



- [Articles & Reviews](#)
- [News Archive](#)
- [Forums](#)
- [Premium Ad-Free](#)
- [Contact](#)
- Close

-
- [Articles & Reviews](#)
- [News Archive](#)
- [Forums](#)
- [Premium](#)
- [Contact](#)
- Categories
 - [Computers](#)
 - [Display Drivers](#)
 - [Graphics Cards](#)
 - [Linux Gaming](#)
 - [Memory](#)
 - [Motherboards](#)
 - [Processors](#)
 - [Software](#)
 - [Storage](#)
 - [Operating Systems](#)
 - [Peripherals](#)
-

MeshXFS: AI Adapts XFS Into A Clustered File-System

Written by [Michael Larabel](#) in [Linux Storage](#) on 17 October 2026 at 01:02 PM EDT. [4 Comments](#)

 LINUX STORAGE MeshXFS is a clustered open-source file-system in which "no human wrote any of its own code". Depending upon your views of AI, not necessarily something you want to hear for entrusting your data in an AI-created solution. Instead, Claude Opus was tasked with adapting the XFS file-system driver into a clustered file-system.

Steve Shoecraft who started the MeshXFS project and wrote into Phoronix to highlight the initiative. He remarked:

"MeshXFS began as an experiment to answer one question: can AI write a kernel filesystem driver, and not a simple one, but a clustered filesystem with distributed locking, concurrent access from many nodes, fencing and crash recovery? It is now a working, released, open-source (GPL-2.0) POSIX clustered filesystem, and the answer so far is yes."

XFS was adapted into a POSIX clustered file-system complete with distributed locking, many node concurrent access capabilities, fencing and crash recovery, and other features. Steve further explained of this MeshXFS creation:

"It starts from the upstream XFS code, written by the XFS developers. Everything that turns XFS into a filesystem many machines can mount read-write at once was written by AI:

- two distributed lock managers: one over the network, and one that keeps lock state on the shared disk itself using SCSI COMPARE AND WRITE, with no lock network at all
- cache coherency across nodes, fencing with SCSI persistent reservations, and survivor-led journal recovery
- an on-disk envelope around XFS, plus the userspace tools (mkfs, fsck, resize)
- every change to the forked XFS code since the fork (the xfs/ tree has grown from about 226k to about 314k lines)
- the test harnesses, the test rig automation, and the release validation

Claude Opus, running as an autonomous coding agent in Claude Code, did a large share of the work, consulting Claude Fable, GPT, Gemini and Astra on the hardest problems: lock protocol design, recovery races, fencing correctness. The AI also wrote and ran the tests, diagnosed the failures and fixed them. My part was setting the goal and the bar: data integrity first, never crash the host, and stay within twice the time native XFS takes on the same storage. I did not write, edit or review the code."

For those concerned about entrusting their data into an AI-modified file-system, each MeshXFS release is said to undergo a ~30 row suite on real multi-node clusters through a variety of different real-world scenarios.

Those curious about MeshXFS and wanting to learn more can do so via the project's [GitHub](#).

[4 Comments](#)

Related News

- [Linux 7.3 Lands Last-Minute Fixes For Samsung 990 PRO & 990 EVO Plus SSDs](#)
- [EXT4 Introducing Iomap Buffered I/O Path With Some Performance Gains](#)
- [Faster Zswap With Patches To Batch The Writeback I/O](#)
- [EXT4 Deprecates Its Journalled "data=journal" Mode](#)
- [XMFs: Experimental File-System Being Worked On By Huawei For Modern Linux Servers](#)
- [Large Folios Able To Deliver Big Performance Gains For FUSE With Linux 7.4](#)

About The Author

Michael Larabel is the principal author of Phoronix.com and founded the site in 2004 with a focus on enriching the Linux hardware experience. Michael has written more than 20,000 articles covering the state of Linux hardware support, Linux performance, graphics drivers, and other topics. Michael is also the lead developer of the Phoronix Test Suite, Phoromatic, and OpenBenchmarking.org automated benchmarking software. He can be followed via [Twitter](#), [LinkedIn](#), or contacted via [MichaelLarabel.com](#).

Popular News This Week

- [Linus Torvalds Working On A Hefty Linux Kernel Improvement With Claude Code](#)
- [Linus Torvalds "Did What I Preach", Used AI To Make Code Decipherable & Uncovered More Bugs](#)
- [Microsoft Releases Microsoft Defender For The Linux Desktop](#)
- [Today's Steam Beta Makes The Linux Client A 64-bit App](#)
- [Claude Code / AI Shows Potential For Reverse-Engineering Hardware For Linux Support](#)
- [Linux Kernel Developers Plan To Remove "Assisted-By" Tag Requirement For AI/LLM Usage](#)
- [Epic Games To Improve Easy Anti-Cheat On Linux With Anti-Cheat Systemd Service & eBPF](#)
- [Python 3.15 Released With Experimental JIT Compiler Running Faster](#)

Latest Linux News

- [MeshXFS: AI Adapts XFS Into A Clustered File-System](#)
- [Linux Lands Fix for Rare, Varying SMP Boot Hangs Affecting Kernels Since 2024](#)
- [GNOME's New Local/Cloud AI Chat App Gains More Features](#)
- [Linux 7.3 Lands Last-Minute Fixes For Samsung 990 PRO & 990 EVO Plus SSDs](#)
- [KDE Plasma 6.9 To Debut New Weather Widget & On-Screen Keyboard](#)
- [Ubuntu Touch 24.04-2.1 Brings New Hardware Support & Important Security Fix](#)
- [Wine 11.20 Released With CD-ROM Support Change](#)
- [17 More Security Vulnerabilities Made Public For X.Org Libraries](#)
- [GNOME OS Preview Announced In Road Toward A Stable Release](#)
- [The Best Features Of Linux 7.3: Performance Improvements, Lots From Valve](#)
- [After 23 Years, Longtime Linux Developer To "Step Back For A While"](#)

Show Your Support, Go Premium

[Phoronix Premium](#) allows ad-free access to the site, multi-page articles on a single page, and other features while supporting this site's continued operations.

Latest Featured Articles

- [Intel Xeon 6980P Granite Rapids Performance On Linux Over The Past Year](#)
- [LPDDR5 5467 vs. 6400 vs. 7467 MT/s Memory Performance Benchmarks For Laptops](#)
- [Ubuntu 26.10 amd64v3 Packages Provide Some Additional Uplift On AMD EPYC](#)
- [Framework Laptop 12 Offers Improved Performance & Efficiency With Intel Core 3 Wildcat Lake](#)
- [ROCm 10 OpenCL vs. Mesa 26.3-dev Rusticl Performance On AMD Strix Halo](#)

Support Phoronix

The mission at Phoronix since 2004 has centered around enriching the Linux hardware experience. In addition to supporting our site through advertisements, you can help by [subscribing to Phoronix Premium](#). You can also contribute to Phoronix through tips/donations via [PayPal](#) or [Stripe](#).

Phoronix Media

- [Contact](#)

- [Michael Larabel](#)

- [Support Phoronix](#)
- [While Having Ad-Free Browsing,](#)
- [Single-Page Article Viewing](#)

Share

- [Facebook](#)
- [Twitter / X](#)

- [Legal Disclaimer, Privacy Policy, Cookies](#) |

Privacy Manager

 | [Contact](#)

- Copyright © 2004 - 2026 by [Phoronix Media](#).

- All trademarks used are properties of their respective owners. All rights reserved.