

# Configuração de Ambiente em Nuvem

## Contexto

A computação em nuvem tornou-se essencial no cenário atual, permitindo a criação de ambientes escaláveis e acessíveis remotamente. Nesta atividade, fomos desafiados a criar e configurar uma máquina virtual em nuvem, aplicar comandos básicos de Linux e registrar todo o processo.

## Objetivo

O objetivo desta prática:

- Configurar uma instância em uma plataforma de computação em nuvem (AWS).
- Instalar e atualizar o sistema operacional Linux.
- Executar entre 10 a 15 comandos no terminal, manipulando arquivos e diretórios.
- Instalar um serviço adicional (Apache2).
- Documentar o processo com capturas de tela, relatando dificuldades encontradas e soluções aplicadas.

## Cenário

A instância foi criada na plataforma **Amazon Web Services (AWS)**, utilizando o sistema operacional **Ubuntu 24.04.3 LTS**.

O acesso foi realizado via terminal SSH, com privilégios de administrador, e a manipulação de arquivos ocorreu inteiramente na linha de comando.

## Entrega

O presente relatório contém:

- Descrição do ambiente configurado.
- Registro dos comandos utilizados no Linux.
- Instalação de um serviço adicional (Apache2).
- Relato das dificuldades enfrentadas e respectivas soluções.
- Capturas de tela (a serem inseridas) documentando cada etapa.

## Tarefas

### Configuração Inicial

- Criação da instância na AWS.
- Conexão via SSH utilizando chave privada.

✓ **Êxito**

Execução da instância iniciada com êxito (i-0838fe87449d17164)

#### ▼ Log de execução

Inicializando solicitações	✓ Com êxito
Criando grupos de segurança	✓ Com êxito
Criando regras do grupo de segurança	✓ Com êxito
Iniciar inicialização	✓ Com êxito

```
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1011-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/pro

System information as of Fri Sep 19 14:20:44 UTC 2025

System load:  0.08           Temperature:   -273.1 C
Usage of /:    25.6% of 6.71GB Processes:      110
Memory usage: 22%           Users logged in: 0
Swap usage:   0%            IPv4 address for ens5: 172.31.21.223

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-21-223:~$
```

- Elevação de privilégios para administrador com o comando:

```
ubuntu@ip-172-31-21-223:~$ sudo su
```

- Atualização do sistema:

```
root@ip-172-31-21-223:/home/ubuntu# apt update -y
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1415 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1143 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [278 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.3 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1485 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [299 kB]
Get:20 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [195 kB]
Get:21 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:22 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [8744 B]
Get:23 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [880 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.1 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1901 kB]
Get:27 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [195 kB]
Get:28 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.3 kB]
Get:29 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [18.0 kB]
Get:30 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1815 kB]
Get:31 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [426 kB]
Get:32 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:33 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 c-n-f Metadata [54 B]
Get:34 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [32.0 kB]
Get:35 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [5500 B]
Get:36 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:37 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [48
```

```
root@ip-172-31-21-223:/home/ubuntu/projeto# apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following upgrades have been deferred due to phasing:
  dpkg landscape-common
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
```

- Foram utilizados **12 comandos diferentes**, conforme solicitado, para a manipulação de arquivos e diretórios:

1. pwd – Exibe o diretório atual.
2. ls – Lista os arquivos do diretório.
3. ls -la – Lista arquivos detalhadamente, incluindo ocultos.
4. mkdir <nome> – Cria um diretório.
5. cd <nome> – Acessa o diretório.
6. touch <arquivo> – Cria um arquivo vazio.
7. ls – Verificação do arquivo criado.

8. cp <origem> <destino> – Copia arquivos.
9. echo "mensagem" > <arquivo> – Insere conteúdo em arquivo.
10. cat <arquivo> – Exibe o conteúdo do arquivo.
11. ps aux – Lista os processos em execução.
12. htop – Exibe os processos em tempo real (requer instalação).

```
root@ip-172-31-21-223:/home/ubuntu# pwd
/home/ubuntu
root@ip-172-31-21-223:/home/ubuntu# ls
root@ip-172-31-21-223:/home/ubuntu# ls -la
total 28
drwxr-x--- 4 ubuntu ubuntu 4096 Sep 19 14:22 .
drwxr-xr-x 3 root   root   4096 Sep 19 14:12 ..
-rw-r--r-- 1 ubuntu ubuntu  220 Mar 31  2024 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Mar 31  2024 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Sep 19 14:20 .cache
-rw-r--r-- 1 ubuntu ubuntu  807 Mar 31  2024 .profile
drwx----- 2 ubuntu ubuntu 4096 Sep 19 14:12 .ssh
-rw-r--r-- 1 ubuntu ubuntu    0 Sep 19 14:22 .sudo_as_admin_successful
root@ip-172-31-21-223:/home/ubuntu#
```

```
root@ip-172-31-21-223:/home/ubuntu# mkdir projeto
root@ip-172-31-21-223:/home/ubuntu# cd projeto
root@ip-172-31-21-223:/home/ubuntu/projeto# touch arquivo.txt
root@ip-172-31-21-223:/home/ubuntu/projeto# la
arquivo.txt
root@ip-172-31-21-223:/home/ubuntu/projeto# cp arquivo.txt backup.txt
root@ip-172-31-21-223:/home/ubuntu/projeto# ls
arquivo.txt  backup.txt
root@ip-172-31-21-223:/home/ubuntu/projeto# echo "Teste para apresentação" >> arquivo.txt
root@ip-172-31-21-223:/home/ubuntu/projeto# cat arquivo.txt
Teste para apresentação
```

```
root@ip-172-31-21-223:/home/ubuntu/projeto# ps aux
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	0.0	1.4	22632	13552	?	Ss	14:12	0:02	/sbin/init
root	2	0.0	0.0	0	0	?	S	14:12	0:00	[kthreadd]
root	3	0.0	0.0	0	0	?	S	14:12	0:00	[pool_workqueue_release]
root	4	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-rcu_gp]
root	5	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-sync_wq]
root	6	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-kvfree_rcu_reclaim]
root	7	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-slub_flushwq]
root	8	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-netns]
root	11	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/0:0H-events_highpri]
root	13	0.0	0.0	0	0	?	I<	14:12	0:00	[kworker/R-mm_percpu_wq]
root	14	0.0	0.0	0	0	?	I	14:12	0:00	[rcu_tasks_rude_kthread]
root	15	0.0	0.0	0	0	?	I	14:12	0:00	[rcu_tasks_trace_kthread]
root	16	0.0	0.0	0	0	?	S	14:12	0:00	[ksoftirqd/0]

