Mosh Roaming remote shell

CONCEPTS

SSH only logs in and starts mosh-server; the session itself runs over UDP, so it survives sleep, Wi-Fi changes and roaming.

mosh client local
↓ SSH (TCP 22)
Login starts mosh-server
↓ UDP 60000-61000
mosh-server your shell
↓ roams with you
Session survives IP changes

Only the visible screen is synced, so there is no scrollback. Run tmux or screen on the server for history.

Both client and server need mosh installed, and UDP must get through. Windows has no native client (use WSL or Cygwin).

CONNECT

`mosh <host>`
Connect to a host

`mosh <user>@<host>`
Connect as another user

`mosh <host> -- <command>`
Run a command instead of the shell

`mosh --ssh="ssh -p <port>" <host>`
Use a non-default SSH port

`mosh --ssh="ssh -i <keyfile>" <host>`
Pass SSH options such as a key

`mosh <host> -- tmux new -As <name>`
Attach to or create a tmux session

`mosh --server=<path> <host>`
Path to mosh-server on the remote

`mosh -4 <host>`
IPv4 only

`mosh -6 <host>`
IPv6 only

PORTS AND FIREWALL

`mosh -p <port> <host>`
Use one server UDP port

`mosh -p <low>:<high> <host>`
Use a UDP port range

`sudo ufw allow 60000:61000/udp`
Open the mosh range in ufw

`sudo firewall-cmd --add-port=60000-61000/udp --permanent`
Open the range in firewalld

`sudo iptables -A INPUT -p udp --dport 60000:61000 -j ACCEPT`
Open the range in iptables

ESCAPE KEY

`Ctrl+^ .`
Kill the connection

`Ctrl+^ Ctrl+Z`
Suspend the client

`MOSH_ESCAPE_KEY=<char> mosh <host>`
Change the escape character

LOCAL ECHO

`mosh --predict=adaptive <host>`
Echo locally only on slow links (default)

`mosh -a <host>`
Always predict typing

`mosh -n <host>`
Never predict typing

SERVER

`sudo apt install mosh`
Install on Debian or Ubuntu

`sudo dnf install mosh`
Install on Fedora

`sudo pacman -S mosh`
Install on Arch

`brew install mosh`
Install on macOS

`mosh-server --version`
Check mosh-server is found

`locale`
Check a UTF-8 locale is set

SERVER (cont.)

`export LC_ALL=en_US.UTF-8`
Set a UTF-8 locale

`pgrep -a mosh-server`
List running sessions on the server

`pkill -SIGUSR1 mosh-server`
Clean up disconnected sessions

TROUBLESHOOTING

`mosh-server new`
Test it starts and prints a port and key

Common errors

Message	Likely cause
Nothing received from server on UDP port	Firewall blocks UDP
mosh-server: command not found	Not on remote PATH, use --server
needs a UTF-8 native locale	Set LC_ALL on both ends
Connection to server lost	Wait, it resumes on its own

No UDP on the network (some hotels, corporate Wi-Fi) means no mosh. Fall back to plain SSH inside tmux.

RECIPES

Roaming tmux session

```
# survives laptop sleep and network changes
mosh <user>@<host> -- tmux new -As main
```

Open the firewall (ufw)

```
sudo ufw allow OpenSSH
sudo ufw allow 60000:61000/udp
sudo ufw status
```

Smaller port range

```
# fewer sessions, fewer open ports
sudo ufw allow 60000:60010/udp
mosh -p 60000:60010 <host>
```