Three question regarding IPsec

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IPsec

IPsec = security enhancement to IP.

Questions:

Q1: Should IP contain security provisions?

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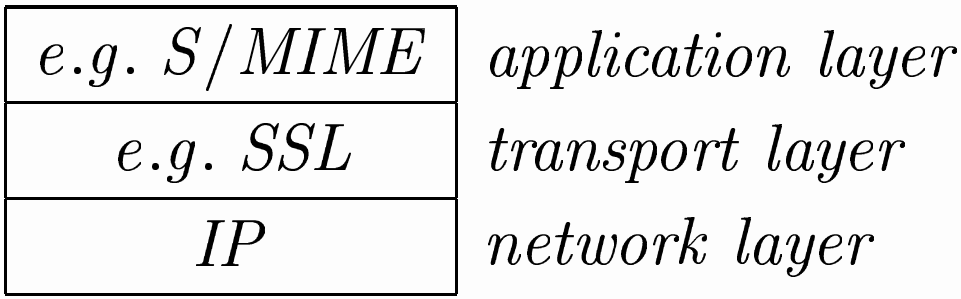
Q3: Can (and should) we formally verify IPsec?

Q1: Should IP contain security provisions?

IP is fundamental for all internet communications.



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General opinion: security at every level.

A1: Yes, IP should consider security.

Q2: Is IPsec a good security enhancement to IP?

Seems to work, but

- IKE contains vulnerabilities.
- Many insecure implementations.

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A2: IPsec is not as good as required.

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A3: Yes, we can and will have to apply formal methods to IPsec , but. . .

- Why construct such an important protocol without providing formal proofs of correctness?
- Apply formal methods already in design phase; do not leave it as an exercise for the scientific community.