

TCP Provenance Identifier Option

IETF 125 ShenZhen, TCPM WG

<https://datatracker.ietf.org/doc/html/draft-liang-tcp-provenance-option-01>

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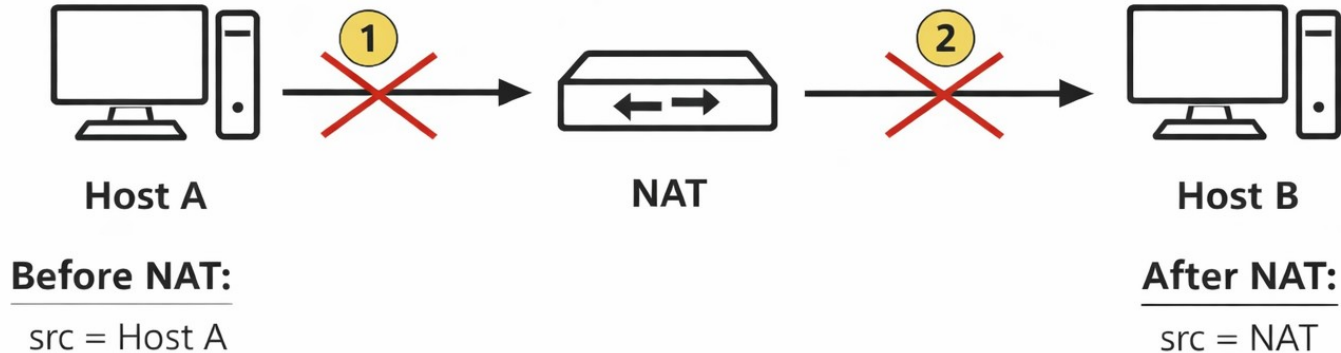
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Background

- Cloud native and data center networks contain many middleboxes
- Connections often traverse NATs, proxies, load balancers
- Operators rely on observability to diagnose network issues

Problems

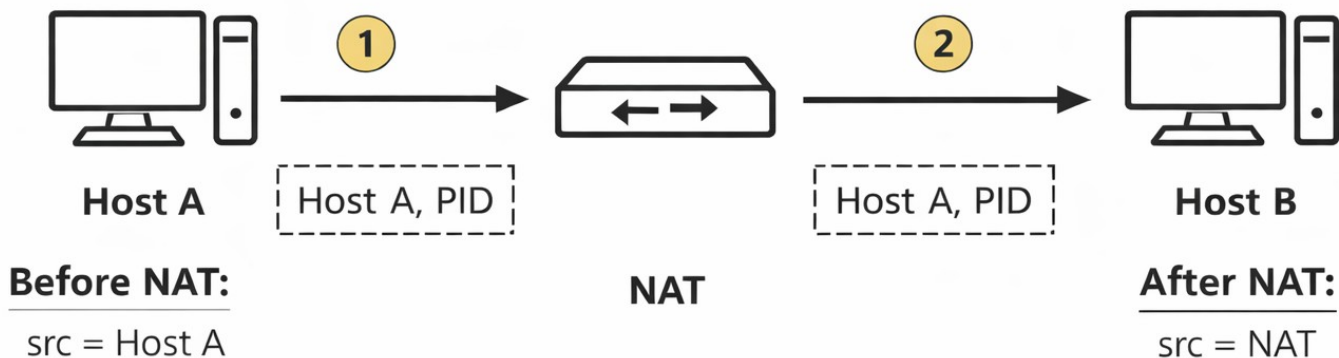
- Middleboxes rewrite connection identifiers.
- Connection provenance is lost,



- and IP address alone is insufficient for troubleshooting.

Use Case

- Link connection segments observed at different network points.
- Attribute traffic to its originating connection.
- Enable fast provenance to fine-grained entities
 - Example: (host IP, PID) → identify the process generating the connection
 - Important in modern environments where many pods or processes share a host



Call for Feedback and Collaboration

Open questions:

- When and how should the option be initiated?
- Sender and receiver behaviors
- Middlebox handling and compatibility
- ...

We welcome discussion, feedback, and collaboration.