

OpenSynergy Collaborates with Google and Qualcomm on Virtualizing Android Automotive OS

Berlin, July 7th, 2020. OpenSynergy, today announced its yearlong collaboration with Google and Qualcomm on a reference platform with a virtualized Android Automotive OS instance running on top of OpenSynergy's COQOS Hypervisor SDK and Qualcomm's Snapdragon SA8155 automotive System on Chip (SoC).

Google has announced collaborations with several vehicle manufacturers to power in-vehicle infotainment (IVI) systems with Android Automotive OS, Google's open-source Android platform. The automotive sector is moving towards consolidating increasingly complex and heterogeneous hardware subsystems such as the Instrument Cluster, Infotainment, Head up display etc. onto a single System on Chip (SoC) with mixed-criticality (safety-critical & non-critical) requirements. This enables tighter software integration between the subsystems, and allows for cost & weight savings. Hence, Google is working on virtualization of Android Automotive OS by leveraging and extending VIRTIO, an established virtualization standard maintained by the OASIS consortium, which Google is a member of. Virtualization allows multiple operating systems ('guests') with mixed-criticality requirements to share the same hardware ('host') managed by host software ('hypervisor'). Android Automotive OS will be supported as a guest virtual machine on automotive industry standard based hypervisors.

Last year Google, OpenSynergy and Qualcomm decided to collaborate on the implementation of this reference platform. Goal of this platform, which is planned to be released soon, is to show how Android Automotive OS can be safely and securely integrated on a powerful System on Chip (SoC) using open standards based virtual platform.

The VIRTIO standard

VIRTIO, a device-sharing standard popular in the cloud domain, provides the transport layer and device models for essential computing devices such as Block, Network, Console, GPU, Input, etc. The DMA-like nature of the devices allows high-performance implementations as an alternative to hardware assisted I/O virtualization models while still providing ease of implementation and safety.

OpenSynergy joined the OASIS consortium in 2019 to pioneer the expansion of VIRTIO in the automotive domain. At the same time the company contributed with several VIRTIO devices to the Linux kernel. Thanks to the expertise gathered in the open source domain, OpenSynergy currently provides the most mature open-standard-driven virtual platform in the automotive industry.

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Regis Adjamah, CEO of OpenSynergy: *“Embracing VIRTIO was a major milestone for our automotive-grade COQOS Hypervisor SDK. It is good news for all our customers currently in the process of upgrading their IVI programs. We are complementing our lean, OS-agnostic, type 1 hypervisor with the open-standard device sharing technology VIRTIO. We aggressively pursue the adoption of open standards by investing in open source. We believe the time has come for the automotive industry to abandon proprietary solutions, to embrace open standards and compete on the quality of their implementation”.*

By showing how Android Automotive OS can be deployed and ported without further modification on different SoCs and different hypervisors, the reference platform will help VIRTIO to expand its scope to the automotive domain. VIRTIO provides maximum flexibility to OEMs and Tier 1 partners, enabling them to easily switch between SoCs, hypervisors and host/guest operating systems, to best match their needs.

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About OpenSynergy

OpenSynergy provides embedded software products for the next generation of vehicles. Our hypervisor and communication products pave the way for an integrated driving experience.

The virtualization platform COQOS Hypervisor SDK supports the convergence of software-based vehicle functions with different requirements on safety and security. It is designed for multi-display cockpit controllers, smart antennae or powerful domain controllers using a mix of AUTOSAR technology and open solutions, such as Linux and Android.

OpenSynergy is active member of several standardization bodies relevant in the Automotive industry, such as OASIS (Organization for the Advancement of Structured Information Standards), AUTOSAR, GENIVI Alliance and Linux Foundation (Automotive Grade Linux).

Our engineering services complement the products.

Read on www.opensynergy.com

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