

# Paper Evaluation, Fastpass: A Centralized “Zero-Queue” Datacenter Network

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## Problems

- 1) There are multiple arbiters run in Fastpass, one primary and a few secondaries. But all of them need to be pre-determined IP multicast destination address and the network topology. The arbiters can only know the network changes by using packet drops and it may not be fast enough. And once a packet is dropped, the link is set to be unavailable. But sometimes packet losses happen due to bit flips in the physical layer.
- 2) When the arbiter finishes processing all demands, it has a maximal matching which means none of the unallocated demands can be allocated. This may cause a low utilization of bandwidth. And there is no deadline detection which means short deadline demands may need to wait and can't satisfy their deadlines.
- 3) In order to meet latency and throughput requirements, the timeslot allocator and path selection allocator need very fast algorithms.
- 4) In the timeslot allocation, the pipeline allocator can only satisfy the demands with a unique source to a unique destination in a timeslot. The demands can't be satisfied if one destination has already been allocated. What to do if multiple to one burst traffic generate in one timeslot?
- 5) The time duration of a timeslot is really a tradeoff and needs to be well considered in different kind of networks.
- 6) Also, as a centralized structure, it exists the problems of scalability and fault-tolerance.