Need For Advanced Congestion Mitigation In Modern Networks

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Modern Networks Need Modern Solutions

- Modern networks serve multiple types of applications
  - Some are latency sensitive
  - Some are using a big amount of bandwidth
  - These may interact and potentially interfere
- Convergence of applications on the same infrastructure
- As part of it, many transport protocols are running on the same infrastructure
  - These may interact and potentially interfere as well
- Some rely on lossy network operation, some of lossless network operation

- There is a need to minimize the interference between applications and transport protocols

Important Scenarios to Mitigate

- Prevent head of line blocking within a single network element
- Prevent head of line blocking across the network, between network elements
- Enable better scheduling within a single network element
- Prevent starvation and unfair bandwidth allocation within a single network element
- Prevent starvation and unfair bandwidth allocation across the network, between network elements

Congestion Isolation

- Congestion isolation is one of the tools to lower or prevent interference between applications on converged infrastructure
  - Drive better overall performance of the networks
- For lossless networks (or partially lossless)
  - Help to mitigate congestion spreading

- Congestion Isolation is a need for lossy, lossless and hybrid networks

Dynamic Load Balancing

- Currently most of the networks are based on static load balancing
- There is a need for dynamic load balancing in the networks
  - In order to mitigate scenarios where heavy flows are the majority, which may cause inefficiencies in the networks and block smaller flows
  - Behind the static load balancing there are assumptions about the number of concurrent flows and their respective size

Thank You