Project EVE Policy for updating EVE kernel

Maintaining a secure and reliable system requires constant attention to the latest Linux kernel updates. Updates to the Linux kernel offer necessary security patches, performance improvements, and bug fixes to keep your system operating correctly.

The Linux kernel sits at the core of the EVE-OS acting as a bridge between the edge computing hardware and the applications running on EVE.

The kernel is the core part of the operating system that loads at bootup and manages low-level operations, such as memory management and scheduling of processor tasks. Any higher-level functions in the operating system are always managed and actioned by the OS kernel.

Some of the major reasons for updating the kernel include but are not limited to

- **Driver updates**
- **Additional functionality**
- **Faster performance**
- **Security Fixes**
- **Stability Improvements**

Linux kernel updates are released at a high frequency – in part due to the fact that Linux kernel vulnerabilities are continuously discovered right through the year. It's not a matter of quarterly or annual updates – it's more frequent than that. Where a vulnerability is discovered, Linux kernel security updates – or patches – will likely be released almost immediately.

Long Term release kernels

Long Term kernels are picked based on various factors -- major new features, popular commercial distribution needs, device manufacturer demand, maintainer workload and availability, etc. The new longterm version will become available based on how much time has elapsed since the last longterm version was released.

Version	Maintainer	Released	Projected EOL
6.1	Greg Kroah-Hartman & Sasha Levin	2022-12-11	Dec, 2026
5.15	Greg Kroah-Hartman & Sasha Levin	2021-10-31	Oct, 2026
5.10	Greg Kroah-Hartman & Sasha Levin	2020-12-13	Dec, 2026
5.4	Greg Kroah-Hartman & Sasha Levin	2019-11-24	Dec, 2025
4.19	Greg Kroah-Hartman & Sasha Levin	2018-10-22	Dec, 2024
4.14	Greg Kroah-Hartman & Sasha Levin	2017-11-12	Jan, 2024

The LTS version as of this writing is 6.1.58. This LTS branch was initially released in December 2022 with updates coming in as revisions to minor releases 6.1.xx etc. The LTS releases are made available on a semi-regular cadence, between 12 & 15 months apart. There is a balance between keeping up with the latest kernel updates and avoiding issues associated with taking a newer kernel which is still unproven.

The plan is to follow a process for updating the EVE-OS kernel on an annual basis at a minimum. EVE-OS will be updated in Q4 with the LTS version released in the previous year. The commitment is to continuously monitor the community updates to the linux kernel. In the event of the community publishing security fixes or critical features it will be evaluated for the criticality of the changes, how they apply to EVE-OS and update the kernel if deemed necessary.

The goal is to incorporate a release that is up to date but also tested and validated by the industry as a good candidate for kernel updates.

Going forward EVE with an updated kernel will be validated in Q4 on an annual basis and made available to users before the end of the year. The update to the EVE-OS, running on a LTS kernel 6.1.xx will be made available by 12/30/2023. The plan is to update it again in Q4 2024 and every year going forward.