rfc6712bis and rfc4210bis

draft-ietf-lamps-rfc6712bis-03
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draft-ietf-lamps-rfc4210bis-06
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IETF 116 – LAMPS Working Group

Activities since IETF 115 on rfc6712bis

Changes since IETF 115:

- Minor editorial update preventing expiration
- Moved the draft to github.com/lamps-wg/cmp-updates/ converting from XML to MD

Activities since IETF 115 on rfc4210bis

Changes since IETF 115:

- Added section on POP for KEM keys
- Added a **proposal for message protection using KEM keys and HPKE in version -04/-05 and updated this proposal in -06 to using plain KEM and KDF without HPKE**
- Updated guidance on which CMS-based key management to use with encrypted values
- Added a text regarding use of Certificate Transparency
- Moved the draft to github.com/lamps-wg/cmp-updates/ converting from XML to MD

Message protection using KEMs – HPKE vs. plain KEM+KDF

CMP message protection

- KEM certificate to deliver an authenticated public KEM key.
- This public KEM key is to be used to establish a shared secret.
- A KDF is to be used to derive a shared secret key.
- This shared secret key is to be used for MAC-based message protection.

The authors believe that using plain KEM+KDF as proposed for CMS (see draft-ietf-lamps-cms-kemri) is more straight forward than using HPKE because confidentiality (seal/open) is needed.

➔ Shall we move forward using plain KEM+KDF?

Message protection using KEMs – Concatenation of two keys vs. separate keys on both sides

CMP message protection

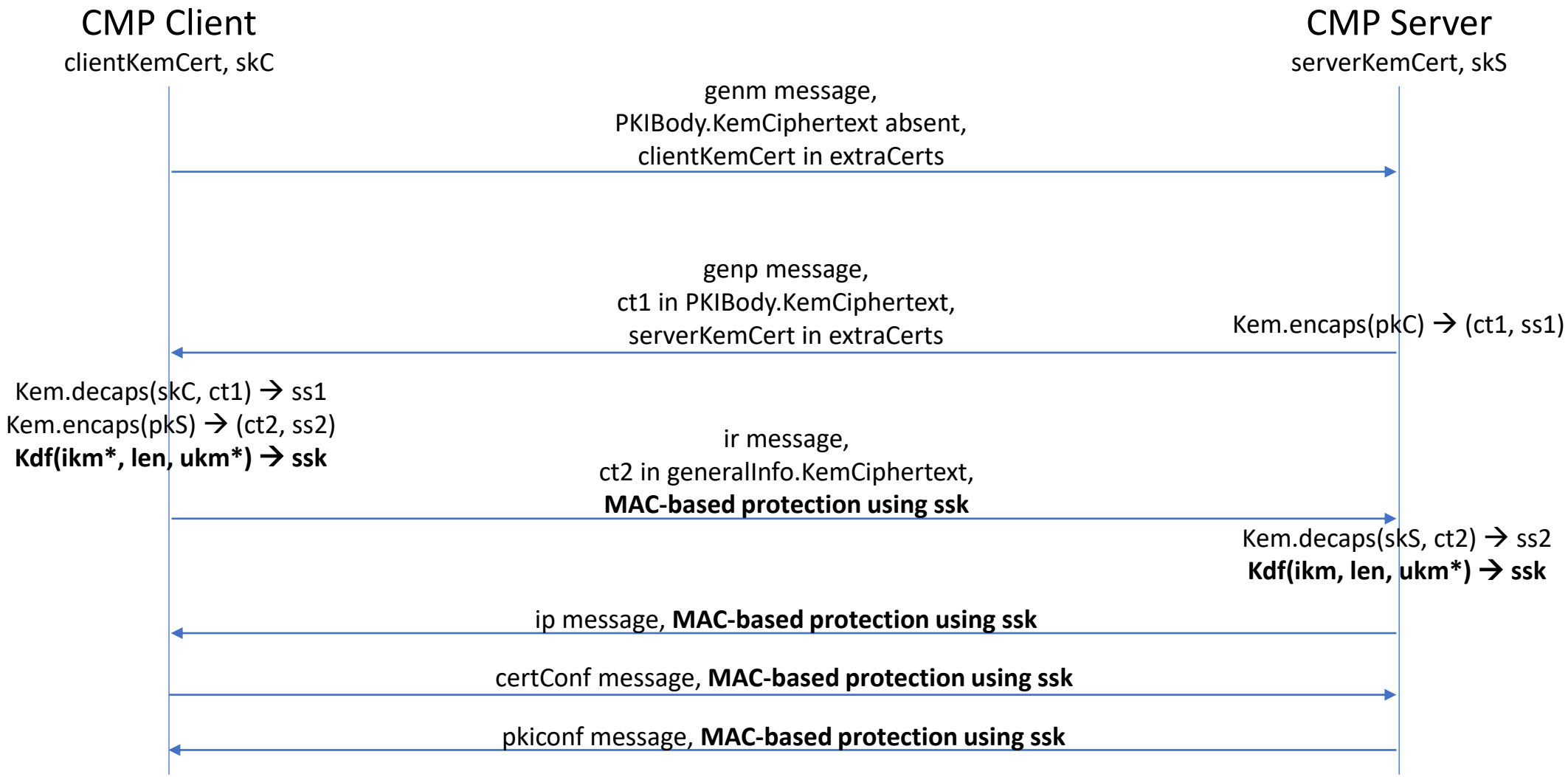
- KEM certificate to deliver an authenticated public KEM key.
- This public KEM key is to be used to establish a shared secret.
- A KDF is to be used to derive a shared secret key.
- This shared secret key is to be used for MAC-based message protection.

