```
ubuntu@ip-172-31-82-214:~$ sudo apt upgrade && sudo apt update
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [11
9 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [
109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packag
es [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-
 en [5652 kB]
 Get:7 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1342
 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f
Metadata [286 kB]
      IS
man [man options] [[section] page ...]
man * k [apropes options] regers
man * k [an options] [section] term
man * f [man options] [section] term
man * f [man options] [sage
man * l man options] [sage
man * w| * [man options] page
man * [man options] [sage ...]
      TION man is the system's manual pager. Each page argument given to man is normally the name of a program, utility or function. The manual page associated with each of these arguments is then found and man is the system's manual, if provided, will direct man to look only in that section of the manual. The default action is to search in all of the available sections following a pre-defined order (see CEFARITS); and to thow only the first page Ground, even if name coils in several sections.
          table throw successful the programs or shell commands 
System calls (functions provided by the kernel) 
Library calls (functions within program libraries) 
Special files (usually found in 1862) 
File formats and conventions, e.g. /etc/passad
         Games Miscellaneous (including macro packages and conventions), e.g. man(7), groff(7), man-pages(7) System administration commands (usually only for root) Kernel routines [Non-standard]
            tional section names include NAME, SYMOPSIS, COMPIGURATION, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUE, ERRORS, ENVIRONMENT, FILES, VERSIONS, CONFORMING TO, NOTES, BUGS, EXAMPLE, AU-
and SEE ALSO.
       The following conventions apply to the SYNOPSIS section and can be used as a guide in other sections
                       type exactly as shown.
replace with appropriate argument.
any or all arguments within [] are optional,
options delimited by | cannot be used together
argument is repeatable.
entire expression within [] is repeatable.
                           ubuntu@ip-172-31-82-214:~$ lsb_release -a
                           No LSB modules are available.
                           Distributor ID: Ubuntu
                           Description:
                                                                           Ubuntu 22.04.4 LTS
                           Release:
                                                                             22.04
                           Codename:
                                                                          jammy
                           ubuntu@ip-172-31-82-214:~$ |
```

```
ip-172-31-82-214:-% lsb_release -a
modules are available.
utor ID: ubuntu
tion: ubuntu 22.04.4 LTS
c: jammy
ip-172-31-82-214:-% cat /proc/cpuinfo
                                                                                ne de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_tsc rep_good nopl xtopology cpuid tsc_known_freq pni pclmu e4.1 sse4.2 x2apic movbe popent tsc_deadline_timer as xsave avx f16c rdrand hypervisor lahf_im abm cpuid_fault invpcid_single pti fsgsbase bmil avx2 smep bmi2 erms invpcid xsaveopt littloom spectrex_l spectrex_l
               vendor_id = "GenuineIntel"
version information (1/eax):
            version information (1/eax):
    processor type = primary processor (0)
    family = 0x6 (6)
    model = 0xf (15)
    stepping id = 0x1 (1)
    extended family = 0x0 (0)
    extended model = 0x4 (4)
    (family synth) = 0x6 (6)
    (model synth) = 0x4f (79)
    (simple synth) = Intel Core (unknown type) (Broadwell-E / Broadwell-EX) {Haswell}, 14nm
miscellaneous (1/ebx):
    process local APIC physical ID = 0x0 (0)
    maximum IDs for CPUs in pkg = 0x1 (1)
    CLFLUSH line size = 0x8 (8)
    brand index = 0x00 (0):
    brand id = 0x00 (0): unknown
            maximum IDs for CPUs in pkg = 0x1 (
CLFLUSH line size = 0x8 (
brand index = 0x0 (
brand id = 0x00 (0): unknown feature information (1/edx):
    x87 FPU on chip
    WHE: virtual-8086 mode enhancement
    DE: debugging extensions
    PSE: page size extensions
    TSC: time stamp counter
    ROMSR and WRMSR support
    PAE: physical address extensions
    MCE: machine check exception
    CMPXCHG8B inst.
