Debian Kernel Team Overview and Status

dann frazier + Debian Kernel Team

July 14, 2005
History

Who we are and what we do

Debian Patches

What Next?

How Can I Help?
To: debian-boot@lists.debian.org, debian-devel@lists.debian.org
Subject: Resignation
From: Herbert Xu <herbert@gondor.apana.org.au>
Date: Wed, 05 May 2004 08:07:55 +1000

Denis Barbier <barbier@linuxfr.org> wrote:
>
> KDE control center in Debian displays Taiwanese flag, so you should
> certainly resign from Debian and join Fedora. Well I did not check
> if Fedora still censors it, but as Red Hat did, there is little
> chance that this has changed.

So be it.

Free software extremists I can live with. But this is too much.
I will resign from this project in two weeks time.

In the mean, please send me offers to maintain my packages in *private*.
Any packages which are not claimed for in two weeks time will be orphaned
and th usual rules shall apply.

--
Debian GNU/Linux 3.0 is out! ( http://www.debian.org/ )
Email: Herbert Xu ~{PmV>HI~} <herbert@gondor.apana.org.au>
PGP Key: http://gondor.apana.org.au/~herbert/pubkey.txt
2004.05.04 Herbert Xu retires
2004.05.05 Andres Salomon suggests a kernel team be formed
2004.05.18 Martin Michlmayr announces his intent to form a kernel team
2004.05.22 William Lee Irwin III announces intent to NMU kernel packages
2004.06.15 First kernel-source uploaded by the kernel team (2.6.6-2)
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
  - 2.4.17: s390, powerpc-apus, mips
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
  - 2.4.17: s390, powerpc-apus, mips
  - 2.4.18: alpha, i386, powerpc
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
  - 2.4.17: s390, powerpc-apus, mips
  - 2.4.18: alpha, i386, powerpc
  - 2.4.19: mips
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
  - 2.4.17: s390, powerpc-apus, mips
  - 2.4.18: alpha, i386, powerpc
  - 2.4.19: mips
  - Some architectures didn’t even use kernel-source (hi bdale :)
Initial Challenges

- Understanding Existing Patches
- Version Sync
- In Woody:
  - kernel-source/i386/alpha maintained by Herbert
  - All other architectures tracked kernel-source independently
  - 2.2.10: powerpc-apus
  - 2.2.19: arm
  - 2.2.20: m68k, powerpc, sparc
  - 2.2.22: alpha
  - 2.4.16: i386, arm
  - 2.4.17: s390, powerpc-apus, mips
  - 2.4.18: alpha, i386, powerpc
  - 2.4.19: mips
  - Some architectures didn’t even use kernel-source (hi bdale :)
  - *10* kernel-source packages (2.2.10, 2.2.19, 2.2.20, 2.2.22, ...
$ info kernel-team

- Debian Developers and non-Debian Developers
- Maintainers of a number of kernel packages (kernel-source, kernel-image, etc)
- But not all...
  - Just Linux
  - arm and m68k are maintained outside of the kernel team
- Maintainers of kernel-related packages (initrd-tools, cramfs, mkvmlinuz)
Working with d-i

- kernel-image \(\rightarrow\) linux-kernel-di
  - High Granular for a Highly Modular Installer
  - Version Sync Problematic

- ABI Suckage
Kernel Team owns unstable/testing security
  ▶ Not on vendor-sec
  ▶ Security reports come in from various sources

Currently Maintaining a security branch for Sarge... will the security-team use it?
ABI Changes and why they Suck

- A change in the kernel module ABI
- Documentation/stable_api_nonsense.txt
- kernel-image-2.6.8-2-686_i386.deb
- Track latest kernel with meta-package (kernel-image-2.6-686)
- Forces us through NEW
- Sucks for d-i
dpkg -L kernel-patch-debian

- Patches the kernel team likes:
Patches the kernel team likes:
- Security Fixes
- Driver Fixes
- Stability Fixes
dpkg -L kernel-patch-debian

- Patches the kernel team likes:
  - Security Fixes
  - Driver Fixes
  - Stability Fixes

- Patches the kernel team generally reject:
dpkg -L kernel-patch-debian

- Patches the kernel team likes:
  - Security Fixes
  - Driver Fixes
  - Stability Fixes

- Patches the kernel team generally reject:
  - New features
  - Out-of Tree Drivers
  - My favourite patch set
But I _Really_ think this patch should be in Debian
But I _Really_ think this patch should be in Debian

- Submit it Upstream
Sarge is done - what about 2.4?

- Can we drop 2.4 from sid/testing?
- Can we ditch initrd-tools?
- mips has no 2.6 yet
- sparc32 SMP is flaky in 2.6
Single Source Package

- Builds source, tree, headers, image for all archs
  - Let the buildds do the work
  - kernel-tree still provided for external archs
- Rename to linux-kernel
Non-Free Firmware

- Non-Free vs. Non-Redistributable
- kernel-modules-nonfree
- Working with Copyright Holders:
  http://wiki.debian.net/?KernelFirmwareLicensing
initramfs

Features

- New Feature in 2.6
- Developed by Jeff Bailey for Ubuntu
- CPIO archive - No filesystem support needed
- Unpacking happens early - in time to, say, load firmware
- Stackable
- Magic rootdev naming goes away
- Includes hotplug + udev for hardware discover
- ... but will that work for Debian?

Uber Feature: *May deprecate initrd-tools*
What Can I Do?

- Run Debian Kernels
- Report Bugs!
- ... With Patches
What Can I Do?

- Run Debian Kernels
- Report Bugs!
- ... With Patches
- ... That have already been accepted upstream!
What Can I Do?

- Run Debian Kernels
- Report Bugs!
- ... With Patches
- ... That have already been accepted upstream!
- Make sure your bug hasn’t already been filed
- STFW! Google to see if this issue has been discussed/fixed
- Test the latest upstream kernel to see if the bug has been fixed
- Test earlier kernels to see when it was introduced
The Wiki: http://wiki.debian.net/?DebianKernel
The List: http://lists.debian.org/debian-kernel
The Source Repo: http://svn.debian.net/wsvn/kernel
The IRC Channel: irc://irc.debian.org/#debian-kernel