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[SECURITY PATCH 0/8] GRUB2 vulnerabilities - 2025/11/18

From: Daniel Kiper**Subject:** [SECURITY PATCH 0/8] GRUB2 vulnerabilities - 2025/11/18**Date:** Tue, 18 Nov 2025 19:00:13 +0100

Hi all,

This patch set contains a bundle of fixes for various security flaws discovered, as part of a pro-active hardening effort, in the GRUB2 code recently. The most severe one, i.e. potentially exploitable, has CVE assigned and is listed at the end of this email.

Details of exactly what needs updating will be provided by the respective distros and vendors when updates become available.

Full mitigation against CVE will require updated shim with latest SBAT (Secure Boot Advanced Targeting) [1] data provided by distros and vendors. This time UEFI revocation list (dbx) will not be used and revocation of broken artifacts will be done with SBAT only. For information on how to apply the latest SBAT revocations, please see `mokutil(1)`. Vendor shims may explicitly permit known older boot artifacts to boot.

Updated GRUB2, shim and other boot artifacts from all the affected vendors will be made available when the embargo lifts or some time thereafter.

I am posting all the GRUB2 upstream patches which fix all security bugs found and reported up until now. Affected Linux distros carry or will carry soon one form or another of these patches. Now all the GRUB2 upstream patches are in the GRUB2 git repository [2] too.

I would like to thank Alec Brown, Jamie and Thomas Frauendorfer for responsible disclosure and preparation of patches needed to fix known issues. Marco Benatto has been helping with assigning CVEs and scores for the issues. Thank you!

Daniel

[1] <https://github.com/rhboot/shim/blob/main/SBAT.md>
https://github.com/rhboot/shim/blob/main/Delivering_Sbat_Revocations.md

[2] <https://git.savannah.gnu.org/gitweb/?p=grub.git>
<https://git.savannah.gnu.org/git/grub.git>

CVE-2025-54770: Missing unregister call for `net_set_vlan` command may lead to use-after-free
CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:L - 4.9

The `net_set_vlan` command is registered in the `net` module during load. However, the command is not unregistered at the module unload. So, this may lead to use-after-free issue when the `net_set_vlan` command is invoked after the

net module unload.

Reported-by: Thomas Frauendorfer

CVE-2025-54771: grub_file_close() does not properly controls the fs refcount
CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:L - 4.9

When closing a file the grub_file_close() misses to dereference the filesystem structure leading to possible invalid reference to the file->fs->mod pointer. It may lead to a use-after-free vulnerability.

Reported-by: Thomas Frauendorfer

CVE-2025-61661: Out-of-bounds write in grub_usb_get_string() function
CVSS:3.1/AV:P/AC:H/PR:N/UI:N/S:U/C:N/I:L/A:H - 4.8

When reading strings from a USB device in grub_usb_get_string() function the initial length is taken from first message read. Then this value is used to allocate memory for UTF-8 destination string. However, during conversion the length value is taken from the second USB device read. This can be dangerous if malicious USB devices are connected because they may expose smaller initial length value, used for memory allocation, and subsequent read may provide larger length, used during conversion. Such behavior may lead to heap overflow during UTF-16 to UTF-8 conversion.

Reported-by: Jamie

CVE-2025-61662: Missing unregister call for gettext command may lead to use-after-free
CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:L - 4.9

The gettext command is registered in the gettext module during load. However, the command is not unregistered at the module unload. So, this may lead to use-after-free issue when the gettext command is invoked after the gettext module unload.

Reported-by: Alec Brown

CVE-2025-61663: Missing unregister call for normal commands may lead to use-after-free
CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:L - 4.9

The normal command is registered in the normal module during load. However, the command is not unregistered at the module unload. So, this may lead to use-after-free issue when the normal command is invoked after the normal module unload.

Reported-by: Alec Brown

CVE-2025-61664: Missing unregister call for normal_exit command may lead to use-after-free
CVSS:3.1/AV:L/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:L - 4.9

The normal_exit command is registered in the normal module during load. However, the command is not unregistered at the module unload. So, this may lead to

use-after-free
issue when the normal_exit command is invoked after the normal module unload.

Reported-by: Alec Brown

*** Security recommendation ***

We have observed the same missing unregister behavior for the functional_test and all_functional_test commands. However, both commands are part of the GRUB's test library and should not be included in GRUB images targeting production environments. Given the statement above we opted to not assign CVEs for such cases and instead strongly recommend that GRUB's users to not include both functionl_test and all_functional_test commands in the production GRUB images.

```

grub-core/commands/test.c          | 2 +-
grub-core/commands/usbttest.c     | 4 ++-
grub-core/gettext/gettext.c       | 19 ++++++++-----
grub-core/kern/file.c             | 6 +++--
grub-core/net/net.c               | 1 +
grub-core/normal/main.c           | 12 ++++++-----
grub-core/tests/lib/functional_test.c | 7 ++++--
7 files changed, 30 insertions(+), 21 deletions(-)

```

Alec Brown (3):

gettext/gettext: Unregister gettext command on module unload
normal/main: Unregister commands on module unload
tests/lib/functional_test: Unregister commands on module unload

Jamie (2):

commands/usbttest: Use correct string length field
commands/usbttest: Ensure string length is sufficient in usb string processing

Thomas Frauendorfer | Miray Software (3):

commands/test: Fix error in recursion depth calculation
kern/file: Call grub_dl_unref() after fs->fs_close()
net/net: Unregister net_set_vlan command on unload

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