



Contribution ID: 311

Type: **not specified**

## Instant Detection of Virtual Devices

*Monday, 12 September 2022 11:45 (30 minutes)*

During boot-time of Guest there are many (in thousands) PCI config reads and significantly increases Guest boot-time.

Currently, when these reads are performed by a Guest, they all cause a VM-exit, and therefore each one of them induces a considerable overhead.

This overhead can be further improved, by mapping MMIO region of virtual machine to memory area that holds the values that the “emulated hardware” is supposed to return. The memory region is mapped as “read-only” in the NPT/EPT, so reads from these regions would be treated as regular memory reads. Writes would still be trapped and emulated by the hypervisor.

This helps to reduce virtual machine PCI scan and initialization time by ~65%. In our case it reduced to ~18 mSec from ~55 mSec.

### **I agree to abide by the anti-harassment policy**

Yes

**Primary authors:** KAHER, Ajay (VMWare); MAKHALOV, Alexey (VMware); KAMAT, Ashwin Dayanand (VMware)

**Presenter:** KAHER, Ajay (VMWare)

**Session Classification:** VFIO/IOMMU/PCI MC

**Track Classification:** LPC Microconference: VFIO/IOMMU/PCI MC