10 Ejercicios básicos con SSH

- **Ejercicio 1 — Verificar si SSH está instalado**

Objetivo: comprobar cliente y servidor.

ssh -V

👉 Resultado esperado: versión de OpenSSH instalada.

```
~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 ❯ ssh -V
OpenSSH_10.0p2 Debian-8, OpenSSL 3.5.3 16 Sep 2025
```

- **Ejercicio 2 — Instalar y arrancar servidor SSH**

Objetivo: habilitar acceso remoto.

sudo apt update

sudo apt install openssh-server -y

sudo systemctl enable ssh

sudo systemctl start ssh

```
~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 ❯ sudo apt install openssh-server -y
openssh-server is already the newest version (1:10.0p1-8).
openssh-server set to manually installed.
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 43

~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 ❯ sudo systemctl enable ssh
Synchronizing state of ssh.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable ssh
Created symlink '/etc/systemd/system/sshd.service' → '/usr/lib/systemd/system/ssh.service'.
Created symlink '/etc/systemd/system/multi-user.target.wants/ssh.service' → '/usr/lib/systemd/system/ssh.service'.

~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 ❯ sudo systemctl start ssh

~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 ❯ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
     Loaded: loaded (/usr/lib/systemd/system/ssh.service; enabled; preset: disabled)
     Active: active (running) since Wed 2025-09-24 11:20:21 CEST; 5 days ago
 Invocation: ce04f491eff54b42a0e32a314c7841c9
       Docs: man:sshd(8)
             man:sshd_config(5)
   Main PID: 26821 (sshd)
      Tasks: 1 (limit: 6870)
     Memory: 200K (peak: 2.2M, swap: 1.2M, swap peak: 1.2M)
        CPU: 21ms
     CGroup: /system.slice/ssh.service
             └─26821 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"

Sep 24 11:20:21 kali systemd[1]: Starting ssh.service - OpenBSD Secure Shell server ...
Sep 24 11:20:21 kali sshd[26821]: Server listening on 0.0.0.0 port 22.
Sep 24 11:20:21 kali sshd[26821]: Server listening on :: port 22.
Sep 24 11:20:21 kali systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
```

👉 Resultado esperado: servicio SSH activo.

- **Ejercicio 3 — Conectarse a localhost**

Objetivo: probar conexión básica.

ssh usuario@localhost

hay que crear previamente un usuario y crear una clave.


```
~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 > ssh csubires@localhost
The authenticity of host 'localhost (::1)' can't be established.
ED25519 key fingerprint is SHA256:ZfpsKoPyRh/gaHIxWrSRiBggjAHOVqVxBh9TYI69b2w.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
csubires@localhost's password:
Last login: Fri Sep 26 12:16:09 CEST 2025 on pts/0
Linux kali 6.12.38+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.38-1kali1 (2025-08-12) x86_64

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

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
┌──(csubires㉿kali)-[~]
```

