Packet Generation in Service Function Chains

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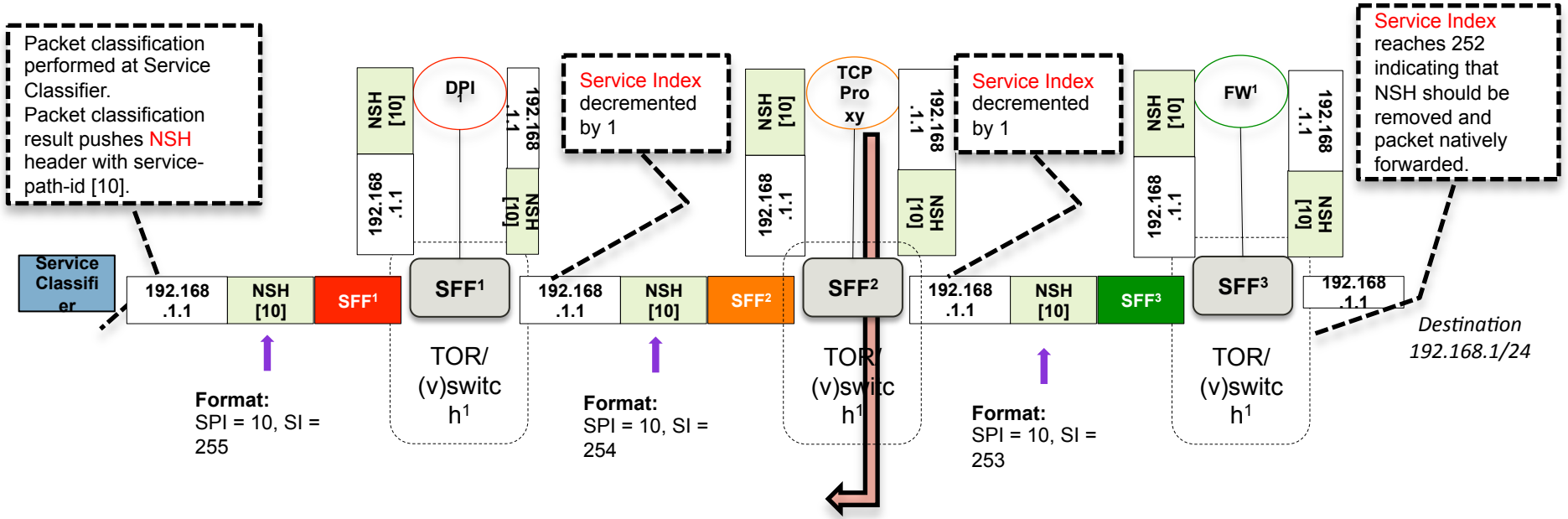
Problem Statement

- Service Functions (e.g., Firewall, NAT, Proxies and Intrusion Prevention Systems) generate packets in the reverse flow direction, i.e., destined to the source of the current in-process packet/flow.
- This is a basic intrinsic functionality and therefore needs to be supported in a service function chaining deployment.

Example



TCP Proxy needs to send packets back to the clients

- What information does it need?
- How to get it?

Information Needed

- Reverse Path ID (symmetric or not)
- TCP Proxy Service Index on *the reverse path*
- Metadata

How to get Path & Index Information?

- *SF receives Reverse Forwarding Information (implemented)*
- SF requests SFF cooperation
- Classifier Encodes Information
- *Algorithmic Reversed Path ID & Index Generation (implemented)*

How to determine Metadata?

- Metadata can be inserted by Classifier or SFs
- TCP Proxy can not determine or request metadata generated (or that would be generated) by classifier or other SFs
- Solution: Path-invariant metadata, flow-invariant metadata

Thank you.