The bridge to possible

Fairness through a picosecond lens

Solution for Equitable Market Data Distribution

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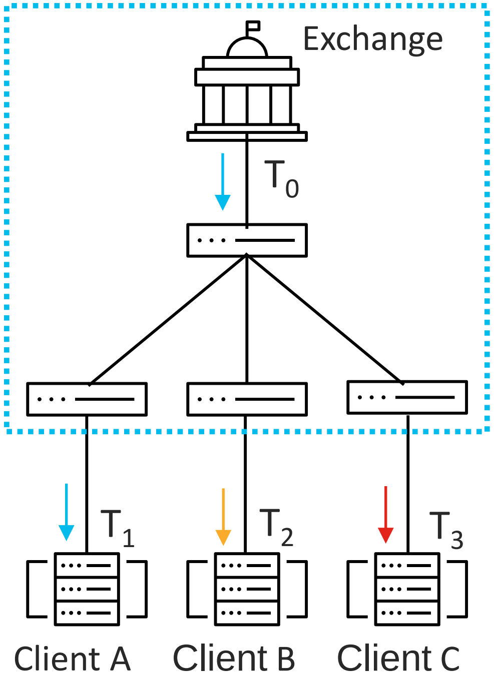
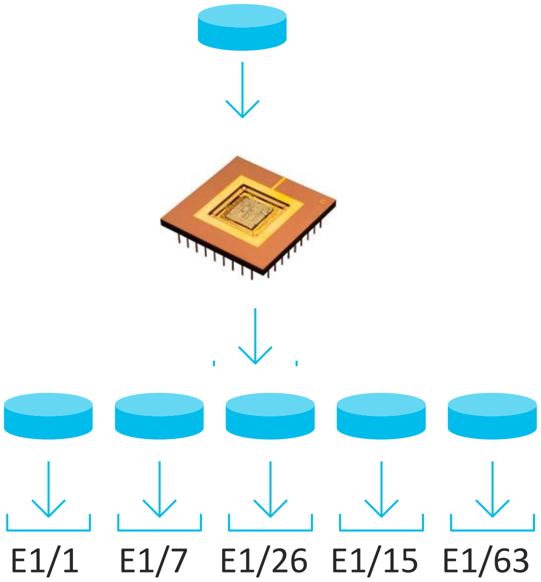
STAC Summit – June 1, 2022

Problem – Market Data Distribution

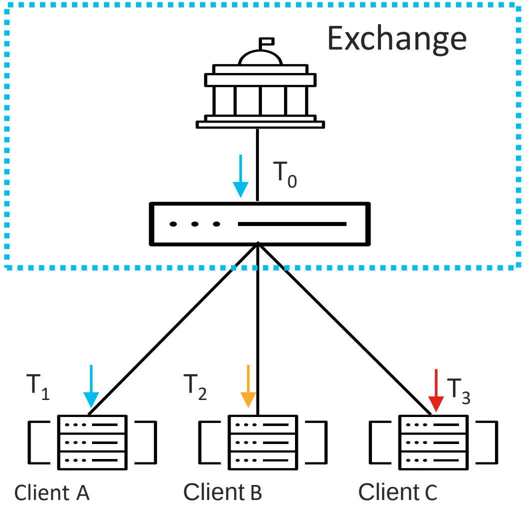


- Exchanges provide market data to various clients
- Exchange distributes data at time T_0
- Assumption is that each trader receives market data at same time, time T_1
- However, these clients often receive data at different times

ASIC Based Multicast Replication

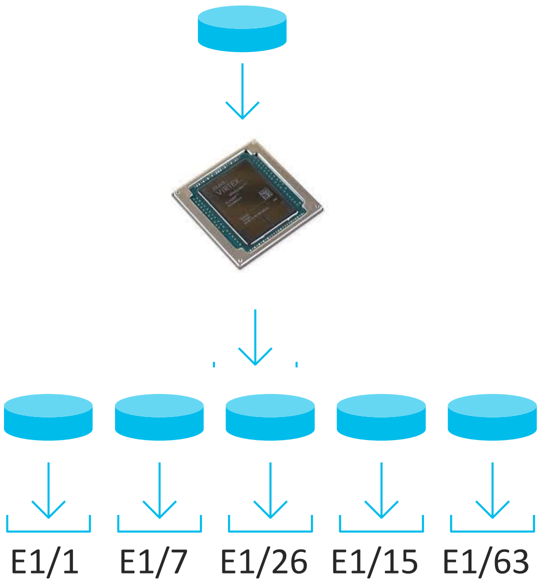


- ASIC multicast replication is serial
- Results in latency variation to egress ports (~21ns on N3K-C3548)

