

# Telemetry Report Revised Format

January 18, 2018

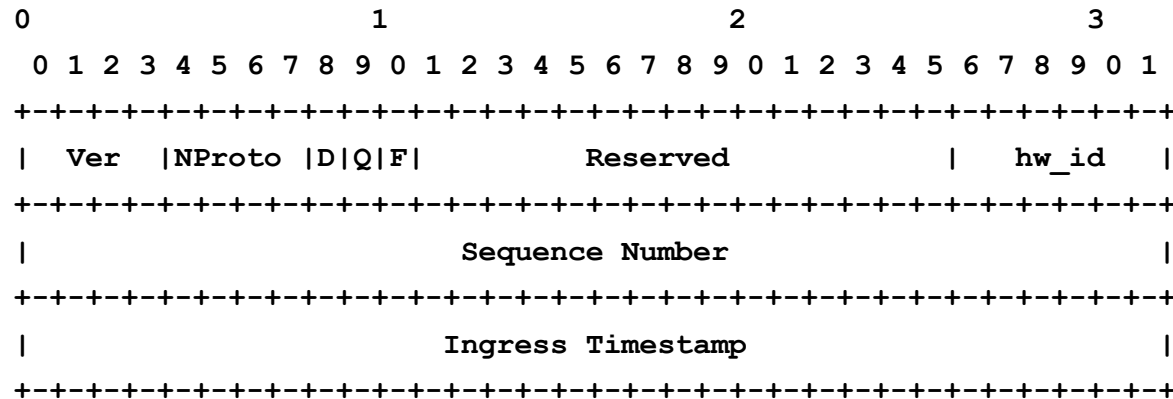
Mickey Spiegel, Jeongkeun Lee: *Barefoot Networks*

Gordon Brebner: *Xilinx*

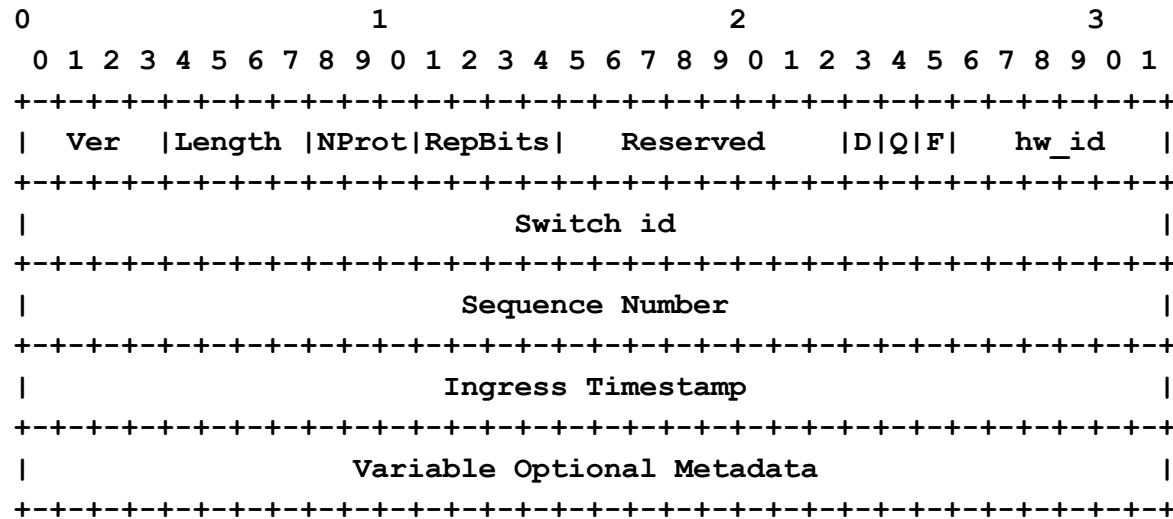
Mukesh Hira: *VMware*

# Proposed Telemetry Report Format Changes

- Promote **Switch id** to fixed portion of the header, always present
  - Switch id**: The unique ID of a switch (generally administratively assigned). Switch IDs must be unique within a management domain.
  - hw\_id**: Identifies the hardware subsystem that generated this report, e.g. a specific linecard in a chassis.
  - Sequence Number**: From a specific combination of (Switch id, hw\_id) to a particular telemetry report destination, used to detect loss of telemetry reports.
- Flexible format allowing arbitrary combinations of telemetry metadata in the Telemetry Report Header
  - Replaces current Telemetry Drop Report Header and Telemetry Switch Local Report Header
  - Add a small 4 bit length field indicating the Telemetry Report Header length in multiples of 4 octets
  - Add a bitmap indicating which optional metadata is present in the Telemetry Report Header
- Rearrange fields in the first 32 bits of the Telemetry Report Header



# Revised Telemetry Report Header (16+ octets)



Length of the telemetry report header in multiples of 4 octets

NProto: Next Protocol { 0 Ethernet, 1 IPv4, 2 IPv6 }

RepBits: Report Metadata Bits indicate which optional metadata (4 octets each) is present

