

Debian GNU/Hurd

Past, Presence and Future

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The Hurd

```
<marcus> Jeroen: you are a Hurd developer. Being  
insane is part of the public image.
```



The Past, First Generation

- Pretty good summary on the H recently
- Designed by Thomas Bushnell, BSG, with some input by others (including RMS)
- Core system implemented by Thomas and Roland McGrath (glibc author) (excluding RMS)
- Architecture:
 - ▶ GNU Mach microkernel, including VMM and device drivers
 - ▶ POSIX layer implemented by glibc
 - ▶ Hurd servers provide authentication, networking, file systems
 - ▶ Hurd translators allow for flexible invocation of hurdish servers
 - ▶ Hurd libraries greatly facilitate development
- Thomas and Roland still answer interesting questions (and Roland commits Hurd-specific glibc code/fixes)



The Past, First Generation

“My memory on this is as dim as usual, so I am mostly making up new rationale on the spot.” – Roland McGrath



The Past, Second and Third Generations

- Mark Kettenis and Miles Bader joined development
- Development of more user-friendly translators and servers
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- Marcus Brinkmann and Neal Walfield joined later
- Marcus started the Debian `hurd-i386` port and designed and implemented the Hurd console
- Neal contributed important fixes and patches, as well a POSIX threading library (`libpthread`)
- Both started Hurd-NG on various microkernels and designs, but eventually discontinued them
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- By 2005, Debian GNU/Hurd was very much in limbo



The Past, Second and Third Generations

“When I joined the Hurd in 1997, there was little doubt about the Hurd state at that time: It was just about at the end of dieing a slow death.” – Marcus Brinkmann



The Presence, Fourth Generation

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- Samuel (youpi) showed up and fixed about everything
 - ▶ Implemented TLS
 - ▶ Ported GNU Mach to Xen and implemented PAE
 - ▶ Fixed countless GNU Mach crashers
 - ▶ Fixed/ported glibc
 - ▶ Fixed and/or ported X.org several times
 - ▶ Initiated the debian-installer port
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 - ▶ pushes the Hurd concepts and design discussions
 - ▶ Organized the successful GSoC projects



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 - ▶ Organized the successful GSoC projects
- Thomas (tschwinge) pushed the GNU side
 - ▶ Made cross-building happen and fixed various toolchain issues
 - ▶ Got the new committers to the GNU Mach and Hurd codebases approved
 - ▶ Migrated the repositories to git



The Presence, Fourth Generation

“You know you became a hurd hacker when you type `l root` instead of `su -` on a linux box” – Samuel Thibault



The Presence, Community

- Around a dozen people regularly contribute/discuss on `bug-hurd/debian-hurd`
- Former GSoC students are partly still actively around, some mentoring, some reprising GSoC with new projects
- Emilio Pozuelo Monfort (pochu) has been porting GNOME packages
- Pino Toscano (pinotree) has been porting KDE package



The Presence, Community

<jbailey> Well, if we can't talk about the Hurd here,
we may as well talk about sex.

<neal> They are often equivalent. functionally
speaking.

<jbailey> neal: They last a short time under load?



The Presence, Google Summer of Code

- Emilio Pozuelo Monfort is fixing testsuite failures
 - ▶ Fixed glib, most of coreutils
- Karim Allah Ahmed is improving the virtual memory management
 - ▶ Ported parts of OSF Mach
- Zheng Da is porting DDE to GNU Mach
 - ▶ e100, e1000 now working
- Jeremy Koenig is porting debian-installer for Debian



The Presence, Debian-Installer

- Added `initrd` support to GNU Mach
- Fixed `glibc` for `mkdir ("/")`
- Ported `partman`
- Integrated user-space partition stores
- Ported `busybox`
- Fixed `grub-installer`
- Status/Roadmap:
<http://www.gnu.org/software/hurd/user/jkoenig.html>



The Presence, Debian GNU/Hurd

- Debian-installer working (#589528)
- Autobuilders {mozart, bach, rossini}.debian.net keeping up
 - ▶ 67% of the archive built
 - ▶ Continuously building with week-long uptimes
- Xen DomU working, but not out-of-the-box
- Qemu images available
- Most of GNOME and KDE has been ported and built
- Porter box `strauss.debian.net` available, `userdir-ldap-wired`



The Future

- Port more packages
- Get debian-installer fully working
- Integrate Xen
- Explore Hurdish concepts for Debian problems
- Establish testing (dispatch somebody to release team)
- Release with squeeze+1?



The Future

“Do you pine for the nice days of minix-1.1, when men were men and wrote their own device drivers? Are you without a nice project and just dying to cut your teeth on a OS you can try to modify for your needs? Are you finding it frustrating when everything works on minix? No more all- nighters to get a nifty program working? Then this post might be just for you :-)” – Linus Torvalds

