

Linux Commands on AWS EC2

a. Created EC2 instance with Ubuntu os

The screenshot shows the AWS Management Console interface for an EC2 instance. At the top, there's a search bar and buttons for 'Connect', 'Instance state', 'Actions', and 'Launch instances'. Below this is a table of instances. The instance 'i-02a29ec54e4d916b1' is listed with a 'Running' status, 't2.micro' instance type, and 'us-east-1b' availability zone. Below the table, the details for this instance are shown, including its public IP address (172.31.83.85) and private IP address (172.31.83.85).

Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
i-02a29ec54e4d916b1	Running	t2.micro	Initializing	No alarms	us-east-1b	ec2-174-129-138-135.c...	174.129.138.135	-	-

Instance: i-02a29ec54e4d916b1 (Ubuntu)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

▼ Instance summary info

Instance ID: i-02a29ec54e4d916b1 (Ubuntu)

IPv6 address: -

Hostname type: IP name: ip-172-31-83-85.ec2.internal

Answer private resource DNS name: IPv4 (A)

Auto-assigned IP address: -

Public IPv4 address copied

174.129.138.135 | open address

Instance state: Running

Private IP DNS name (IPv4 only): ip-172-31-83-85.ec2.internal

Instance type: t2.micro

VPC ID: -

Private IPv4 addresses: 172.31.83.85

Public IPv4 DNS: ec2-174-129-138-135.compute-1.amazonaws.com | open address

Elastic IP addresses: -

AWS Compute Optimizer finding: -

b. Converted .pem File to .ppk using PutyGen

The screenshot shows the PuTTY Key Generator window. It displays a generated SSH key pair (ssh-rsa) with a public key for pasting into an OpenSSH authorized_keys file. The key fingerprint is shown as 'ssh-rsa 2048 SHA256jGfYgS/D5vbC2tP9TAV4W9PeJ9pOkMuctswA/dod5IE'. The key comment is 'imported-openssh-key'. The key passphrase and confirm passphrase fields are empty. The 'Actions' section shows buttons for 'Generate', 'Load', 'Save public key', and 'Save private key'. The 'Parameters' section shows the 'Type of key to generate' set to 'RSA' and the 'Number of bits in a generated key' set to '2048'.

PuTTY Key Generator

File Key Conversions Help

Key

Public key for pasting into OpenSSH authorized_keys file:

```
ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAQCIK19tleqP7nrfGnJFp4AjpT7WbBhI8rJprPgghooDrMHaX1nU/EUzQjq
qgrOCezH6TVdHtYET70MWEKsHCUXHjF6F4MOCvA8N/FeUkNVyTxdZXVj0IfRQbwOVCO4K1p3ITUxTWlg1E
DccBLo1iPsmJKVfY6puT3sLPns3Wu/eDjlXoDR1+GD/SdCji2VW7F/2dY2pZpLygM3TWKfTBQ5NpoliGPk9Ss5
VfR7wbpK1mSbtU3aoyLti/AejiQJYqMD+5da+ciArhQUB0ZcsE3zGYpHCQdF
```

Key fingerprint: ssh-rsa 2048 SHA256jGfYgS/D5vbC2tP9TAV4W9PeJ9pOkMuctswA/dod5IE

Key comment: imported-openssh-key

Key passphrase:

Confirm passphrase:

Actions

Generate a public/private key pair

Load an existing private key file

Save the generated key

Generate

Load

Save public key

Save private key

Parameters

Type of key to generate:

☒ RSA ☐ DSA ☐ ECDSA ☐ EdDSA ☐ SSH-1 (RSA)

