



TRUSTED FIRMWARE
OPEN SOURCE SECURE WORLD SOFTWARE

Trusted Firmware Community Project

March 2021



TrustedFirmware
.org



Trusted Firmware: Build Security Collaboratively

Open Governance Community Project

Reference open source implementation of Secure world software for Arm processors
across all market segments

Membership open to all

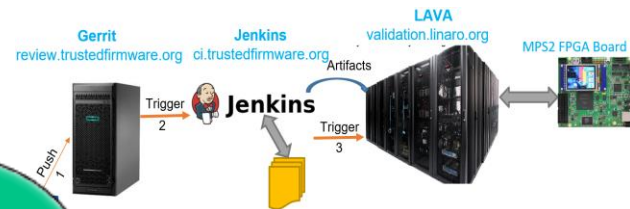
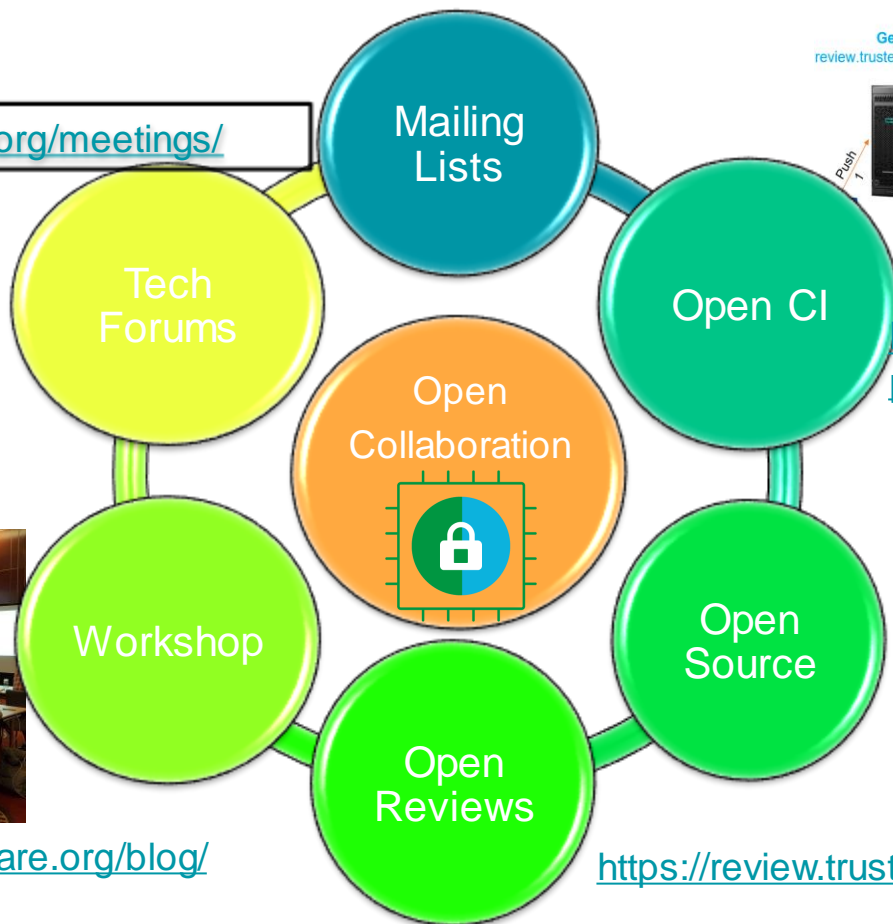
Board

Technical Steering Committee



The Virtuous Circle Of Collaboration!

