Kernel: GuC/HuC, ZFS, X.Org and Mesa

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- **[Intel's Linux Driver To Load HuC Firmware By Default For Icelake+](#)** [2]

  For several generations now of Intel graphics there have been the GuC/HuC firmware binaries while beginning with Icelake "Gen 11" graphics those binary blobs will be loaded by default.

  Intel's GuC has been used for graphics workload scheduling while the HuC firmware provides some "media functions from the CPU to GPU" for different video codec functions and CPU-GPU synchronization among other abilities.

- **[ZFS On Linux Has Figured Out A Way To Restore SIMD Support On Linux 5.0+](#)** [3]

  Those running ZFS On Linux (ZoL) on post-5.0 (and pre-5.0 supported LTS releases) have seen big performance hits to the ZFS encryption performance in particular. That came due to upstream breaking an interface used by ZFS On Linux and admittedly not caring about ZoL due to it being an out-of-tree user. But now several kernel releases later, a workaround has been devised.

  Some Linux distributions have resorted to reverting the kernel patch that stopped exporting the kernel FPU begin/restore functions used by ZoL for tapping vector-based (SSE/AVX) algorithms. But now ZFS On Linux itself has figured out a solution to restore said SIMD support on these recent kernel releases.

- **[Many Vintage X.Org Modules Could Use Some Help If Wanting New Releases](#)** [4]

Longtime X.Org developer Alan Coopersmith who also maintains the X.Org stack for Oracle's Solaris has been trying to get out some updated X.Org modules with different code-bases having collected enough changes over the years to warrant new versions.

While he has been releasing a number of X.Org module updates recently, he's left out many for varying reasons. Even for these modules accumulating enough changes, among those he has left out for releasing new versions include TWM, XKBCOMP, XKBUTILS, XRandR, Xrestop, XScope, xf86-input-keyboard, and xf86-video-dummy.

- **Mesa 19.2 Is Just Six Patches Away From Seeing OpenGL 4.6 Support** [5]

  Later this month marks two years since the release of OpenGL 4.6 and just ahead of that date it looks like Mesa could finally land its complete GL 4.6 implementation, at least as far as the Intel open-source graphics driver support is concerned.

  Mesa is now just six patches away from OpenGL 4.6! Following recent SPIR-V patches being merged, there are just five patches left plus the sixth that updates the documentation and flips on OpenGL 4.6 for the i915 Mesa driver. The remaining patches are in regards to base vertex work.

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