    APIC on chip
    SYSENTER and SYSEXIT
    MTRR: memory type range registers
    PTE global bit
    MCA: machine check architecture
    CMOV: conditional move/compare instr
    PAT: page attribute table
    PSE-36: page size extension
    PSN: processor serial number
                                                                                                                                                                                                                                                                           = true
= true
= true
                                                                                                                                                                                                                                                                                       true
true
                                                                                                                                                                                                                                                                                        true
                                                                                                                                                                                                                                                                                       true
true
                                                                                                                                                                                                                                                                                       true
true
                                                                                                                                                                                                                                                                          = true
                                                                                                                                                                                                                                                                                       true
true
                                                                                                                                                                                                                                                                                       true
true
                                  PSE-36: page size extension
PSN: processor serial number
CLFLUSH instruction
                                                                                                                                                                                                                                                                                       true
false
                                                                                                                                                                                                                                                                                        true
                                  CLFLUSH INSTRUCTION
DS: debug store
ACPI: thermal monitor and clock ctrl
MMX Technology
FXSAVE/FXRSTOR
EST averagions
                                                                                                                                                                                                                                                                                       false
false
                                                                                                                                                                                                                                                                            = true
= true
                                   SSE extensions
                                                                                                                                                                                                                                                                                         true
                                   SSE2 extensions
SS: self snoop
                                                                                                                                                                                                                                                                                         true
false
                                  The strong is the strong in the strong is a seri should be supported a structure of the strong in the structure is a seri should be supported a structure in the structure in the structure is a seri should be supported as the structure is a seri should be supported in the structure in the structure is a seri should be supported in the structure in the structure is a seri should be supported as the structure is a seri should be supported as the structure is a seri should be supported as the structure is a seri should be supported as the structure is a seri should be supported as the structure is a series of the structur
               IA64
PBE: pending break event
feature information (1/ecx):
PNI/SSE3: Prescott New Instructions
PCLMULDO instruction
DTES64: 64-bit debug store
MONITOR/MWAIT
CPL-qualified debug store
VMX: virtual machine extensions
SMX: safer mode extensions
                                                                                                                                                                                                                                                                               = true
= true
= false
= false
= false
= false
ubuntu@ip-172-31-82-214:~$ df
                                                                                              1K-blocks
                                                                                                                                                                                                                    Used Available Use% Mounted on
Filesystem
                                                                                                                            20134592 1841880 18276328 10% /
  /dev/root
                                                                                                                                                                                                                                                                                                                                                                          10% /
0% /dev/shm
1% /run
0% /run/lock
6% /boot/efi
1% /run/user/1000
                                                                                                                                            486004
                                                                                                                                                                                                                                                                                                   486004
                                                                                                                                                                                                                                              0
tmpfs
                                                                                                                                                                                                                                                                                                   193544
5120
                                                                                                                                                 194404
                                                                                                                                                                                                                                            860
tmpfs
                                                                                                                                                           5120
tmpfs
/dev/xvda15
                                                                                                                                                 106832
                                                                                                                                                                                                                                   6186
                                                                                                                                                                                                                                                                                                      100646
                                                                                                                                                   97200
                                                                                                                                                                                                                                                                                                           97196
                                                                                                                                                                                                                                                   4
tmpfs
ubuntu@ip-172-31-82-214:~$ free
                                                                                                                     total
                                                                                                                                                                                                                               used
                                                                                                                                                                                                                                                                                                                                     free
                                                                                                                                                                                                                                                                                                                                                                                                                       shared buff/cache
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          591312
Mem:
                                                                                                                 972012
                                                                                                                                                                                                                    177800
                                                                                                                                                                                                                                                                                                                     202900
                                                                                                                                                                                                                                                                                                                                                                                                                                              864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           629456
                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                            0
Swap:
                                                                                                                                                                                                                                                       0
ubuntu@ip-172-31-82-214:~$
```

```
No Wiguests are running outdated hypervisor (gemu) binaries on this host.

