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Arm Solutions at Lightspeed

VirtIO sub-group Kick Off

Core Collective Virtualization Working Group

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Meeting Goals

- Sub group goals
  - Mission statement?
- Scope / Topics of Interest
  - New transports - virtio-msg ?
  - New virtio interfaces / spec / device / driver ?
  - Existing virtIO infrastructure
    - new features ?
    - maintenance ?
  - Support for more hypervisors?
  - AOB
- Logistics
  - Meeting frequency, timing etc?

Today is more about brainstorming and collecting topics of interests, not fixing them :)

Participants' Interest

Name	Topics of Interest
Mark (QC)	users of virtio; more simulation perspective; pain points: virt-gpu including vulkan, addnl ppl at QC other groups - interface changes perhaps?
Michael (arm?)	Xen, virtio as a user; virtio support to run Android on Xen (maybe nested Virt?)
Viresh (Linaro)	virtio backends, virtio-msg implementation and upstreaming
Manos (Linaro)	backends, frontends (drivers), spec work, testing / verification
Bertrand (arm)	virtio-msg integration in OASIS, writing virtio-msg-ffa spec, upstreaming support in Linux, generally virtio in Xen
Edgar (AMD)	virtio-msg, qemu backend, Linux / zephyr, Xen; Safety versions of virtio; RT / reduce boottime - vhost and other kernel implementations? backends: virtio-media + Xen (auto usecases)
Alex (Linaro)	virtio-msg, qemu backends, virt-gpu, vhost-user + qemu, rustvmm backends
Bill (Linaro)	virtio-msg in qemu, spec and linux kernel; virtio in zephyr (both driver and device), bare-metal C, bare-metal Rust (both driver and device)
Apurupa (QC)	virtio-msg - enable backend in QTEE; support for Google trusted HALs
Armelle (Google)	virtio-msg over FF-A (VM<> TZ; Hafnium SP<>SP); vsock memory sharing (host <> TZ; VM <> TZ; SP<>SP).

- This slide was filled interactively during the kick-off meeting

Core Topics

- virtio-msg - upstreaming into OASIS, QEMU and Linux
  - core, FF-A, amp
  - Spec + Linux upstreaming
  - demonstrators on various setups (amp, FF-A)
  - Zephyr?
  - QTEE / Trusty
  - Xen frontend / backend support
  - virtio shared memory support device -> driver?
  - support in pKVM, ~~*Gunyah (needs FF-A ABI) which is there already*~~
- Additional devices / backends?
  - virtio-media (in Qemu?) - maturity as well
- vsock and memory sharing
  - Armelle mentioned in the virtualization subgroup
  - Secure buffers support additional for Android use-cases

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Core Topics

- Support for other hypervisors?
  - most are proprietary? eg QNX standardisation / feature-parity?
    - perhaps check with QNX folks to see if virtio-msg and virtio in general are of interest to them?
- Comprehensive Test suite?
  - mimic a backend / driver
  - QEMU
    - functional tests to exercise some virtio devices; not comprehensive. mostly virgl /venus. no native context.
  - Compliance Tests would be nice.
  - Feature bit management (proprietary extension vs upstream spec clash?)
- CI - loop?
  - for implementations; spec CI may be harder?
- Maintenance?
  - once virtio-msg is upstreamed, maintenance will be required long-term
  - virtio-gpu on QEMU is best-effort maintained; is virgl backend the long term solution? also not maintained much

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AOB

- priorities and goals for virtio-msg
  - deliverables, LoE, and pricing
  - Contributions - direct vs paid?
    - Bertrand will continue to work on the spec part
    - Google wants to enable Viresh to continue upstreaming (Linux and FF-A implementation for OASIS)
  - Q from Armelle: How do we expect FF-A implementation to be for spec approval?
  - FF-A and amp upstreaming
    - Plan is to have Viresh to do virtio-msg upstreaming - core, FF-A, amp
    - Sumit to share estimate

Logistics

- Sub-sub groups?
  - Not in general :) - we might rationalize some of the subtopics that come from the discussion
  - May have specific topic-based meetings, eg specific virtio-msg meetings
- Bi-weekly meetings
  - time zone? - seems US / Europe / India for now.
  - keep the same time, update based on participation from East
- Handover for virtio-msg meetings into CC?
  - start talking on HVAC mailing list.
- Contribution intent and method
  - Money, time, ???
- Other Logistics we need
  - code share method ?
  - shared drive / mailing lists ?
  - any other support we need from Core Collective ?



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Thank you