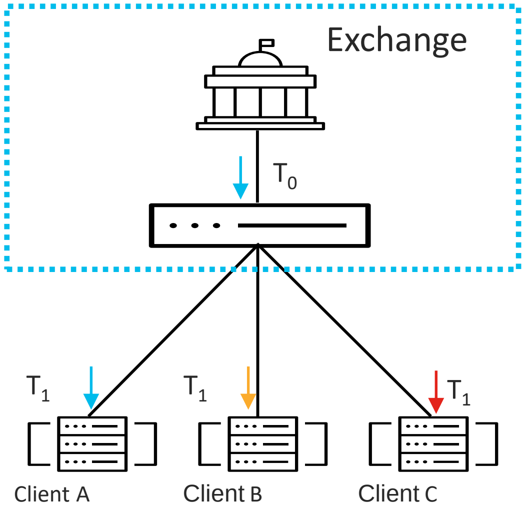


Not STAC Benchmark

FPGA Based Multicast Replication



- FPGA multicast replication can be parallel
- Result is nearly simultaneous delivery



Nexus 3550-T FPGA Switch Delivers Unmatched Fairness

Cisco NX-OS support

Same NXOS CLI
Same APIs
Support in NDFC

Low Latency Layer 2 and 3

Port to port latency 100-160 nano seconds*, 25G capable

FPGA

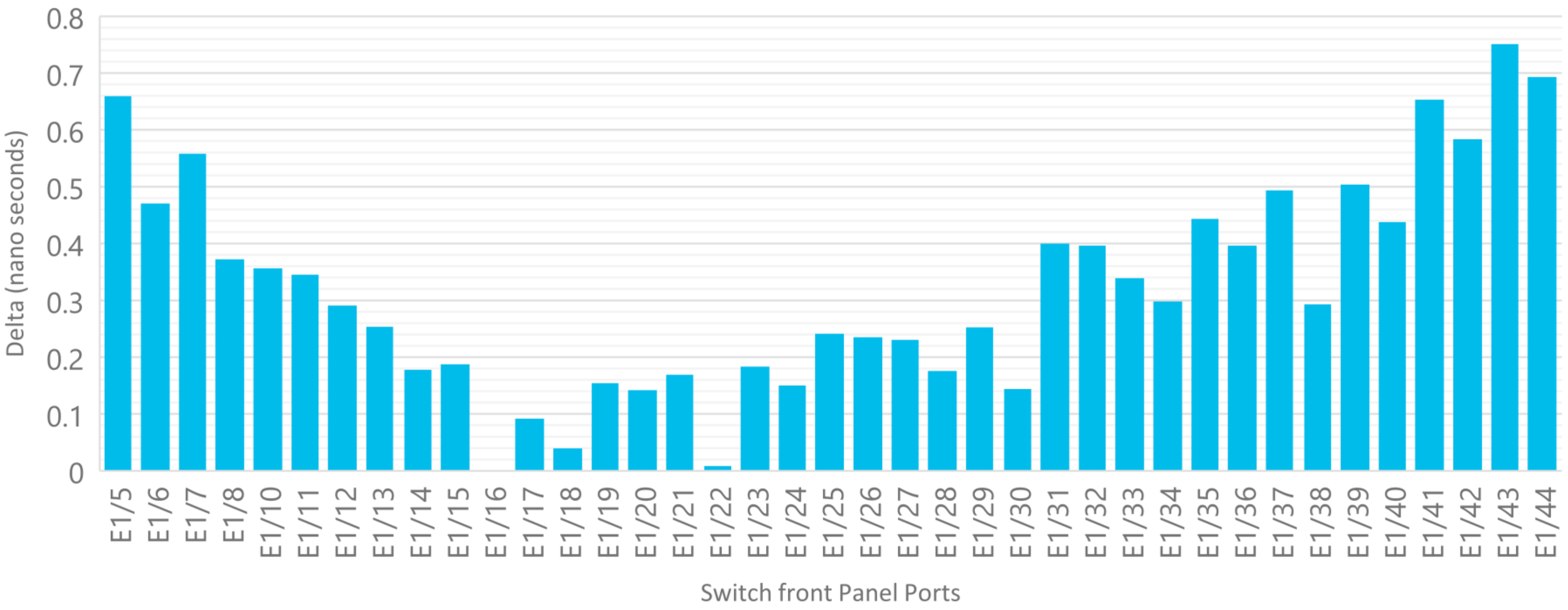
Xilinx Ultrascale+ VU35P-3 FPGA with 8GB HBM2

Custom FDK

Design FPGA application on the switch

***Not STAC Benchmark**

Nexus 3550-T Market Data Fairness*



Per port delay from fastest port in this sample – all ports are inside of 1ns

*Part of future NXOS software release
Not STAC Benchmark

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