<https://www.trustedfirmware.org/meetings/>



<https://www.trustedfirmware.org/projects/open-ci/>

<https://git.trustedfirmware.org/>

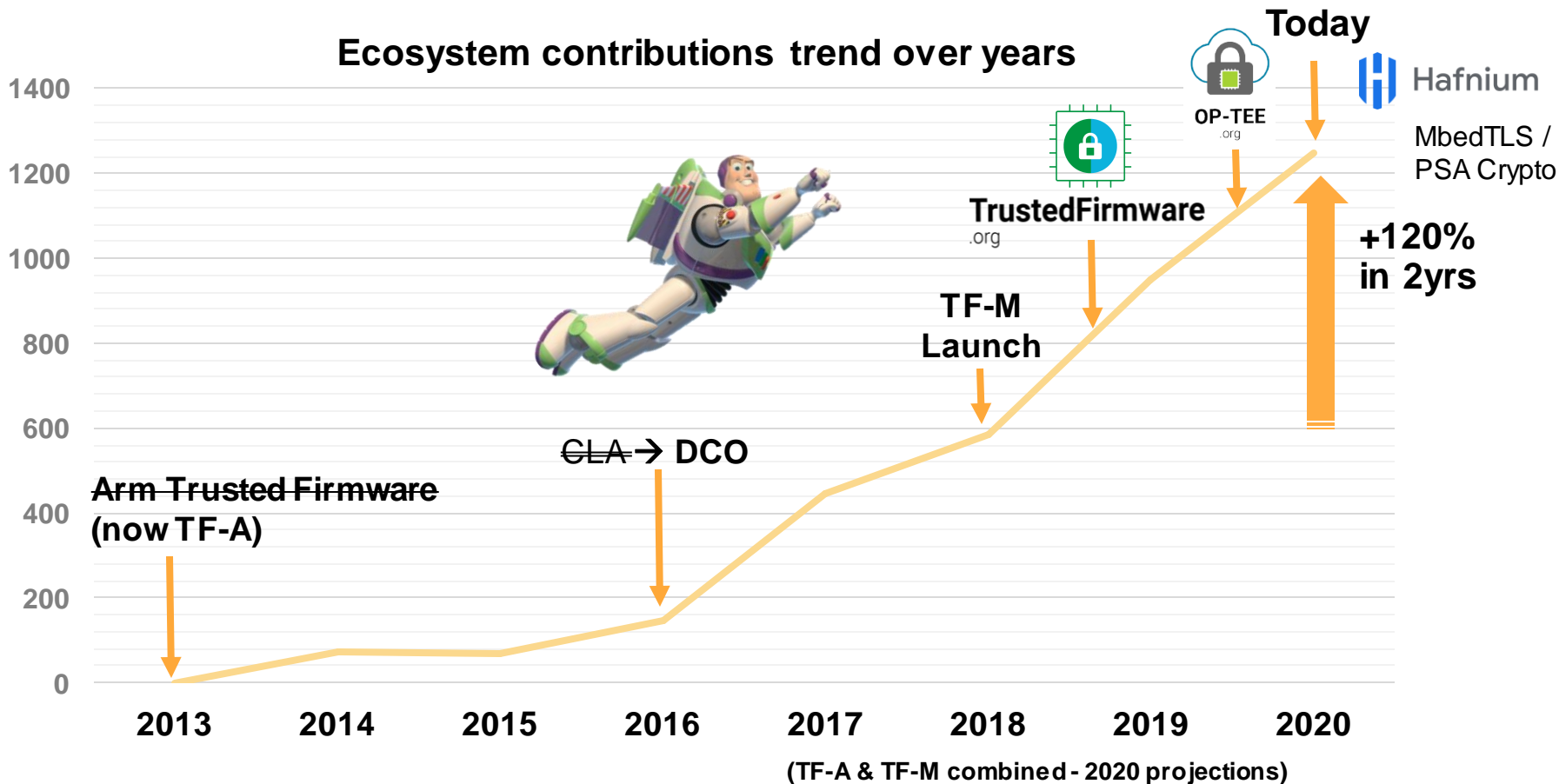
<https://review.trustedfirmware.org/>

<https://www.trustedfirmware.org/blog/>



A success story: from 0% to infinity...and beyond!

