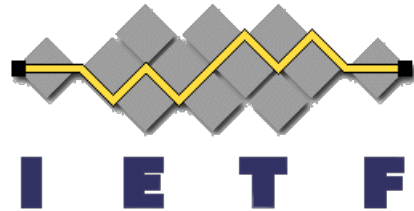


**IETF 94**  
**SFC WG**



Yokohama, Japan  
November 5, 2015

# SFC Use Cases for Network Security

draft-wang-sfc-ns-use-cases-00

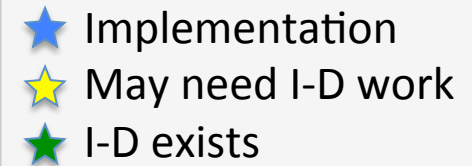
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Jeremy Felix (jefelix@cisco.com)  
Jay Iyer (jiyer@cisco.com)

# Purpose

- Identify use cases for network security functions to participate in SFC
- Identify potential work items in the SFC framework



# Service Classification



- ★ Identifying flow **initiator** and **responder**
- ★ Classification based on both **network** and **application criteria**
- ★ Switching to a **new Service Function Path** based on application criteria (e.g. TLS traffic to a new path)

# Service Function

- ★ Implementation
- ★ May need I-D work
- ★ I-D exists

- ★ Embedding SC for Service Policy re-evaluation based on L5-7 data
- ★ Mid-stream flow pick-up
- ★ Bypass/offloading with intelligent control (e.g. TCP control packets, # of packets)  
[draft-kumar-sfc-offloads-01](#)
- ★ Tap mode (e.g. IDS, Packet Capture)

# Service Function Packet Handling

★ **Dropping** packets and closing flows

★ **Injecting** new packets

[draft-penno-sfc-packet-01](#)

★ **Initiating** new connections

★ Producing security classification results for subsequent Service Functions

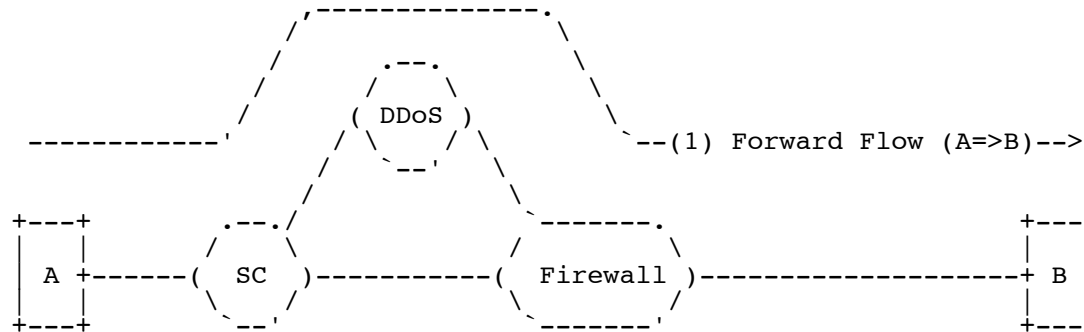
★ Implementation  
★ May need I-D work  
★ I-D exists



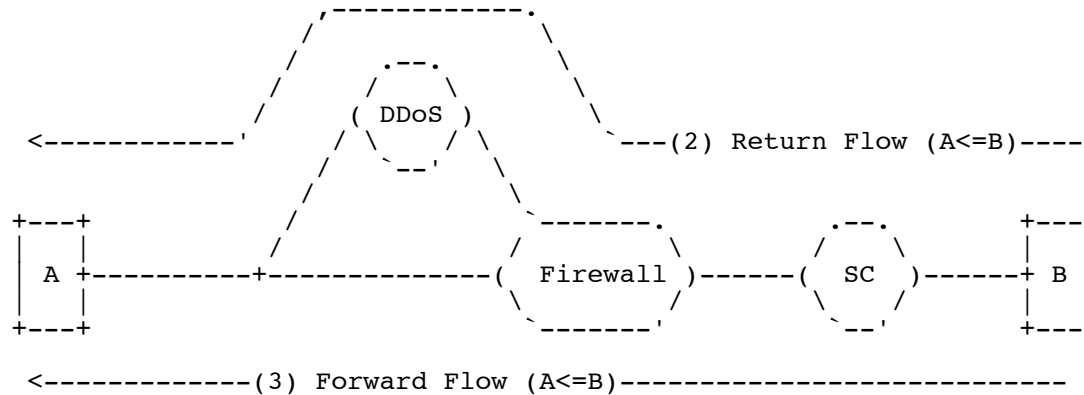
Thank you!



