Layer 3 Quantized Congestion Notification (L3QCN)

draft-yu-tsvwg-l3qcn-00

Yolanda Yu
Yolanda.yu@huawei.com
IETF97-Seoul
Problem Statement

• The essential of IEEE 802.1 Qau (Congestion Notification) is to early alarm the potential congestion, QCN could not be used on the L3 network.

• Due to the requirement of extremely high throughput, the multi-path L3 network is normally used in DC.

• Could we extend the QCN into the L3 network? L3QCN

• What scenario should we consider?
  - Nested Tunnel
  - Different network topologies
L3QCN in a certain scenario

- T4 detected the congestion on the port of T4→H4, judge the congested stream. Constructed the private CNM (5-tuple, congestion extent metric). Encapsulate in IP+UDP. Use the specific UDP port. Set the Dec IP as the Src IP of the stream to make sure the CNM could be routed to the origin TOR.
Think about a More Generic CN in L3 Network

1. Tunneling is common used in DC network which may make this scenario more complex, such as VxLAN, NVGRE, GPE MAC-in-MAC.
2. Nested tunneling may even increase the complexity.
3. Different network topologies, such as Fat tree, CLOS, ...