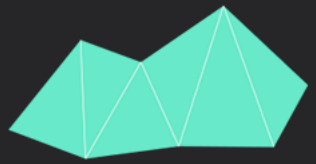


OSTS 2015

OPEN SOURCE TECHNOLOGY SUMMIT

Open Source IA Firmware Directions

Vincent Zimmer

BIOS

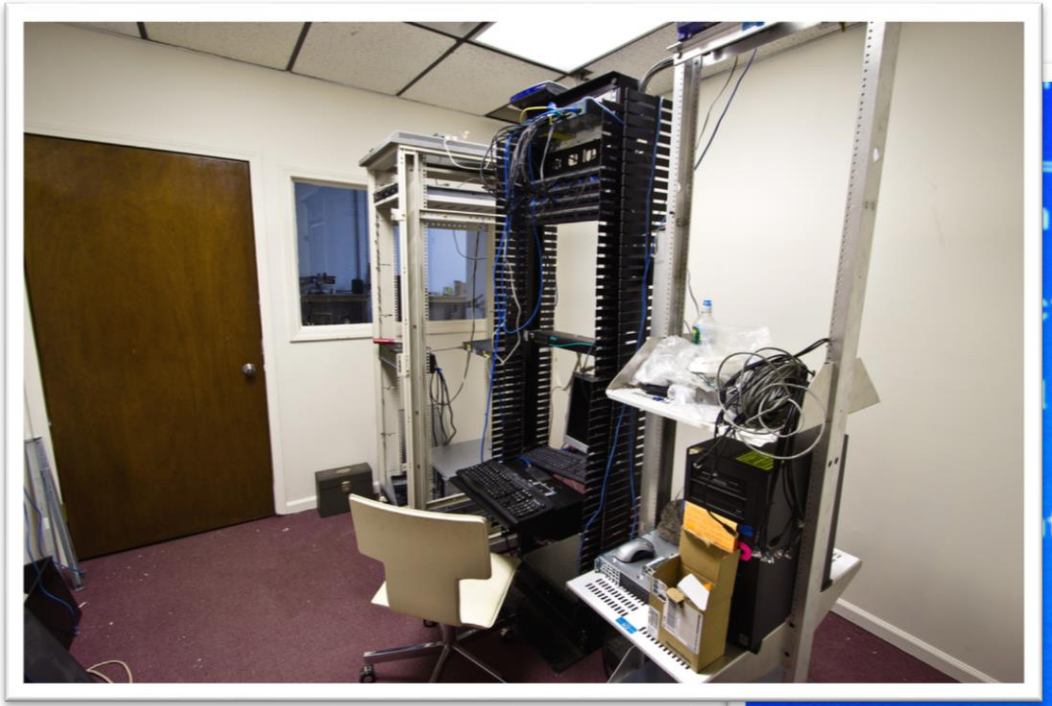
Past, Present, and Future

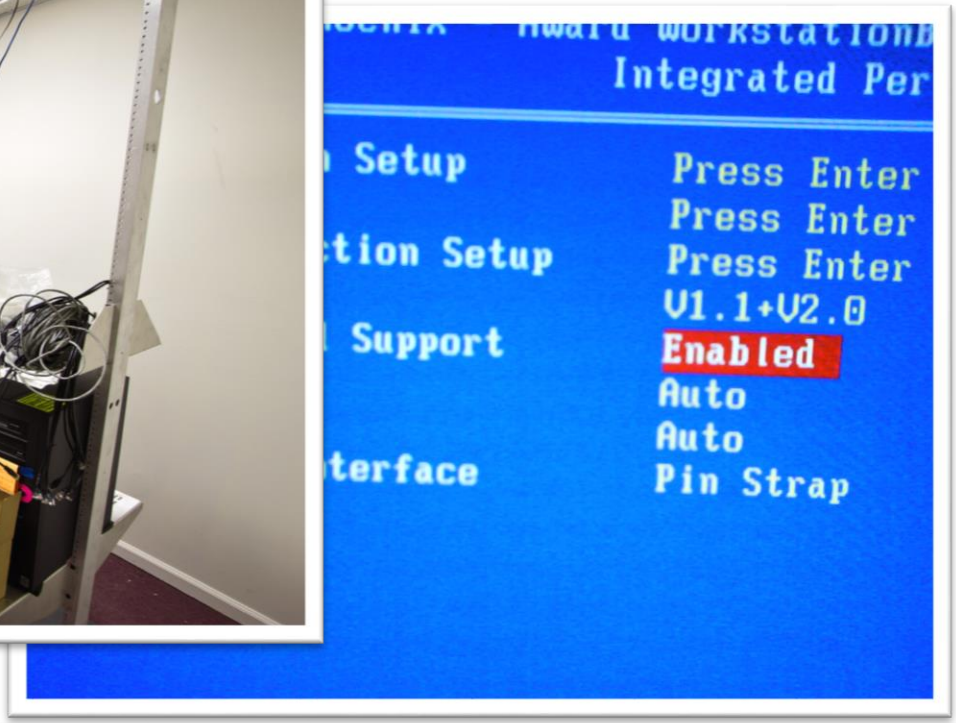
BIOS: The Past

Monolithic BIOS

- General Purpose