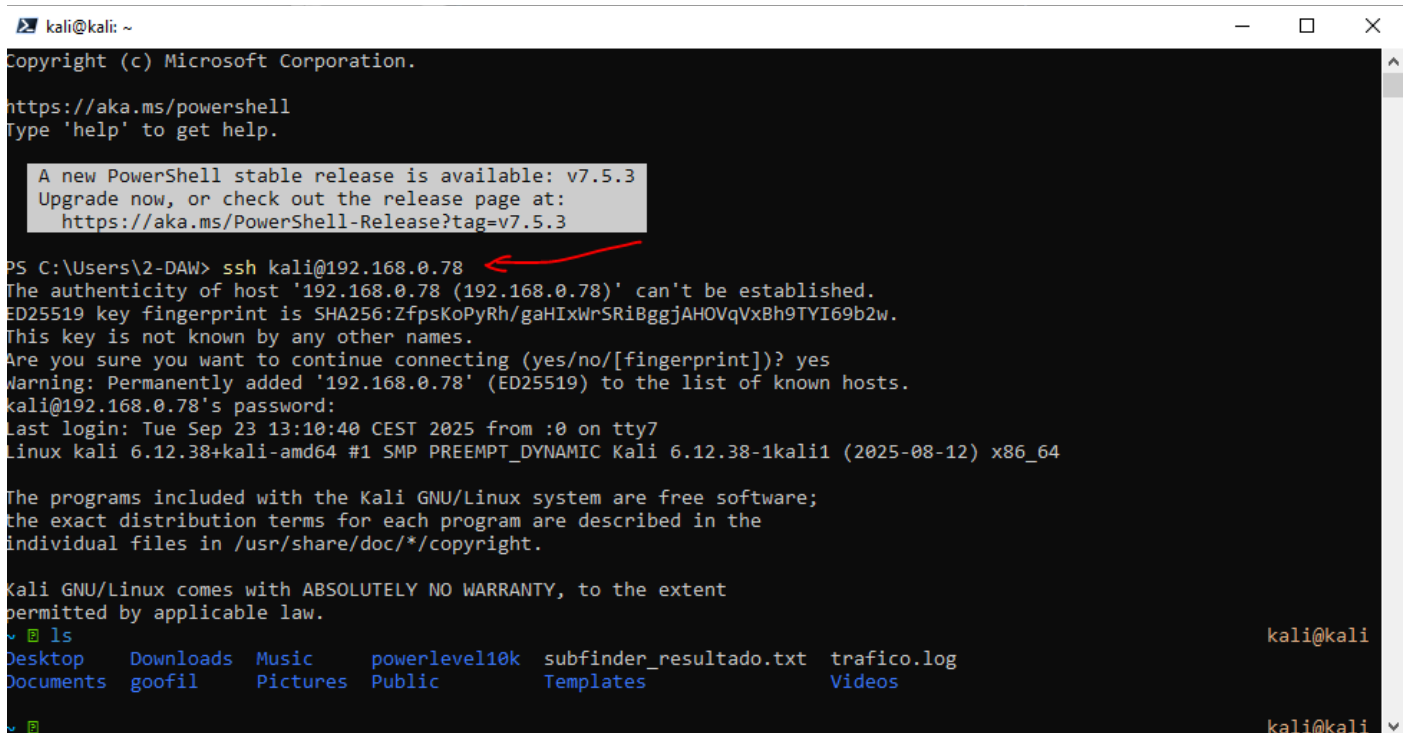👉 Resultado esperado: pedir contraseña y entrar en sesión SSH.

- **Ejercicio 4 — Conectarse a otra máquina en la red**

Objetivo: practicar con dos VMs o un PC+móvil.

ssh usuario@192.168.1.50

👉 Resultado esperado: acceso remoto a otro host.

ipftop mirar tu ip


```
kali@kali: ~                                                        —   □   ×
Copyright (c) Microsoft Corporation.

https://aka.ms/powershell
Type 'help' to get help.

  A new PowerShell stable release is available: v7.5.3
  Upgrade now, or check out the release page at:
    https://aka.ms/PowerShell-Release?tag=v7.5.3

PS C:\Users\2-DAW> ssh kali@192.168.0.78
The authenticity of host '192.168.0.78 (192.168.0.78)' can't be established.
ED25519 key fingerprint is SHA256:ZfpsKoPyRh/gaHIxWrSRiBggjAHOVqVxBh9TYI69b2w.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.0.78' (ED25519) to the list of known hosts.
kali@192.168.0.78's password:
Last login: Tue Sep 23 13:10:40 CEST 2025 from :0 on tty7
Linux kali 6.12.38+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.38-1kali1 (2025-08-12) x86_64

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

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
~ ▫ ls                                                              kali@kali
Desktop    Downloads  Music      powerlevel10k  subfinder_resultado.txt  trafico.log
Documents  goofil     Pictures   Public         Templates              Videos
~ ▫                                                                 kali@kali
```

- ◆ **Ejercicio 5 — Copiar un archivo con scp**

Objetivo: transferencia segura.

scp documento.txt usuario@192.168.1.50:/home/usuario/

hay que crear el documento.txt previamente

usuario

👉 Resultado esperado: archivo transferido al host remoto.

