Updates on Server Base System Architecture and Boot Requirements

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Agenda

- SBSA/SBBR
- SBBA/SBBR Tests
- Ecosystem Questions
Platform Architecture

- **Base System Architecture (BSA)**
  - Defines hardware requirements

- **Base Boot Requirements (BBR)**
  - Defines firmware requirements

- These specifications require a minimum set of hardware and firmware implementations that will ensure OS and firmware will interoperate
SBSA/SBBR

● SBSA/SBBR are the BSA/BBR for the enterprise systems
  ○ Developed using feedback from vendors across the industry (Silicon vendors, OSVs, Hypervisor vendors, BIOS vendors, OEMs and ODMs)
  ○ SBBR defines the required, recommended and optional UEFI, ACPI and SMBIOS interfaces

● SBSA are SBBR are now available at https://developer.arm.com/
  ○ Current versions are SBSA v3.0 and SBBR v1.0
  ○ No click through license required
SBSA/SBBR Compliance Tests
SBSA/SBBR Compliance Tests

● SBSA test suite covers
  ○ SBSA PE properties
  ○ SBSA defined system components
  ○ SBSA rules for PCIe integration
    ■ Based on the PCIe specification
    ■ Based on standard OS drivers with no quirks enabled

● SBBR test suite covers
  ○ UEFI testing based on the UEFI SCT
  ○ ACPI testing based on FWTS
  ○ SMBIOS testing

● Provided as open source
  ○ Apache v2 License

● Built on top of a Platform Adaptation Layer
  ○ ARM will support one based on UEFI and ARM Trusted Firmware
  ○ A silicon vendor can also port to a bare metal environment
SBBR Tests

● From 3 sources (all open source)
  ○ UEFI SCT* (ARM will upstream into SCT)
  ○ FWTS (ARM + Linaro will upstream)
  ○ Standalone (ARM provides through github and packages into LuvOS image)

● Note: UEFI SCT is currently for UEFI member only. Would like to see it open source
Unified Release

● A unified software release, to tie all of these deliverables together with the enterprise FVP model
● Planned for future
SBSA/SBBR Tests Release

• Overarching github including SBBR
  ○ https://github.com/ARM-software/arm-enterprise-acs

• SBSA github
  ○ https://github.com/ARM-software/sbsa-acs
SBSA/SBBR Roadmap

SBSA – alpha
(source + binary)
SBBR – alpha

SBSA – beta
* PCIe testing

SBSA/SBBR EAC

SBSA/SBBR update
SBSA/SBBR Compliance process

SBSA-3.next
SBBR-1.next

SBSA-4.0
SBBR-next-next

Specs

2016 Q4
2017 Q1
2017 Q2
2017 Q3
2017 Q4
Future
Questions to the ARM Community
SBSA/SBBR Certificate

- To improve the out-of-box experience for OS vendors and system users, ARM received feedback that a badge program certifying the SBSA/SBBR Compliance can be useful
- Feedback?
UEFI Driver Binary Format

• EBC is a cross-architecture solution
  ○ One driver image for all ISAs
  ○ Open-source EBC Interpreter for ARM upstreamed to tianocore

• However,
  ○ Benefit cannot be realized if x86 uses its native format, unless more ISAs become relevant
  ○ No supported EBC Compiler
  ○ No Secure Boot Signing for EBC Drivers

• Can the industry come together to solve these problems?
  ○ If not, propose that ARM AArch64 native binary format be used for UEFI Drivers on ARM systems
  ○ Feedback?
Summary
Conclusion

- SBSA/SBBR Tests can be used for compliance tests
- Drive closure on a remaining questions
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Thank You

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