

Configure Proxmox VE no-subscription updates for a homelab

Point a Proxmox VE node without a subscription at the official pve-no-subscription repository, keep the Debian base and security streams intact, settle the separate Ceph repository decision, and finish with a verified update, using official repositories only.

PROXMOX VE 9.2 · DEBIAN 13 TRIXIE · PVE-NO-SUBSCRIPTION · CEPH REPOSITORIES · HOW-TO GUIDE

General educational guidance, not affiliated with or endorsed by Proxmox Server Solutions GmbH. Written for a non-production homelab; a production system normally belongs on a subscription and the Enterprise Repository. Validated on Proxmox VE 9.2.10 on Debian 13. Published 2026-08-16.

3 PVE package streams

the homelab runs on pve-no-subscription;
enterprise and test stay disabled

9 steps, backup to validation

official repositories only; the subscription
notice stays intact

A Proxmox VE homelab without a subscription still needs its updates: Debian security fixes and the Proxmox packages themselves. This guide points the node at the official **pve-no-subscription** repository, disables the enterprise stream an unsubscribed node cannot authenticate to, decides the separate Ceph repository deliberately, and finishes with a verified **apt update** and upgrade. Nothing here installs a fake subscription key, patches the interface, or suppresses the subscription notice: those modifications are unsupported, updates can overwrite them, and they change no repository entitlement.

CONTEXT Subscription and repository are separate decisions

What a subscription buys

Access to the Enterprise Repository and, depending on the level, commercial support. It is priced per occupied CPU socket, and the code is open source under the AGPLv3 either way. The paid Community level is the middle ground for non-critical systems: it includes Enterprise Repository access and no support tickets. No subscription is required to run Proxmox VE or to use the No-Subscription repository.

What the repository decides

Which package stream **apt** pulls from. An unsubscribed node pointed at the enterprise stream gets authorization errors, and a node with no PVE repository at all gets no Proxmox updates. The homelab answer is exactly one stream: **pve-no-subscription**.

Where production belongs

This guide is for a non-production homelab. A client production system normally carries an appropriate subscription, the Enterprise Repository, a tested maintenance process, and a defined vendor-support path. Reassess the choice if the server starts hosting production, revenue-generating, or contractually supported workloads.

MAP The three PVE streams and the validated state

REPOSITORY	SUBSCRIPTION	PROXMOX'S INTENDED USE	THIS HOMELAB
pve-enterprise	Required	The most stable packages, suitable for production	Disable while no valid subscription exists
pve-no-subscription	Not required	Testing and non-production use; packages "not always as heavily tested and validated"	Enable
pve-test	Not required	Latest packages, primarily for developers	Leave disabled

The validated node ended in this state, which the rest of the guide builds and checks:

ITEM	OBSERVED STATE	ASSESSMENT
PVE No-Subscription	Enabled; <code>download.proxmox.com/debian/pve</code> , suite <code>trixie</code>	Correct for this homelab
PVE Enterprise	Disabled; <code>enterprise.proxmox.com/debian/pve</code>	Correct without a subscription
Debian base	Enabled; suites <code>trixie</code> and <code>trixie-updates</code>	Required
Debian security	Enabled; suite <code>trixie-security</code>	Required
Ceph No-Subscription	Ceph Squid enabled	Valid today; see the Ceph step before changing it
Ceph Enterprise	Disabled	Correct without a subscription
Tailscale (third-party)	Enabled	Unrelated to the subscription; keep only if used

The repository page's **You get updates for Proxmox VE** line confirms an enabled PVE update channel was detected; the `apt update` in the validation step proves the repository is reachable. The yellow warnings that the PVE and Ceph No-Subscription streams are "not recommended for production use" are expected on this configuration and do not indicate a failure.

01 Confirm the release and back up the APT configuration

This procedure applies to Proxmox VE 9 on Debian 13, code name trixie. Suites and file formats differ on earlier releases, so confirm what is installed from **Shell** on the node:

```
pveversion --verbose
grep -E '^(PRETTY_NAME|VERSION_CODENAME)= ' /etc/os-release
```

The output must identify Proxmox VE 9 and `VERSION_CODENAME=trixie`. On any other major release, stop and use that release's repository instructions: changing a repository suite is never a substitute for the official major-version upgrade procedure.