ubuntu@ip-172-31-82-214:~$ hardinfo
Computer
Summary
Operating System
Kernel Modules
Boots
Languages
Filesystems
Display
Environment Variables
Development
Users
Groups
Devices
Processor
Memory
PCLS Bevices
Printers
Battery
Jensors
Jupit Devices
Jupi
```

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-82-214:~$ likwid-topology
                                   Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz
                                    Intel Xeon Broadwell EN/EP/EX processor
CPU type:
CPU stepping:
Hardware Thread Topology
Sockets:
Cores per socket:
 Threads per core:
                                                                                                                                                 Available
HWThread
                                    Thread
                                                                        Core
                                                                                                            Socket
                                                      (0)
 Socket 0:
 Cache Topology
 evel:
                                                      32 kB
Size:
 Cache groups:
                                                      2
256 kB
( 0 )
 evel:
Size:
 Cache groups:
Level:
                                                      45 MB
Size:
                                                      (0)
Cache groups:
NUMA Topology
NUMA domains:
Domain:
                                                     (0)
10
Processors:
Distances:
                                                      223.676 MB
Free memory:
Total memory:
                                                     949.23 MB
 ubuntu@ip-172-31-82-214:~$
                         10
223.676 MB
949.23 MB
      W8ip-172-31-82-214:-5 lscpu
tecture: x86_64
op-mode(s): 32-bit, 64-bit
ress sizes: 46 bits physical, 48 bits virtual
Order: Little Endian
      line CPU(s) list:
        el:
ead(s) per core:
e(s) per socket:
ket(s):
                           4600.04
fpu vme de pse tsc msr pae mse ex8 apic sep mtrr pge msa smov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant.tsc rep.good nopl
clmuladq ssea3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popent tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm abm cpuid_fault invpcibmi2 erms; invocid xsaveous
       node(s):
node0 CPU(s):
abilities:
er data sampling:
multihit:
                          ONG affected
KVM: Mitigation: VMX unsupported
Mitigation: PTE Inversion
Vulnerable: Clear CPU buffers attempted, no microcode; SMT Host state unknown
Mitigation; PTI
Vulnerable: Clear CPU buffers attempted, no microcode; SMT Host state unknown
Not affected
Not affected
Not affected
Wilnerable
Mitigation; usercopy/swapps barriers and __user pointer sanitization
Mitigation; Retpolines, STIBP disabled, RSB filling, PBRSB-eIBRS Not affected
Not affected
Not affected
```

