Certificate-based Namespace for HIP

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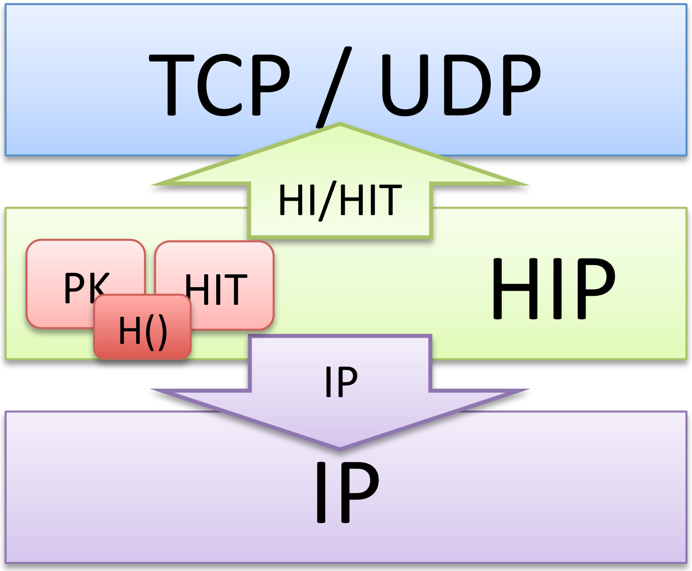
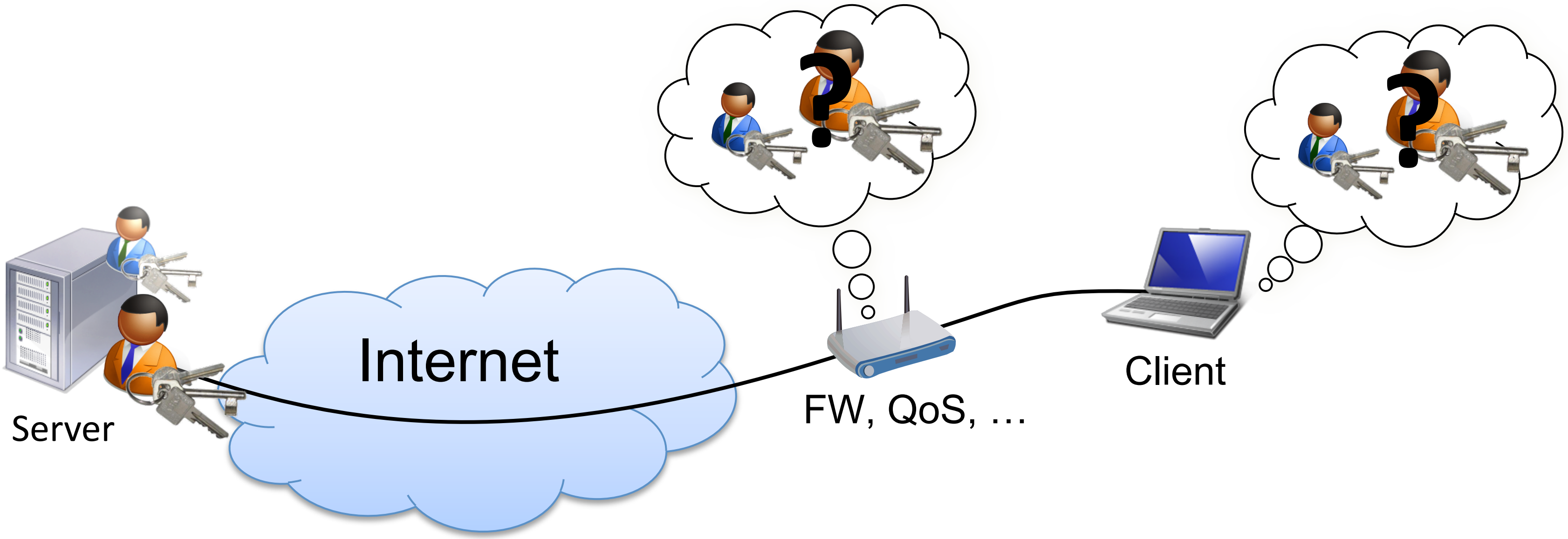
HIP Namespace in the Stack

- Implementation of the id/loc split
- Public key as stable host identity
  - Statistically unique
  - Cryptographically verifiable



HIP Namespace and identity life cycles?

