Modern QEMU Devices

A Hands-On Approach

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What To Expect Today

Outline Of This Presentation

- Brief introduction to device modeling
- Live conversion of a device into modern form
- Discussion of further upcoming changes

Devices

The Initial Approach: PC Decomposition By Functions

- Floppy (-fda)
- IDE disk (-hda)
- ATAPI CD (-cdrom)
- Network (-net nic)
- Sound (-soundhw)
- Graphics (-vga)
- CPU (-cpu)

Why Rethink Device Modeling?

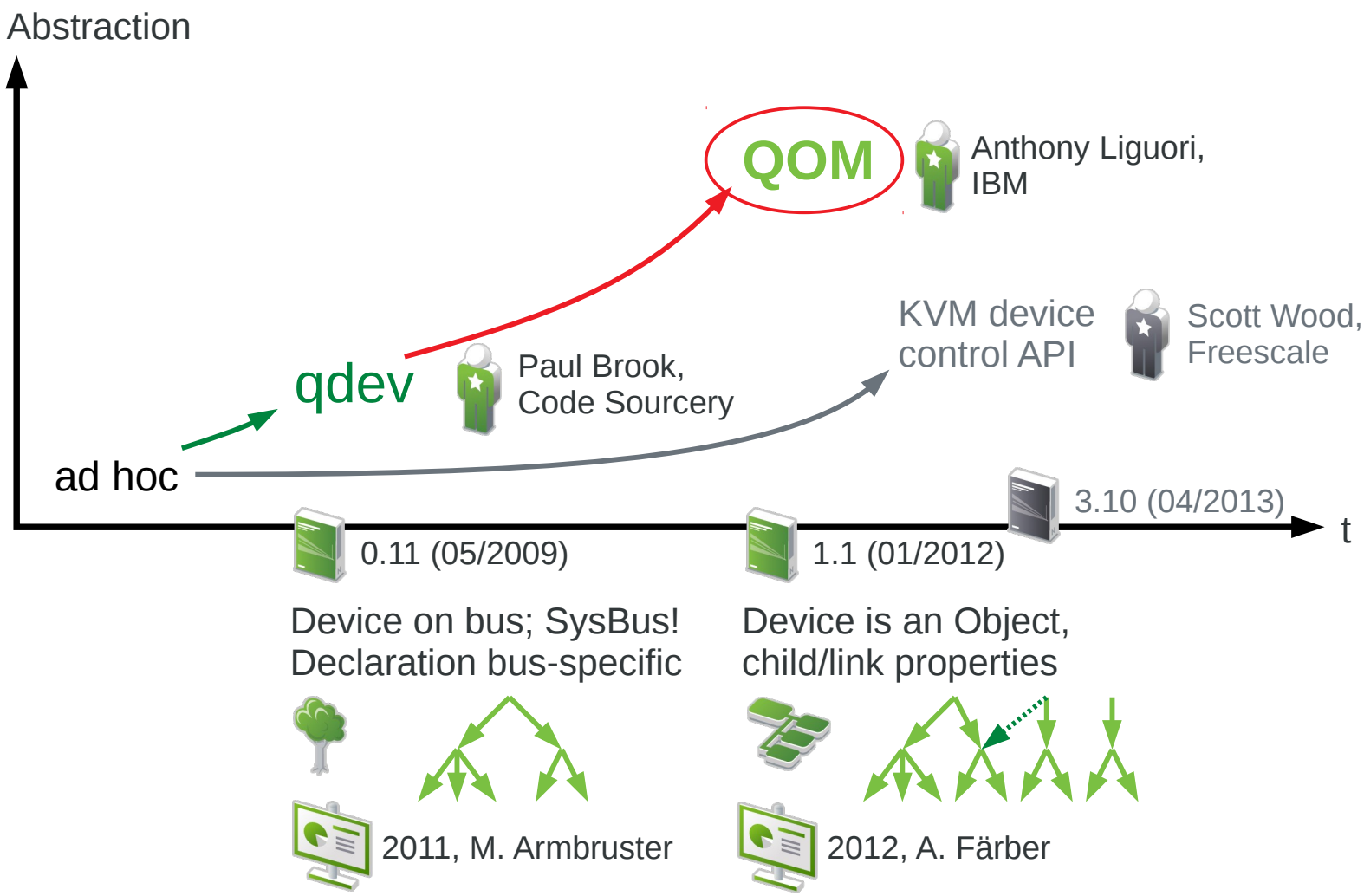
Compare The Classic PC To Embedded Chipsets!

- Composition
- Encapsulation
- Buses
- Maintenance
- Management
- Competitors

Experts: How many do you recognize?

