draft-eckert-detnet-tcqf-09 (was07)
draft-eckert-detnet-glbf-05 (was 04)
draft-eckert-detnet-flow-interleaving-03

versus

draft-ietf-detnet-dataplane-taxonomy-04 / Chars mail request for classification

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Not necessarily speaking for all co-authors of all mentioned drafts

DETNET-WG, IETF124 Montreal

Update

- Added text about classification (draft-ietf-detnet-dataplane-taxonomy)
  - TCQF, gLBF
- TCQF, gLBF – two separate solutions
  - Each now claims to (optionally) include draft-eckert-detnet-flow-interleaving
    To improve possible utilization in network with many low rate flows
    Approach is result of discussion at IETF123/mailing-list (thanks folks!)

draft-eckert-detnet-tcqf-09

6.1. Solution Scope, Taxonomy and Status for DetNet adoption considerations

6.1.1. Solution scope

Defines solution as consisting of this draft plus draft-eckert-detnet-flow-interleaving

6.1.2. Taxonomy

6.1.3. Status

Taxonomy – no change vs target proposed at IETF123 – but written down

4.1 Dominant Factor for Latency Bound: Cat 3 (Sum of Max Burst Sizes/Capacity)

5.1 Periodic solution: Yes

Significantly increased permissible MTIE (Maxium Time Interval Error) over reference algorithm (CQF). Typically factor 50 ? To support higher speed links without higher accuracy clocks.

5.2 Traffic Granularity: Class Based

5.3 Time Bounds: bounded – left and right bounded

5.4 Service Order: (Priority?), Arrival

1. Suitable Category for DetNet: 6.3. Class level periodic bounded category

draft-eckert-detnet-glbf-05

Appendix C. Solution Scope, Taxonomy and Status for DetNet adoption considerations

C.1. Solution scope

Defines solution as consisting of this draft plus draft-eckert-detnet-flow-interleaving

This is „Damper“ solution specifically employing queuing to use ATS latency calculus to allow high-speed FIFO based hardware (general purpose Damper requires PIFO, could be morechip-size intensive)

C.2. Taxonomy

C.3. Status

Taxonomy – no change vs target proposed at IETF123 – but written down

4.1 Dominant Factor for Latency Bound: Cat 3: configured burst size on each hop

Does NOT need to be the same on each hop !!!

5.1 Periodic solution: **No**

Biggest difference over TCQF – implies also removal of need for clock synchronization. Only requires frequency sync.

5.2 Traffic Granularity: Class Based

5.3 Time Bounds: bounded – TIGHT (per-hop) left and right bounded

Per-hop delay tighter fixed than cycle in TCQF

5.4 Service Order: Priority, Arrival

1. Suitable Category for DetNet: 6.5. Class level non-periodic bounded category

Status

- draft-eckert-detnet-tcqf-09
  - High-speed PoC router/asic implementation (100Gbps Ethernet ports)
  - Academic Network 2000 km Network validation (english translation reference included in draft)
  - Simulation based validation in research conference paper (reference included)

- draft-eckert-detnet-glbf-05
  - Research conference paper, open source reference simulation implementation
  - Research journal paper
  - TBD: i think there may be more implementations in derived research work from colleagues prolog Admission Controller + Path Calculation Engine implementation, Linux Kernel (eBPF) implementation)

Questions ?