

Scenario 1: Service Not Starting

Step 1: Check service status

```
ubuntu:$ sudo apt install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  squashfs-tools
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  nginx-common
Suggested packages:
  fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  nginx nginx-common
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 564 kB of archives.
After this operation, 1596 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
 0% [Waiting for headers]
 0% [Waiting for headers]
 0% [Waiting for headers]

 0% [Waiting for headers]
 0% [Waiting for headers]
 0% [Waiting for headers]

 0% [Waiting for headers]
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx-common all 1.24.0-2ubuntu7.5 [43.4 kB]
16% [Waiting for headers]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx amd64 1.24.0-2ubuntu7.5 [520 kB]
16% [2 nginx 756 B/520 kB 0%]

Fetched 564 kB in 15s (37.3 kB/s)
Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 113825 files and directories currently installed.)
Preparing to unpack .../nginx-common_1.24.0-2ubuntu7.5_all.deb ...
Unpacking nginx-common (1.24.0-2ubuntu7.5) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.24.0-2ubuntu7.5_amd64.deb ...
Unpacking nginx (1.24.0-2ubuntu7.5) ...
Setting up nginx-common (1.24.0-2ubuntu7.5) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
Setting up nginx (1.24.0-2ubuntu7.5) ...
 * Upgrading binary nginx
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.
```

Step 2: Check recent logs

```
ubuntu:$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Wed 2026-02-04 16:03:14 UTC; 42s ago
       Docs: man:nginx(8)
   Process: 1807 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Process: 1809 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
 Main PID: 1838 (nginx)
    Tasks: 2 (limit: 2237)
   Memory: 1.7M (peak: 3.9M)
     CPU: 22ms
    CGroup: /system.slice/nginx.service
            └─1838 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;""
              ├─1843 "nginx: worker process"

Feb 04 16:03:14 ubuntu systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Feb 04 16:03:14 ubuntu systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
ubuntu:$
```

Step 3: Check if enabled on boot

```
ubuntu:/$ systemctl is-enabled nginx
enabled
ubuntu:/$ █
```

