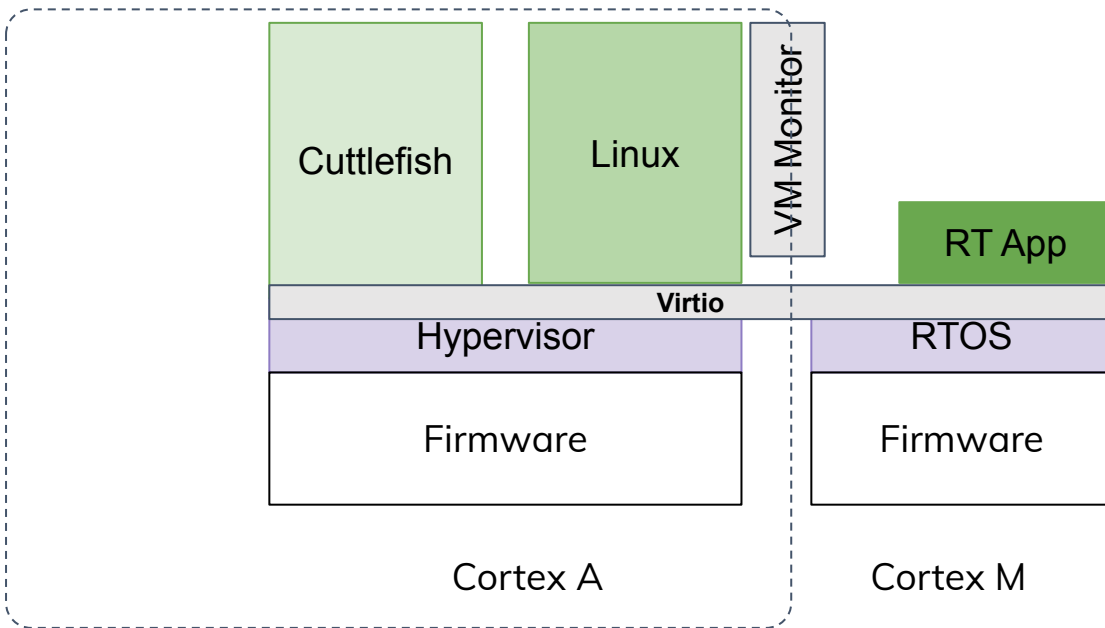


Virtualization infrastructure enhancement

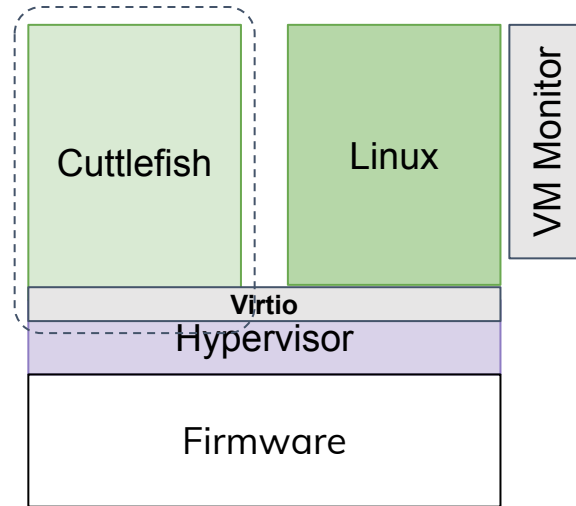
Project proposal



Xen/Paravirtualized Android LBIs

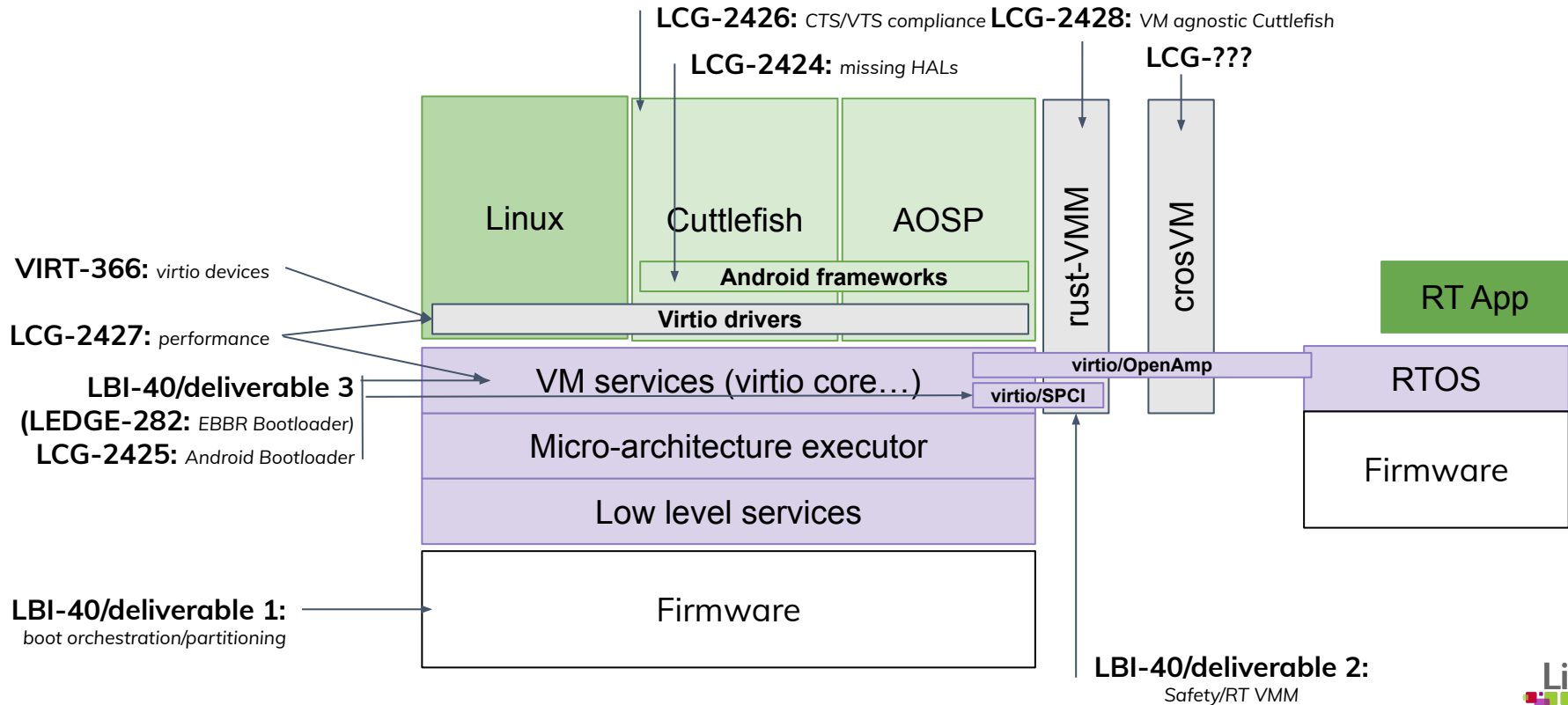


Paravirtualized Android LBI



Cortex A

Complex reality → LBI-40 (common infrastructure topics)



Organizing activities

- Cuttlefish: LCG team
 - LCG-2424, LCG-2426
 - LCG-2427 (performance measurements)
 - LCG-2428: verify Cuttlefish can work on environment developed by Virt LP
- Virtualization infrastructure enhancements: VIRT team
 - VIRT-366: virtio devices
 - LBI-40/1: type-1 hypervisor boot orchestration
 - LBI-40/2: rust-VMM based VMM with safety island and Trust Zone components
 - LBI-40/3: optimized virtio; virtio over SPCI/OpenAMP; Android as virtio backend

Particular context: most members and potential project members have solved the engineering challenges. The main goal is to establish an ecosystem optimized solution.

→ No Linaro resources planned except Alex Bennée, some members may step up

From independent initiatives to project

- Led by Mike Holmes
