

Create EC2-Instance

- I. Login to aws console
- II. Go to EC2 under the services section
- III. Click on Launch instances

Name: <Machine-1>

Application and OS Images (Amazon Machine Image)

The screenshot displays the 'Amazon Machine Image (AMI)' selection interface in the AWS console. At the top, there are tabs for 'Recents' and 'Quick Start'. Below these, a row of AMI cards is shown for 'Amazon Linux', 'macOS', 'Ubuntu', 'Windows', and 'Red Hat'. The 'Amazon Linux' card is selected and highlighted. To the right of the cards is a search icon and a link to 'Browse more AMIs'. Below the cards, the details for the selected 'Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type' are shown, including the AMI ID 'ami-09d3b3274b6c5d4aa' and a 'Verified provider' badge. The architecture is set to '64-bit (x86)'.

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type
ami-09d3b3274b6c5d4aa (64-bit (x86)) / ami-081dc0707789c2daf (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20221004.0 x86_64 HVM gp2

Architecture AMI ID

64-bit (x86) ami-09d3b3274b6c5d4aa Verified provider

Instance type : t2.micro

Key pair (login): already created key pair

▼ Network settings [Info](#)

Edit

Network [Info](#)

vpc-0e0c46829d8f2db34

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-4' 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

Check Summary

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)

ami-09d3b3274b6c5d4aa

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

Launch Instance

2. Create Elastic Block Store:

- Go to volumes
- Create volume
- Select availability zone which is ec2 instance is available zone
- Go to action → attach volume

```
root@ip-172-31-30-76:/home/ec2-user
root@ip-172-31-30-76 ec2-user]# pwd
/home/ec2-user
root@ip-172-31-30-76 ec2-user]# df -hT
Filesystem      Type      Size  Used Avail Use% Mounted on
devtmpfs        devtmpfs  474M   0  474M   0% /dev
tmpfs           tmpfs     483M   0  483M   0% /dev/shm
tmpfs           tmpfs     483M  440K  482M   1% /run
tmpfs           tmpfs     483M   0  483M   0% /sys/fs/cgroup
/dev/xvda1      xfs       8.0G  1.6G  6.5G  20% /
tmpfs           tmpfs     97M    0  97M   0% /run/user/1000
root@ip-172-31-30-76 ec2-user]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
xvda        202:0    0   8G  0 disk
└─xvda1     202:1    0   8G  0 part /
xvdf        202:80   0   1G  0 disk
root@ip-172-31-30-76 ec2-user]# sudo su
root@ip-172-31-30-76 ec2-user]# mkdir storage
mkdir: cannot create directory 'storage': File exists
root@ip-172-31-30-76 ec2-user]# ls
storage
root@ip-172-31-30-76 ec2-user]# mkfs -t xfs /dev/xvdf
meta-data=/dev/xvdf          isize=512    agcount=4, agsize=65536 blks
               =                       sectsz=512   attr=2, projid32bit=1
               =                       crc=1       finobt=1, sparse=0
data        =                       bsize=4096  blocks=262144, imaxpct=25
               =                       sunit=0     swidth=0 blks
naming      =version 2              bsize=4096  ascii-ci=0 ftype=1
log         =internal log        bsize=4096  blocks=2560, version=2
               =                       sectsz=512  sunit=0 blks, lazy-count=1
realtime    =none                extsz=4096  blocks=0, rtextents=0
root@ip-172-31-30-76 ec2-user]# mount -t xfs /dev/xvdf /home/ec2-user/storage/
root@ip-172-31-30-76 ec2-user]# df -hT
Filesystem      Type      Size  Used Avail Use% Mounted on
devtmpfs        devtmpfs  474M   0  474M   0% /dev
tmpfs           tmpfs     483M   0  483M   0% /dev/shm
tmpfs           tmpfs     483M  440K  482M   1% /run
tmpfs           tmpfs     483M   0  483M   0% /sys/fs/cgroup
/dev/xvda1      xfs       8.0G  1.6G  6.5G  20% /
tmpfs           tmpfs     97M    0  97M   0% /run/user/1000
/dev/xvdf       xfs       1014M  34M  981M   4% /home/ec2-user/storage
root@ip-172-31-30-76 ec2-user]#
```

Instances (1/1) [Info](#)

Find instance by attribute or tag (case-sensitive)

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public IPv4 D |
|-----------|---------------------|----------------|---------------|-------------------|--------------|-------------------|---------------|
| machine-1 | i-0cbcf2e3f8b40a62a | Running | t2.micro | 2/2 checks passed | No alarms | us-east-1b | ec2-3-93-200- |