Ecosystem contributions trend over years



Current members

arm



RENESAS



Google

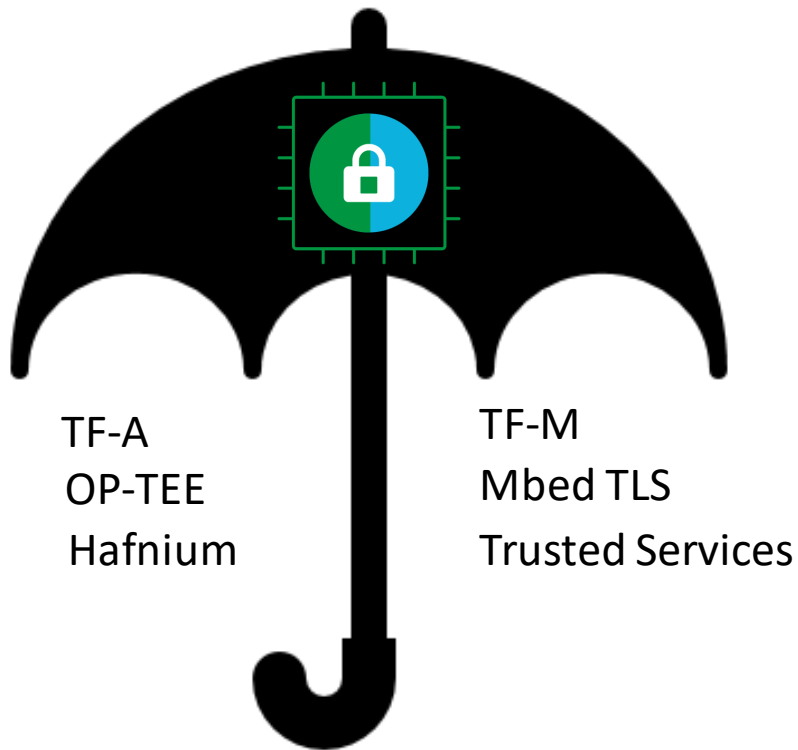


life.augmented



NXM

Current Projects



Build Security Collaboratively



All market segments

Devices

IoT/Mobile/Auto/Laptop

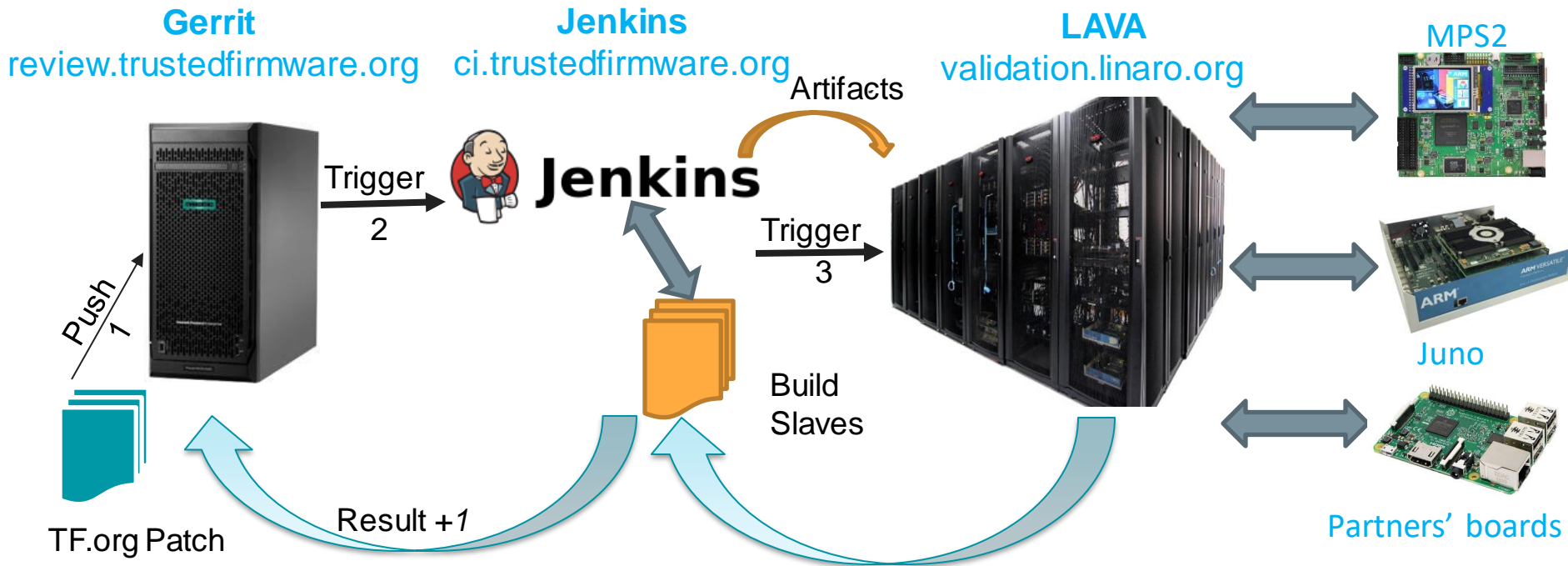
Embedded
Edge

Cloud
Server



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Open CI & Board Farm



Trusted Firmware Security Center

New centralized Security incident process

https://developer.trustedfirmware.org/w/collaboration/security_center/

- Have you found a security vulnerability in Trusted Firmware?
→ Report it here: security@lists.trustedfirmware.org
- Coordinated disclosure with Trusted Stakeholders and ESS
 - https://developer.trustedfirmware.org/w/collaboration/security_center/trusted_stakeholder_registration/
- Per-project security email aliases
 - https://developer.trustedfirmware.org/w/collaboration/security_center/mailing_aliases/

