Ubuntu Server CLI pro tips

Networking

Get the IP address of all interfaces
`networkctl status`

Display all IP addresses of the host
`hostname -I`

Enable/disable interface
`ip link set <interface> up`
`ip link set <interface> down`

Show routes
`ip route`

Which route will be used to reach a host
`ip route get <IP>`

Which route will be used to reach a host
`ip route get <IP>`

List open ports and associated processes
`sudo ss -tulpn`

Manage firewall rules
Enable firewall: `sudo ufw enable`
List rules: `sudo ufw status`
Allow port: `sudo ufw allow <port>`
Deny port: `sudo ufw deny <port>`

Connect remotely through SSH
`ssh <user>@<host IP>`

Security

Show which users are logged in
`w`

Get user password expiration date
`chage -l <user>`

Set user password expiration date
`sudo chage <user>`

Lock a user account
`sudo passwd -l <user>`

Unlock a user password
`sudo passwd -u <user>`

Automatically detect and ban abusive IP addresses
`sudo apt install fail2ban`

Show banned IP addresses
`sudo fail2ban-client status`
`sudo fail2ban-client status <jail>`

Ubuntu Advantage

Enable Ubuntu Advantage
Visit ubuntu.com/advantage to get a free token for up to 3 machines (or 50 if you are an official Ubuntu Community member).
`sudo ua attach <token>`

Check Ubuntu Advantage Service availability and entitlement
`sudo ua status`

Enable or disable a service
`sudo ua enable <service>`
`sudo ua disable <service>`

Fix a CVE/USN
`sudo ua fix <cve/usn>`

See packages update availability status of the system
`sudo ubuntu-security-status`

See CVEs that Livepatch has patched
`canonical-livepatch status --verbose`

Packages

Search for packages
`apt search <string>`
`snap find <string>`

List available package versions
`apt-cache policy <package>`

List available updates
`apt list --upgradable`

Apply all available updates
`sudo apt update && sudo apt upgrade`

Install from the Ubuntu Archive:
`sudo apt install <package>`

Install from the Snap Store:
`sudo snap install <package>`

Remove the package
`sudo apt remove <package>`

Remove the package
`sudo apt remove <package>`

Remove the package and all its configuration files
`sudo apt purge <package>`

Reinstall broken package
`sudo apt install -f --reinstall <package>`

Which files does this package provide?
`dpkg-query -L <package>`

Which package provides this file?
`dpkg-query -S <path>`

Files

List files with permissions and dates
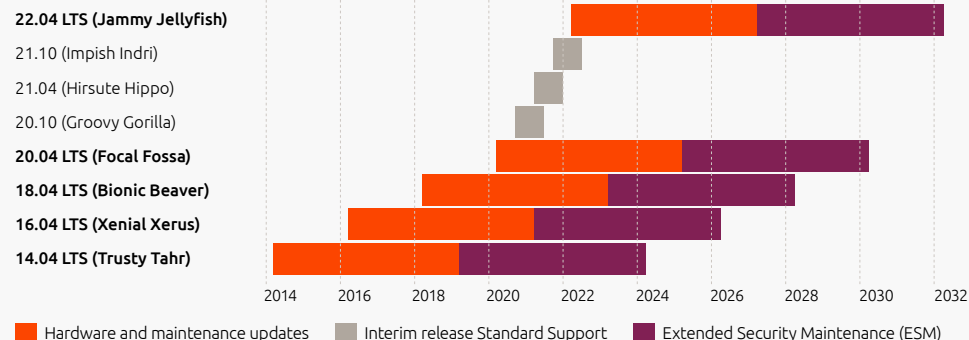`ll`

Common file operations
create empty: `touch <filename>`
create with size: `fallocate -l <size> <filename>`
create with content: `echo "<content>" > <filename>`

Quick file search
`locate <filename>`

Search string in file
`grep <string> <filename>`

Search string recursively in directory
`grep -Iris <string> <directory>`

Ubuntu release cadence

Release	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032
22.04 LTS (Jammy Jellyfish)										
21.10 (Impish Indri)										
21.04 (Hirsute Hippo)										
20.10 (Groovy Gorilla)										
20.04 LTS (Focal Fossa)										
18.04 LTS (Bionic Beaver)										
16.04 LTS (Xenial Xerus)										
14.04 LTS (Trusty Tahr)										

■ Hardware and maintenance updates   ■ Interim release Standard Support   ■ Extended Security Maintenance (ESM)