Both sides could **derive one shared secret key resulting form the concatenation of the two KEM shared secrets**. This results in **one shared secret key used by both sides** for MAC calculation and verification.

Alternatively, both sides could **derive two shared secret keys, one from the shared secret resulting its decapsulate operation and one resulting from the encapsulate operation**. This results in **two shared secret keys used on both sides**, one for MAC calculation and the other for MAC verification (and vice versa). **This approach could also be used like one side uses a KEM key pair and the other uses a signature key pair.**

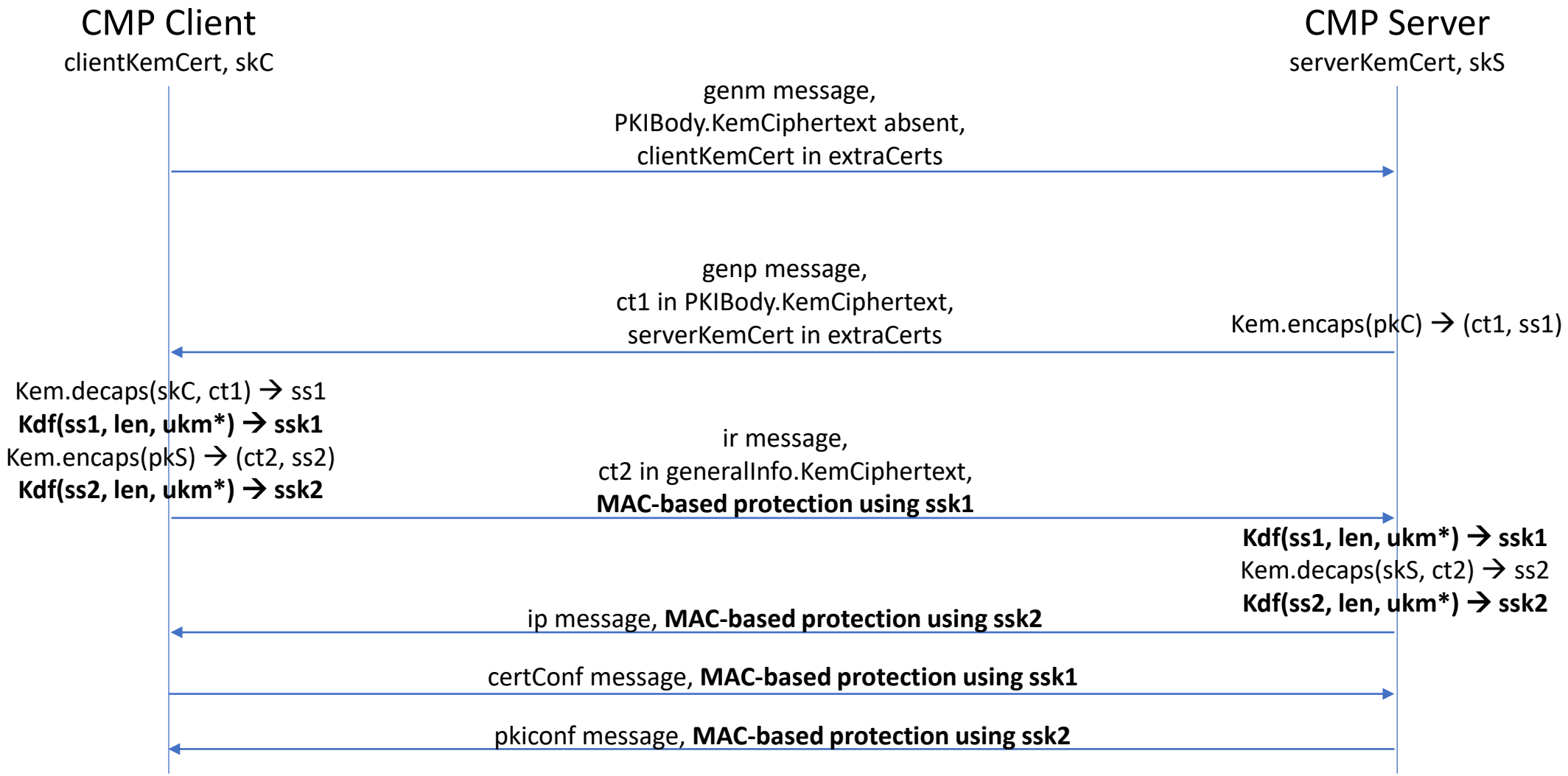
➔ Shall we move forward deriving two different shared secret keys?

Client and server use shares symmetric key



*) **ikm = concat(ss1, ss2)**
ukm = concat("CMP-KEM", transactionID, genp_senderNonce, genp_recipNonce)

Client and server use different secret keys



*) ukm = concat("CMP-KEM", transactionID, genp_senderNonce, genp_recipNonce)