- Central Control
- Low Innovation
- Closed Source

BIOS: The Past

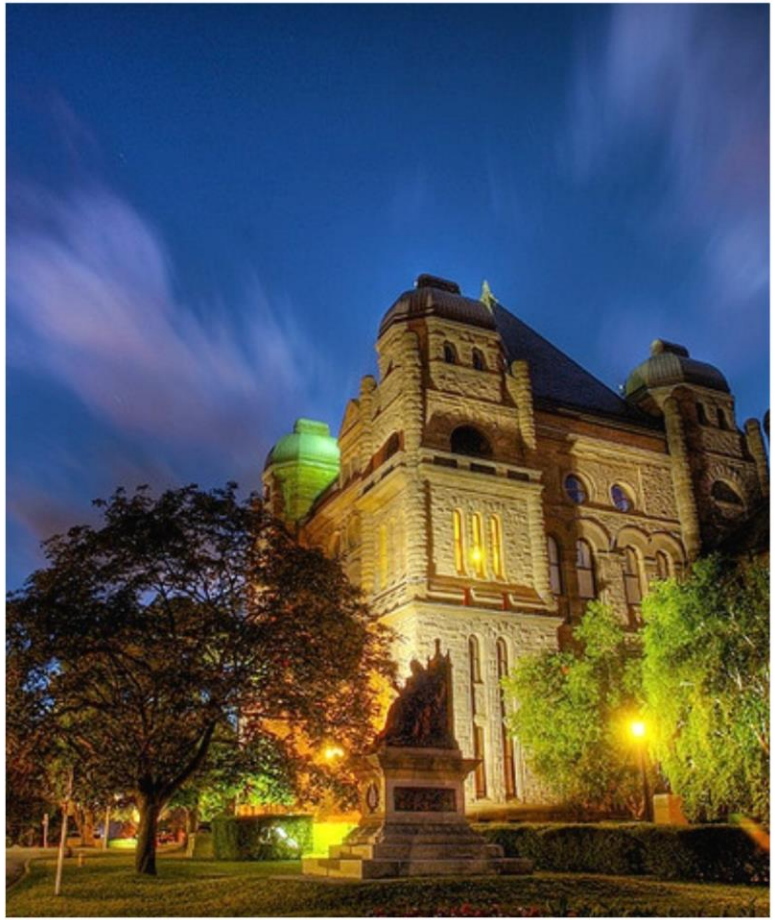




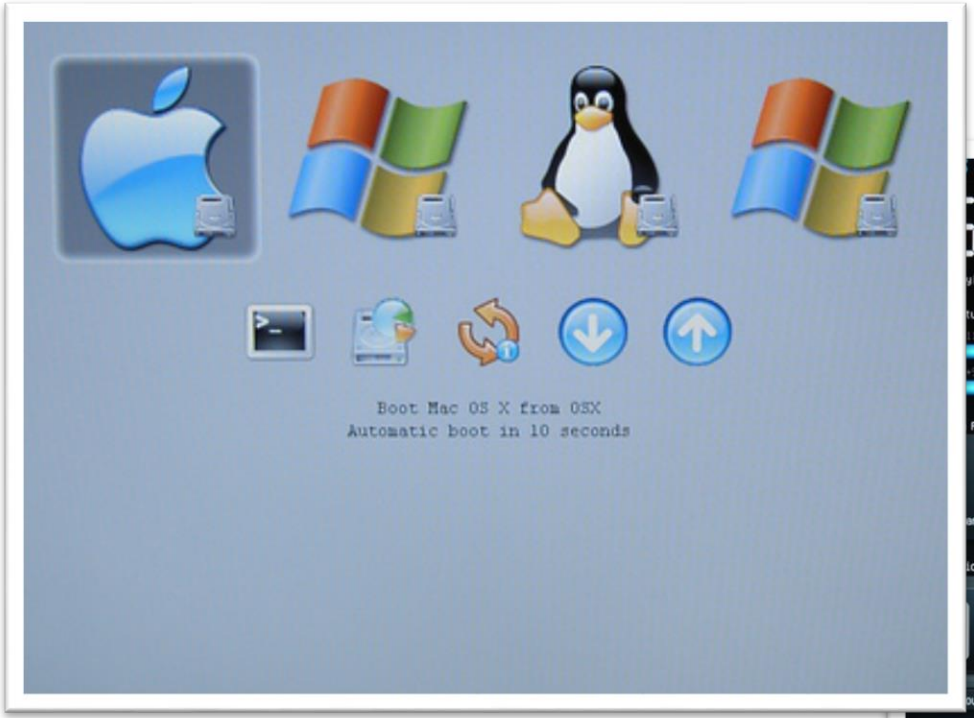
BIOS: The Present

UEFI Modular BIOS

- Standards based (UEFI, ACPI)
- Vendor Contribution
- Lower Innovation
- Closed Source platform code, open source core