Then copy the current APT configuration aside. The web-interface workflow below is the normal path, and the backup makes any manual troubleshooting reversible:

```
backup_dir="/root/apt-repository-backup-$(date +%Y%m%d-%H%M%S)"
install -d -m 0700 "$backup_dir"
cp -a /etc/apt/sources.list.d "$backup_dir/"
[ ! -e /etc/apt/sources.list ] || cp -a /etc/apt/sources.list "$backup_dir/"
printf 'Repository backup: %s\n' "$backup_dir"
```

- Sign in as `root@pam` for the complete web-interface workflow, including the **Upgrade** action; delegate repository or shell access only through an approved role design.
- Confirm working DNS and outbound access to the Debian and Proxmox hosts, and current VM, container, and configuration backups before installing updates.
- In a cluster, repeat the checks and configuration on every node: APT configuration is local to each node.

02 Review every enabled repository

Select the node (the example uses `pve01`) and open **Updates > Repositories**. Expand each repository-file group and review every enabled row. Judge each entry by its URI, suite, component, enabled state, and signing key, never by the file name alone.

03 Disable the enterprise repository

Complete this step only on a node without a valid subscription. Locate the enterprise entry, normally `/etc/apt/sources.list.d/pve-enterprise.sources`, and verify it before touching it:

FIELD	EXPECTED VALUE
URI	<code>https://enterprise.proxmox.com/debian/pve</code>
Suite	<code>trixie</code>
Component	<code>pve-enterprise</code>

Select the row, select **Disable**, and confirm the enabled column changes. Disabling adds an `Enabled: no` field to the `deb822` entry (the multi-line `Field: value` format of `.sources` files) without deleting the definition, so it can be re-enabled after a subscription is installed.

• Why it cannot stay enabled

A fresh installation ships with this repository enabled, so finding it active on a new node is expected. An unsubscribed node cannot authenticate to `enterprise.proxmox.com`, and `apt update` reports a `401 Unauthorized` error for that repository until it is disabled or a valid key is installed.

04 Enable pve-no-subscription

If an entry with component `pve-no-subscription` already exists, verify the suite is `trixie` and the URI is the official Proxmox download host, then select **Enable** if it is disabled. If it is absent, select **Add**, choose **No-Subscription** for Proxmox VE in the repository list (a Ceph repository is a separate decision, made in the next step), confirm, and **Reload** if the table does not refresh. Either way, the resulting entry sits in `/etc/apt/sources.list.d/proxmox.sources` and corresponds to:

```
Types: deb
URIs: http://download.proxmox.com/debian/pve
Suites: trixie
Components: pve-no-subscription
Signed-By: /usr/share/keyrings/proxmox-archive-keyring.gpg
```

• HTTP is expected here; the signature is the protection

Proxmox's published No-Subscription entries use HTTP. APT authenticates the repository and its packages through signed metadata and the named Proxmox archive keyring, so keep the `Signed-By` line and never substitute an untrusted mirror.

Exactly one normal PVE stream stays enabled: `pve-no-subscription` on, `pve-enterprise` and `pve-test` off. `pve-test` exists for developer testing, and routine homelab updates never need it.

05

Decide the Ceph repository on its own

Ceph repositories are separate from the main PVE repository. Proxmox preconfigures one because preinstalled Ceph client packages let the node connect to an external Ceph cluster's RBD or CephFS storage, and the same repository serves a hyper-converged deployment. The preconfigured entry is Ceph Enterprise, and without a valid subscription it fails with the same 401 error as the main enterprise stream: disable it the same way. The yellow warning for an enabled Ceph No-Subscription entry is expected. Pick the row that matches the node:

SITUATION	GUIDANCE
Standalone homelab, no Ceph in use	Keep (or add) one valid Ceph No-Subscription entry so the preinstalled client packages receive updates, and accept the expected warning. The repository's presence configures no Ceph services; do not install Ceph merely because the repository exists.
New Ceph deployment on PVE 9	Proxmox marks Ceph Tentacle 20.2 as the recommended release. Select the release and the No-Subscription stream through the Proxmox Ceph installation workflow.
Existing Ceph Squid cluster	Never switch the repository entry by itself. Follow the official Ceph Squid to Tentacle upgrade guide, which sequences health checks, repositories, packages, and service restarts.
External Ceph cluster	Confirm client and server compatibility, follow the external-Ceph repository procedure, and verify with <code>ceph --version</code> .
Valid subscription in use	Use the matching Ceph Enterprise repository for the selected release.

