Tailscale & Headscale Cheat Sheet

The commands you look up every time: status and ping, exit node, subnet router, Serve and Funnel, then the Headscale config, users, keys and ACLs, and the usual failure causes. Built from the Tailscale and Headscale documentation and the vpnsmith.com guides.

01 Daily commands

COMMAND	WHAT IT DOES
`tailscale status`	Every node in the tailnet, its 100.x IP, and flags such as "offers exit node"
`tailscale ip -4`	This machine's tailnet IPv4
`tailscale ping NODE`	Path to a node: `via DERP(fra)` means relayed, `via 1.2.3.4:41641` means direct
`tailscale netcheck`	NAT type, nearest DERP region, whether a direct path is possible
`tailscale set --accept-routes`	Linux only: use subnets advertised by other nodes (other systems accept them by default)
`tailscale up --authkey=tskey-auth-...`	Log in a headless node without a browser
`tailscale version`	Client version, check it before you report a bug

02 Exit node, step by step

ON THE SERVER

```
echo 'net.ipv4.ip_forward = 1' | sudo tee /etc/sysctl.d/99-tailscale.conf
echo 'net.ipv6.conf.all.forwarding = 1' | sudo tee -a /etc/sysctl.d/99-tailscale.conf
sudo sysctl -p /etc/sysctl.d/99-tailscale.conf
sudo tailscale up --advertise-exit-node
```

Then approve the node as an exit node in the admin console (Machines, Edit route settings). With Headscale, approve it from the CLI (section 05).

ON THE CLIENT

Use the exit node	`sudo tailscale set --exit-node=NAME-OR-100.x.y.z`
Block traffic if the tunnel drops	`sudo tailscale set --exit-node=NAME --exit-node-allow-lan-access=false`
Stop using it	`sudo tailscale set --exit-node=`
Check it works	`curl ifconfig.me` must print the server's IP, not yours

Automatic exit node choice (`--exit-node=auto:any`) needs a paid plan or the Mullvad add-on. Manual choice works on the free plan.

03 Subnet router

Same forwarding lines as the exit node, then:

```
sudo tailscale up --advertise-routes=192.168.1.0/24
```

Approve the route in the admin console, and run `sudo tailscale set --accept-routes` on Linux clients.

> **Overlapping subnets.** If your home LAN and the hotel Wi-Fi are both 192.168.1.0/24, the local network wins and your packets go to a stranger's router. Renumber the home LAN once to an unusual range (a random 10.x.y.0/24) and the problem is gone for good.

On a VPS, advertise the Docker bridge (`--advertise-routes=172.17.0.0/16` with Docker's default range) to reach containers by IP with nothing published on the public interface.

04 Serve and Funnel

COMMAND	WHO CAN REACH IT
`tailscale serve --bg 3000`	Devices in your tailnet only
`tailscale funnel --bg 3000`	Anyone on the internet with the URL
`tailscale funnel --bg --https=8443 3000`	Same, on port 8443
`tailscale funnel status`	What is published right now

Funnel listens on **443, 8443 and 10000 only**, a hard limit. Funnel adds no login in front of your service. For another port or your own domain, use a reverse proxy (Caddy) on a VPS.

05 Headscale: the self-hosted control server

MINIMUM CONFIG.YAML VALUES (HEADSCALE 0.29)

KEY	VALUE AND WHY
`server_url`	`https://headscale.your-domain.com`. Must be HTTPS: official clients refuse plain HTTP
`listen_addr`	`127.0.0.1:8080`, behind a reverse proxy that terminates TLS
`metrics_listen_addr`	`127.0.0.1:9090`, never public
`derp.urls`	`https://controlplane.tailscale.com/derpmap/default` to reuse Tailscale's public relays

KEY	VALUE AND WHY
oidc	Optional, recommended in production; without it you use users and pre-auth keys

FIRST USER, FIRST NODE

```
systemctl enable --now headscale
headscale users create alice
headscale users list                      # numeric ID, e.g. 1
headscale preauthkeys create --user 1 --reusable --expiration 24h
# on the client:
tailscale up --login-server https://headscale.your-domain.com --authkey tskey-auth-...
headscale nodes list                      # the new node and its 100.x IP
headscale nodes list-routes               # routes and exit nodes waiting
headscale nodes approve-routes --identifier ID --routes 0.0.0.0/0,::/0
```

On iOS and Android, the official app has a custom login server setting: enter the same URL.

ACL POLICY, SAME JSON AS TAILSCALE

```
{
  "groups": { "group:admins": ["alice@"], "group:devs": ["bob@"] },
  "acls": [
    { "action": "accept", "src": ["group:admins"], "dst": ["*:*"] },
    { "action": "accept", "src": ["group:devs"], "dst": ["tag:dev:*", "tag:prod:80,443"] }
  ]
}
```

06 Symptom, then the likely cause

SYMPTOM	LOOK AT
Slow, **`tailscale ping`** says **`via DERP`**	No direct path (strict NAT or CGNAT). Allow inbound UDP 41641 (Tailscale's default) on the server firewall, or run your own DERP relay near your users
Exit node set, **`curl ifconfig.me`** shows your own IP	Exit node not approved, or IP forwarding off on the server (`sysctl net.ipv4.ip_forward` must print 1)
LAN behind subnet router unreachable from Linux	`--accept-routes` missing on the client, or route not approved
Reaches the wrong device on a hotel network	Overlapping subnet (section 03)
Client will not log in to Headscale	`server_url` not HTTPS, or the proxy does not forward to `127.0.0.1:8080`
Headscale breaks after an upgrade	Breaking changes happen between minor versions: read the changelog before each bump

07 Need a server for an exit node or Headscale?

An exit node, a subnet router for containers or a Headscale server must stay on around the clock, on a machine with a public IPv4. Contabo Cloud VPS 4 is listed at about 5.50 EUR/month excluding VAT on a 24-month term (contabo.com, read on 20 October 2026; check the current price on the order page): see Contabo Cloud VPS. This is an affiliate link: vpnsmith.com earns a commission if you buy, at no extra cost to you. Pick the region you want to exit from. A Headscale server or a small exit node for a few devices also fits a smaller plan: HostPapa Unmanaged VPS Lite (1 core, 1 GB RAM, 25 GB NVMe, 4 TB transfer, root SSH) is listed at 2.95 USD/month on a 3-year term, then the regular rate (hostpapa.com, read on 28 October 2026): see the HostPapa VPS offer (affiliate link).

Rather not run a server, and only want to appear from another country? A commercial VPN does that with no setup: Proton VPN runs a Black Friday offer on its Plus plan (checked on 28 October 2026; the order page shows the price for your country), affiliate link. Tailscale's own Mullvad add-on is another option.

Full walkthroughs: Tailscale exit node guide · Subnet router · Self-host Headscale · Headscale config generator.

This sheet is a summary of the vpnsmith.com guides and the Tailscale and Headscale documentation (Tailscale 1.104, Headscale 0.29, October 2026). It was not produced from a test bench across every platform and network.