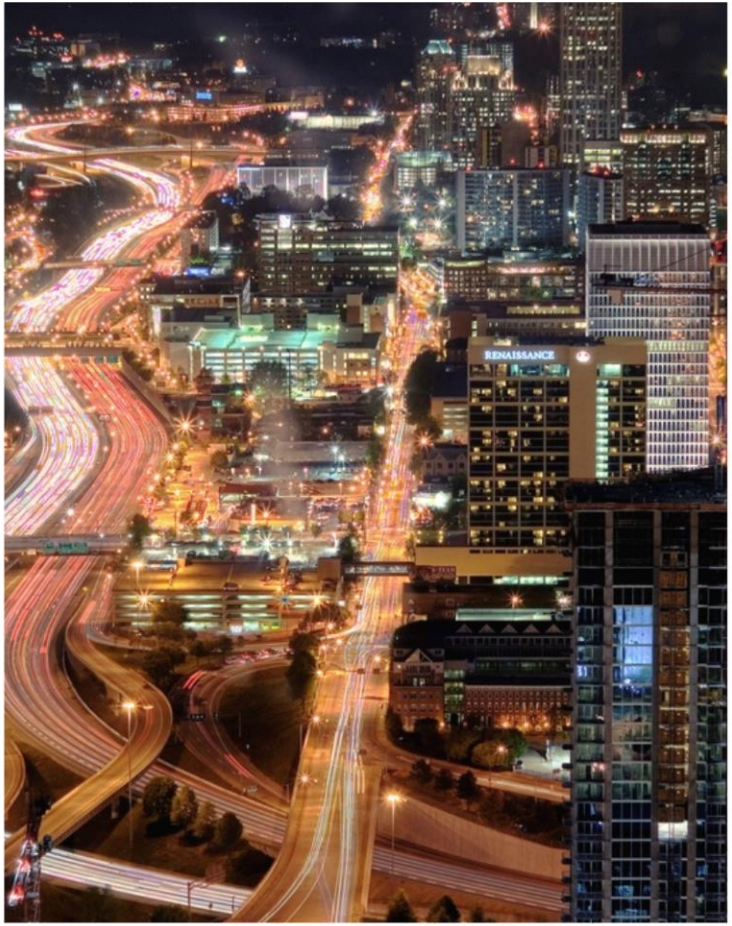
BIOS: The Present



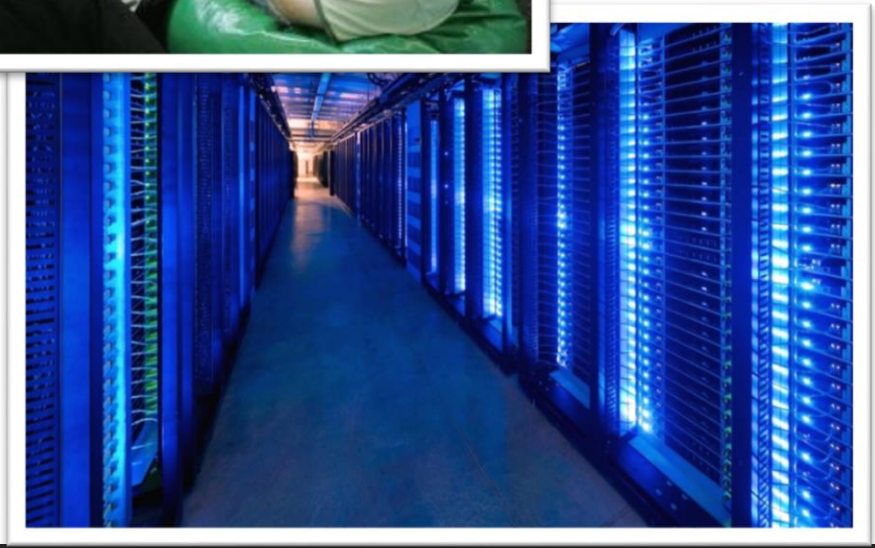
BIOS: The Future

Open Source BIOS

- Global Contribution
- Ability to Specialize independently
- Debuggable
- Rapid Innovation



BIOS: The Future



Industry response to ‘open source’ the BIOS

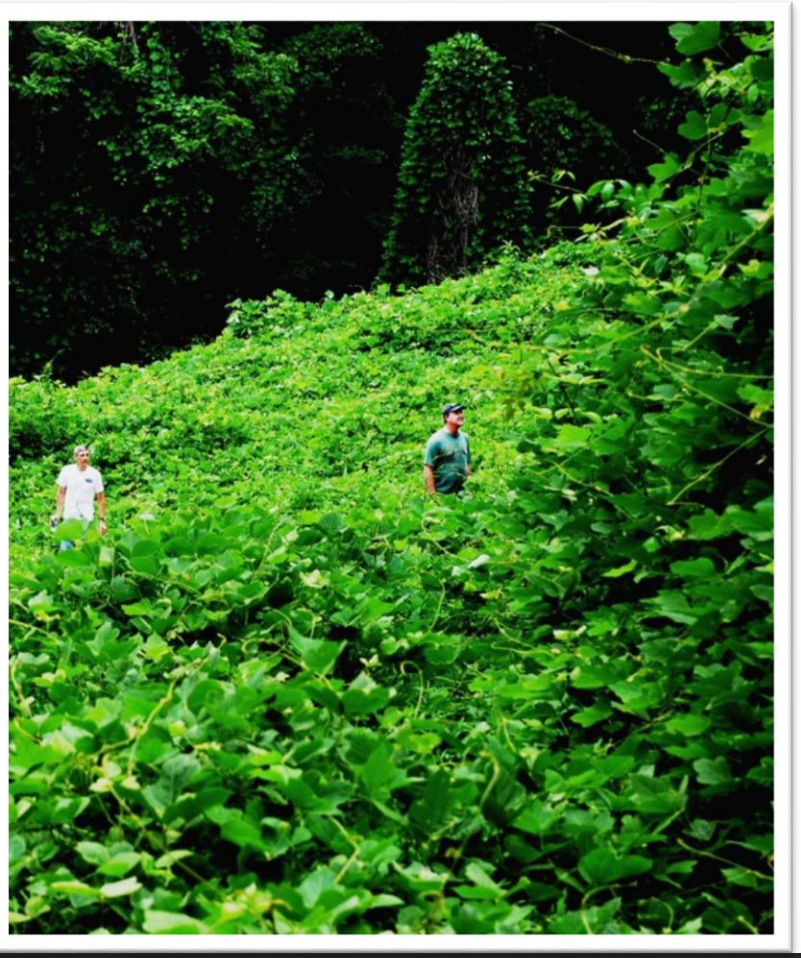
Full Platform Code

The Jungle

Platform Code

The Jungle

- Non-public hardware specifications



Platform Code

The Jungle

- Non public hardware specifications
- Closed source “Sample” code

Platform Code

The Jungle

- Non-public hardware specifications
- Closed source “Sample Code”
- Kitchen sink

Platform Code

The Jungle

- Non-public hardware specifications
- Closed source “Sample Code”
- Kitchen sink
- Proprietary Config

Platform Code

The ~~Jungle~~ Bridge

- Open Standards
- Open Source core and platform code
- Minimize IP components in binary like Intel FSP

Work in progress - Get small, Get open

Bridge over the Jungle

EDK II – where we're at today

UEFI Specification – 2000 pp

Underlying PI specification – 2000 pp

Intel Framework Specifications

ACPI, USB,….