Phasing out "old" HIs



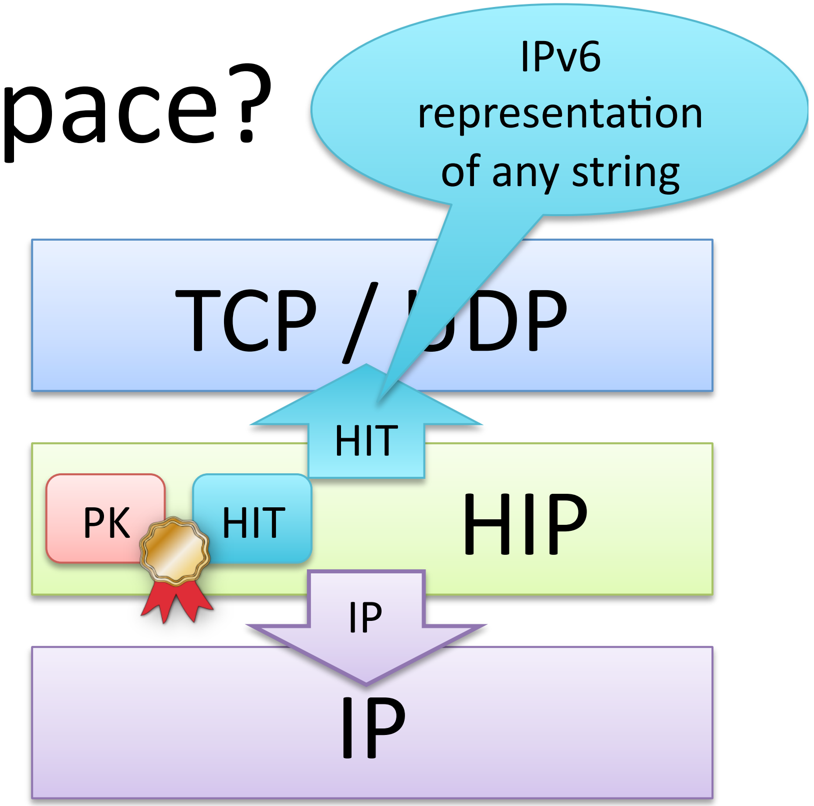
- Host Identity bound to public key's life cycle
  - New key == new identity
  - New HITs in ACLs, DBs, …
- Re-bootstrapping of trust
  - Manual setup? Separate Protocol?
  - … but host is still same trustworthy entity

What is the HIT?

- Representation of HI
  - IPv6 format
  - Can be mapped to HI (locally)
  - Mapping is of cryptographic nature
- Current mapping
  - Hash function
- Other alternative
  - Certificates

New Namespace?

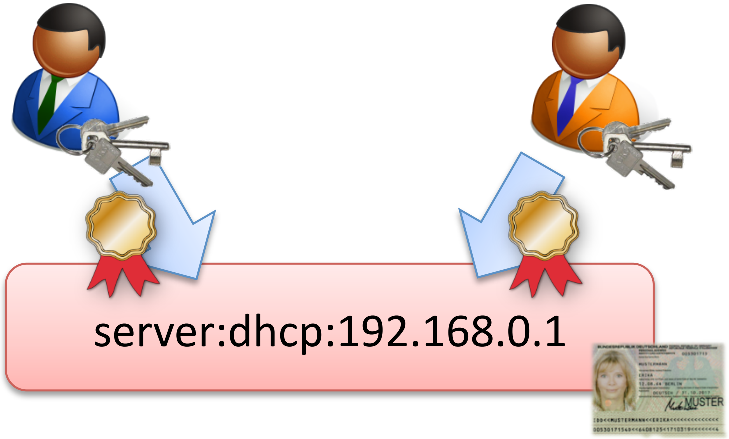
- 3 components of a host identity
  - Descriptive host identifier
  - Public Key equating to traditional HI
  - Binding certificate