- **Ejercicio 6 — Copiar una carpeta con scp -r**

Objetivo: practicar recursividad.

scp -r carpeta usuario@192.168.1.50:/home/usuario/

```
PS C:\Users\2-DAW> scp -r .\.ssh\ csubires@192.168.0.78:/home/csubires/
csubires@192.168.0.78's password:
known_hosts                                            100%  837    817.3KB/s   00:00
known_hosts.old                                        100%   95     92.8KB/s   00:00
```

👉 Resultado esperado: carpeta completa copiada

```
~/Documents/box ) sudo ls -la /home/csubires
total 96
drwx------ 8 csubires csubires  4096 Sep 29 14:05 .
drwxr-xr-x 4 root     root      4096 Sep 24 12:26 ..
-rw------- 1 csubires csubires   315 Sep 29 13:53 .bash_history
-rw-r--r-- 1 csubires csubires   220 Sep 24 12:26 .bash_logout
-rw-r--r-- 1 csubires csubires  5551 Sep 24 12:26 .bashrc
-rw-r--r-- 1 csubires csubires  3526 Sep 24 12:26 .bashrc.original
drwxr-xr-x 6 csubires csubires  4096 Sep 24 12:26 .config
drwxrwxr-x 4 csubires csubires  4096 Sep 24 12:35 data
-rw-r--r-- 1 csubires csubires 11759 Sep 24 12:26 .face
lrwxrwxrwx 1 csubires csubires     5 Sep 24 12:26 .face.icon → .face
drwxr-xr-x 3 csubires csubires  4096 Sep 24 12:26 .java
drwxr-xr-x 5 csubires csubires  4096 Sep 29 13:52 .local
-rwxrwxrwx 1 root     root       980 Sep 24 12:35 Makefile
-rw-rw-r-- 1 csubires csubires   154 Sep 29 14:03 .minttyrc
-rw-r--r-- 1 csubires csubires   807 Sep 24 12:26 .profile
drwxrwxrwx 3 root     root      4096 Sep 24 12:30 srcs
drwx------ 2 csubires csubires  4096 Sep 29 14:05 .ssh
-rw------- 1 csubires csubires   864 Sep 24 12:35 .viminfo
-rw-r--r-- 1 csubires csubires   336 Sep 24 12:26 .zprofile
-rw-r--r-- 1 csubires csubires 10855 Sep 24 12:26 .zshrc
```

Hay que crear la carpeta previamente

- **Ejercicio 7 — Usar autenticación con clave pública**

Objetivo: evitar contraseñas.

1. Generar clave:

ssh-keygen

Crear un fichero, yo lo he llamado password.pub

Sino quieres crear un fichero le das al enter cuando salga el fichero por defecto
id_ed25519

```
~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 > cat /home/kali/.ssh/config
# Configuración para la organización
Host laboral
    HostName github.com
    User git
    IdentityFile ~/.ssh/id_ed25519

# Configuración personal
Host personal
    HostName localhost
    User git
    IdentityFile ~/.ssh/password
```

2. Copiar clave al servidor:

   ssh-copy-id usuario@192.168.1.50

```
~/.ssh > ssh-copy-id csubires@192.168.0.78
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/kali/.ssh/id_ed25519.pub"
The authenticity of host '192.168.0.78 (192.168.0.78)' can't be established.
ED25519 key fingerprint is SHA256:ZfpsKoPyRh/gaHIxWrSRiBggjAHOVqVxBh9TYI69b2w.
This host key is known by the following other names/addresses:
    ~/.ssh/known_hosts:5: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
csubires@192.168.0.78's password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'csubires@192.168.0.78'"
and check to make sure that only the key(s) you wanted were added.
```

3. Conectarse sin contraseña.

```
~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 > ssh-copy-id csubires@personal
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: ssh-add -L
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
csubires@localhost's password:
Permission denied, please try again.
csubires@localhost's password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'csubires@personal'"
and check to make sure that only the key(s) you wanted were added.

~/Doc/Ejercicios_seguridad_informatica_2025 main ?3 > ssh csubires@personal          14s
Last login: Mon Sep 29 14:28:12 CEST 2025 from ::1 on ssh
Linux kali 6.12.38+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.38-1kali1 (2025-08-12) x86_64

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

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Sep 29 14:24:37 2025 from ::1
┌──(csubires㉿kali)-[~]
└─$ exit
logout
Connection to localhost closed.
```

- **Ejercicio 8 — Redirección de puerto con SSH (túnel simple)**

Objetivo: tunelizar una conexión.

ssh -L 8080:localhost:80 usuario@192.168.1.50

👉 Resultado esperado: acceder al puerto 80 del remoto desde http://localhost:8080.

