Skulls - coreboot your X230 the easy way

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February 2, 2019

Who am I?
- work for https://www.ginzinger.com/en/ in Austria
- kernel developer, C programming, tslib maintainer, ...
- use Tor!

Let’s curl an image and coreboot your Laptop!

Lenovo Thinkpad X230 Laptop

3rd gen. Intel i series (Ivy Bridge)

The coreboot project

https://coreboot.org - ”for end users”
”coreboot is a replacement for your BIOS / UEFI with a strong focus on boot speed, security and flexibility.”
free software (GPL)
hardware init / ACPI interface

coreboot distributions

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- Libreboot (X200)
- Heads (X230, Librem Laptops)
- Skulls - not quite Heads (X230)

They all release binary flash image files

Skulls goals

```
 faadfce initial infos
75b154334d.config | 686
++++++++++++++++++++++++++++++++++++++++++++++++++
README.md | 100 +++++++++++++
pci8086,0166.rom | Bin 0 -> 65536 bytes 3
files changed, 786 insertions(+)
```

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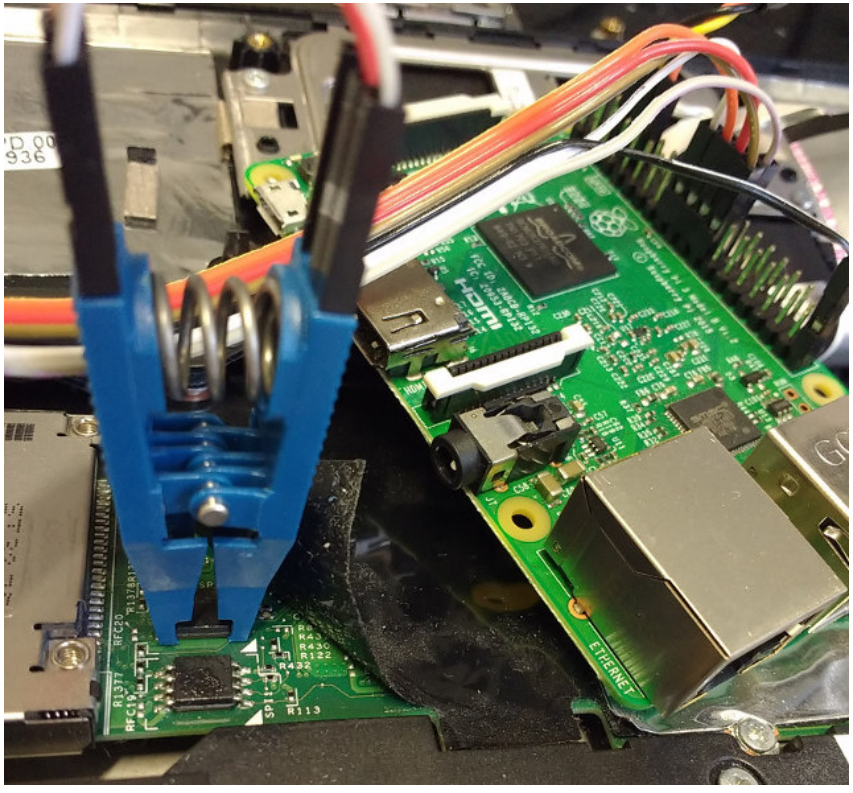
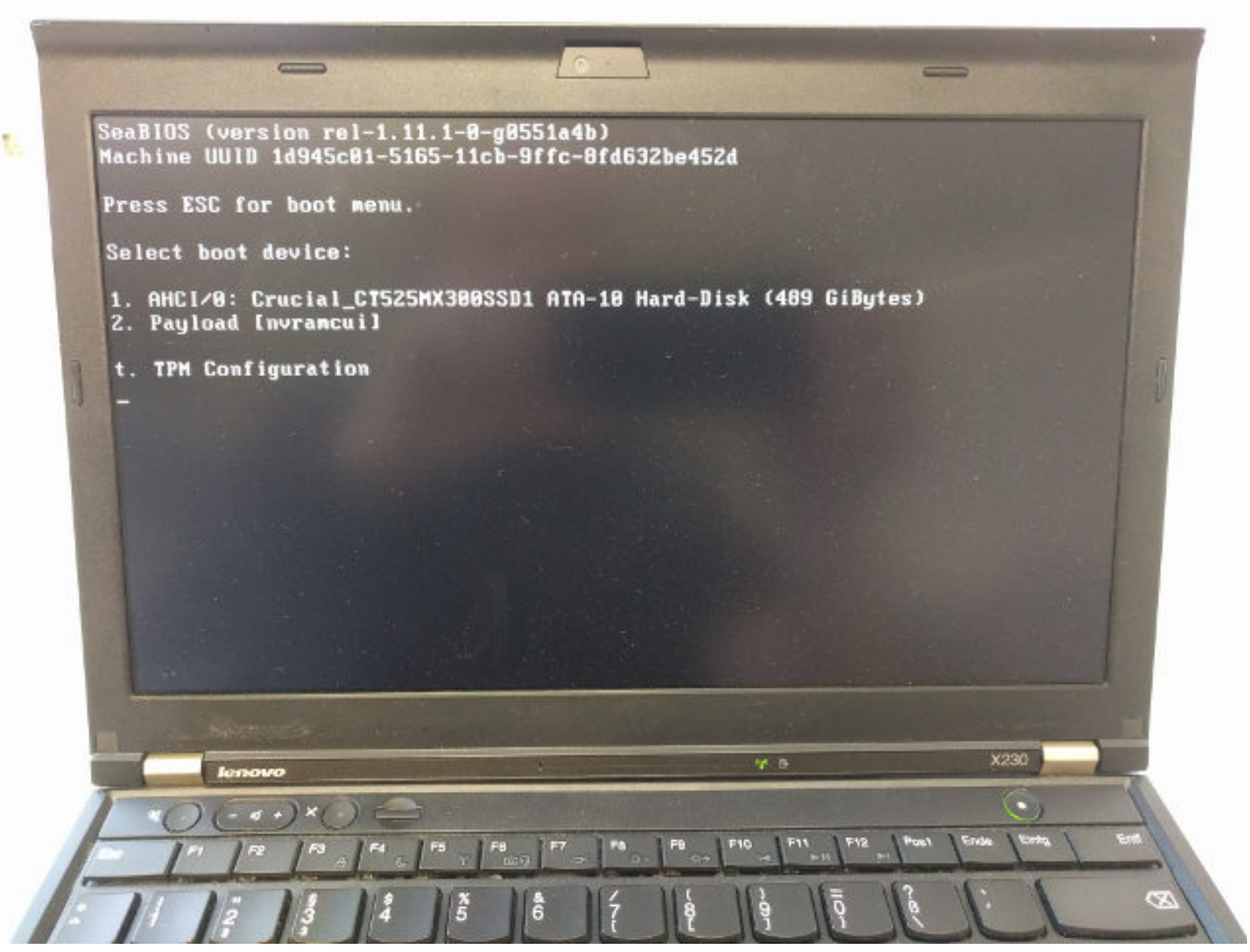
no excuse for running the proprietary vendor BIOS
build reproducibly (important because we release ROM images)
security through simplicity (flash a known good image often)
Heads - http://osresearch.net

easy to install




```
# ./external_install_top.sh -k
"backup-file-to-create"
# ./external_install_bottom.sh -m -k
"backup-file-to-create"
```

easy to use


SeaBIOS (version rel-1.11.1-0-g0551a4b)
Machine UUID 1d945c01-5165-11cb-9ffc-0fd632be452d
Press ESC for boot menu.
Select boot device:
1. AHCI/0: Crucial_CT525MX300SSD1 ATA-10 Hard-Disk (489 GiBytes)
2. Payload [nvramcui]
t. TPM Configuration
lenovo
X230

How does a release currently look like?

Thinkpad X230 only. 2 different images:
- free software except microcode update binary
- Intel's proprietary VGABIOS (currently looks more beautiful)

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coreboot master branch HEAD at time of release
latest SeaBIOS release
latest microcode update by Intel

upstream work

ensure latest SeaBIOS and MCU versions are in coreboot
test and update coreboot's board-status (Supported Motherboards wiki)

recorded demo (there’s not VGA/HDMI during reboot)

https://github.org/merge/skulls
https://www.coreboot.org/users.html