Trusted Firmware-A

Secure world reference software for all Arm Cortex-A & Neoverse processors across all market segments.

Trusted boot flow and runtime firmware providing standard implementation of Arm specifications:

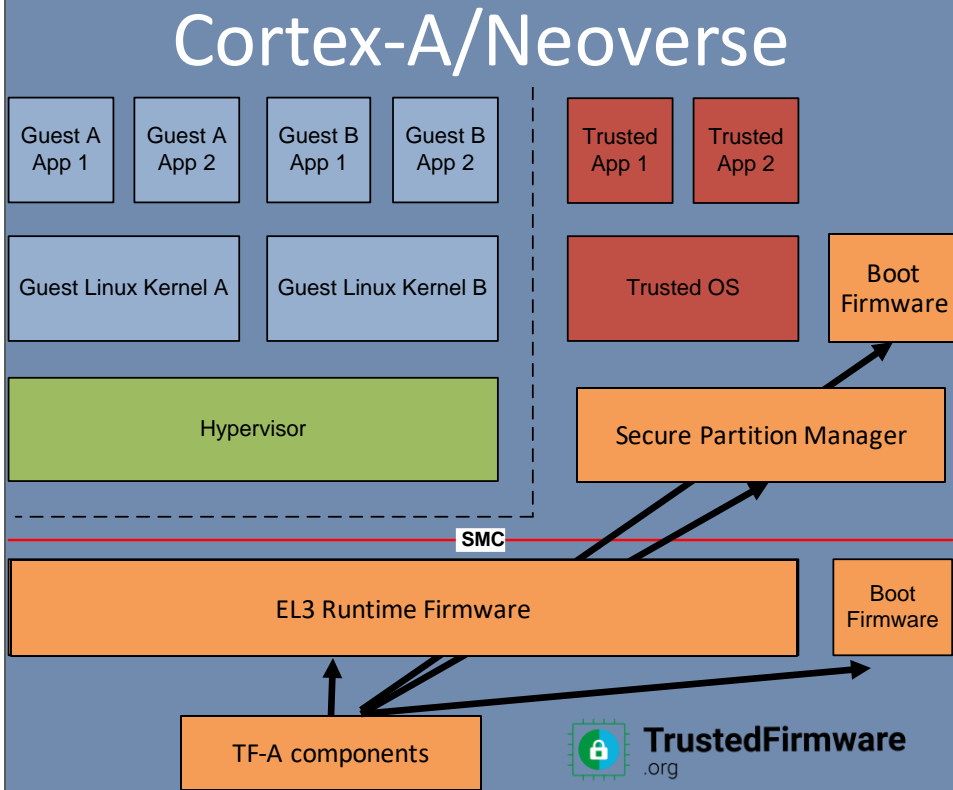
SMCCC (SMC Calling Convention)

TBBR (Trusted Board Boot Requirements)

PSCI (Power State Coordination Interface)

SCMI (System Control & Management Interface)

FF-A (Firmware Framework for A-Profile)