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2022

Files

Find files modified in the last <n> minutes
```
find <directory> -mmin -<n> -type f
eg. find . -mmin -5 -type f
```

Show only the nth column
```
col<n> "<separator>" <filename>
eg. col2 "," foo.csv
```

Display file paginated
```
less <filename>
```

Display first <n> lines
```
head -n <n> <filename>
```

Display last <n> lines
```
tail -n <n> <filename>
```

Follow file content as it increases
```
tail -f <filename>
```

Pack a directory into an archive
tar.gz: `tar cvzf <target>.tar.gz <source dir>`
zip: `zip -r <target> <source dir>`

Unpack an archive
tar.gz: `tar xf <tar.gz file>`
zip: `unzip <zip file>`

Copy file to remote server
```
rsync <filename> <user@
server>:<destination>
eg. rsync config.yaml
admin@192.0.0.0:/config
```

Copy directory recursively from remote server
```
rsync -avruz <user@
server>:<source> <destination>
eg. rsync -avruz admin@192.0.0.0:/
config /tmp
```

System

Display kernel version   `uname -r`

Get root disk usage   `df -h`

Get memory usage   `cat /proc/meminfo`

Get system time   `timedatectl status`

Set system timezone
```
timedatectl list-timezones
sudo timedatectl set-timezone <zone>
```

Get all running/failing services
```
systemctl --state running
systemctl --state failed
```

Start, stop or restart a service
```
systemctl start/stop/restart <service>
```

Get the full content of a systemd unit including overrides
```
systemctl cat <service>
```

Edit a systemd avoiding conflicts with package updates
```
systemctl edit <service>
```

Monitor new logs for a service
```
journalctl -u <service> --since now -f
```

Monitor all logs since boot   `journalctl --boot 0`

Get the list of recent logins   `last`

Display running processes   `htop`

Kill process by id   `kill <process id>`

Kill process by name   `pkill <process name>`

Run command in the background
```
<command> &
# staying alive after hangup and logging to file
nohup <command> >> /var/log/yourcommand.log 2>&1 &
```

Display background commands   `jobs`

Bring command <n> to the foreground   `fg <n>`

Ubuntu VMs on workstation

Install Multipass and launch an Ubuntu VM
```
sudo snap install multipass
multipass launch <image> --name <VM name>
```
Omitting <image> will launch a VM with the latest Ubuntu LTS

Find available images
```
multipass find
```

List existing VMs
```
multipass list
```

Get a shell inside a VM
```
multipass shell <VM name>
```

More Multipass help at
discourse.ubuntu.com

Micro clouds

Launch a LXD container
```
lxd init
lxc launch ubuntu:18.04 <container name>
Or another distro
lxc launch images:centos/8/amd64 <container name>
```

Get a shell inside a LXD container
```
lxc exec <name> bash
```

Push a file to a LXD container
```
lxc file push <filename> <container name>/<path>
```

Pull a file from a LXD container
```
lxc file pull <destination> <container name>/<file path>
```

Launch a LXD VM
```
lxc launch images:ubuntu/20.04 <vm name> --vm
```

Get a shell inside a LXD VM
```
lxc exec <name> bash
```

More LXD help at linuxcontainers.org/lxd

Bare metal provisioning

Start a VM with a MAAS demo
```
wget -qO- https://raw.githubusercontent.com/
canonical/maas-multipass/main/maas.yml \
 | multipass launch --name maas -c4 -m8GB -d32GB
--cloud-init -
```

Find the IP address of the MAAS demo server
```
multipass list | grep maas | awk '{print $3}'
```

Access MAAS dashboard using IP from multipass list
http://10.x.x.x:5240/
Default username and password is admin:admin

More MAAS help at maas.io

Kubernetes

Install MicroK8s and list available add-ons
```
sudo snap install microk8s --classic
microk8s.status --wait-ready
```

Enable auxiliary Kubernetes services with MicroK8s add-ons
```
microk8s enable <add-ons>
```

View MicroK8s nodes and running services
```
microk8s.kubectl get nodes
microk8s.kubectl get services
```

More MicroK8s help at microk8s.io/docs

OpenStack

Install MicroStack and launch test instance
```
sudo snap install microstack --devmode --beta
sudo microstack.init --auto --control
microstack.launch cirros -n test
```

Get admin password
```
sudo snap get microstack config.credentials.
keystone-password
```

Access Horizon dashboard
https://10.20.20.1

More MicroStack help at microstack.run/docs