Updates on Server Base System Architecture and Boot Requirements

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Agenda

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

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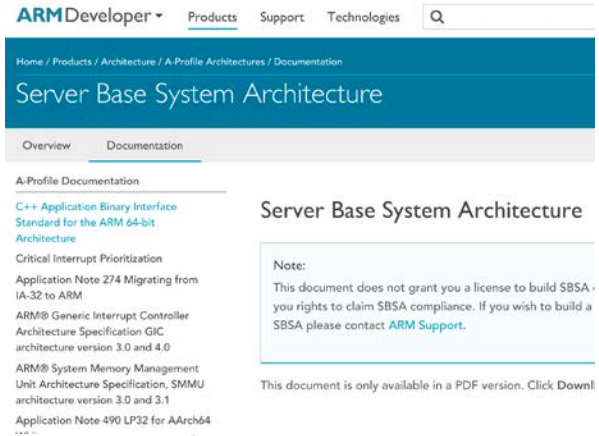
SBSA/SBBR

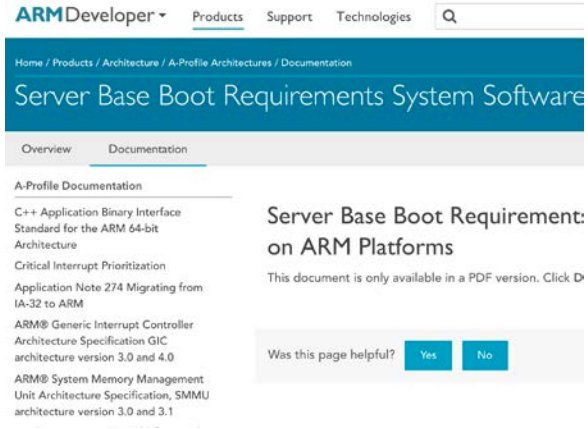
Platform Architecture

- 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





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SBSA/SBBR Compliance Tests

SBSA/SBBR Compliance Tests

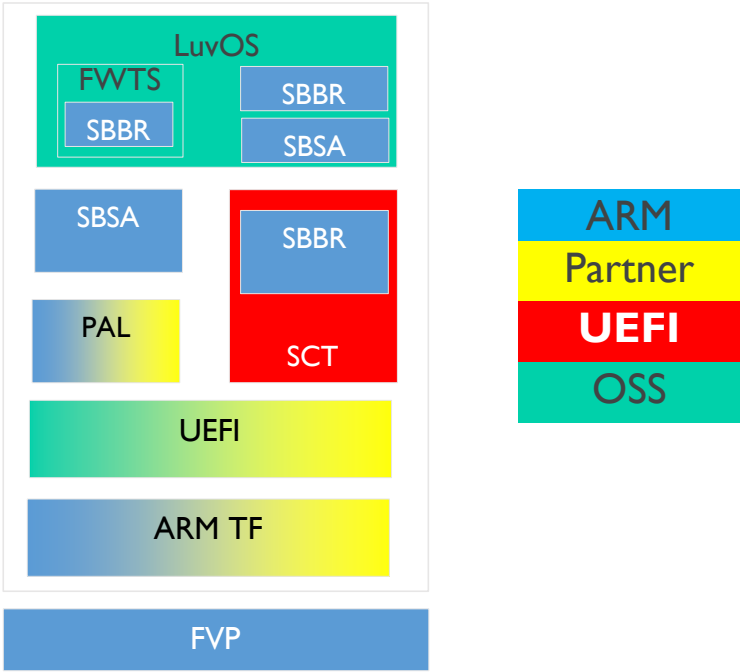
- SBSA test suite covers
  - SBSA PE properties
  - SBSA defined system components
  - SBSA rules for PCIe integration
    - Based on the PCIe specification
    - Based on standard OS drivers with no quirks enabled
- SBBR test suite covers
  - UEFI testing based on the UEFI SCT
  - ACPI testing based 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