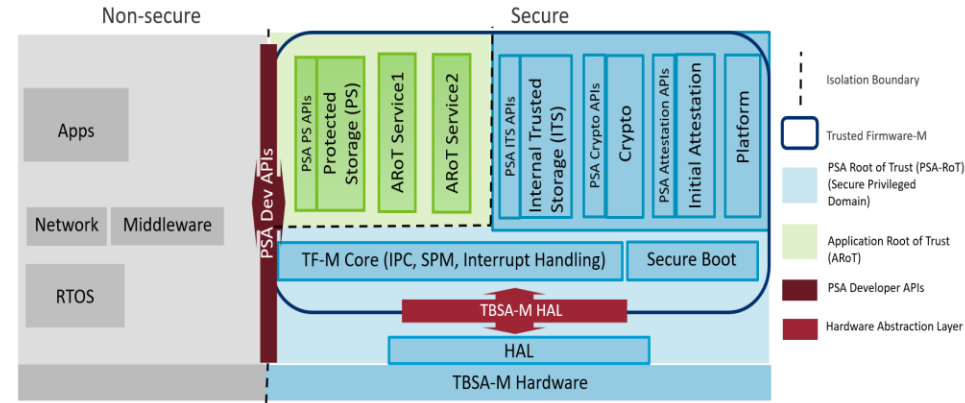


Trusted Firmware-M

Implements the Secure Processing Environment (SPE) for Armv8-M, Armv8.1-M architectures. It is the platform security architecture reference implementation aligning with PSA Certified guidelines.

It consists of Secure Boot and a set of Secure Services such as Secure Storage, Crypto, Attestation etc. for Applications accessible via PSA Functional APIs.

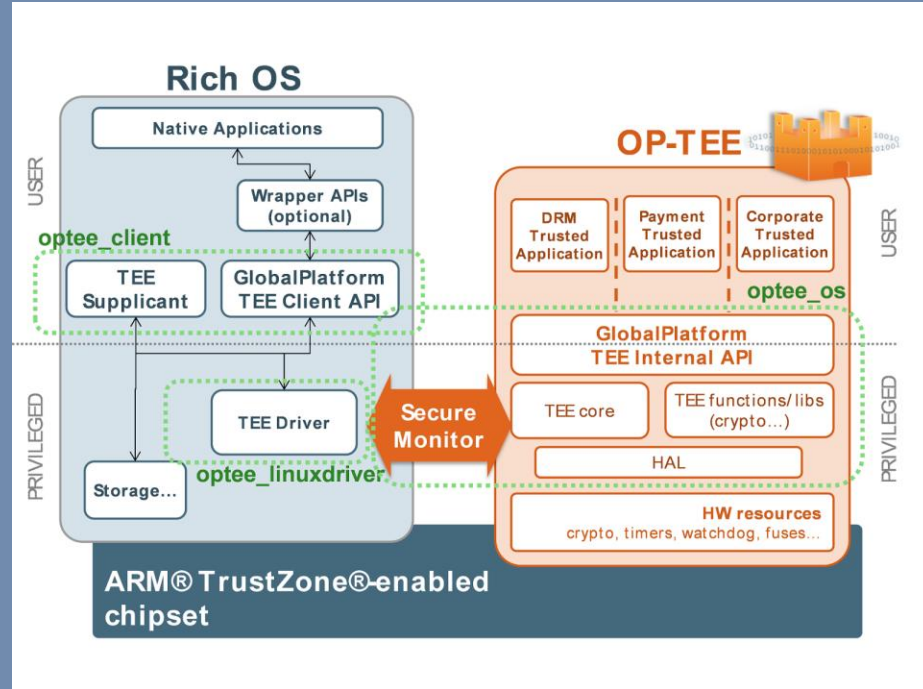
Cortex-M



OP-TEE

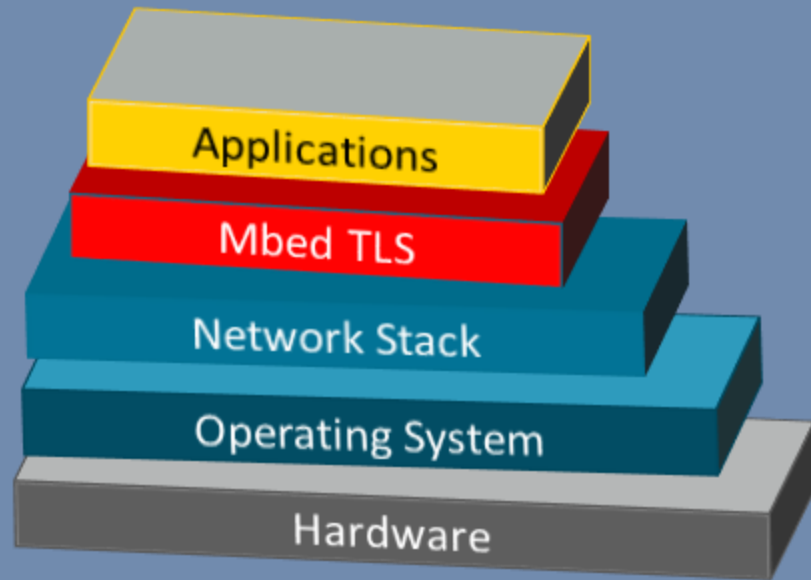
A reference implementation of a Trusted Execution Environment (TEE), designed as companion to a non-secure Linux kernel running on Arm Cortex-A cores using the TrustZone technology.