- **Ejercicio 9 — Ejecutar un comando remoto**

Objetivo: lanzar un comando sin abrir sesión completa.

ssh usuario@192.168.1.50 "uptime"

👉 Resultado esperado: salida del comando uptime del host remoto.

◆ **Ejercicio 10 — Copia de archivos con sftp**

Objetivo: usar protocolo FTP seguro.

sftp usuario@192.168.1.50

sftp> put documento.txt

sftp> get otro.txt

Fallos al usar puerto 80

OPCIÓN 1: Iniciar sesión como root directamente

1. Sal del usuario actual:

2. exit

3. En tu terminal, inicia sesión como **root** si conoces la contraseña:

4. ssh root@192.168.1.55

5. Luego ejecuta:

ss -tuln | grep :80

instalar apache

apt update

apt install apache2 -y


```
~/Documents/box ) sudo apt install apache2
[sudo] password for kali:
apache2 is already the newest version (2.4.65-3+b1).
apache2 set to manually installed.
Summary:
  Upgrading: 0, Installing: 0, Removing: 0, Not Upgrading: 43
```

systemctl start apache2


```
~/Documents/box ) sudo systemctl start apache2

~/Documents/box ) sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; disabled; preset: disabled)
     Active: active (running) since Mon 2025-09-29 14:45:57 CEST; 7s ago
 Invocation: 4aa396a4631e4845b5fe3c2803ff77d5
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 100392 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 100408 (apache2)
      Tasks: 6 (limit: 6870)
     Memory: 22.1M (peak: 22.6M)
        CPU: 59ms
     CGroup: /system.slice/apache2.service
             ├─100408 /usr/sbin/apache2 -k start
             ├─100411 /usr/sbin/apache2 -k start
             ├─100412 /usr/sbin/apache2 -k start
             ├─100413 /usr/sbin/apache2 -k start
             ├─100414 /usr/sbin/apache2 -k start
             └─100415 /usr/sbin/apache2 -k start

Sep 29 14:45:56 kali systemd[1]: Starting apache2.service - The Apache HTTP Server...
Sep 29 14:45:57 kali apachectl[100407]: AH00558: apache2: Could not reliably determine the s
Sep 29 14:45:57 kali systemd[1]: Started apache2.service - The Apache HTTP Server.
```

ss -tuln | grep :80

Ahora deberías ver algo así:


```
~/Documents/box ) ss -tuln | grep :80
tcp   LISTEN 0      128         127.0.0.1:8080      0.0.0.0:*
tcp   LISTEN 0      128             [::1]:8080        [::]:*
tcp   LISTEN 0      511                 *:80           *:*
```

LISTEN 0 128 0.0.0.0:80 0.0.0.0:*

LISTEN 0 128 [::]:80   [::]:*

👉 3. En tu máquina cliente (desde la que haces el túnel SSH):

Ejecuta:

ssh -L 8080:localhost:80 usuario@192.168.1.55

(Sustituye usuario por el que tenga acceso, o usa kali si has iniciado sesión con ese.)

```
~/Documents/box ❯ ssh -L 8080:localhost:80 csubires@localhost
Last login: Mon Sep 29 14:47:36 CEST 2025 from ::1 on ssh
Linux kali 6.12.38+kali-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.38-1kali1 (2025-08-12) x86_64

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

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Sep 29 14:47:36 2025 from ::1
┌──(csubires㉿kali)-[~]
└─$
```

👉 4. Desde tu navegador o terminal en la máquina cliente:

En el navegador:

http://localhost:8080

O en terminal:

curl http://localhost:8080

```
~/Documents/box ❯ curl http://localhost:8080
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Debian Default Page: It works</title>
    <style type="text/css" media="screen">
  * {
    margin: 0px 0px 0px 0px;
    padding: 0px 0px 0px 0px;
  }

  body, html {
    padding: 3px 3px 3px 3px;

    background-color: #D8DBE2;

    font-family: Verdana, sans-serif;
    font-size: 11pt;
```

aparecerá la página de apache.