Step 4: List all services

```
ubuntu:/$ systemctl list-units --type=service
UNIT                                     LOAD   ACTIVE SUB   DESCRIPTION
apparmor.service                         loaded  active  exited  Load AppArmor profiles
apport.service                           loaded  active  exited  automatic crash report generation
blk-availability.service                 loaded  active  exited  Availability of block devices
console-setup.service                   loaded  active  exited  Set console font and keymap
containerd.service                      loaded  active  running  containerd container runtime
cron.service                            loaded  active  running  Regular background program processing daemon
dbus.service                            loaded  active  running  D-Bus System Message Bus
docker.service                          loaded  active  running  Docker Application Container Engine
finalrd.service                         loaded  active  exited  Create final runtime dir for shutdown pivot root
fwupd.service                           loaded  active  running  Firmware update daemon
getty@tty1.service                      loaded  active  running  Getty on tty1
keyboard-setup.service                  loaded  active  exited  Set the console keyboard layout
kmod-static-nodes.service               loaded  active  exited  Create List of Static Device Nodes
lvm2-monitor.service                   loaded  active  exited  Monitoring of LVM2 mirrors, snapshots etc. using dmeventd or progress polling
ModemManager.service                   loaded  active  running  Modem Manager
multipathd.service                     loaded  active  running  Device-Mapper Multipath Device Controller
nginx.service                           loaded  active  running  A high performance web server and a reverse proxy server
packagekit.service                      loaded  active  running  PackageKit Daemon
plymouth-quit-wait.service              loaded  active  exited  Hold until boot process finishes up
plymouth-quit.service                  loaded  active  exited  Terminate Plymouth Boot Screen
plymouth-read-write.service            loaded  active  exited  Tell Plymouth To Write Out Runtime Data
podman-restart.service                 loaded  active  exited  Podman Start All Containers With Restart Policy Set To Always
polkit.service                          loaded  active  running  Authorization Manager
rsyslog.service                         loaded  active  running  System Logging Service
serial-getty@ttyS0.service              loaded  active  running  Serial Getty on ttyS0
setvtrgb.service                       loaded  active  exited  Set console scheme
ssh.service                            loaded  active  running  OpenBSD Secure Shell server
sysstat.service                         loaded  active  exited  Resets System Activity Logs
systemd-binfmt.service                loaded  active  exited  Set Up Additional Binary Formats
systemd-fsck@dev-disk-by\x2dlabel-BOOT.service loaded  active  exited  File System Check on /dev/disk/by-label/BOOT
systemd-fsck@dev-disk-by\x2dlabel-UEFI.service loaded  active  exited  File System Check on /dev/disk/by-label/UEFI
systemd-journal-flush.service          loaded  active  exited  Flush Journal to Persistent Storage
systemd-journald.service               loaded  active  running  Journal Service
systemd-logind.service                 loaded  active  running  User Login Management
systemd-modules-load.service           loaded  active  exited  Load Kernel Modules
systemd-networkd-wait-online.service  loaded  active  exited  Wait for Network to be Configured
systemd-networkd.service               loaded  active  running  Network Configuration
systemd-random-seed.service            loaded  active  exited  Load/Save OS Random Seed
systemd-remount-fs.service             loaded  active  exited  Remount Root and Kernel File Systems
systemd-resolved.service               loaded  active  running  Network Name Resolution
systemd-sysctl.service                loaded  active  exited  Apply Kernel Variables
systemd-timesyncd.service              loaded  active  running  Network Time Synchronization
systemd-tmpfiles-setup-dev-early.service loaded  active  exited  Create Static Device Nodes in /dev gracefully
systemd-tmpfiles-setup-dev.service     loaded  active  exited  Create Static Device Nodes in /dev
systemd-tmpfiles-setup.service         loaded  active  exited  Create Volatile Files and Directories
systemd-udev-trigger.service          loaded  active  exited  Coldplug All udev Devices
systemd-udevd.service                 loaded  active  running  Rule-based Manager for Device Events and Files
```

Part 2: Scenario-Based Practice

Sorted CPU list

```
ubuntu:/$ ps aux --sort=-%cpu | head -10
USER   PID %CPU %MEM VSZ RSS TTY      STAT START   TIME COMMAND
root      1  0.1  0.6 22520 13544 ?    Ss 15:40  0:03 /sbin/init
root    1259  0.1  0.6 1231188 12600 ?  S<L 15:40  0:02 /bin/runtime-info-service
root    1222  0.0  3.3 838088 64704 ?  SNL 15:40  0:01 /opt/theia/node /opt/theia/browser-app/src-gen/backend/main.js /root --hostname=0.0.0.0 --port 40205
root     662  0.0  2.4 1728296 48000 ?  SsL 15:40  0:01 /usr/bin/containerd
root     856  0.0  3.6 1824352 70368 ?  SsL 15:40  0:00 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock
root    1271  0.0  0.1 10840 2048 ?    SL 15:40  0:00 /bin/kc-terminal -p 40200 --writable -t disableLeaveAlert true bash
root     721  0.0  1.1 110016 22912 ?  SsL 15:40  0:00 /usr/bin/python3 /usr/share/unattended-upgrades/unattended-upgrade-shutdown --wait-for-signal
root     306  0.0  0.6 34452 13044 ?  S<s 15:40  0:00 /usr/lib/systemd/systemd-journald
root      43  0.0  0.0      0      0 ?    I< 15:40  0:00 [kworker/0:1H-kblockd]
ubuntu:/$ █
```

Identify PID

Note the **PID** of the highest CPU process.

Finding Service Logs (Nginx)

View recent logs

Follow logs live

```
ubuntu:$ journalctl -u nginx
Feb 04 16:03:14 ubuntu systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Feb 04 16:03:14 ubuntu systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
ubuntu:$ journalctl -u nginx -f
Feb 04 16:03:14 ubuntu systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Feb 04 16:03:14 ubuntu systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.

^C
ubuntu:$
```