Number of bits in a generated key: 2048

c. Connection to EC2 using putty

ec2-user@ip-172-31-89-195:~

```
[ec2-user@ip-172-31-89-195 ~]$ iostat
Linux 6.1.21-1.45.amzn2023.x86_64 (ip-172-31-89-195.ec2.internal)      04/18/23      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           4.46    0.00    0.74    0.13    1.03   93.64

Device            tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd Device
xvda              12.18        336.30        264.91         0.00     167943     132292         0

[ec2-user@ip-172-31-89-195 ~]$ iostat -h
Linux 6.1.21-1.45.amzn2023.x86_64 (ip-172-31-89-195.ec2.internal)      04/18/23      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           4.3%    0.0%    0.7%    0.1%    1.0%   93.8%

           tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn    kB_dscd Device
          11.81        326.0k        256.8k         0.0k      164.0M      129.2M         0.0k xvda

[ec2-user@ip-172-31-89-195 ~]$ iostat -x
Linux 6.1.21-1.45.amzn2023.x86_64 (ip-172-31-89-195.ec2.internal)      04/18/23      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           4.09    0.00    0.68    0.12    0.94   94.17

Device            r/s    kB/s    rrqm/s    %rrqm r_await rareq-sz    w/s    kB/s    wrqm/s    %wrqm w_await wareq-sz    d/s    dB/s    drqm/s    %drqm d_await dareq-sz
f/s f_await aqu-sz %util
xvda             8.95    308.23    0.00    0.00    0.80    34.45    2.24    242.95    0.15    6.14    4.46   108.38    0.00    0.00    0.00    0.00    0.00    0.00
0.00    0.00    0.02    1.47

[ec2-user@ip-172-31-89-195 ~]$ iostat -c
Linux 6.1.21-1.45.amzn2023.x86_64 (ip-172-31-89-195.ec2.internal)      04/18/23      _x86_64_      (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           3.99    0.00    0.67    0.12    0.92   94.30
```


```
top - 08:33:17 up 10 min, 1 user, load average: 0.01, 0.06, 0.07
Tasks: 103 total, 1 running, 102 sleeping, 0 stopped, 0 zombie
%Cpu(s):  0.0 us,  0.3 sy,  0.0 ni, 99.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :  953.2 total,  585.8 free,  129.0 used,  238.3 buff/cache
MiB Swap:   0.0 total,   0.0 free,   0.0 used,  685.0 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1	root	20	0	170548	16436	10132	S	0.0	1.7	0:00.89	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_par_gp
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	slub_flushwq
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	netns
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0:0H-events_highpri
9	root	20	0	0	0	0	I	0.0	0.0	0:00.04	kworker/u2:0-events_unbound
10	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_percpu_wq
11	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_kthread
12	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_rude_kthread
13	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_trace_kthread
14	root	20	0	0	0	0	S	0.0	0.0	0:00.04	ksoftirqd/0
15	root	20	0	0	0	0	I	0.0	0.0	0:00.05	rcu_preempt
16	root	rt	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
18	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/0
20	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kdevtmpfs
21	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	inet_frag_wq
22	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kauditd
23	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khungtaskd
24	root	20	0	0	0	0	S	0.0	0.0	0:00.00	oom_reaper
25	root	20	0	0	0	0	I	0.0	0.0	0:00.13	kworker/u2:1-events_unbound
26	root	20	0	0	0	0	I	0.0	0.0	0:00.02	kworker/u2:2-events_unbound
27	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	writeback
28	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kcompactd0
29	root	39	19	0	0	0	S	0.0	0.0	0:00.00	khugepaged
30	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kintegrityd
31	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kblockd
32	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	blkcg_punt_bio
33	root	20	0	0	0	0	S	0.0	0.0	0:00.00	xen-balloon
34	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	tpm_dev_wq
35	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	md
36	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	edac-poller
37	root	-51	0	0	0	0	S	0.0	0.0	0:00.00	watchdogd
38	root	0	-20	0	0	0	I	0.0	0.0	0:00.02	kworker/0:1H-kblockd
57	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kswapd0
60	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	xfsalloc

```
[ec2-user@ip-172-31-89-195 ~]$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0   8G  0 disk
├─xvda1     202:1    0   8G  0 part /
├─xvda127   259:0    0  1M  0 part
└─xvda128   259:1    0 10M  0 part
[ec2-user@ip-172-31-89-195 ~]$ fdisk -p
fdisk: invalid option -- 'p'
Try 'fdisk --help' for more information.
[ec2-user@ip-172-31-89-195 ~]$ fdisk -l
fdisk: cannot open /dev/xvda: Permission denied
[ec2-user@ip-172-31-89-195 ~]$ sudo fdisk -l
Disk /dev/xvda: 8 GiB, 8589934592 bytes, 16777216 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 2B0AC1C1-48A9-48F0-A26B-B5FF1FD10D98

Device            Start      End  Sectors  Size Type
/dev/xvda1        24576 16777182 16752607   8G Linux filesystem
/dev/xvda127      22528   24575    2048    1M BIOS boot
/dev/xvda128      2048    22527    20480   10M EFI System

Partition table entries are not in disk order.
[ec2-user@ip-172-31-89-195 ~]$
```

 ec2-user@ip-172-31-89-195:~

