GSOC 2010 of Coreboot

Wang Qing Pei

Coreboot

Coreboot is a Free Software project aimed at replacing the proprietary BIOS (firmware) you can find in most of today's computers. It performs just a little bit of hardware initialization and then executes a so-called payload.

Coreboot

- coreboot offers you the opportunity to work with modern technology "right on the iron".
- Your application will be available to users worldwide and promoted along with all other coreboot projects.

Coreboot

- There are a very passionate team - so you will interact directly with the project initiators and project leaders.
- It is a large and helpful community. Over 100 experts in hardware and firmware lurk on the mailing list, many of them waiting to help you.

Possible ideas

1) **drivers for libpayload**
   libpayload is a small BSD-licensed static library (a lightweight implementation of common and useful functions) intended to be used as a basis for coreboot payloads.
2) **TianoCore on coreboot**
3) **coreboot port to AMD 800 series chipsets**

4) coreboot mass-porting to AMD 780 series
5) coreboot GeodeLX port from v3 to v4
6) coreboot port to Marvell ARM SOC's with PCIe
7) Infrastructure for automatic code checking
8) coreboot cheap testing rig

Multiple GUIs for flashrom

flashrom text mode GUI (for command line and flashrom-as-payload)

flashrom graphics mode GUI (should be cross-platform, Sean Nelson has preliminary code you can base this on)

Recovery of dead boards and onboard flash updates

flashrom as payload

flashrom remote flashing for coreboot panic room mode

flashrom remote flashing with modified SerialICE

SPI bitbanging hardware support

flashrom support for Nvidia SPI chipset hardware
flashrom support for RayeR SPIPGM hardware
flashrom support for Paraflasher hardware
flashrom support for Willem hardware
flashrom support for some-yet-uninvented cheap universal LPC/FWH/SPI flasher hardware
flashrom support for bitbanging LPC/FWH
flashrom support for bitbanging Parallel

Generic flashrom infrastructure improvements

flashrom support for automatic recovery in case something goes wrong

flashrom support for partial reflashing

flashrom support for bytewise flashing (similar to the point above)

Laptop support

This one is really HARD. If you're lucky and if you have datasheets, you can do it in maybe 1 month. If you're unlucky, it can take the whole GSoC or more. If there is interest, we'll try to find an embeddec controller which won't cause you to give up in frustration. Still, it might be beneficial if you're willing to solder.

flashrom support for embedded controllers (ECs) in laptops

Contact

If you are interested in becoming a GSoC student, please contact Stefan Reinauer.
There is also an IRC channel on irc.freenode.net: #coreboot