- Stable description identifies host
- Public key authenticates host
  - May change over time
  - Allows for key negotiation

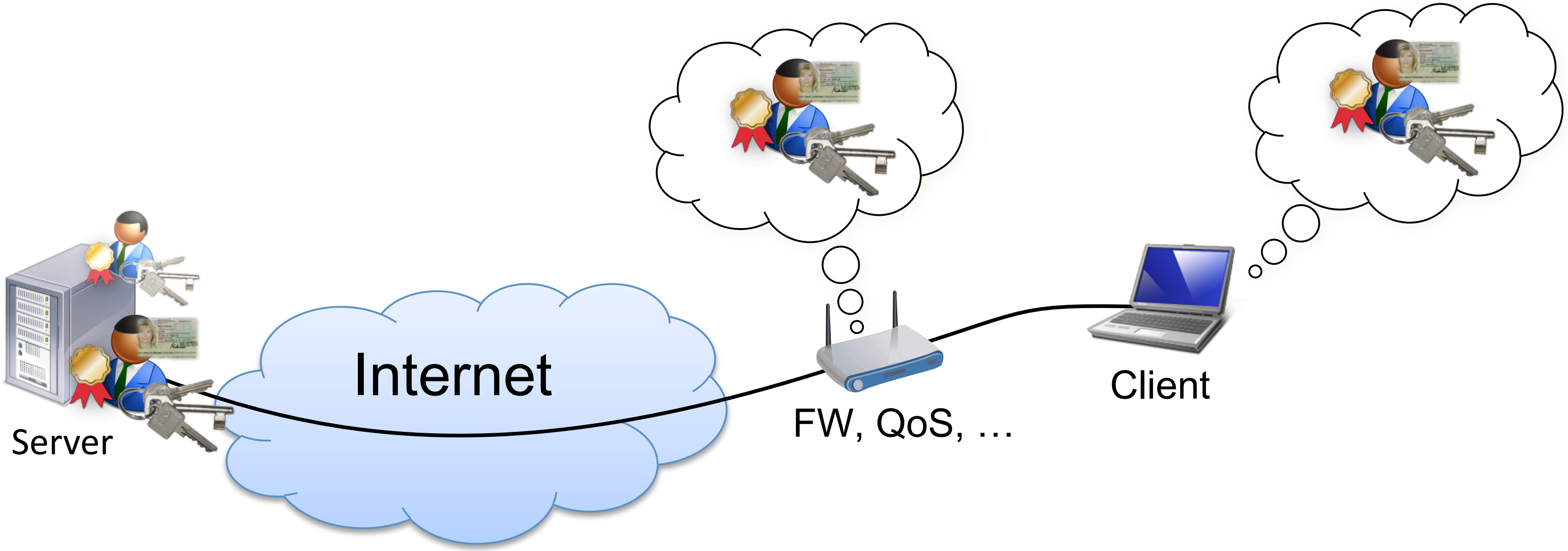
Scoping Identifiers

- Inherent naming conflicts



- Certificate confines scope of host identifier
  - Binding certificate (CA-specific scope)
  - Common root/intermediate cert. (coordinated scope)

Replacing a HI (revisited)



- Public key and certificate change
- Host identifier remains stable

➡ Host identity stays intact

ToDo

1. Deeper look into and specification of coordinated namespace scenario
2. Generation of HITs from certificate-based HIs
3. Integration of namespace in HIP exchange