```
[ec2-user@ip-172-31-89-195 ~]$ hostnamectl
Static hostname: ip-172-31-89-195.ec2.internal
Icon name: computer-vm
Chassis: vm
Machine ID: e2bffe8d1d1348e4947c27a25b957c18
Boot ID: 9cd5564aca934c22b7b88bc1e669172f
Virtualization: xen
Operating System: Amazon Linux 2023
CPE OS Name: cpe:2.3:o:amazon:amazon_linux:2023
Kernel: Linux 6.1.21-1.45.amzn2023.x86_64
Architecture: x86-64
Hardware Vendor: Xen
Hardware Model: HVM domU
Firmware Version: 4.11.amazon
[ec2-user@ip-172-31-89-195 ~]$
```

ec2-user@ip-172-31-89-195:~

```
[ec2-user@ip-172-31-89-195 ~]$ free -h
              total        used        free      shared  buff/cache   available
Mem:           953Mi       128Mi       582Mi        2.0Mi        242Mi       684Mi
Swap:           0B           0B           0B

[ec2-user@ip-172-31-89-195 ~]$ ls /run
[ec2-user@ip-172-31-89-195 ~]$ fdisk -l
-bash: fdisk: command not found
[ec2-user@ip-172-31-89-195 ~]$ fdisk -l
fdisk: cannot open /dev/xvda: Permission denied
[ec2-user@ip-172-31-89-195 ~]$ sudo fdisk -l
Disk /dev/xvda: 8 GiB, 8589934592 bytes, 16777216 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 2B0AC1C1-48A9-48F0-A26B-B5FF1FD10D98

Device        Start      End  Sectors  Size Type
/dev/xvda1    24576 16777182 16752607   8G Linux filesystem
/dev/xvda127  22528   24575    2048   1M BIOS boot
/dev/xvda128  2048   22527    20480  10M EFI System

Partition table entries are not in disk order.
[ec2-user@ip-172-31-89-195 ~]$ #sudo fdisk /dev/xvda1
[ec2-user@ip-172-31-89-195 ~]$ unmount /dev/xvda1
-bash: unmount: command not found
[ec2-user@ip-172-31-89-195 ~]$ p
-bash: p: command not found
[ec2-user@ip-172-31-89-195 ~]$ mkdir /mount_dir
mkdir: cannot create directory '/mount_dir': Permission denied
[ec2-user@ip-172-31-89-195 ~]$ sudo mkdir /mount_dir
[ec2-user@ip-172-31-89-195 ~]$ mount /dev/sda /mount_dir
mount: /mount_dir: must be superuser to use mount.
[ec2-user@ip-172-31-89-195 ~]$ sudo mount /dev/sda /mount_dir
mount: /mount_dir: /dev/xvda already mounted or mount point busy.
[ec2-user@ip-172-31-89-195 ~]$ sudo df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0   4.0M  0% /dev
tmpfs           477M   0   477M  0% /dev/shm
tmpfs           191M  2.8M  188M  2% /run
/dev/xvda1      8.0G  1.5G  6.5G  19% /
tmpfs           477M   0   477M  0% /tmp
tmpfs           96M    0    96M  0% /run/user/1000
[ec2-user@ip-172-31-89-195 ~]$
```

```
[ec2-user@ip-172-31-89-195 ~]$ touch test1.txt
[ec2-user@ip-172-31-89-195 ~]$ ls -l
total 4
-rw-r--r--. 1 ec2-user ec2-user 18 Apr 18 08:29 test.txt
-rw-r--r--. 1 ec2-user ec2-user  0 Apr 18 08:46 test1.txt
[ec2-user@ip-172-31-89-195 ~]$ chmod 444 test1.txt
[ec2-user@ip-172-31-89-195 ~]$ ls -l
total 4
-rw-r--r--. 1 ec2-user ec2-user 18 Apr 18 08:29 test.txt
-r--r--r--. 1 ec2-user ec2-user  0 Apr 18 08:46 test1.txt
[ec2-user@ip-172-31-89-195 ~]$
```

ec2-user@ip-172-31-89-195:~

```
[ec2-user@ip-172-31-89-195 ~]$ df
Filesystem      1K-blocks    Used Available Use% Mounted on
devtmpfs         4096         0      4096   0% /dev
tmpfs            488020       0     488020   0% /dev/shm
tmpfs            195212      2848     192364   2% /run
/dev/xvda1       8310764 1549796     6760968  19% /
tmpfs            488024       0     488024   0% /tmp
tmpfs            97604        0      97604   0% /run/user/1000
[ec2-user@ip-172-31-89-195 ~]$ du
4      ./ssh
0      ./config/procps
0      ./config
24     .
[ec2-user@ip-172-31-89-195 ~]$
```