Device power management based on platform firmware

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Introduction - What is SCMI?

Motivation behind System Control & Management Interface

Less Fragmentation, More Common Code, Platform Firmware, More secure!
Introduction - What is SCMI?

Where we are in virtualized systems

Guest 1
- Power Management
- System Control

Guest 2
- Power Management
- System Control

Upgradeability, Maintainability, Time-To-Market

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SCMIv2.0 – Top Level View

- Dynamic Discovery
- Power & Performance Management
- Reset Domain, Sensors, Notifications
- Device based isolation & permission management
- Fast Transport: Reg/Shmem with Doorbell(opt)

System Control & Management Interface v2.0
SCMlv2.0 - Device based isolation & permission management

- Minimal Hypervisor interference designs
- Resource Manager manages shared resources
- System Controller allows discovery of only those commands and ID’s that are configured for agent
- Dedicated device assignment to VMs (passthrough mode)
SCMIv2.0 - Device based isolation & permission management

- **Co-operative Multi Master Systems**
  - Each master co-operates to transition system resources according to wishes of a specific agent/master, since SCP cannot turn off resources when in use
SCMI-next: Device Protocol

- Device advertises
  - Power States
  - Performance Levels
  - Reset States

- System Controller
  - Abstracts and Manages platform specific details
  - Creates device attributes from constituent domains
  - Manages Domain Dependencies for Device Management
Thank you

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References

- SCMI v2.0 Specification