

Stratos Home

Next meeting Agenda

2021-04-30 Project Stratos Sync Meeting notes

- TBD

Elevator Pitch

Establish [virtio](#) as the standard interface between hypervisors, freeing a mobile, industrial or automotive platform to migrate between hypervisors and reuse the backend implementation.

About this project

There is a growing trend towards virtualization in areas other than the traditional server environment. The server environment is uniform in nature, but as we move towards a richer ecosystem in automotive, medical, general mobile and the IoT spaces, more device abstractions are needed, and way richer organizations are needed:

- In the automotive world, devices as different as FM radio and CAN bus need to be abstracted
- Virtual Machine Monitor (VMM) may need to become a certifiable entity with real-time capabilities
- Some deployment models are based on "stub VMs" to deal with hardware and keep the hypervisor mostly out of hardware handling
- In automotive, VMs can be as diverse as Android (IVI, Automotive Grade Linux (e-cockpit), Apertis (ADAS))
- Guaranteed performance of IO is a critical enabler in any use case
- VMM / "safeOS" on cortex-A
- VMM / "safeOS" on cortex-M
- [Virtio backends](#)
 - in the hypervisor
 - in a stub domain
 - n "primary" VM (mobile)

The conclusions of member discussions related to the above topics are:

- Mobile and automotive share in common a need to resolve several missing abstractions such as clocks, RPMB, FM radio...
- There are gaps in interfaces between VMs and hypervisor to deal with guaranteed IO performance
- Commercial offerings will dominate the market. Yet, there is a need to define clear interfaces so that there is no coupling between VM, hypervisor, hardware, VMM architecture.

Project Stratos is working towards developing hypervisor agnostic abstract devices leveraging virtio and extending hypervisor interfaces and standards to allow all architectures.

The four key areas of interest are

- High-performance Virtio interfaces
- Virtual Machine Monitors with a safety island
- Boot Orchestration
- Written Standards for the hypercalls

Details

Sub pages focusing on Use cases

Meetings & Calendar

Meeting Notes

- [2021-04-30 Project Stratos Sync Meeting notes](#)
- [2021-04-15 Project Stratos Sync Meeting notes](#)
- [2021-04-01 Project Stratos Sync Meeting notes](#)
- [2021-03-18 Project Stratos Sync Meeting notes](#)
- [2021-03-04 Project Stratos Sync Meeting notes](#)

Calendar

This calendar is displayed using UTC timezone with no DST offsets.

Contact

- Mailing list: <https://op-lists.linaro.org/mailman/listinfo/stratos-dev>
- IRC: #linaro-virtualization on Freenode
- Archives: <https://op-lists.linaro.org/pipermail/stratos-dev/>
- Virtual Meeting Link: <meet.google.com/uak-yrj-tyd>

Roadmaps, current work, backlog etc

Current Plan


The following items are on the project backlog but not currently planned. If you are interested in contributing to any of these items, please state your intention on the project's mailing list (found above)

Key	Summary	T	Assignee	Status	Resolution
STR-35	Virtio GPIO		Viresh Kumar	TODO	Unresolved
STR-29	virtio-video: Qemu device emulation via vhost-user daemon		Peter Griffin	IN PROGRESS	Unresolved
STR-28	virtio-video: Update Linux frontend driver to match latest spec		Peter Griffin	TODO	Unresolved
STR-27	virtio-video: Help get standard merged to OASIS		Peter Griffin	TODO	Unresolved
STR-26	VirtIO i2c		Viresh Kumar	IN PROGRESS	Unresolved
STR-25	Create "fat" virtqueue implementation		Arnd Bergmann	TODO	Unresolved
STR-22	XEN mediator for FF-A and OP-TEE		Sughosh Ganu	TODO	Unresolved
STR-21	Ensure Zephyr can run cleanly as a Dom0 guest		Takahiro Akashi	IN PROGRESS	Unresolved
STR-20	Fix QEMU's support for Xen on arm64		Alex Bennée	IN PROGRESS	Unresolved
STR-19	Virtio aware Xen model for QEMU for testing additional devices		Alex Bennée	TODO	Unresolved
STR-15	A linux host API for proving a limited sharing of a range of address space between two KVM guests		Arnd Bergmann	IN PROGRESS	Unresolved
STR-9	Implement Optimized VirtIO interfaces		Alex Bennée	IN PROGRESS	Unresolved
STR-8	Prototype a minimal memory profile virtio backed with front end changes		Unassigned	TODO	Unresolved
STR-5	VirtIO RPMB		Alex Bennée	IN PROGRESS	Unresolved
STR-4	VirtIO SCMI and other resource management approaches		Vincent Guittot	TODO	Unresolved

15 issues

Proposed New Plan

The following items are on the project backlog but not currently planned. If you are interested in contributing to any of these items, please state your intention on the project's mailing list (found above)

Key	Summary	T	Assignee	Status	Resolution
STR-3	VirtIO SPI		Unassigned	OPEN	Unresolved

1 issue

Medium Term Plan







The following items are on the project backlog but not currently planned. If you are interested in contributing to any of these items, please state your intention on the project's mailing list (found above)

Key	Summary	T	Assignee	Status	Resolution
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No issues found

Future Plan

The following items are on the project backlog but not currently planned but are expected to be address in the future

Key	Summary	T	Assignee	Status	Resolution
STR-30	Architecture document for virtualized media usecases		Peter Griffin	OPEN	Unresolved
STR-18	Ensure we can boot Xen on modern SBSA ACPI enabled platforms		Unassigned	OPEN	Unresolved
STR-17	Ensure the correct FDT is passed to the hypervisor to allow bootup of Dom0		Unassigned	OPEN	Unresolved
STR-7	Create a common virtio library for use by programs implementing a backend		Takahiro Akashi	OPEN	Unresolved
STR-2	VirtIO Watchdog		Unassigned	OPEN	Unresolved
STR-1	VirtIO Audio		Unassigned	OPEN	Unresolved

6 issues

Plan of Record

Health Checks

PDF version is [here](#).