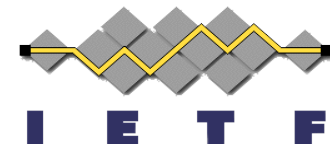


# SAVI for Delegated IPv6 Prefixes

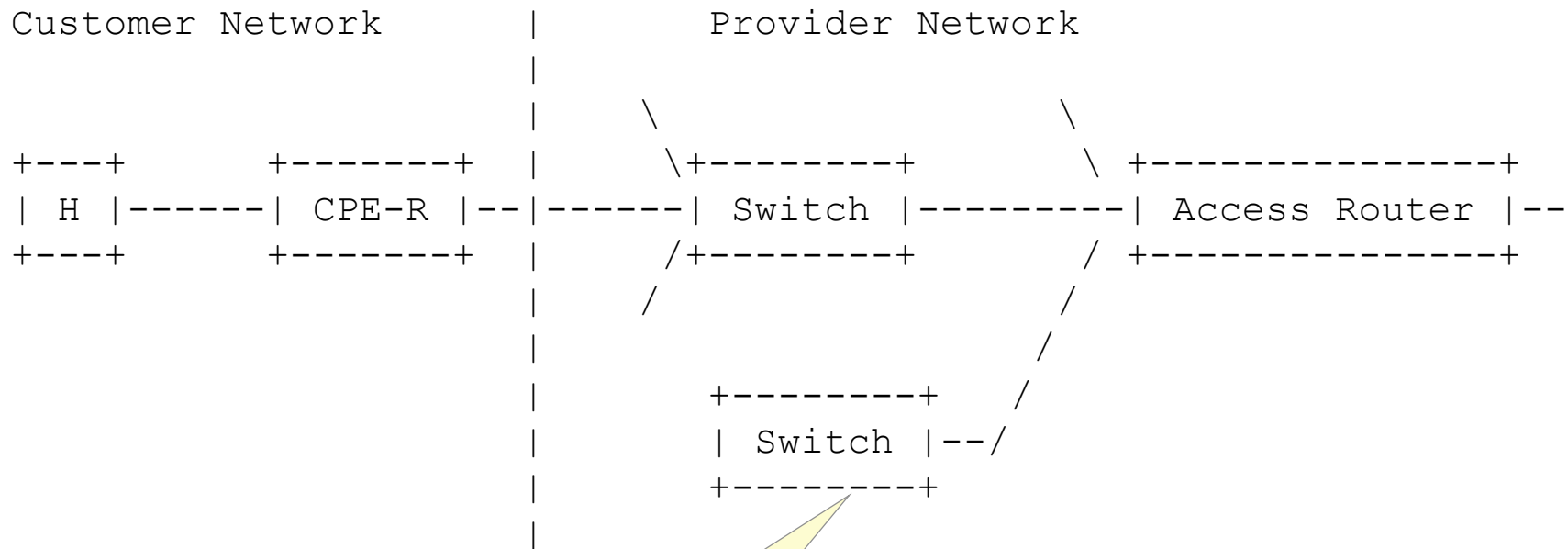
draft-kaippallimalil-savi-dhcp-pd-01.txt

John Kaippallimalil  
Frank Xia  
Jun Bi

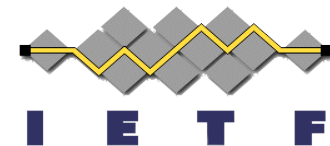
March 2010



# Provider Network Architecture

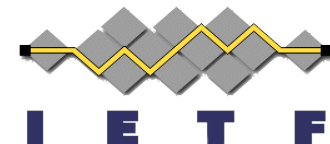


SAVI solution to protect switch ports and provider network.



# Problem Statement

- CPE-R obtains delegated prefix from Access Router using RFC 3633, provides individual prefixes to hosts.  
(CPE-R may also obtain other addresses using SLAAC, DHCP).
- How to validate IPv6 source address of upstream packets initiated by host, forwarded by CPE-R to Access Router (AR).
- Switch (in between CPE-R, AR) may ensure that IPv6 address and lower binding anchor are not spoofed.



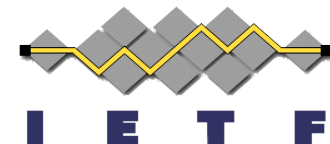
# Solution

- Binding state based on snooping RFC 3633.

7.	Binding Specification . . . . .	6
7.1.	Process of DHCP-PD Snooping . . . . .	6
7.1.1.	Initialization . . . . .	6
7.1.2.	From START to BOUND . . . . .	7
7.1.3.	State transition from BOUND . . . . .	8
7.2.	State Machine for DHCP-PD Snooping . . . . .	9

- Filtering Upstream Traffic:

8.	Filtering Specification . . . . .	9
8.1.	Data Packet Filtering . . . . .	9
8.2.	Control Packet Filtering . . . . .	9

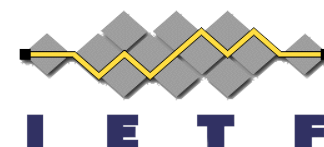


# Solution Applicability

- Solution can satisfy BBF requirements to filter delegated prefixes:  
“..AN SHOULD inspect upstream and downstream DHCPv6 (RFC3315, RFC3633) and ND (RFC4861, 4862) per user port, discover the mapping of IPv6 prefix to MAC address and populate its IP Anti-spoofing table accordingly.” (WT-177)
- -01 revised to be compatible with SAVI working group documents:

`draft-ietf-savi-dhcp-01`

`draft-ietf-savi-rationale-00`

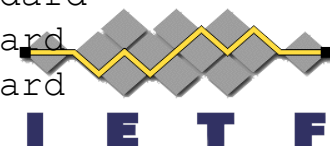


# Solution Applicability

- Applies to access provider networks, and complies with SAVI scope:  
“...the WG is already chartered to work also on a solution for Ethernet-based broadband access networks that are used in DSL environments.”

[SAVI Charter]

Jul 2008	WG approval
Aug 2008	First WG draft on threats document
Oct 2008	First WG draft on SLAAC solution
Dec 2008	First WG draft on SeND solution
Dec 2009	First WG draft on DHCP solution
Dec 2009	First WG draft on protocol framework
Mar 2010	Submit document on threats to IESG for Informational RFC
Mar 2010	First WG draft on solution for Ethernet-based broadband access networks
Dec 2010	Submit Ethernet-based broadband access network solution to IESG for Proposed Standard
Dec 2010	Submit protocol framework to IESG for Informational RFC
Dec 2010	Submit SLAAC solution to IESG for Proposed Standard
Dec 2010	Submit SeND solution to IESG for Proposed Standard
Dec 2010	Submit DHCP solution to IESG for Proposed Standard

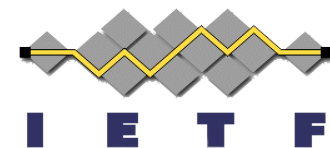


# Questions



# Next Steps

- Adopt as WG draft?





# Architecture Context \*\* BACKUP