Tianocore.org – SVN

- Large feature package
- Buildtools
- Compatibility/Duet

2,000,000 loc in the open

Typical platform drawing
200,000 LOC from open,
100,000 from closed source

What we're doing

Open Hardware

+

Desktop

Apple iMac* 21.5''

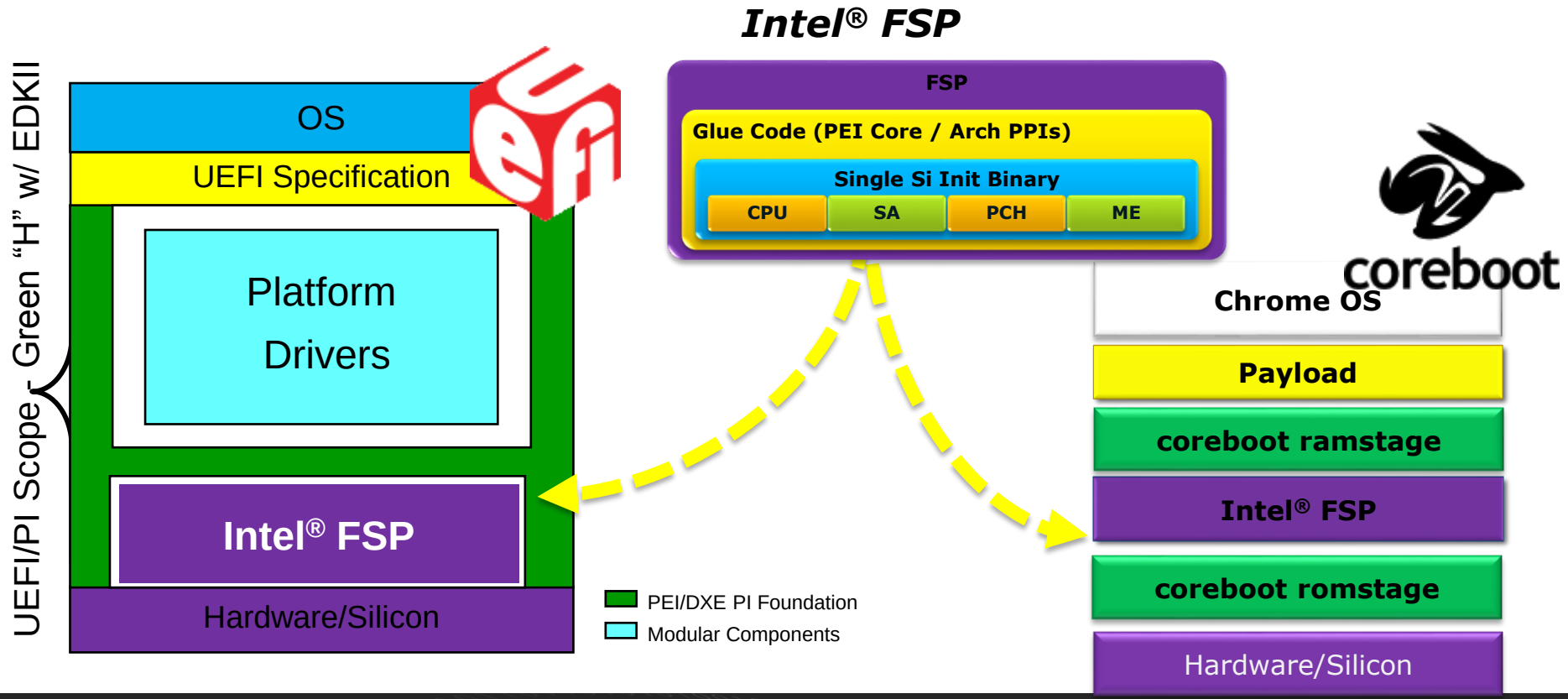
SVN->Git
Right-size trees
More open trees
BWG->Pub EDS