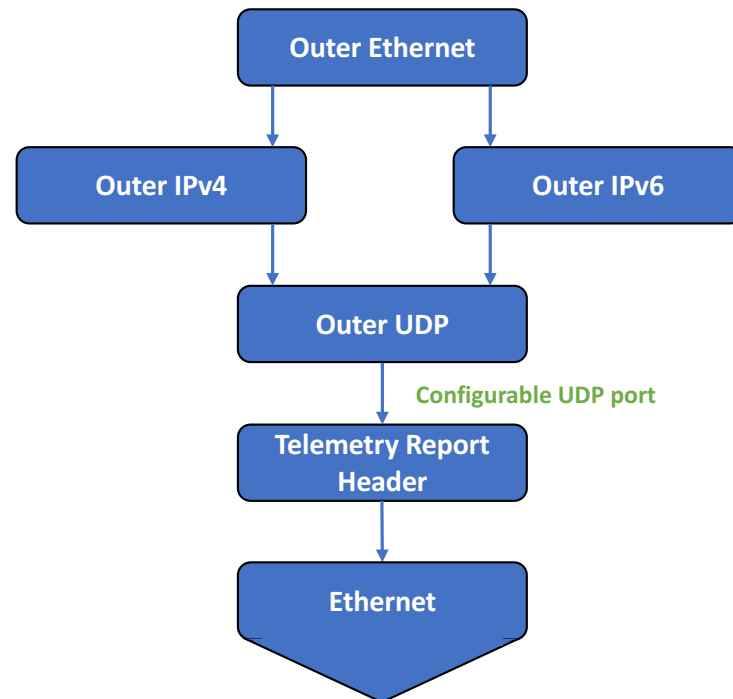
bit 0 (MSB): Ingress port id (16 bits) + Egress port id (16 bits)

bit 1: Queue id (8 bits) + Queue occupancy (24 bits)

bit 2: Egress Timestamp (32 bits)

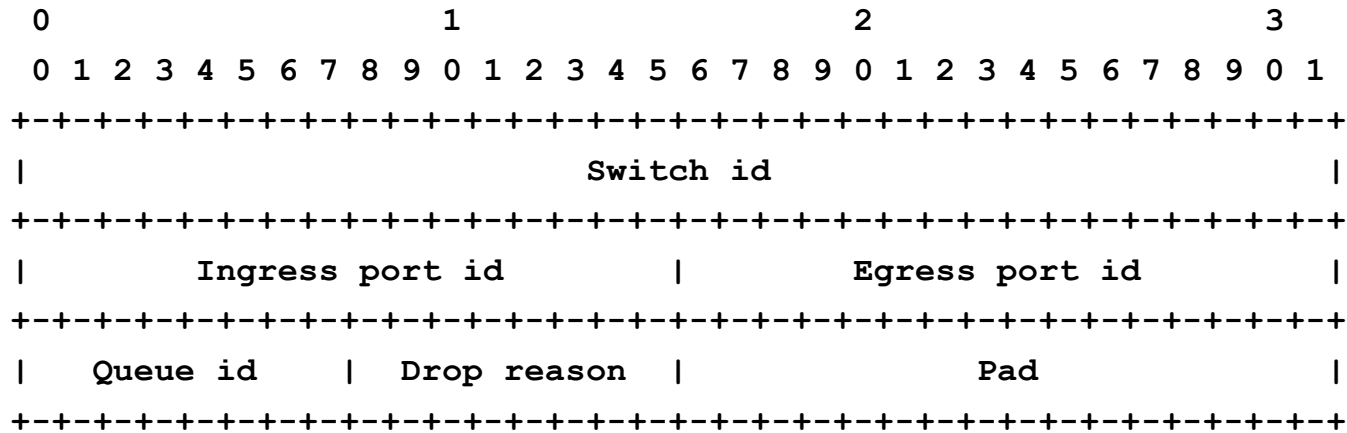
bit 3: Queue id (8 bits) + Drop reason (8 bits) + Padding (16 bits)

# Simple Ethernet/IP Transport of Telemetry Report



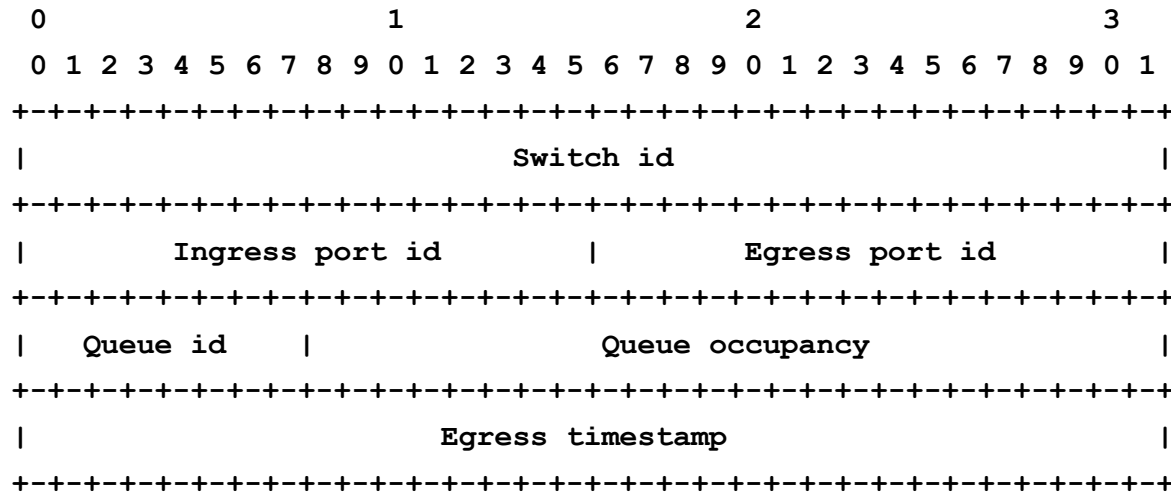
Backup Slides

# Telemetry Drop Report Header (12 octets)



- Defined in [\[INT\]](#):
  - Switch id
  - Ingress port id
  - Egress port id
  - Queue id
- Drop reason
  - An enumeration that indicates the reason why a packet was dropped, for example as defined in [github.com/p4lang/switch](https://github.com/p4lang/switch).

# Telemetry Switch Local Report Header (16 octets)



- Defined in [INT]:
  - Switch id
  - Ingress port id
  - Egress port id
  - Queue id
  - Queue occupancy
  - Egress timestamp