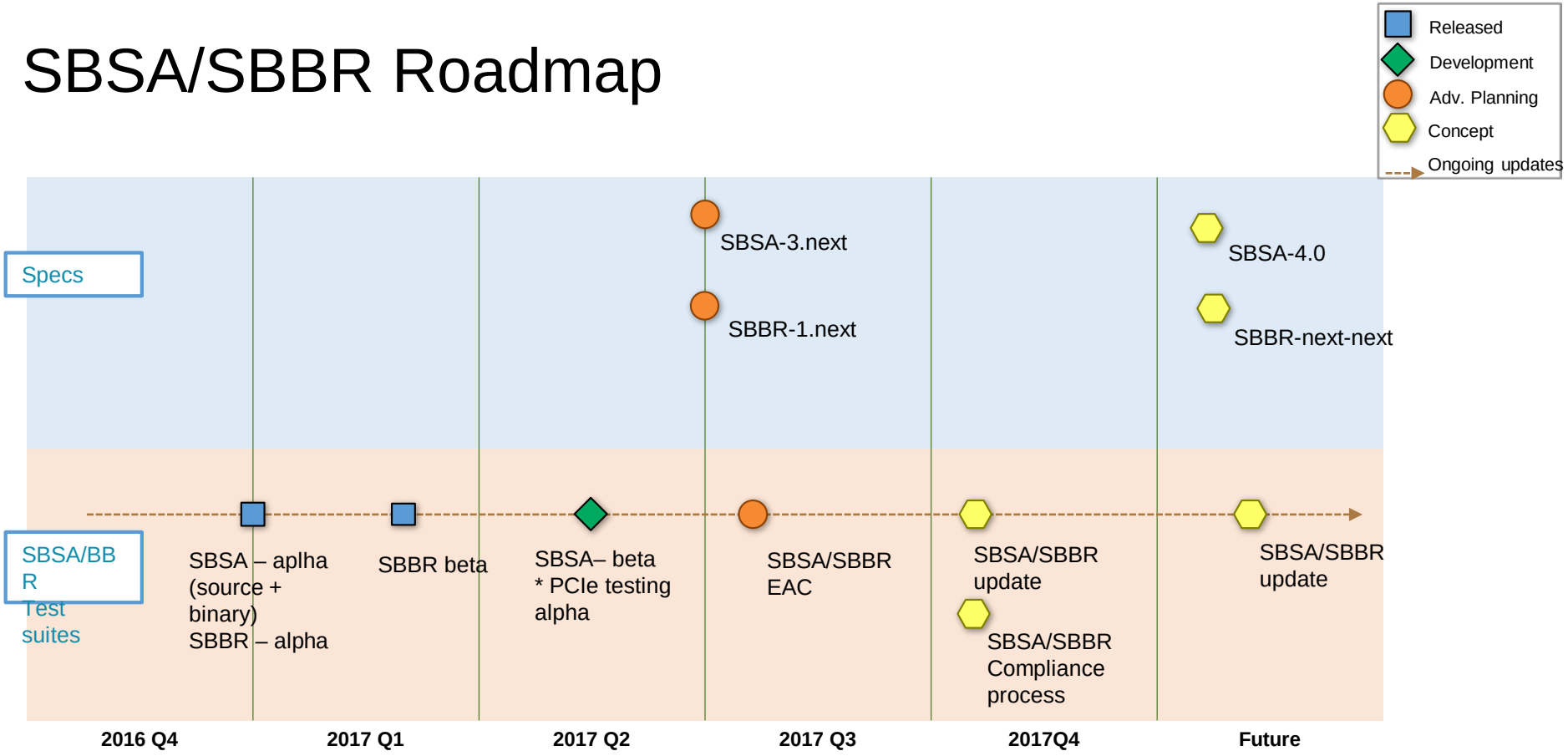
- A unified software release, to tie all of these deliverables together with the enterprise FVP model
- Planned for future



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



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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?

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Summary

Conclusion

- SBSA/SBBR Tests can be used for compliance tests
- Drive closure on a remaining questions
- Contact info: dong.wei@arm.com

Thank You

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For further information: www.linaro.org

BUD17 keynotes and videos on: connect.linaro.org