



Liquid-Markets-Solutions

ÜberNIC, Can Do!

Presentation for STAC Research, October 19, 2023

ÜberNIC

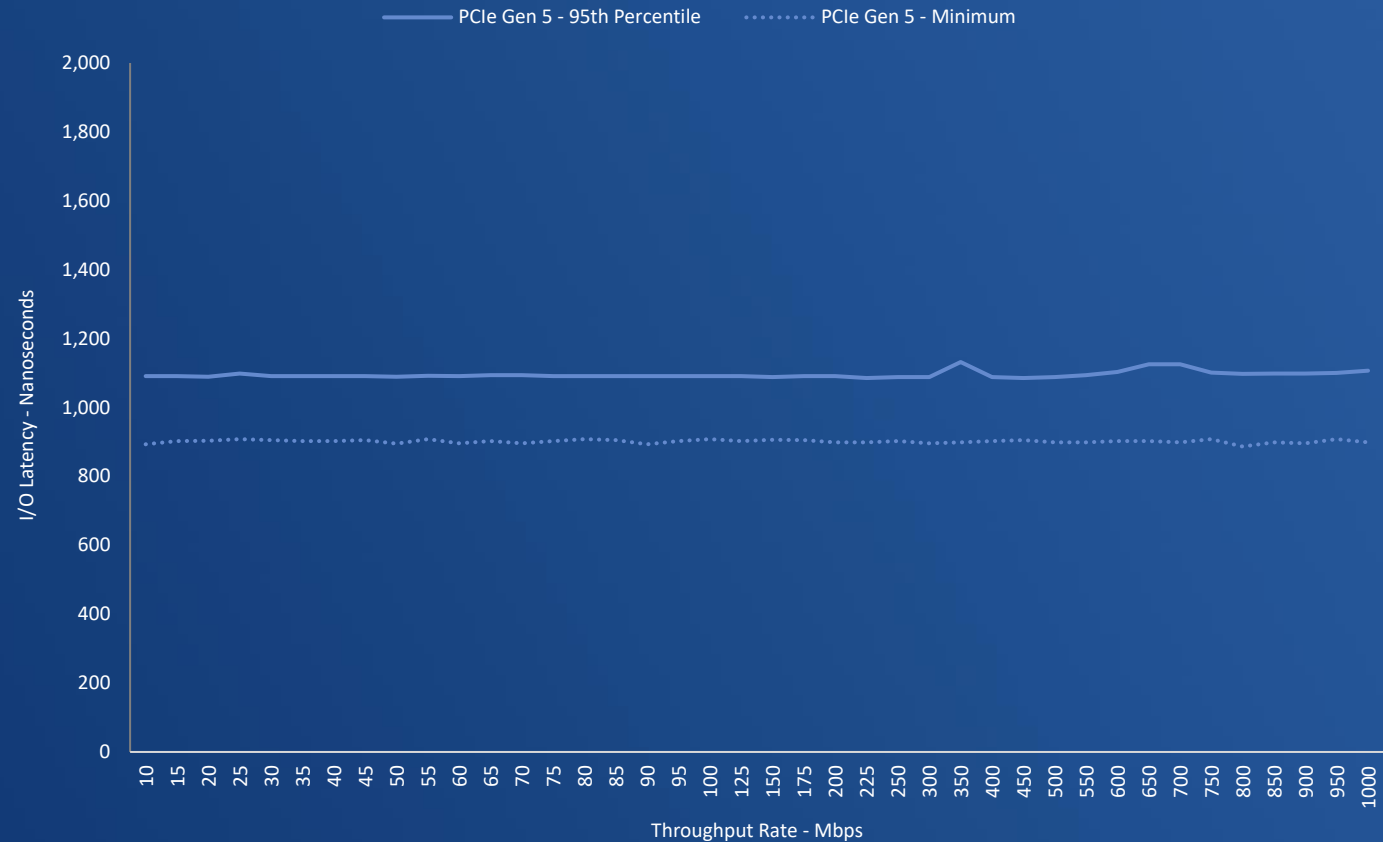
FPGA Network Controller & Network Stack



- 100% FPGA-Based Network Stack
- Supports PCIe 3.0, 4.0, 5.0 & CXL 1.1, 2.0
- 1, 10, 25, 40, 50, 100, 200, & 400 GbE
- Significant Fiber Density; Max 16 FPs
- Multi-GB On-Board Memory; Max 64GB
- MAC-Level Timestamp, PCAP & Port Span
- PPS, NTP, PTPv2, PTM, PTMv2 & White Rabbit
- SmartNIC Capabilities:
 - Add-On LMS Extensible Logic
 - Add-On End-User or 3rd Party Logic
- Single PCIe Slot, HH ½L or FH ¾L

