-69 ~]$ cat /var/www/html/health.html
```

ok

5:58 PM EST-172-31-24-69-14