MR.PLANB FIELD GUIDE · PROXMOX VE

LXC vs VM vs Docker on Proxmox: Decision Guide

Which of the three setups fits your priorities, and why upgrades are where Docker in LXC breaks.

Updated **2026-10-29** · Full guide: www.mrplanb.com/blog/docker-lxc-vs-vms-proxmox-debate-2026

> Plain LXC is the happy path Proxmox tests, Docker inside LXC is convenient but unsupported and can break after upgrades, and Docker in a VM is the boring, safe choice when uptime matters. The right answer depends on whether you value efficiency, stability or convenience. Early native OCI image support in Proxmox VE 9.1 may cool the debate, but it is not yet a Compose replacement.

3
setups compared: plain LXC, Docker in LXC, Docker in a VM

9.1
Proxmox VE release that added early OCI image support

5–7 yrs
how long many users report running Docker in unprivileged LXCs

1 kernel
shared by LXC and Docker, the root of the tension

The three setups at a glance

	Plain LXC	Docker in LXC	Docker in a VM
Kernel	Shares the host kernel	Shares the host kernel	Own guest kernel
Proxmox support	First-class, tested, documented	Not officially supported	The path Proxmox designs for
Strength	Lowest overhead, instant start	Easy Compose, simple backups and migration	Clean isolation, predictable upgrades
Weakness	Many services ship only as Docker images	Compatibility drift, breaks after upgrades	Memory overhead, trickier GPU passthrough
Best for	Efficiency	Convenience on light workloads	Stability and uptime

Why upgrades are the real villain

Each change is reasonable alone. Combined across layers they can stop containers starting at all.

- A container runtime changes how it touches /proc.
- An AppArmor profile tightens slightly.
- A storage driver flips its default behavior.
- Kernel updates, cgroup version shifts and filesystem driver tweaks are normal host maintenance.
- Proxmox does not test its updates against Docker inside unsupported containers, and Docker does not know it runs inside LXC.

Choose by priority

Efficiency
LXCs, with or without Docker. Memory sharing is real, startup is instant, resource use is honest.

Stability and support
VMs win by default. Cleaner isolation, smaller blast radius, clearer rules.

Convenience
Docker remains hard to beat, even when someone calls it unsupported.

Small or low-power box
A VM needs memory for its kernel, init and idle processes. That can decide what fits.

Before you run Docker inside an LXC

- [ ] Keep good backups.
- [ ] Accept that occasional downtime after an upgrade is possible.
- [ ] Delay upgrades if you cannot tolerate surprises on day one of a release.
- [ ] Expect extra care if you use GPUs, advanced networking or boundary storage drivers.
- [ ] Keep a VM option ready for anything that needs predictable behavior.

The OCI wildcard

- Recent Proxmox versions run OCI images directly, with no Docker daemon inside an LXC.
- Proxmox VE 9.1 added early support, per the page FAQ.
- That removes the Docker socket and runc layer from the stack.
- There is no mature equivalent to Docker Compose yet.
- Orchestration is basic and upgrades are cautious, so do not bet production on it today.

Sources and notes: Proxmox VE documentation on LXC · Docker documentation · r/Proxmox discussions on Docker in LXC