- It's Real
- It's Here
- It's Validated
- ÜberNIC, Can Do!

SOF FIFO Transceiver-to-Transceiver I/O Latency



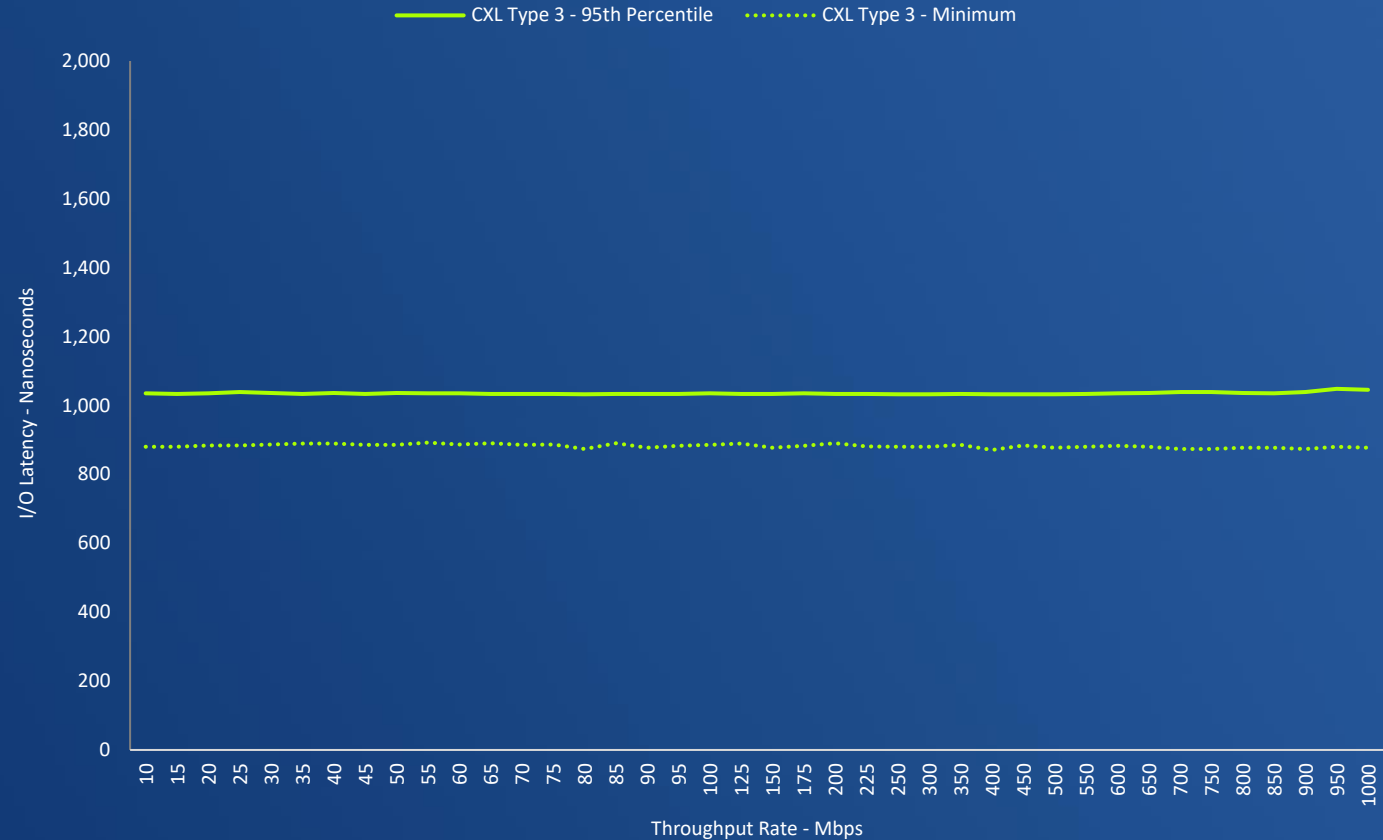
Tested By Naros.TaSR

2,000,000 Frames | Multi-Step Variable Throughput Rate | 10GbE | 64B UDP Payload (110B Frame) | via Linux User-Space | Excluding Business Logic