 - Objective: ensure relevance through holistic approach
 - All VIRT-XXX and (/some aspects of?) LCG initiatives
 - Leverage/cooperate with other projects
 - System DT results
 - LEDGE-282: paravirtualized EBBR bootloader
- Complement it with project membership
 - Morph the technical project into membership project based on SmartNIC model
 - Ad hoc membership fees for non SoC vendors
 - Hypervisor companies: Panasonic, Green Hills, VoSystems, KernKonzept...
 - TrustZone vendors

Thank you

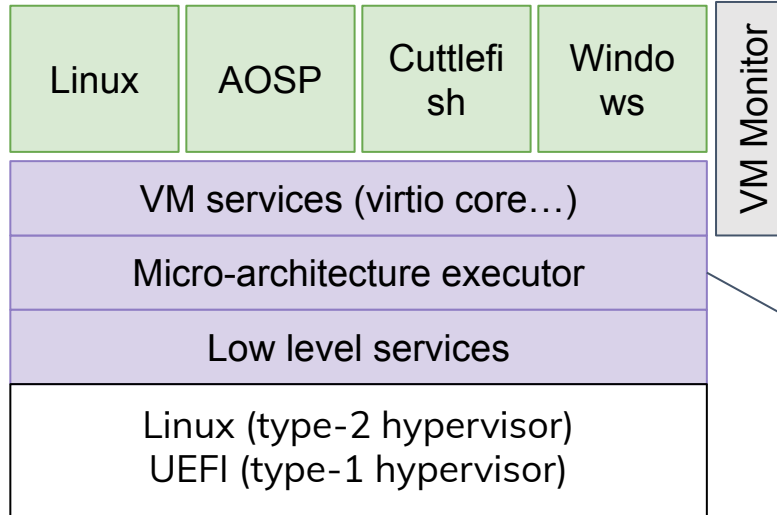
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Anatomy of a hypervisor

Xen, KVM,
Jailhouse,
Hafnium...



Qemu,
crosVM, firecracker
[rust-VMM](#)...

Job for Arm, not Linaro

KVM: VMMs & genealogy

- QEMU
 - Can emulate hardware (floppy, Intel e1000, intel PCH...)
 - Can emulate processors (run aarch64 on x64...)
- crosVM (Chrome OS VMM, Google led)
 - No hardware emulations, virtio only
 - Chrome OS focused
- Firecracker (fork from crosVM, Amazon led)
 - Lightweight VMM for servers
- Rust-VMM (inspired from crosVM/Firecracker by Google, Amazon, Intel, Red Hat)
 - VMM SDK: BYO-VMM
 - Rust based for security

