

Google Summer of Code 2026 Lighting Talk

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NetBSD and pkgsrc

- ▶ **NetBSD** is a free, fast, secure and highly portable Unix-like operating system
 - ▶ Runs on 75 different platforms
 - ▶ Very easy to cross-compile
 - ▶ Vast test suite that runs daily on several ports
 - ▶ 12000 test cases covering both userland and kernel!
 - ▶ Supports Linux binaries via `compat_linux(8)`
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- ▶ **pkgsrc** is the default package system for NetBSD and SmartOS
 - ▶ Works on other Unix-like OSes: macOS, Linux, FreeBSD, OpenBSD and more!

Testing compat_linux(8)

- ▶ `compat_linux` allows you to run unmodified Linux binaries on NetBSD
 - ▶ Not an emulation, native code runs on the CPU
 - ▶ Translation shim
 - ▶ Virtually zero performance impact
 - ▶ *Not covered by existing testing suite!*
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- ▶ Henrique Brito, mentored by Stephen Borrill, worked on that as part of Testing Compat Linux: Syscall testing
 - ▶ Ported and packaged in pkgsrc Linux Test Project (LTP)
 - ▶ Written a shell script to easily run, collect logs and compare to previous runs
 - ▶ Found and fixed a lot of bugs in the process!

Outcomes

- ▶ All Henrique work is *upstreamed* in pkgsrc as [emulators/compat_linux_test_project](#)
- ▶ Also to build Linux Test Project (LTP), `compat_linux(8)` is used
- ▶ Running Linux Test Project (LTP) allows one to:
 - ▶ Find and fix bugs (also kernel panics!)
 - ▶ Find Linux syscall semantics differing from POSIX (followed by NetBSD)
 - ▶ Do in-depth analysis of missing functionalities
- ▶ To learn more:
 - ▶ [Google Summer of Code 2026 Reports: Testing Compat Linux: Syscall testing, part 2](#)
 - ▶ [Linux emulation on NetBSD: How broken is it?](#)