top - 15:06:19 up 24 min, 1 user, load average: 0.10, 0.14, 0.09
Tasks: 96 total, 1 running, 95 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.3 us, 0.3 sy, 0.0 ni, 96.0 id, 3.3 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 949.2 total, 227.6 free, 149.5 used, 572.1 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 634.1 avail Mem

MIB SWap:	0.0	ocai,	0.	o rree,	0.0	usea.	034	4.1 avail mem
PID USE			VIRT	RES	SHR S	%CPU	%MEM	TIME+ COMMAND
1275 ubur			17196	8052	5632 S	0.3	0.8	0:00.22 sshd
3912 roo					0 I	0.3	0.0	0:00.01 kworker/u30:0-events_unbound
1 roo			167404	12764	8284 S	0.0	1.3	0:05.63 systemd
2 roo					0 S	0.0	0.0	0:00.00 kthreadd
3 roo		-20			0 I	0.0	0.0	0:00.00 rcu_gp
4 roo		-20	0		0 I	0.0	0.0	0:00.00 rcu_par_gp
5 roo		-20			0 I	0.0	0.0	0:00.00 slub_flushwq
6 roo		-20			0 I	0.0	0.0	0:00.00 netns
8 roo		-20			0 I	0.0	0.0	0:00.00 kworker/0:0H-events_highpri
9 roo					0 I	0.0	0.0	0:00.07 kworker/0:1-events
11 roo		-20			0 I	0.0	0.0	0:00.00 mm_percpu_wq
12 roo					0 I	0.0	0.0	0:00.00 rcu_tasks_rude_kthread
13 roo					0 I	0.0	0.0	0:00.00 rcu_tasks_trace_kthread
14 roo					0 S	0.0	0.0	0:00.15 ksoftirqd/0
15 roo					0 I	0.0	0.0	0:00.45 rcu_sched
16 roo		0			0 S	0.0	0.0	0:00.01 migration/0
17 roo					0 S	0.0	0.0	0:00.00 idle_inject/0
18 roo					0 S	0.0	0.0	0:00.00 cpuhp/0
19 roo		0			0 S	0.0	0.0	0:00.00 kdevtmpfs
20 roo	t 0				0 I	0.0	0.0	0:00.00 inet_frag_wq
22 roo					0 S	0.0	0.0	0:00.00 kauditd
23 roo	t 20				0 S	0.0	0.0	0:00.00 khungtaskd
24 roo	t 20				0 I	0.0	0.0	0:00.10 kworker/u30:2-flush-202:0
25 roo	t 20				0 S	0.0	0.0	0:00.00 oom_reaper
26 roo		-20			0 I	0.0	0.0	0:00.00 writeback
27 roo	t 20				0 S	0.0	0.0	0:00.04 kcompactd0
28 roo	t 25				0 S	0.0	0.0	0:00.00 ksmd
29 roo		19			0 S	0.0	0.0	0:00.00 khugepaged
30 roo		-20			0 I	0.0	0.0	0:00.00 kintegrityd
31 roo		-20			0 I	0.0	0.0	0:00.00 kblockd
32 roo		-20			0 I	0.0	0.0	0:00.00 blkcg_punt_bio
33 roo	t 20				0 S	0.0	0.0	0:00.00 xen-balloon
34 roo		-20			0 I	0.0	0.0	0:00.00 tpm_dev_wq
35 roo		-20			0 I	0.0	0.0	0:00.00 ata_sff
36 roo	t 0	-20			0 I	0.0	0.0	0:00.00 md
37 roo		-20			0 I	0.0	0.0	0:00.00 md_bitmap
38 roo		-20			0 I	0.0	0.0	0:00.00 edac-poller
39 roo		-20			0 I	0.0	0.0	0:00.00 devfreq_wq
40 roo					0 S	0.0	0.0	0:00.00 watchdogd
43 roo					0 S	0.0	0.0	0:00.17 kswapd0
44 roo					0 5	0.0	0.0	0:00.00 ecryptfs-kthread
45 roo		-20			0 I	0.0	0.0	0:00.00 kthrotld
46 roo					0 I	0.0	0.0	0:00.00 acpi_thermal_pm
47 roo					0 5	0.0	0.0	0:00.03 xenbus
48 roo					0 S	0.0	0.0	0:00.20 xenwatch
49 roo		-20			0 I	0.0	0.0	0:00.00 nvme-wq
50 roo		-20			0 I	0.0	0.0	0:00.00 nvme-reset-wq
51 roo		-20			0 I	0.0	0.0	0:00.00 nvme-delete-wq
52 roo		-20			0 I	0.0	0.0	0:00.00 nvme-auth-wq
53 roo					0 S	0.0	0.0	0:00.00 scsi_eh_0
54 roo		-20			0 I	0.0	0.0	0:00.00 scsi_tmf_0

```
ubuntu@ip-172-31-82-214:~$ sudo dmidecode
# dmidecode 3.3
Getting SMBIOS data from sysfs.
SMBIOS 2.7 present.
11 structures occupying 378 bytes.
Table at 0x000EB01F.
