

VLESS REALITY Cheat Sheet

Xray and sing-box side by side: key generation, the field names that differ between them, the share link, server checks and the usual failure causes. Built from the Xray and sing-box documentation and the vpnsmith.com setup guides.

01 Generate the values (once per server)

COMMAND	WHAT IT GIVES YOU
xray uuid sing-box generate uuid	The VLESS user ID. One per user, it is the login.
xray x25519 sing-box generate reality-keypair	Private key: server only , never in a link. Public key: goes to every client.
xray x25519 -i "<private key>"	Recomputes the public key from a private key you kept.
openssl rand -hex 4	An 8-character short ID. Hex only. An empty short ID is also valid.

Before you go on. Store the private and public key together. Regenerating the pair invalidates every client you already handed out; losing only the public key is harmless, it is recomputed from the private one.

02 One value, three names

The same setting is spelled differently in Xray, sing-box and the share link. Most broken setups are one of these rows copied into the wrong place.

MEANING	XRAY SERVER	SING-BOX	VLESS:// LINK
Borrowed site and port	dest	handshake.server + server_port	(server side only)
SNI the client sends	serverNames (list)	tls.server_name	sni=
Server secret	privateKey	reality.private_key	(never shared)
Client key	(derived)	reality.public_key	pbk=
Short ID	shortIds (list)	reality.short_id	sid=
TLS fingerprint	(client only)	utls.fingerprint	fp=
Flow	flow per client	flow per user	flow=

Only flow value for REALITY over TCP: `xtls-rprx-vision`. Xray also needs `"decryption": "none"` in the VLESS settings and a `freedom` outbound, or traffic black-holes.

03 Share link template

```
vless://UUID@SERVER_IP:443?encryption=none&flow=xtls-rprx-vision&security=reality&sni=HOST&fp=chrome&pbk=PUBLIC_KEY&sid=SHORT_ID&type=tcp#my-server
```

HOST must be one of the server's `serverNames`, and `SHORT_ID` one of its `shortIds`.

04 Choosing the borrowed site

- It answers in TLS 1.3 on the port you point at. Test it from the server: `openssl s_client -connect HOST:443 -servername HOST -tls1_3 </dev/null`
- It is not blocked in the country your clients connect from.
- It is plausible traffic from your server's network location, and it is not a site you control.
- The SNI in `serverNames` / `server_name` and the borrowed host normally hold the same name. A mismatch builds fine and fails at connection time.

05 Check the server before blaming the client

CHECK	COMMAND
Config parses	<code>xray run -test -config /usr/local/etc/xray/config.json</code> <code>orsing-box check -c config.json</code>
Service is up	<code>systemctl status xray (or sing-box)</code>
Something listens on 443	<code>ss -ltnp 'sport = :443'</code>
Port open in the firewall	<code>ufw status</code> then <code>ufw allow 443/tcp</code> if missing
Last errors	<code>journalctl -u xray -n 50 --no-pager</code>
Passthrough works	<code>curl -sI --resolve HOST:443:SERVER_IP https://HOST</code> returns the borrowed site's headers

The last line matters: a plain visitor must see the borrowed site, not an error or a timeout. If it does not, the setup is more conspicuous than an ordinary proxy.

06 Symptom, then the likely cause

SYMPTOM	LOOK AT
Client reaches the real borrowed site instead of tunnelling	Client <code>sid</code> is not in the server's <code>shortIds</code> , or <code>pbk</code> does not match the private key
Connects, no traffic flows	Missing <code>freedom</code> outbound (Xray), or a routing rule that sends everything to a block outbound
Fails only after you set <code>max_time_difference</code> (sing-box) or <code>maxTimeDiff</code> (Xray)	Clock drift on one end. Left empty or 0, the check is off

SYMPTOM	LOOK AT
Works on one network, dies on another	Borrowed site blocked there, or generic TCP throttled: REALITY is TCP only
Old client refuses the link	REALITY needs v2rayNG 1.8+, Shadowrocket 2.2.20+, sing-box 1.5+
sing-box warns about sniff or domain_strategy	Deprecated in 1.11.0 inside inbounds. Use route rule actions sniff and resolve

07 Need a server to run this on?

REALITY needs a VPS with a public IPv4, root access and port 443 free. If you do not have one, 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 a region close to your users.

Prefer not to write the JSON by hand? The [VLESS REALITY config generator](#) creates the keys, UUID and short ID in your browser and writes the matching server config, client config and vless:// link.

Sources: Xray documentation (xtls.github.io), sing-box documentation (sing-box.sagernet.org, field names as of the 1.11 series). Full walkthroughs: [Xray VLESS + REALITY setup](#) · [sing-box REALITY setup](#) · [sing-box vs Xray](#).

This sheet is a summary of the vpnsmith.com guides and the Xray and sing-box documentation. It was not produced from a test bench across every client and network.