The validated node keeps its enabled Ceph Squid entry, which is valid today and wrong to copy for a new deployment:

```
Types: deb
URIs: http://download.proxmox.com/debian/ceph-squid
Suites: trixie
Components: no-subscription
Signed-By: /usr/share/keyrings/proxmox-archive-keyring.gpg
```

Proxmox's repository table lists Ceph Squid 19.2 with an end-of-life of September 2026, so this entry is due a review; a new deployment uses `ceph-tentacle` in the URI instead. Never enable Squid and Tentacle repositories together, never change an active Ceph cluster's major release just to clear a repository warning, and schedule the review before the configured release reaches end-of-life.

06

Keep the Debian base repositories

The No-Subscription repository does not replace Debian: Proxmox states the base Debian repositories are always needed alongside a PVE repository. Verify both are enabled:

PURPOSE	OFFICIAL HOST	EXPECTED SUITES
Debian base and point updates	deb.debian.org/debian	trixie trixie-updates
Debian security updates	security.debian.org/debian-security	trixie-security

Only rebuild these entries when they are missing or demonstrably wrong; after backing up, the reference in the current Proxmox documentation for `/etc/apt/sources.list.d/debian.sources` is:

```
Types: deb deb-src
URIs: http://deb.debian.org/debian/
Suites: trixie trixie-updates
Components: main non-free-firmware
Signed-By: /usr/share/keyrings/debian-archive-keyring.gpg

Types: deb deb-src
URIs: http://security.debian.org/debian-security/
Suites: trixie-security
Components: main non-free-firmware
Signed-By: /usr/share/keyrings/debian-archive-keyring.gpg
```

Working entries that differ cosmetically stay as they are. `Types: deb` without `deb-src` is valid (source packages are optional), an intentionally enabled `contrib` component is valid, and nothing needs rewriting to match a sample. Mixing this trixie reference with entries for another Debian release is the one thing to rule out.

07 Review third-party repositories

Anything beyond Proxmox and Debian is its own supply-chain decision. The validated node carries a Tailscale repository, which stays because Tailscale is intentionally installed there. For each third-party entry, confirm it is still required, its suite matches the installed release, it uses a dedicated trusted signing key, and the vendor still supports Debian 13; troubleshoot its errors separately from the Proxmox repositories. Identify what owns an unfamiliar entry before deleting it.

08 Refresh, review, and upgrade

The repository page's **Reload** only refreshes the display. Updates install from **Updates**: select **Refresh**, wait for the task, and stop on any repository, signature, DNS, TLS, suite, or authorization error. Review the available packages and changelogs, select **Upgrade**, review the proposed actions, and let the upgrade finish uninterrupted. The shell equivalent is:

```
apt update
apt full-upgrade
```

- **full-upgrade, never plain upgrade**

Proxmox documents `apt full-upgrade`, which can remove packages when changed dependencies require it; plain `apt upgrade` cannot, and can leave a partially upgraded or broken system. Review proposed removals before accepting, and cancel and investigate the repository configuration if a transaction proposes removing core Proxmox packages or the `proxmox-ve` metapackage.

Reboot in an approved maintenance window when a new kernel or similar update requires it, after shutting down or migrating workloads; most package updates need no immediate reboot. Proxmox checks for updates daily and emails `root@pam` about available ones, so keep that mailbox monitored rather than assuming the check succeeded.

09 Validate the result

Back on **Updates > Repositories**, the target state reads: **You get updates for Proxmox VE**; No-Subscription enabled; Enterprise and Test disabled; both Debian entries enabled; one intentional Ceph stream; no parsing or suite errors; and one or two expected yellow No-Subscription warnings. Then prove it from the shell:

```
apt update
apt-cache policy pve-manager
pveversion --verbose
```

- **apt update** finishes without errors, and **pve-manager** shows an installed version and a candidate from the intended Proxmox repository.
- The node still reports Proxmox VE 9 on trixie, and the web interface and workloads behave normally after updating.