```
0[          0.0%] Tasks: 33, 40 thr, 76 kthr; 1 running
1[|         0.7%] Load average: 0.00 0.00 0.00
Mem[||||| 206M/914M] Uptime: 00:54:10
Swp[         0K/0K]

Main I/O
PID USER      PRI  NI  VIRT   RES   SHR  S  CPU% MEM%   TIME+  Command
7282 root        20   0  8752  4388  3492  R   0.7  0.5   0:00.06 htop
1 root        20   0  22632 13552  9456  S   0.0  1.4   0:02.74 /sbin/init
129 root        19  -1 50432 13960 12936  S   0.0  1.5   0:00.30 /usr/lib/systemd/systemd-journald
190 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.11 /sbin/multipathd -d -s
197 root        20   0  26492  8132  5060  S   0.0  0.9   0:00.30 /usr/lib/systemd/systemd-udev
202 root        20   0  282M 26912  8608  S   0.0  2.9   0:00.00 /sbin/multipathd -d -s
203 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.00 /sbin/multipathd -d -s
204 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.00 /sbin/multipathd -d -s
205 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.00 /sbin/multipathd -d -s
206 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.19 /sbin/multipathd -d -s
207 root        RT   0  282M 26912  8608  S   0.0  2.9   0:00.00 /sbin/multipathd -d -s
325 systemd-re 20   0  21592 12864 10560  S   0.0  1.4   0:00.15 /usr/lib/systemd/systemd-resolved
537 systemd-ne 20   0  22408  9728  8576  S   0.0  1.0   0:00.04 /usr/lib/systemd/systemd-networkd
599 root        20   0  2720  1932  1804  S   0.0  0.2   0:00.00 /usr/sbin/acpid
603 root        20   0  7224  2744  2488  S   0.0  0.3   0:00.01 /usr/sbin/cron -f -P
604 messagebus 20   0 10028  5720  4696  S   0.0  0.6   0:00.29 @dbus-daemon --system --address=systemd:
610 root        20   0  82920 4324  4068  S   0.0  0.5   0:00.09 /usr/sbin/irqbalance
611 root        20   0  33424 20600 10488  S   0.0  2.2   0:00.13 /usr/bin/python3 /usr/bin/networkd-di
```

- Configurando IP estático na seção ethernet

```
aws Search [Alt+S] Estados Unidos (Norte da Virgínia) ID da conta: 1551-8630-8790 Jenifer

GNU nano 7.2 /etc/netplan/00-installer-config.yaml *
network
version: 2
renderer: networkd
ethernets:
ens33:
dhcp4: false
addresses:
- 192.168.1.100/24
gateway4: 192.168.1.1
nameservers:
addresses:
- 8.8.8.8
- 8.8.4.4

^G Help      ^O Write Out  ^W Where Is   ^R Cut        ^T Execute    ^C Location   M-U Undo      M-A Set Mark  M-] To Bracket
^X Exit      ^R Read File  ^E Replace    ^U Paste      ^J Justify    ^_ Go To Line  M-B Redo      M-C Copy      ^Q Where Was
```

- Instalação do apache2

```
root@ip-172-31-21-223:/home/ubuntu/projeto# apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 2 not upgraded.
Need to get 2086 kB of archives.
After this operation, 8090 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libapr1t64 amd64 1.7.2-3.ubuntu0.1 [108 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ubuntu7 [9116 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 liblua5.4-0 amd64 5.4.6-3build2 [66 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1ubuntu8.8 [1331 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-data all 2.4.58-1ubuntu8.8 [163 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-utils amd64 2.4.58-1ubuntu8.8 [97.7 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2 amd64 2.4.58-1ubuntu8.8 [90.2 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 ssl-cert all 1.1.2ubuntu1 [17.8
```

```
root@ip-172-31-21-223:/home/ubuntu# systemctl start apache2
Warning: The unit file, source configuration file or drop-ins of apache2.service changed on disk. Run 'systemctl daemon-reload' to reload units.
root@ip-172-31-21-223:/home/ubuntu# systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
```

- Dificuldades:

Dificuldade em conseguir fazer a verificação pela linha de comando.

A execução da atividade possibilitou compreender, na prática, os processos de criação e configuração de ambientes em nuvem. Também permitiu exercitar comandos básicos do Linux e a instalação de um servidor web (Apache2), ampliando a experiência com administração de sistemas em ambiente virtualizado.