Signer ID Retrieval Design

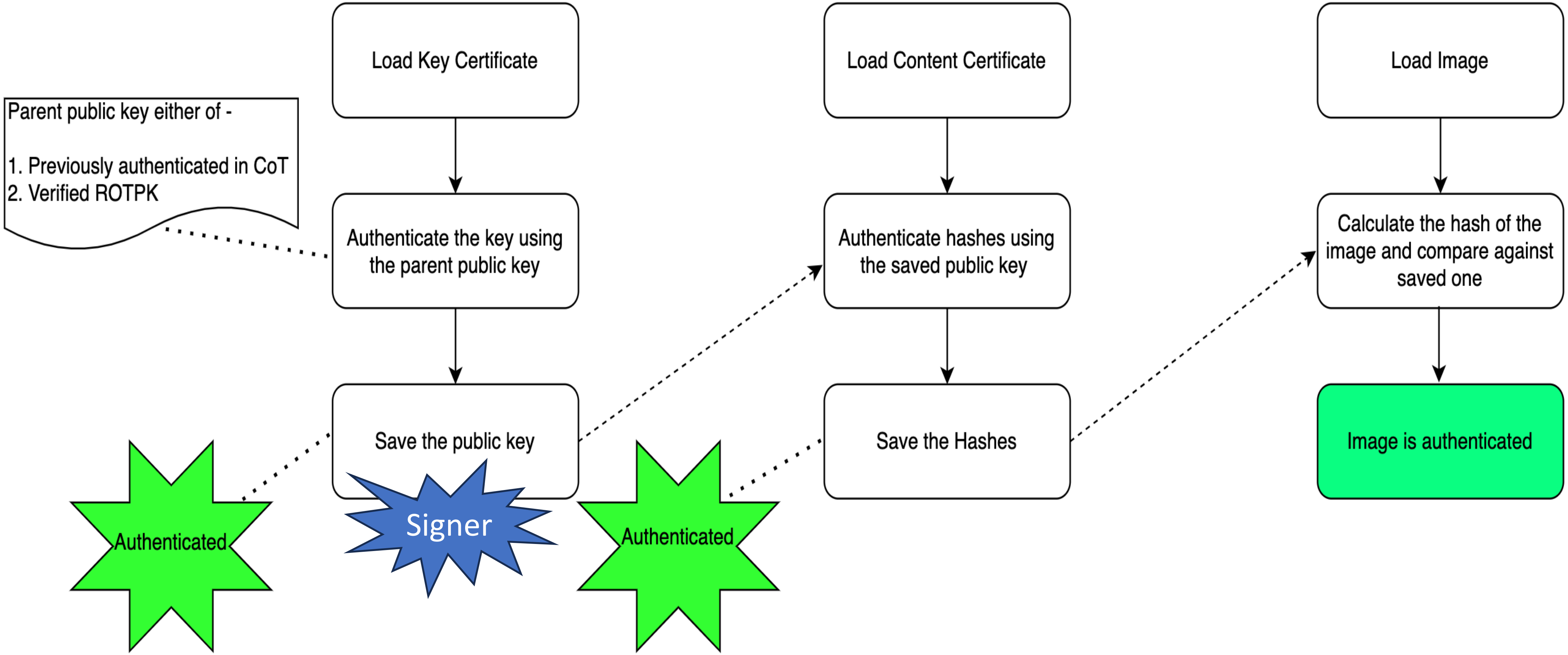
Manish Badarkhe

13/07/2023

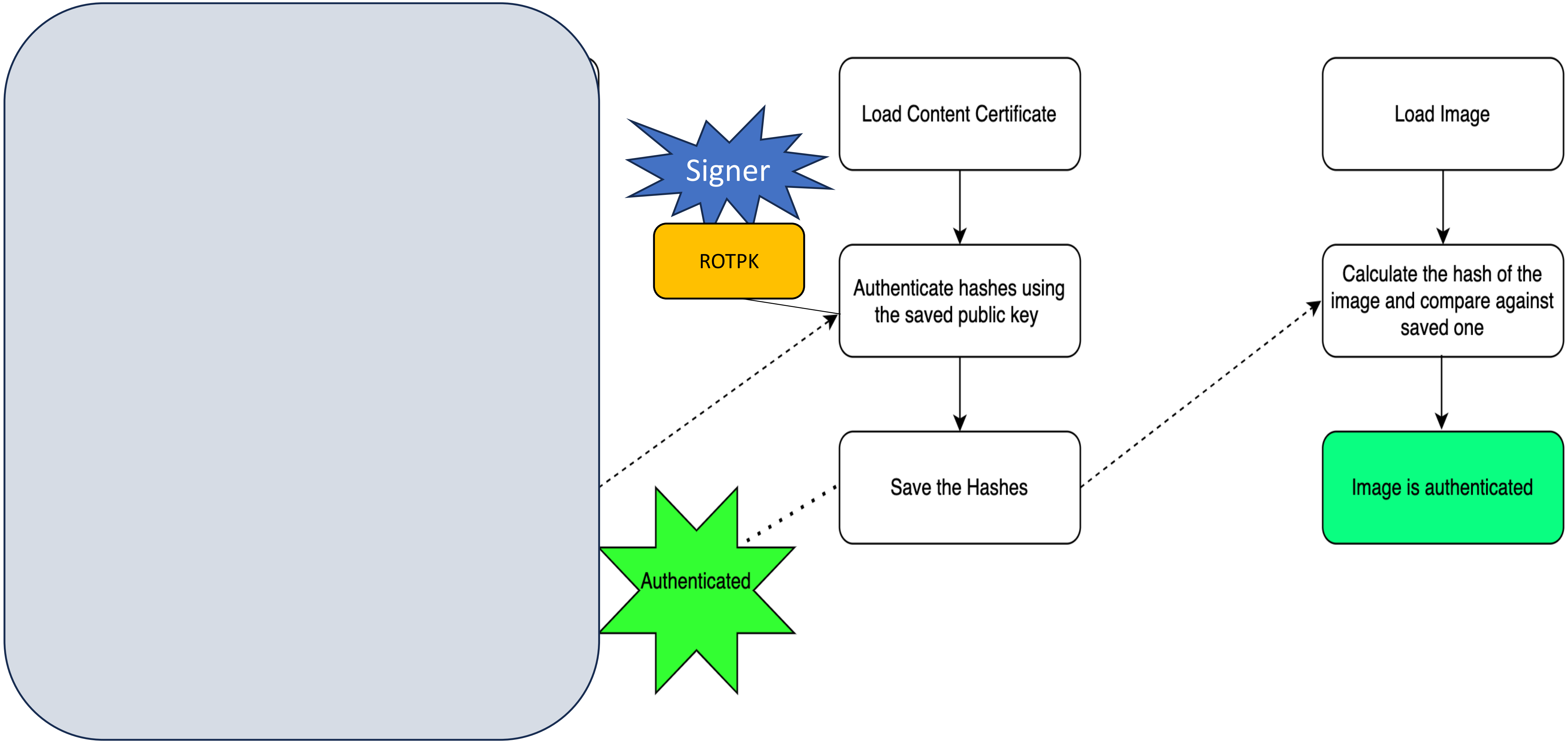
Agenda

- Quick recap
  - Authentication Mechanism
  - Role of public key
- What is signer ID and its usage?
- Design of signer ID retrieval for attestation

Authentication Mechanism


Load Key Certificate
Authenticate the key using the parent public key
Save the public key
Parent public key either of -
1. Previously authenticated in CoT
2. Verified ROTPK
Authenticated
Signer
Load Content Certificate
Authenticate hashes using the saved public key
Save the Hashes
Authenticated
Load Image
Calculate the hash of the image and compare against saved one
Image is authenticated

Authentication Mechanism



Signer
ROTPK
Authenticated
Load Content Certificate
Authenticate hashes using the saved public key
Save the Hashes
Load Image
Calculate the hash of the image and compare against saved one
Image is authenticated