# Flow Initiator and Responder



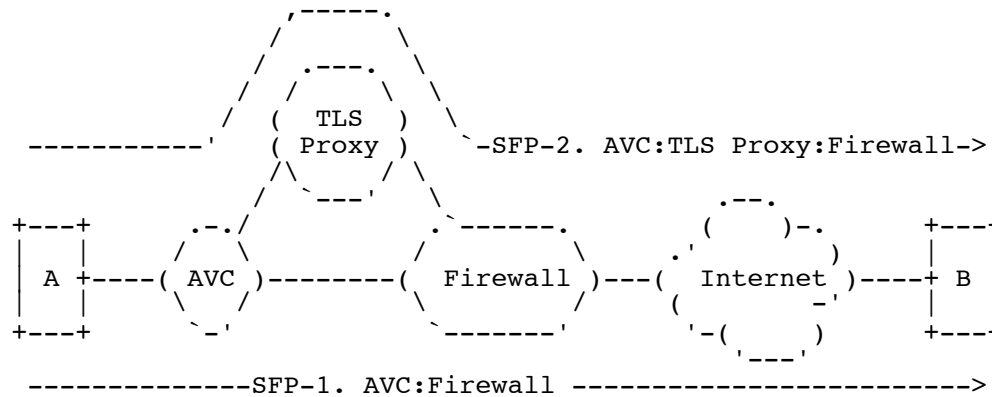
(a) Flows from Host A



(b) Flows from Host B



# Mid-stream Service Function Path Update

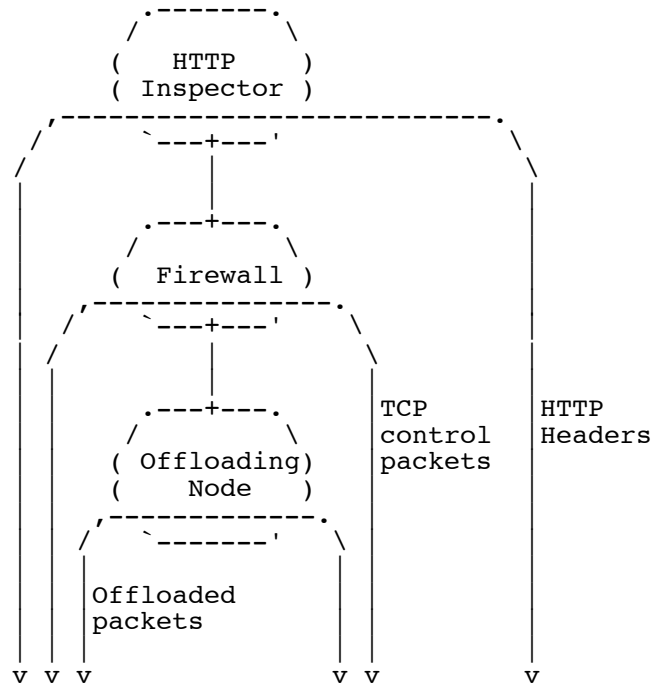


Packets	Service Function Path
TCP Handshake	SFP-1. AVC:Firewall
TLS Client Hello	SFP-1; Switched to SFP-2 after AVC
Rest of TLS HS	SFP-2. AVC:TLS Proxy:Firewall
HTTPS Data	SFP-2. AVC:TLS Proxy:Firewall

