Source Address Validation Improvements – SAVI –

Monday, November 17, 2008. 9:00 – 11:30 am

Salon AB

Agenda

▪ Summary of design decisions so far Christian Vogt	9:10 am
▪ First-come-first-serve SAVI for IPv4 + IPv6 Marcelo Bagnulo	9:30 am
▪ SAVI for IPv6 Secure Neighbor Discovery Marcelo Bagnulo	10:00 am
▪ Thoughts about SAVI in Ethernet-based broadband David Miles and Wojciech Dec	10:30 am
▪ SAVI scenarios and solution space Jun Bi	11:00 am
	end at 11:30 am

Recent Design Decisions

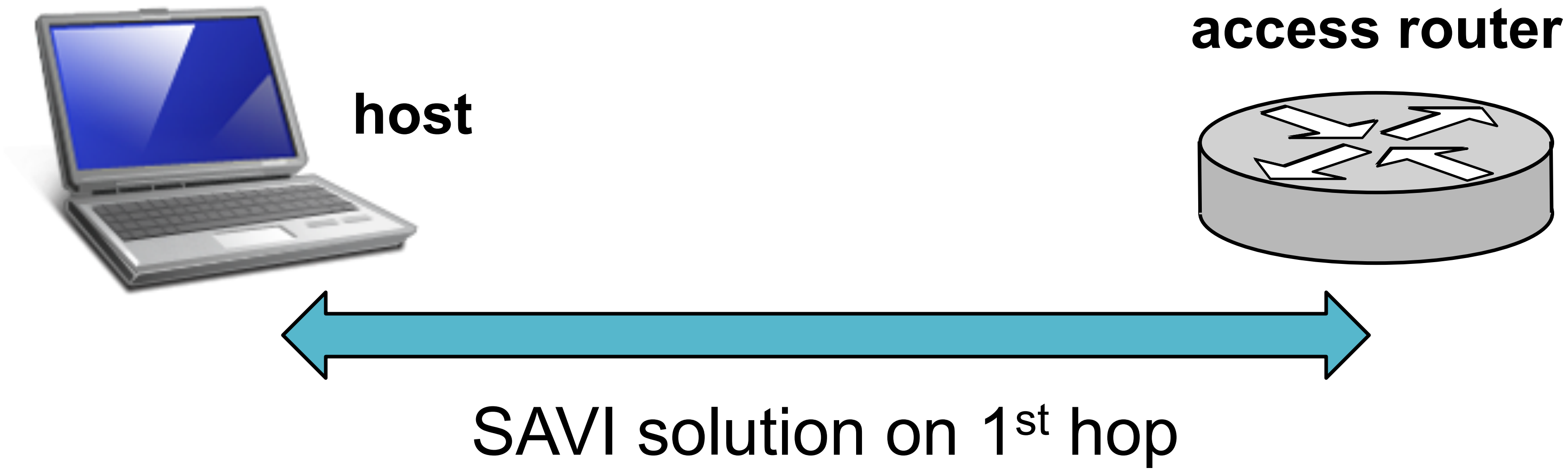
of the SAVI working group

draft-vogt-savi-rationale

Christian Vogt

SAVI working group meeting at IETF 73. November 2008

Framework for SAVI Solutions



ensure that hosts don’t spoof each other’s IP addresses

1. derive legitimate IP address from on-link traffic
2. bind legitimate IP address to lower-layer binding anchor
3. enforce binding

Initial Design Questions

tradeoff between strength of security vs. ease of deployment

- conclusions encourage wide deployment

1. which IP address ownership proof?
   - conclusion: weak proof OK; stronger proof where possible
2. which binding anchor?
   - conclusion: support all, provide recommendations/defaults
3. complement or substitute ingress filtering?
   - conclusion: complement
     ingress filtering costs little extra, but simplifies SAVI solution

Initial Design Questions

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     ingress filtering costs little extra, but simplifies SAVI solution

4. how to distinguish 1-hop vs. forwarded packets?