To review every effective repository field without changing anything:

```
grep -R --line-number --no-messages \
-E '^(Types|URIs|Suites|Components|Signed-By|Enabled):|^[[:space:]]*deb ' \
/etc/apt/sources.list /etc/apt/sources.list.d
```

MANUAL Manual file reference

Reach for the files only when the interface cannot add or disable a standard repository. Inspect the whole file before saving. Disabling the enterprise stream by hand means keeping its definition and adding one line, and the No-Subscription entry is the same block the interface writes:

```
# /etc/apt/sources.list.d/pve-enterprise.sources : add the last line
Types: deb
URIs: https://enterprise.proxmox.com/debian/pve
Suites: trixie
Components: pve-enterprise
Signed-By: /usr/share/keyrings/proxmox-archive-keyring.gpg
Enabled: no

# /etc/apt/sources.list.d/proxmox.sources
Types: deb
URIs: http://download.proxmox.com/debian/pve
Suites: trixie
Components: pve-no-subscription
Signed-By: /usr/share/keyrings/proxmox-archive-keyring.gpg
```

Run **apt update** after any manual edit. To roll a manual change back, restore the step 01 copies (**cp -a "\$backup_dir"/sources.list.d /etc/apt/**), then run **apt update**. If APT reports duplicate definitions, inspect **/etc/apt/sources.list** and all of **sources.list.d/**: a legacy one-line entry and a deb822 **.sources** entry must not define the same repository. Debian 13 may warn about legacy one-line entries; the release notes offer **apt modernize-sources** to migrate them, and it rewrites repository files, so back up **/etc/apt** and review its changes rather than running it mid-task.

HELP Expected messages and failures

MESSAGE OR SYMPTOM	MEANING	ACTION
"The no-subscription repository is not recommended for production use!"	Expected policy warning for the enabled stream	None, for an approved non-production homelab

MESSAGE OR SYMPTOM	MEANING	ACTION
The Ceph no-subscription warning	Expected for an enabled Ceph No-Subscription stream	Confirm exactly one intended Ceph stream; never disable it just to turn the icon green
401 Unauthorized from <code>enterprise.proxmox.com</code>	Enterprise stream enabled without a working subscription	Disable the entry, or install and repair the key
"No Proxmox VE repository is enabled"	The node gets no PVE updates	Enable exactly one appropriate PVE stream
Suite or mixed-suite warning	A repository does not match the installed release, or a major upgrade is incomplete	Stop; correct the suite or follow the major-upgrade guide
Signature or missing-key error	Repository metadata cannot be authenticated	Verify the official URI and Signed-By path; never bypass signature validation
A third-party repository fails	A non-Proxmox source is unavailable or misconfigured	Fix that vendor's entry separately; never mask it with insecure APT options
Login notice about no valid subscription	Expected on an unsubscribed node	Leave the notice intact, or purchase and install a subscription

NEXT If a subscription arrives later

The configuration reverses cleanly. Open **Subscription** on the node, select **Upload Subscription Key**, and confirm the subscription reports active. Then in **Updates > Repositories**, disable `pve-no-subscription`, enable `pve-enterprise`, switch an in-use Ceph stream to its Enterprise counterpart without changing the Ceph release, and run **Refresh** to confirm a clean result; running the enterprise and No-Subscription variants together is never a steady state. For a cluster, price the licensing first: every node covers its occupied sockets, and all nodes must use the same subscription level.

DONE What you achieved

- The node updates from the official `pve-no-subscription` stream, with the enterprise and test streams disabled and the Debian base and security repositories intact.
- The Ceph repository matches actual Ceph use, exactly one release stream is enabled, and its end-of-life review is scheduled.
- Third-party repositories are identified and deliberate, and the APT configuration is backed up.
- `apt update` completes cleanly, updates install through the **Upgrade** workflow or `apt full-upgrade`, and the expected No-Subscription warnings are documented rather than bypassed.

REF References

Proxmox VE documentation: Package Repositories, and Host System Administration (system software updates) · pve.proxmox.com/pve-docs

Ceph: the Squid to Tentacle upgrade guide, and upstream Active Releases · pve.proxmox.com/wiki/Ceph_Squid_to_Tentacle · docs.ceph.com/en/latest/releases

Proxmox VE pricing and subscription FAQ · proxmox.com/en/products/proxmox-virtual-environment/pricing

Debian 13 release notes (apt modernize-sources), and sources.list(5) · debian.org/releases/trixie/release-notes · manpages.debian.org