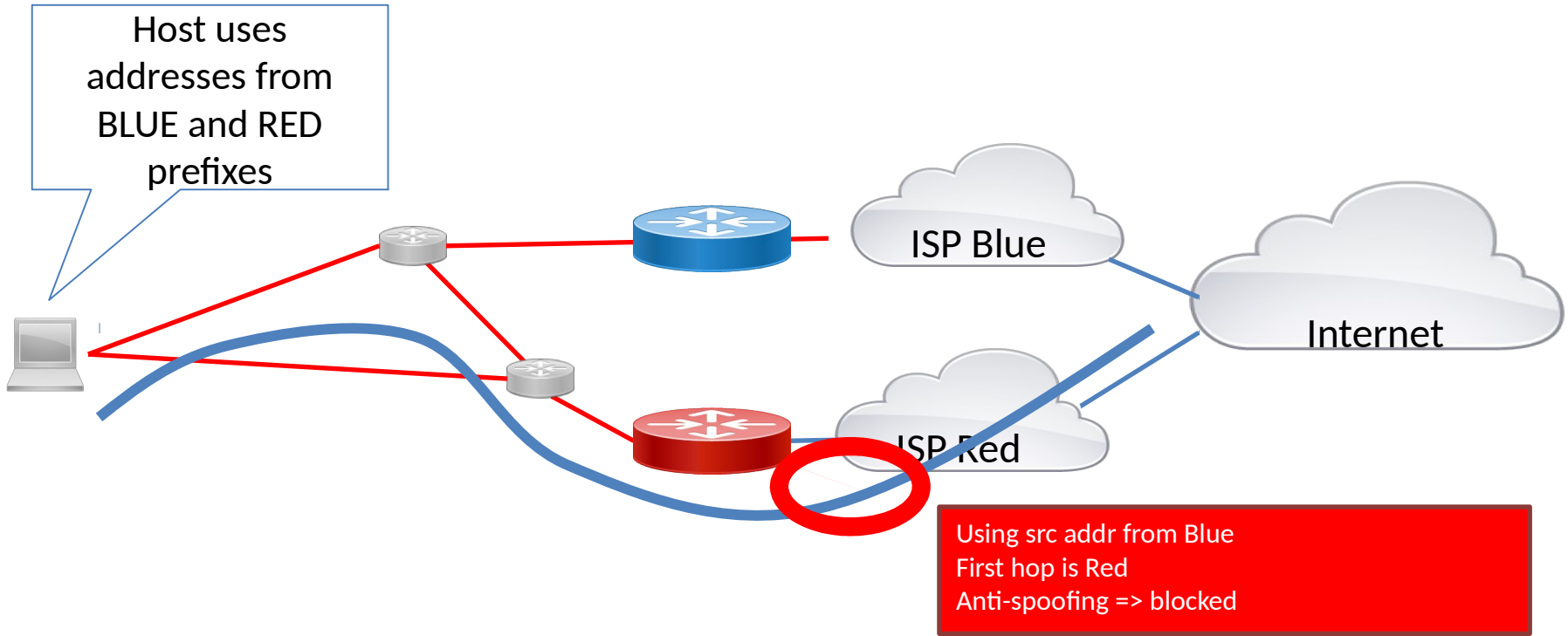


VPP @ Hackathon '95

- VPP - Open source software data plane
 - Commodity hardware, ~10Mpps/core,
 - <http://fd.io> Source: git clone <https://gerrit.fd.io/r/vpp>
- IETF - Running code:
 - Before: Proprietary hardware
 - Now: Production high performance forwarding with commodity hardware and open source
- Project:
 - Source Address Dependent Routing:
 - draft-ietf-rtgwg-dst-src-routing
 - Implementation and performance
- Champion: Ole Trøan <ot@cisco.com>

Need for Source Address Dependent Routing (SADR)



SADR in VPP - what we did

- **Victoria, Ezequiel**, Pierre (in Paris), Eric, Ole
- Setup development environment. Pulled code, built
- Two competing proposals for data structure:
 1. Extend hash key to 256 bit (D, S) lookup
 2. D table entry point to S tables
- Running implementation of 1.
- Test setup, Auto generation of FIBs, PCAP files, performance measurements

SADR table

::/0, 1000::/64 -> ISP A

::/0, 2000::/64 -> ISP B

2001:db8::/64, 1000::/64 -> VPN

2001:db8::/48, ::/0 -> Null

2001:db9::/48, ::/0 -> Null

IPv6 FIB SADR Lookup

- Hash table indexed by: $\langle destination, prefixLength, FIBIndex \rangle$
 - Iterate on *prefixLength* starting from the longest in the table until match found
- When match:
 - No source prefix -> Done (normal Dest lookup)
 - Lookup in a S,D hash table keyed on $\langle destination, destinationPrefixLength, source, sourcePrefixLength, FIBIndex \rangle$
 - Iterate on *sourcePrefixLength* starting from longest in the table until match is found
 - If no match on source prefix, then backtrack up the next longest matching D

Performance

