

0x01 INTRO

* Linux / Linux kernel

* using Linux since 2004

* growing community in tech team :metal:

0x02 WHAT IS LINUX

* family of open-source operating systems built around the Linux kernel

* typically packaged in a form known as a Linux distro

0x03 LINUX KERNEL

* world's most successful and important software project started by Linus Torvalds

* source code released in 1991 (26 years ago) under GPLv2 licence

0x04 LINUX KERNEL

* Linux kernel 4.14 contains about 23 million lines of code

* C, header files, Assembly, JSON, build scrips, etc.

* 85% of kernel code is in drivers, and widest hardware support

0x05 LINUX IS EVERYWHERE

- * 100% of top 500 super computers
- * about 85% of cloud (servers and KVM)
- * Android has 90% of market
- * IoT is dominated by embedded Linux
- * network hardware, routers, switches, access points
- * only 3% desktops and laptops

0x06 LINUX IN SPACEX

- * SpaceX uses a special fault-tolerant Linux kernel in Merlin rocket engines
- * their IT infrastructure runs on Linux
- * Linux is also used in Tesla Motors
- * Falcon 9 self-destruct routine runs on Windows XP strolls

0x07 LINUX IN ORGANIZATION

- * entire Linode runs on Linux
- * all our servers runs on Ubuntu
- * few developers already switched to Linux :metal:
- * we heavily rely on open-source

0x08 KERNEL: CONTRIBUTORS

* over 14k developers from over 1300 companies have contributed since 2005

* 80% of developers are being paid for their work

* RedHat, Intel, Samsung, IBM, SUSE, Google, Linaro (ARM) and more

0x09 KERNEL: MAINTAINERS

- * every file and driver has maintainer
- * subsystems have maintainers
- * branches have maintainers
- * developer -> driver/file maintainer -> subsystem maintainer
- * script identifies owners, so don't touch floppy disk drivers stroll:

OXOA KERNEL: BRANCHES

- * Linus' branch is mainline kernel
- * linux-stable receives slower updates and less bug fixes
- * linux-next is dev branch, merges all trees
- * releases about every 66 days
- * every now and then there is LTS

OXOB KERNEL: PATCHES

* an average of 185 patches per day

* source code is stored git, but changes are submitted in bite-size diffs over email to maintainers

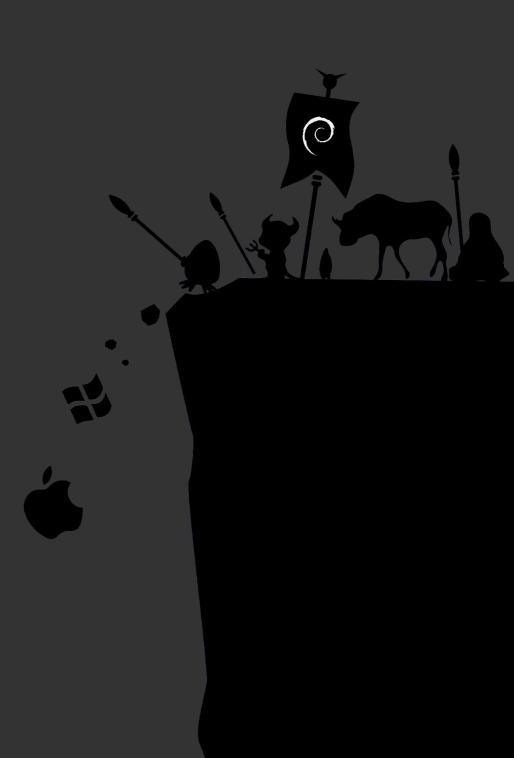
* IBM is doing builds, but testing hardware is hard

OXOC VIRTUALIZATION

* VirtualBox, open-source hypervisor from Oracle

* WINE, compatibility layer for running Windows apps

QUESTIONS?



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