Reporting Logical Port Identifiers in INT metadata

P4 Applications WG Meeting Feb 15 2018

Background

- Network Switches support support a number of “logical” port constructs
  - Link Aggregation Group (LAG)
  - Layer 3 Switched Virtual Interface (SVI)
  - Tunnel Interface (GRE/IPSec/VxLAN/Geneve/….)
  - Virtual Network Topologies have “Logical Ports” in RFC 4122 UUID format (16 Bytes)
- As long as a single type of Port ID is being reported (e.g. Virtual Switch reporting only logical port ID)
  - INT Monitoring Engine can query 16-bit Port ID to actual Port ID out of band
  - In case a switch has multiple Port ID spaces, upper 2-bits in Port ID can be used to define Port Type, leaving 14 bits for 16K ports in each space
  - Exact mechanism for mapping does not need to be defined in INT specifications

More Important Question: How to report multiple Port IDs?

- When tracing a flow using INT, being able to map traffic path through logical and physical port constructs would be useful
- In theory, the port stack can be derived from knowledge of switch configuration and packet headers, but this would be fairly involved
- Debugging would be much easier if switch reported the entire port stack
- Port stack may include more than two ports (one physical port and more than one logical port)
    - E.g. Packet egresses on a tunnel over a LAG port, physically on member 2 of the LAG port
- Ideally, need a flexible length field to report such a port stack