Implements [TEE Internal Core API](#) v1.1.x and the [TEE Client API](#) v1.0, as defined in the [GlobalPlatform API](#) specifications.



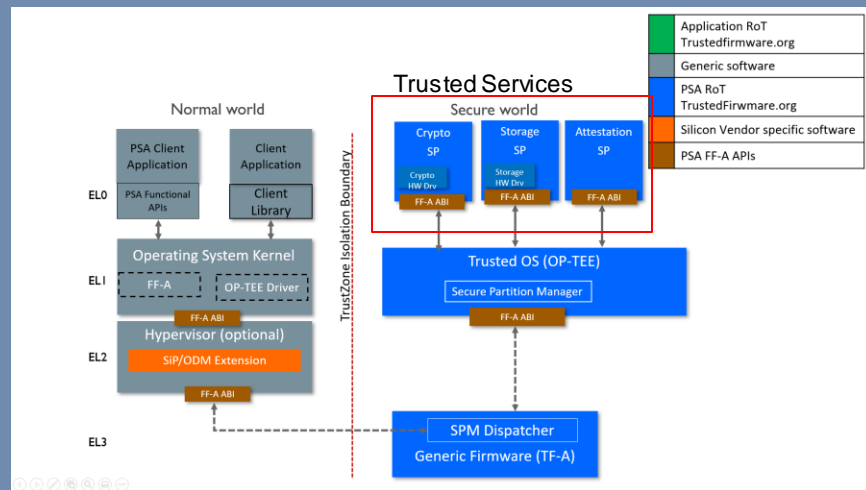
Mbed TLS

- Portable, highly modular, easy-to-use TLS and X.509 library
- Extensively used in various market segments
- Distributed under Apache2.0 License
- Components –
 - Cryptography
 - Protocol (TLS, DTLS)
 - Certificates (X.509, PKI)
- PSA Crypto (Mbed Crypto), derived from Mbed TLS library, brings together Crypto primitives and makes them available via. PSA Crypto APIs.
- PSA Crypto also support driver interfaces to integrate with Secure Elements and Crypto Accelerators.

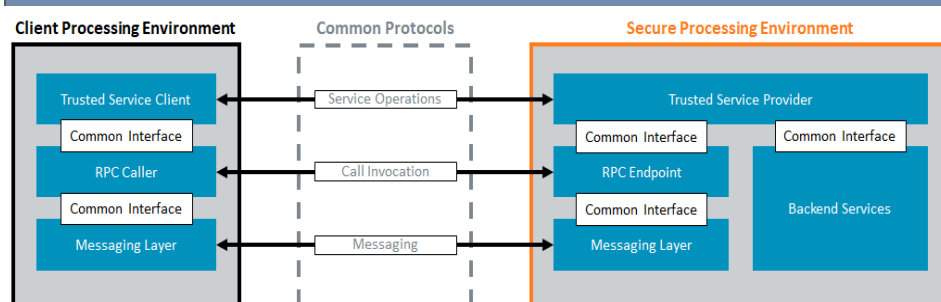


Trusted Services

- Framework to develop Security related Services
- Deployable over range of Isolated Processing Environments (e.g., Secure EL0 Partitions under OP-TEE, Secure Partition under Hafnium.)
- Applications access Trusted Services for Security Operations via. a standardized service layer
- Includes PSA Trusted Services for Cryptography, Storage and Attestation



Layered Model Of Trusted Services



How to Get Involved

Become a project member

Diamond/Platinum Board members define the mission and strategy:

\$100K/year and \$50K/year

General members receive project updates, make requests to the board and have joint representation at Board meetings: \$2.5-25K/year*

Further details, see project Charter:

<https://www.trustedfirmware.org/join>

* Fee according to company size and type

Contact:

enquiries@TrustedFirmware.org

for more information



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Thank you

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Visit www.TrustedFirmware.org or email
enquiries@trustedfirmware.org for more information