Device Evolution

Major Modeling Approaches



Demonstration

Demo 1

Selecting A Candidate And Converting From Ad-hoc To QOM

- git grep --files-without-match **type_init** -- hw/*.c
  - hw/bt/hci-csr.c
  - hw/char/mcf_uart.c
  - hw/char/omap_uart.c
  - hw/char/sh_serial.c
  - hw/display/vga-isa-mm.c
  - …
- Helpful:
  - QTest test cases for automated regression testing
  - Linux kernel or image for quick functional testing

Demo 2

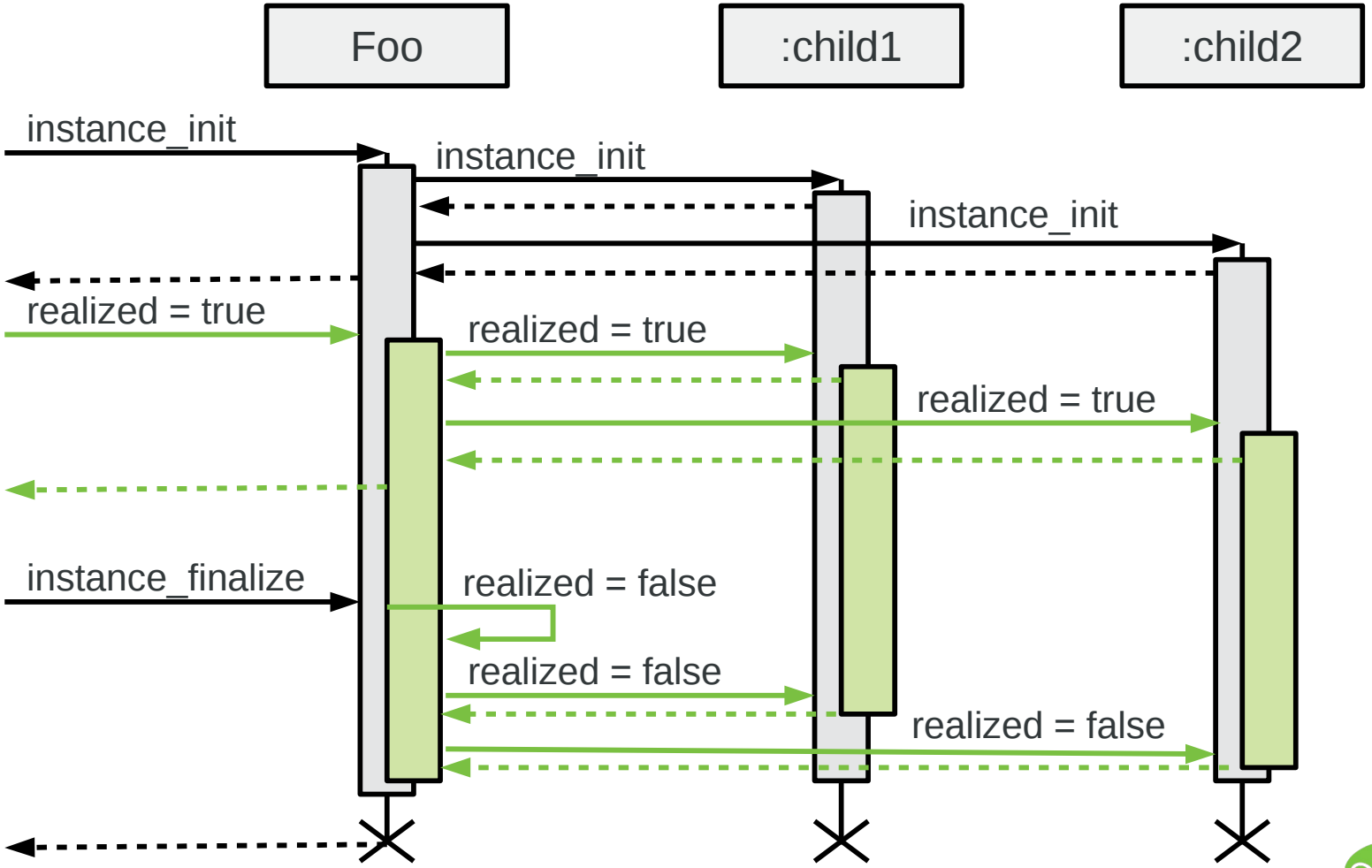
Properties In Qdev Versus QOM

- qemu-system-m68k -qmp unix:foo,server,nowait
- qom-list -s foo /
- qom-get -s foo /machine/unassigned/device[0].type

Upcoming Changes

Realization

Two-stage Initialization



Update your devices please & supply integrated test cases!
www.qemu-project.org

Thank you.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