+

Server

+

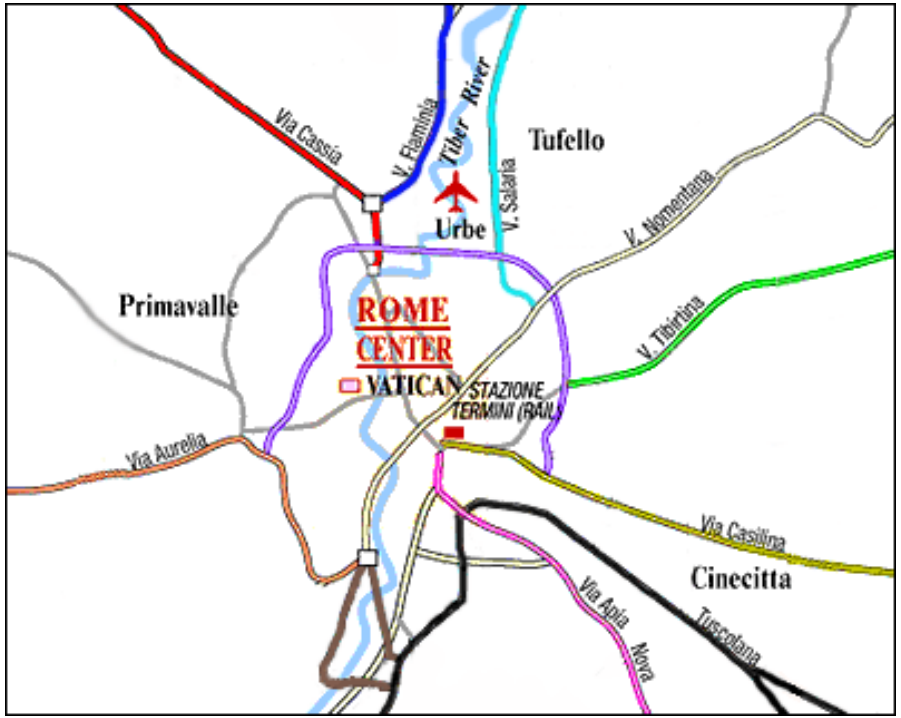
Bridge UEFI-based and coreboot based ecosystems



Many Paths for Enabling SI products

Closed source
Trees using open
Source EDK II core

FSP + open
Source
platform code
Minnow*



Pure open source
Quark EDK II

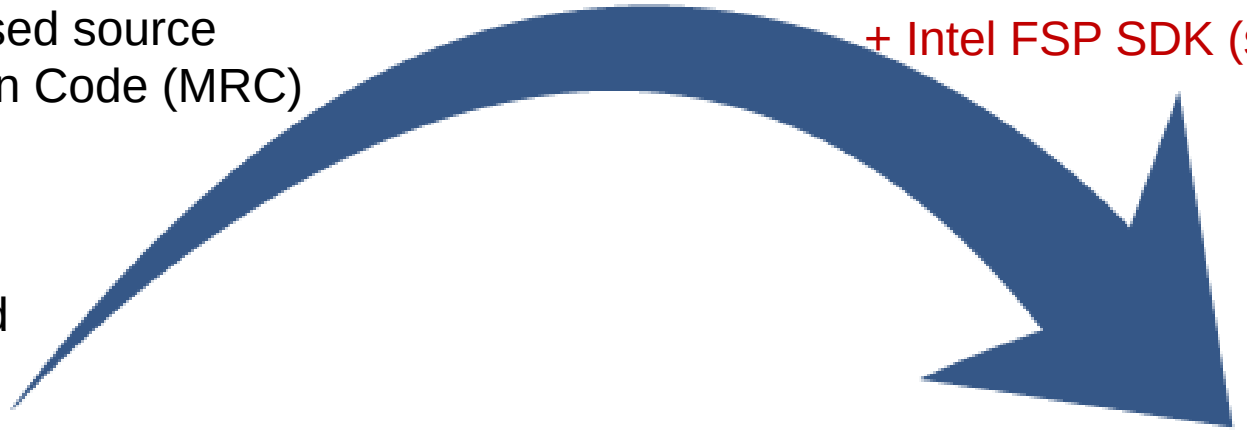
coreboot + FSP
+ UEFI Payload

Architectural roadmap

Open Source core
+ Open Source Platform code
+ Intel FSP binary

Open source core
+ closed source
Silicon Code (MRC)

Open Source core + Open Source Platform code
+ Intel FSP SDK (source + binary)