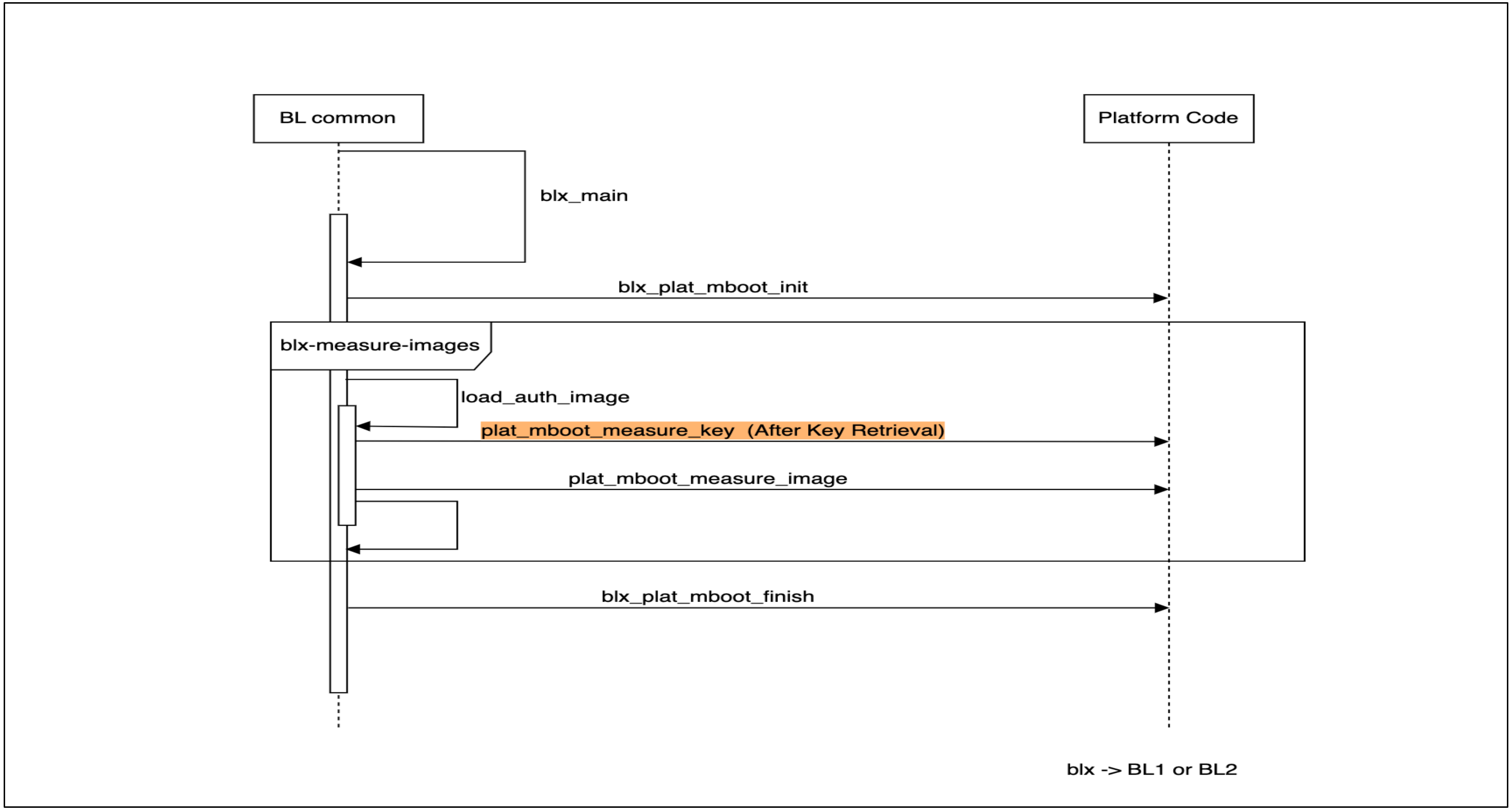
What is signer ID and its use ?

- The hash of a signing authority public key for the software component.
- Due to the fact that boot certificates are not measured, the Signer-ID must be taken into account when attestation is carried out.
- Signer-ID can be used by a verifier to ensure the components were signed by an expected trusted source.
- Signer-ID enables fine-grained policy-based decisions, ultimately determining platform approval.

Design of Signer-ID retrieval

- The Authenticated Public Key (Signer) of an image is retrieved during authentication as discussed previously.
- The platform can measure the key using the Crypto Module via "plat_mboot_measure_key".
- Moreover, platform can pass that measurement to appropriate Measured Boot backends such as RSS or Event Log for extending measurements.
- Measurements are provided to an external verifier, who then can use them to unseal some security policies, eventually helping to attest the platform. This is platform IMPDEF.

Overall Flow



References

- Patches posted externally for review -
  - https://review.trustedfirmware.org/q/topic:%22mb%252Fmb-signer-id%22+(status:open%20OR%20status:merged)
- Signer ID details -
  - https://arm-software.github.io/psa-api/attestation/1.0/IHI0085-PSA_Certified_Attestation_API-1.0.3.pdf

Thank You

Danke

Gracias

Grazie

谢谢

ありがとう

Asante

Merci

감사합니다

धन्यवाद

Kiitos

شكرًا

ধন্যবাদ

תודה