Proof of Transit

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draft-brockners-proof-of-transit-04
Consider TE, Service Chaining, Policy Based Routing, etc...

“How do you prove that traffic follows the selected path?”
Ensuring Path and/or Service Chain Integrity

Approach

- Meta-data added to all user traffic
  - Based on “Share of a secret”
  - Provisioned by controller over secure channel to hops where “proof of transit” is required
  - Updated at every hop where proof of transit is required
- Verifier checks whether collected meta-data allows retrieval of secret
  - “Proof of Transit”: Path verified
POT in an SFC Domain

SFs take part in the POT secret sharing.

Verifier may be an SF at the end of the chain, or somewhere along the chain.
POT in an SFC Domain with SFC Proxy

SFC Domain
SF1 SF2 SF3
POT
Verifier
SFF SFF

NSH-unaware SF.

SFC proxy takes part in POT secret sharing.
So what has changed?

The draft has not changed significantly since version 03.

However, new SFC charter:

"...Security and Privacy - Mechanisms and guidance for securing metadata via authentication, integrity protection, confidentiality, and/or data minimization are not yet defined. What can be effectively provided, for which scenarios, and how those tools can be provided need to be determined and the tools standardized..."
Next Steps

• POT concept (and associated draft) has been presented 3 times in SFC WG. RFC 8300 already references POT. Security and Privacy are now part of the charter.

• WG adoption call