All closed

All Open Source

‘Presentation shouldn’t be a book’, but if you like books…

More web based info:

www.tianocore.org

www.intel.com/fsp

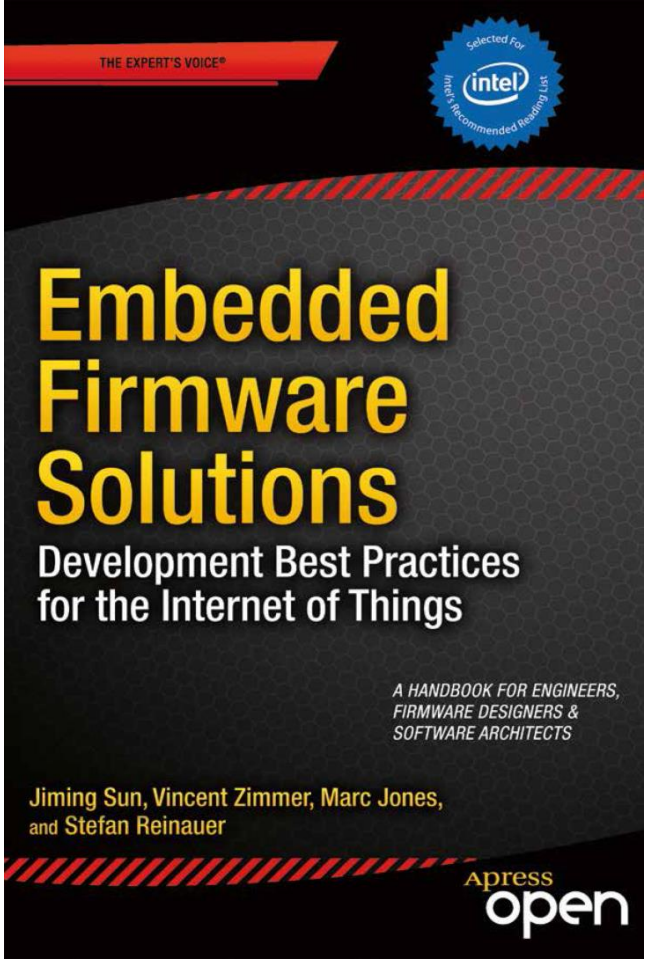
firmware.intel.com

www.coreboot.org

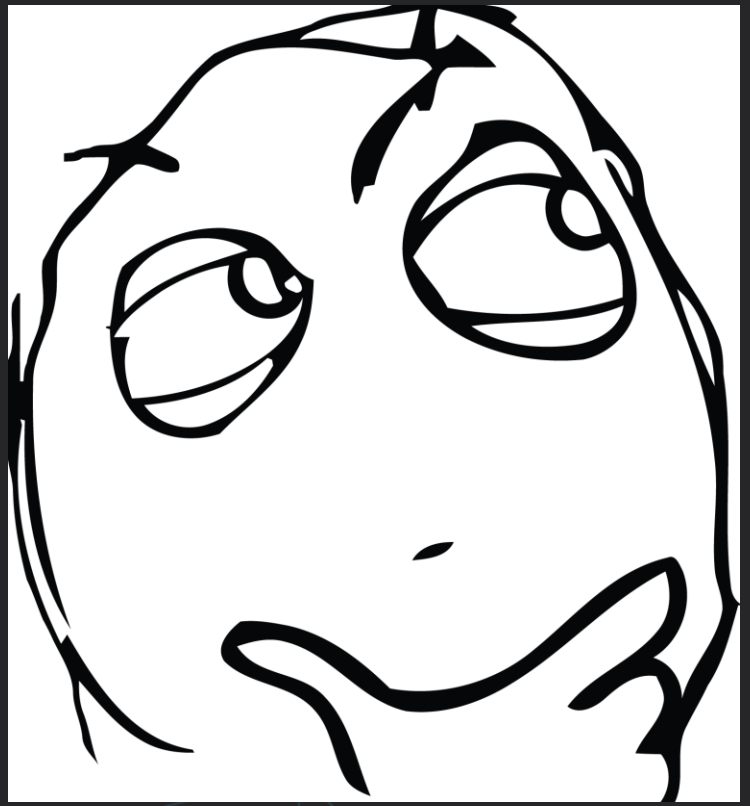
More on topics discussed in this presentation:

Embedded Firmware Solutions

http://www.apress.com/9781484200711



Q&A



Thank you