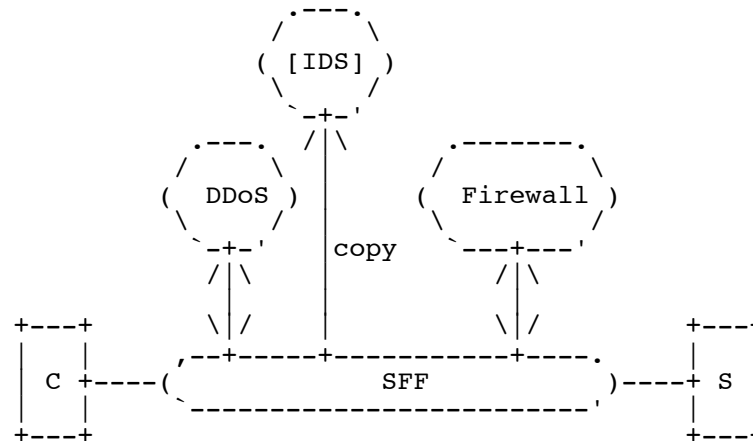




# Service Function Bypass with Control

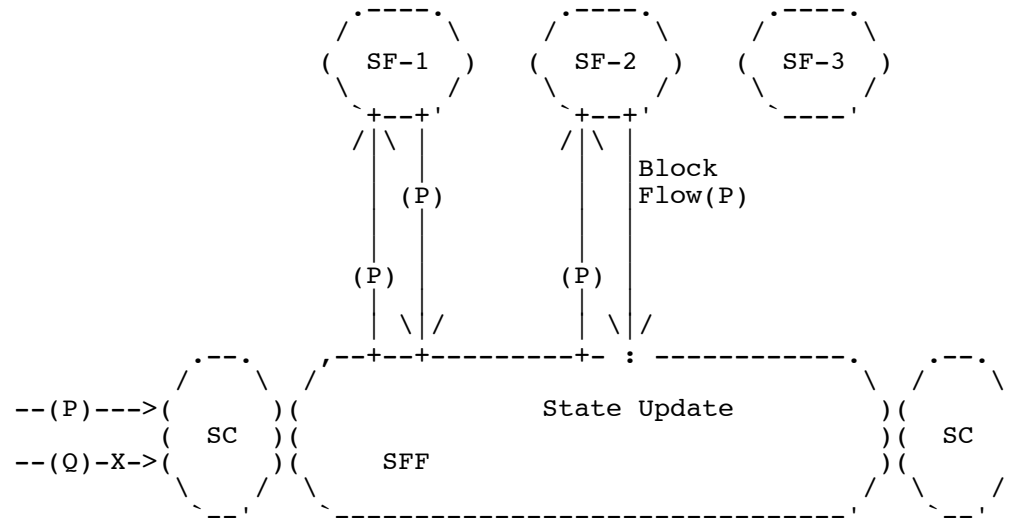


# Tap Mode Service Function

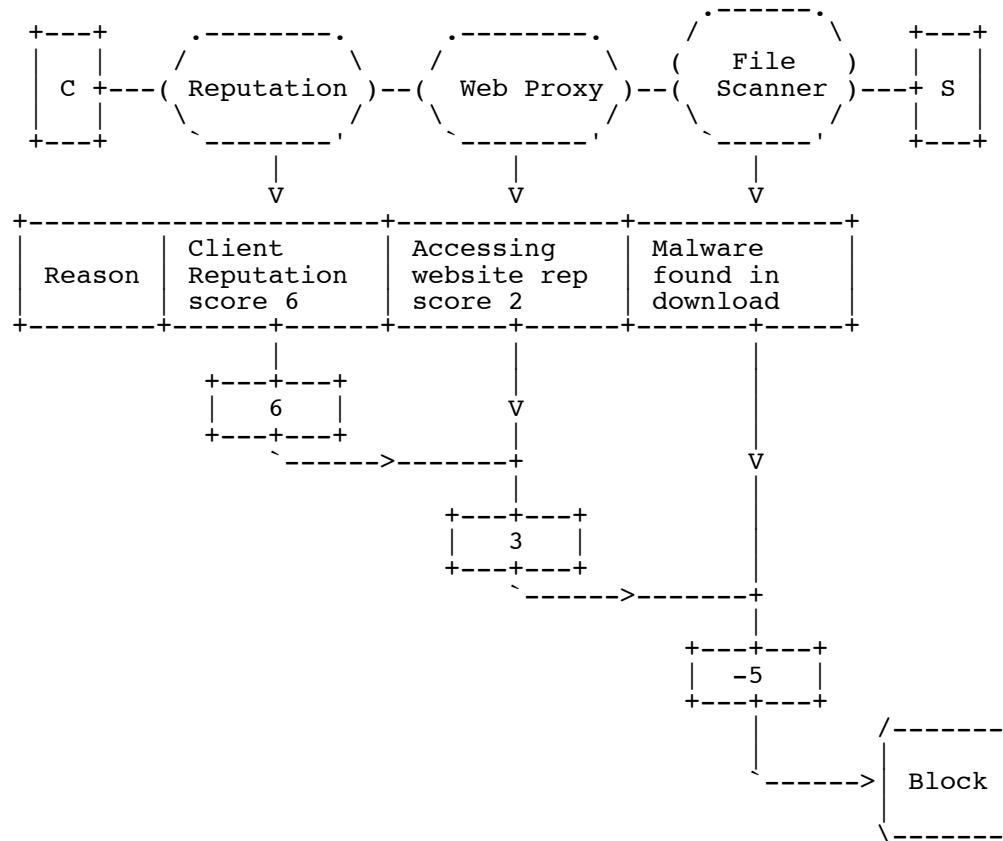


[ ] denotes a packet sink

# Packet Drop and Flow Close



# Accumulated Security Classification Results



# Aggregated Security Classification Results