Instance: i-0cbcf2e3f8b40a62a (machine-1)

Filter block devices

| Volume ID | Device name | Volume size (GiB) | Attachment status | Attachment time | Encrypted | KMS key ID |
|-----------------------|-------------|-------------------|-------------------|-------------------------------|-----------|------------|
| vol-07437e858648dcff7 | /dev/xvda | 8 | Attached | Sat Oct 22 2022 13:09:43 G... | No | - |
| vol-058beb610fdb25461 | /dev/sdf | 1 | Attached | Thu Oct 27 2022 23:57:57 G... | No | - |

3. Snapshot Screenshot creation:

Example taken only for volume snapshot

Create snapshot [Info](#)

Create a point-in-time snapshot of an EBS volume and use it as a baseline for new volumes or for data backup. You can create snapshots from an individual volume, or you can create multi-volume snapshots from all of the volumes attached to an instance.

Snapshot settings

Resource type [Info](#)

Volume
 Create a snapshot from a specific volume.

Instance
 Create multi-volume snapshots from an instance.

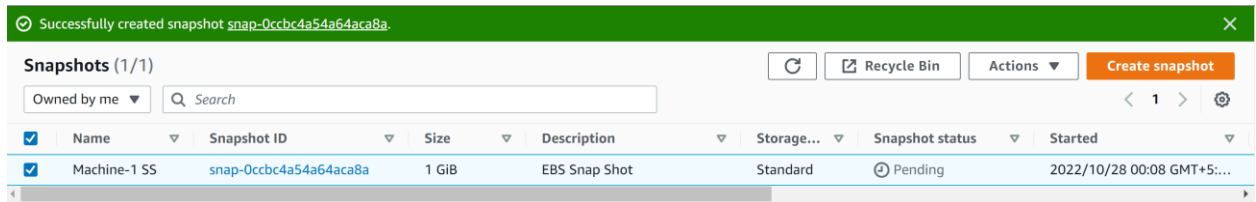
Volume ID
 The volume from which to create the snapshot.

vol-058beb610fdb25461

Description
 Add a description for your snapshot.

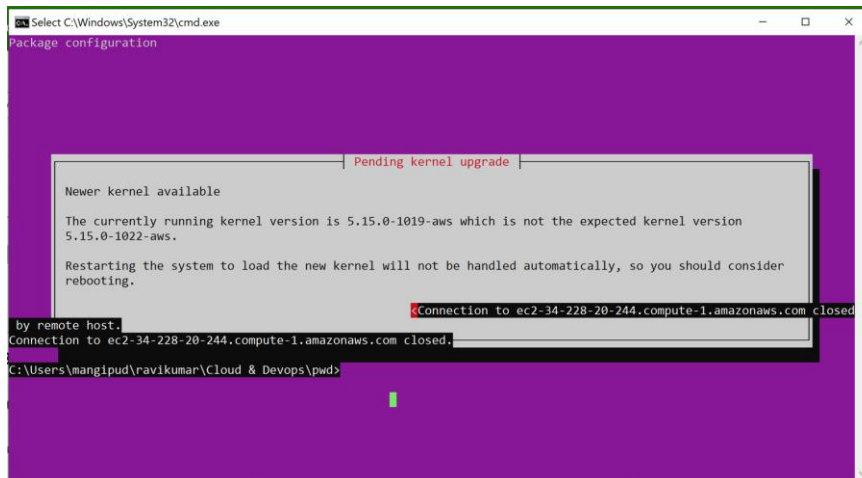
EBS Snap Shot
 255 characters maximum

Encryption [Info](#)
 Not encrypted

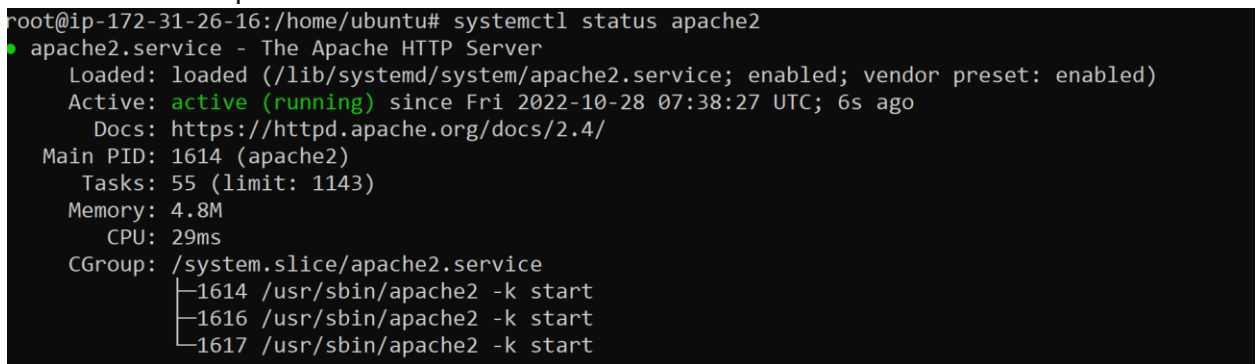


4. AMI Creation:

- Created ubuntu instance with t2.micro
- Installed lamp for testing on ubuntu instance
- My observation while running the command **“sudo apt upgrade”**




- Rebooted instance manually on aws console
- Confirmation of apache 2



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Apache2 Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.