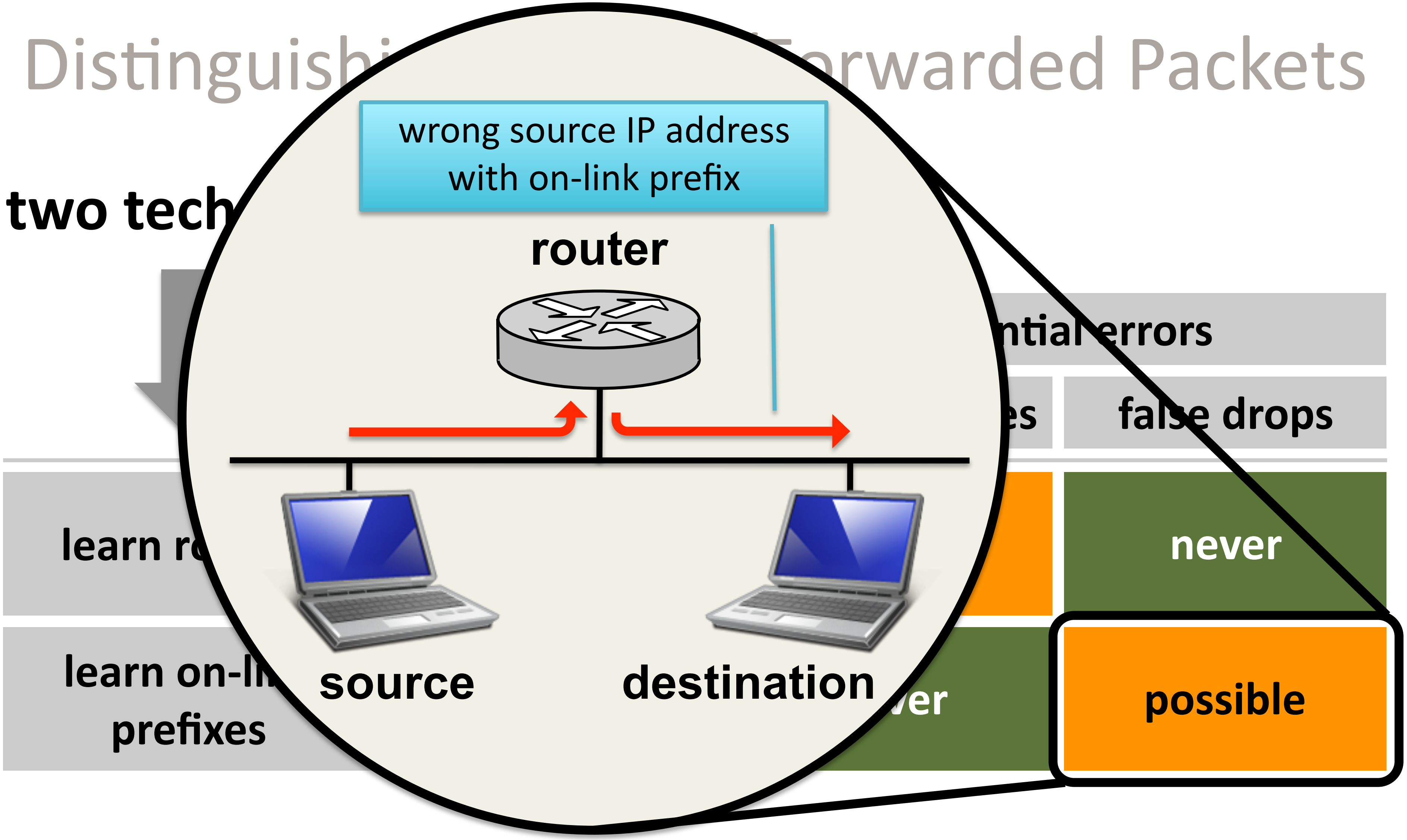
Distinguishing 1st-Hop/Forwarded Packets

two techniques

	configuration options	potential errors	
		false negatives	false drops
learn routers	Secure ND manual	possible	never
learn on-link prefixes	DHCP, ND manual	never	possible

Distinguishi Forwarded Packets

two tech



wrong source IP address with on-link prefix

	ntial errors	
	es	false drops
learn r		never
learn on-li prefixes	ver	possible

Distinguishing 1st-Hop/Forwarded Packets

two techniques

	auto-configurability	potential errors	
		false negatives	false drops
learn routers	Secure ND manual	possible	never
learn on-link prefixes	DHCP, ND manual	never	possible

possible conclusion: use at least one, both if possible

Working Group Deliverables

- problem statement
  draft-mcpherson-savi-threat-scope
- design rationale (new)
  draft-vogt-savi-rationale
- IPv4 solution
  draft-bagnulo-savi-fcfs
- IPv6 solution
  draft-bagnulo-savi-fcfs
- IPv6 solution extension for SeND (new)
  draft-bagnulo-savi-send
- solution for Ethernet-based broadband