

coreboot



coreboot: A viable BIOS replacement
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Overview

- coreboot intro
- coreboot project status
- The BIOS model
- The coreboot model
- How the FS community can help

coreboot

- coreboot is an open source boot loader project to replace the system BIOS
- coreboot is not a BIOS
- coreboot loads payloads

Why coreboot?

- To be Free of the proprietary system BIOS
 - Allow complete and open use of the system
 - DRM free
 - Security
 - Community support
 - Free to fix bugs and add features

Name change

- What happened to LinuxBIOS?
- was: core boot code + Linux kernel
- The project matured
 - Many payload options supported
- became: core boot code + payload

Status

- Active Development Community
 - 19 committers and many more contributors
 - US conferences
 - coreboot symposium in Denver @ HPCW
 - SCALE 7x
 - European conferences
 - 25C3 , ELC, FSCONS, OpenExpo, LinuxTag
 - Google Summer of Code 2008
 - All Virtual All The Time (AVATT)

Status.

- New silicon support contributed by
 - AMD
 - Family 10 (Barcelona) and K8 BGA
 - RS690 and SB600 southbridge
 - Stefan Reinauer
 - Core Duo
 - VIA and coreboot community
 - C7 CPU
 - CN700, VT8237R
- 25+ new platforms supported

Status..

- New payloads
 - SeaBIOS
 - gPXE
 - Grub2
 - Libpayload

Status...

- Work in Progress
 - Laptop/netbook support considerations
 - System Management Mode (SMM)
 - V3 – 10 platforms ported
 - Geode support
 - K8 and Core Duo progressing

Status Summary

BIOS vendor model

- BIOS vendors have a long standing business relationship with systems and silicon vendors
- Silicon vendors provide initialization code
- BIOS vendors provide codebase and services
- Developers on-site
- Co-validate silicon, system, and BIOS
- Buffer for silicon vendors

Shortcomings of the BIOS model

- BIOS is expensive to develop and distribute
 - Source license, royalties, NRE
 - Problem for small volume systems and custom solutions
- Lacks sustained support
- Not free software!

coreboot model

- coreboot can fill the void and provide alternative support
- New relationship between vendors and the coreboot community
 - Vendors should provide same initialization code and documentation
 - Community supports vendor contributions
 - System vendors develop custom mainboard solution

Silicon Vendors

- Community support is viewed as risky by silicon vendors
 - No contracts or NDAs
- Critical for coreboot success
 - Source code
 - Development resources
 - Documentation holes
 - Validated features
 - Documentation
 - Community interaction

Mainboard Vendors

- Mainboard documentation
- Silicon vendor customers
- Make coreboot a requirement

coreboot Community

- Support silicon and mainboard vendors
 - Community liaisons
- Provide framework and infrastructure

coreboot Vendor

- A business other entity that can sign contracts and NDAs to develop coreboot
- Get mainboard vendors shipping with coreboot
- coresystems in Europe.
 - Need Americas and Asia vendors
- Need Linux vendor support to influence silicon and mainboard vendors
 - All Free software stack

FS Community support

- Commitment to Free systems!
 - Commitment from other projects
 - GNU/Linux kernel and distributions
 - Payloads

FS Community Support

- Expand the community
 - Mainboard owners
 - Hardware – mainboards, silicon
 - Tools – flash, jtag,
 - Sub-system owners
 - Payload owners and liaisons
 - Welcome vendors, students, and educators!

You can help!

- Contribute source, documentation, hardware
- Recruit developers and Free systems support
- Support vendors that support the project
- Encourage and support developers

Thank You!

Thank you to the FSF and the entire coreboot
community for your support!