The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```

/etc/apache2/
|-- apache2.conf
|   |-- ports.conf
|-- mods-enabled
|   |-- *.Load
|   |-- *.conf
|-- conf-enabled
|   |-- *.conf
|-- sites-enabled
|   |-- *.conf
|
```

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PHP Version 8.1.2-1ubuntu2.6


| | |
|---|---|
| System | Linux ip-172-31-26-16 5.15.0-1022-aws #26-Ubuntu SMP Thu Oct 13 12:59:25 UTC 2022 x86_64 |
| Build Date | Sep 15 2022 11:30:49 |
| Build System | Linux |
| Server API | Apache 2.0 Handler |
| Virtual Directory Support | disabled |
| Configuration File (php.ini) Path | /etc/php/8.1/apache2 |
| Loaded Configuration File | /etc/php/8.1/apache2/php.ini |
| Scan this dir for additional .ini files | /etc/php/8.1/apache2/conf.d |
| Additional .ini files parsed | /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini |
| PHP API | 20210902 |
| PHP Extension | 20210902 |
| Zend Extension | 420210902 |
| Zend Extension Build | API420210902.NTS |
| PHP Extension Build | API20210902.NTS |
| Debug Build | no |
| Thread Safety | disabled |
| Zend Signal Handling | enabled |
| Zend Memory Manager | enabled |
| Zend Multibyte Support | disabled |
| IPv6 Support | enabled |
| DTrace Support | available, disabled |
| Registered PHP Streams | https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar |

- Right click in instance → Image and template → create image
- In AMI section right click on image → Launch instance from AMI

| Instances (3) Info | | | | | | | | | |
|--------------------|---------------------|----------------|---------------|-------------------|--------------|-------------------|---------------|--|--|
| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public IPv4 D | | |
| webservers B | i-096e818fb2800048a | Running | t2.micro | Initializing | No alarms | us-east-1a | ec2-44-203-1 | | |
| machine-1 | i-0cbcf2e3f8b40a62a | Running | t2.micro | 2/2 checks passed | No alarms | us-east-1b | ec2-54-157-1 | | |
| webservers | i-0a88a00d5d05280cd | Running | t2.micro | 2/2 checks passed | No alarms | us-east-1b | ec2-34-228-2 | | |

**Observation: however instance created from AMI, inbound rule is not covered as reference ec2- instance security group I manually allotted inbound rule for newer instance on http

5. Load Balancer creation:

Under EC2 section click on Load balancer
Created custmise security group

Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer.

Security groups

Select up to 5 security groups

Create new security group

default sg-03046d8f2d662c7e7 VPC: vpc-0e0c46829d8f2db34

LB Security group sg-04e0dbe5f3868436d VPC: vpc-0e0c46829d8f2db34

Created target group on instances

EC2 > Target groups

Target groups (1) Info

Search or filter target groups

| Name | ARN | Port | Protocol | Target type | Load balancer |
|--------------------------|---------------------------------|------|----------|-------------|-----------------|
| webservers-load-balancer | arn:aws:elasticloadbalancing... | 80 | HTTP | Instance | None associated |

Load balancer output

| | |
|--------------------------------------|---|
| PHP Version 8.1.2-1ubuntu2.6 | |
| System | Linux (c-172-31-83-187.5.15.0-1022-aws-#26-Ubuntu SMP Thu Oct 13 12:59:25 |
| Build Date | Sep 15 2022 11:30:49 |
| Build System | Linux |
| Server API | Apache/2.0 Handler |
| Virtual Directory Support | disabled |
| Configuration File (httpd.conf) Path | /etc/httpd/conf/httpd.conf |
| Private IPv4 addresses | |
| 172.31.83.187 | |

| | |
|--------------|---------------------------|
| System | Linux ip-172-31-26-16 5.1 |
| Build Date | Sep 15 2022 11:30:49 |
| Build System | Linux |
| Server API | Apache 2.0 Handler |

Private IPv4 addresses



172.31.26.16