Handle 0x0000, DMI type 0, 24 bytes
BIOS Information
                             formation
Vendor: Xen
Version: 4.11.amazon
Release Date: 08/24/2006
Address: 0xE8000
Runtime Size: 96 kB
ROM Size: 64 kB
Characteristics:
PCI is supported
EDD is supported
                              Targeted content distribution is supported BIOS Revision: 4.11
Handle 0x0100, DMI type 1, 27 bytes
System Information
                             Information
Manufacturer: Xen
Product Name: HVM domU
Version: 4.11.amazon
Serial Number: ec2caceb-46b1-517a-8318-fdb200c5a47d
UUID: ec2caceb-46b1-517a-8318-fdb200c5a47d
Wake-up Type: Power Switch
SKU Number: Not Specified
Family: Not Specified
 Handle OxO3OO, DMI type 3, 21 bytes
Chassis Information
Manufacturer: Xen
                             Manufacturer: Xen
Type: Other
Lock: Not Present
Version: Not Specified
Serial Number: Not Specified
Asset Tag: Not Specified
Boot-up State: Safe
Power Supply State: Safe
Thermal State: Safe
Security Status: Unknown
OEM Information: 0x00000000
Height: Unspecified
Number Of Power Cords: Unspecified
Contained Elements: 0
Handle 0x0401, DMI type 4, 35 bytes
Processor Information
Socket Designation: CPU 1
Type: Central Processor
Family: Other
Manufacturer: Intel
ID: F1 06 04 00 FF FB 8B 17
Version: Not Specified
```

```
untu@ip-172-31-82-214:-$ uname -a
nux ip-172-31-82-214 6.5.0-1014-aws #14~22.04.1-Ubuntu SMP Thu Feb 15 15:27:06 UTC 2024 x86_64 x86_64 x86_64 GNU/Linux
untu@ip-172-31-82-214:~$ cat /proc/cpuinfo
                     GenuineIntel
                      1
0xb000040
                      2299.963
46080 KB
  nitial apicid
     exception
  ags : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht sys
ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand hypervisor lahf_lm al
csc : cpu_meltdown spectre_v1 spectre_v2 spec_store_bypass l1tf mds swapgs itlb_multihit mmio_stale_data
 lflush size :
ache_alignment :
ddress sizes :
ower management:
                   : 64
: 46 bits physical, 48 bits virtual
ubuntu@ip-172-31-82-214:~$ free -h
                                                                                                  buff/cache
                                                                                                                         available
                                               used
                                                                    free
                                                                                     shared
                         total
                                             150Mi
                                                                  333Mi
                                                                                      0.0Ki
                                                                                                           465Mi
                              0B
                                                  0B
                                                                       0B
ubuntu@ip-172-31-82-214:~$ df -Th
ilesystem
/dev/root
                                     Size
                                              Used Avail Use% Mounted on
                         Type
                         ext4
                                                         18G
475M
                                    20G
475M
                                                                   12% /
                                               2.2G
tmpfs
                         tmpfs
                                                                     0% /dev/shm
                                                                     1% /run
0% /run/lock
                                     190M
                                               860K
                                                         190M
tmpfs
                         tmpfs
                                                         5.0M
                                                                     6% /boot/efi
1% /run/user/1000
                                              6.1M
4.0K
 /dev/xvda15
                                     105M
                                                           99M
                         vfat
                                                           95M
                                      95M
ubuntu@ip-172-31-82-214:~$ sudo dmidecode --type 17 | grep Size
Size: 1 GB
ubuntu@ip-172-31-82-214:~$|
```

3.

Uma instância na AWS é um servidor virtual na nuvem que você pode usar para executar suas aplicações. Ela se comporta como uma thread ao ser uma unidade de execução independente, podendo ser gerenciada e escalonada dinamicamente conforme necessário, de forma semelhante ao gerenciamento de threads em um programa.

AMI (Amazon Machine Image) é um modelo de imagem virtual usado para criar uma instância EC2 (Elastic Compute Cloud) na AWS (Amazon Web Services). Uma AMI contém todos os elementos necessários para iniciar uma instância, como o sistema operacional, aplicativos, configurações de rede e permissões de acesso. É possível criar AMIs personalizadas para atender às necessidades específicas de sua aplicação e usá-las para iniciar novas instâncias conforme necessário.

5.

O preço de um modelo de processador reservado na EC2 (Elastic Compute Cloud) da AWS depende de vários fatores, como a região da AWS em que você está executando as instâncias, o tipo de instância e o plano de pagamento (reservado, sob demanda, etc.).

Os preços específicos podem ser encontrados no site da AWS, na seção de preços da EC2. Lá, você pode selecionar a região, o tipo de instância e ver os preços para diferentes planos de pagamento, incluindo instâncias reservadas.