Not a STAC Benchmark

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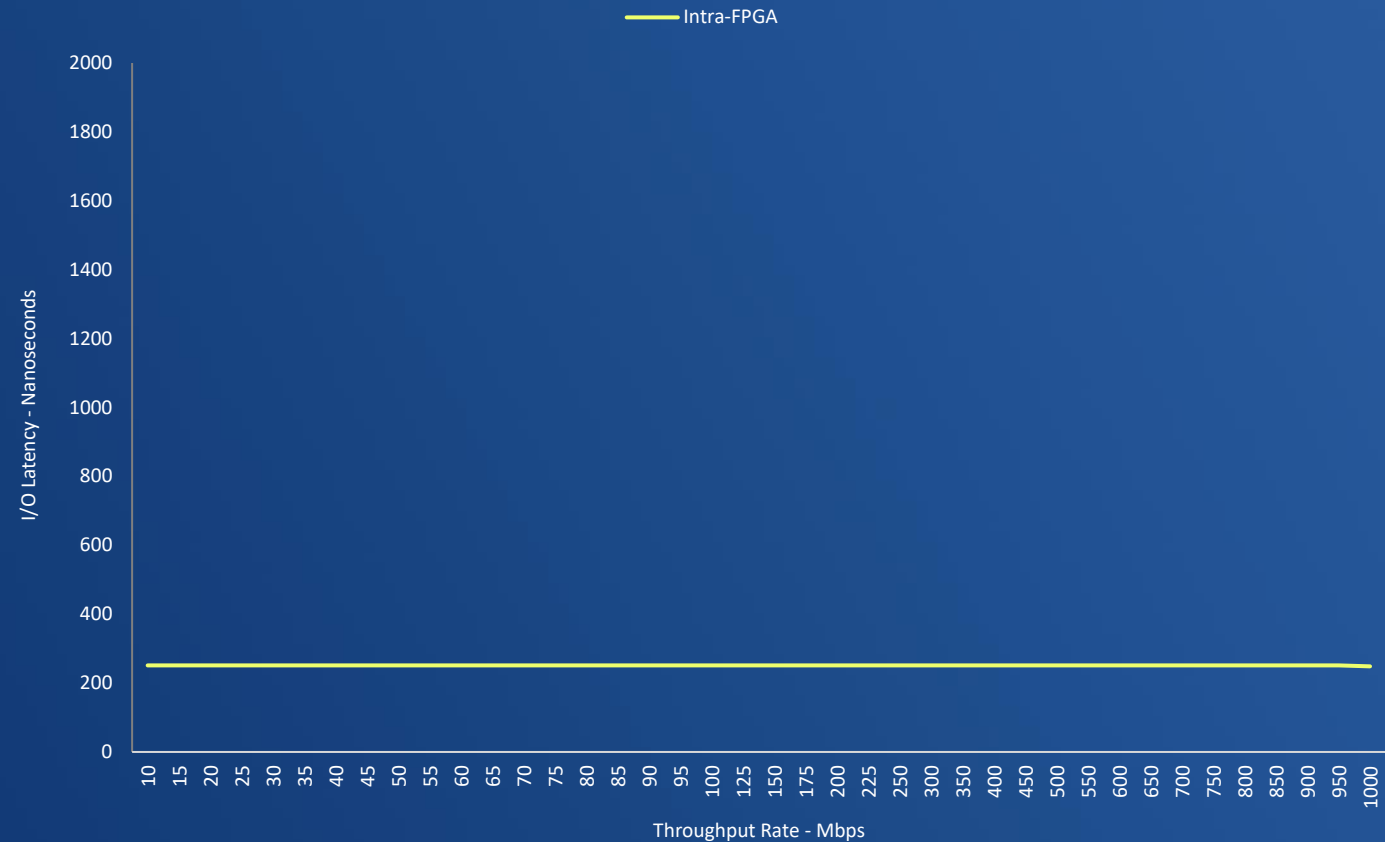
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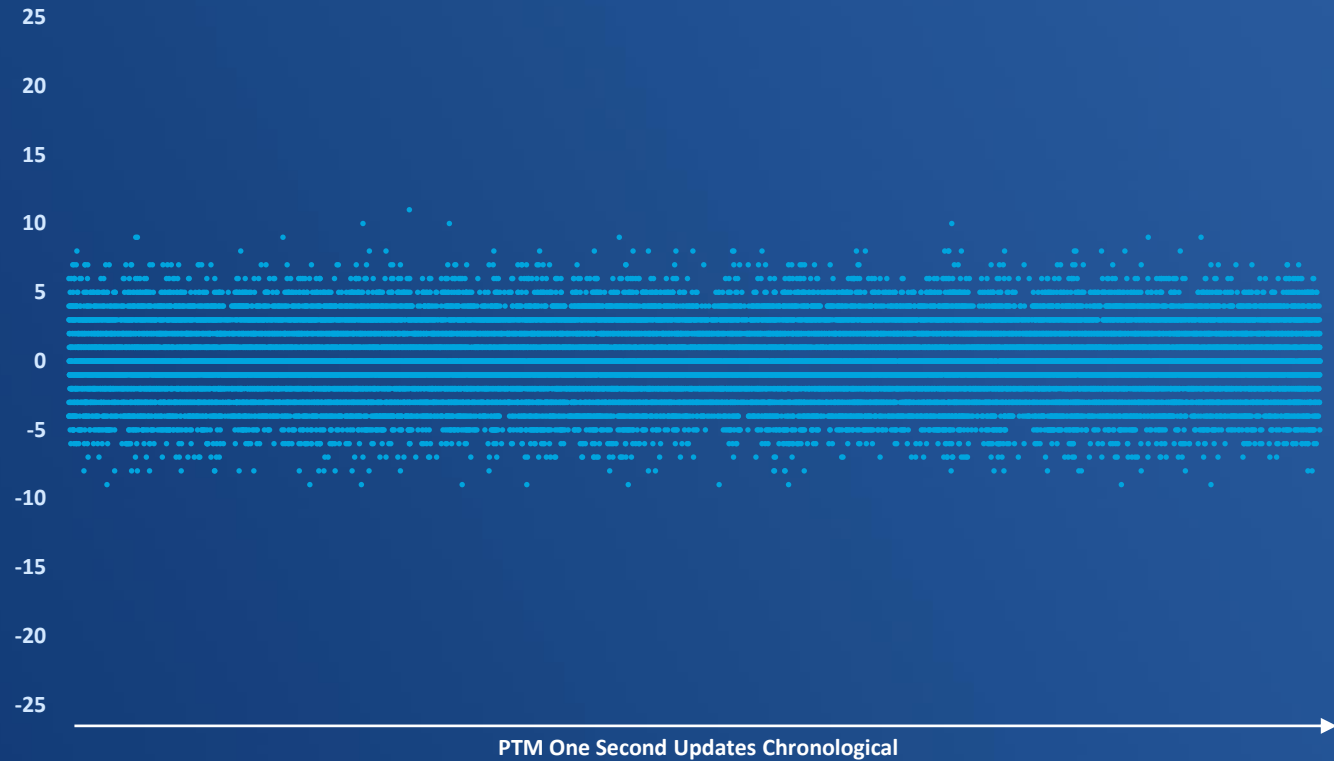
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Host/ÜberNIC Host Real-Time Clock Post-Update Time Value Divergence



Not a STAC Benchmark

WR

PTMv2

PTFM





ÜberNIC Can Do!

- 100% FPGA-Based Network Stack
- Supports PCIe 3.0, 4.0, 5.0, CXL 1.1, 2.0, & Intra-FPGA
- 1, 10, 25, 40, 50, 100, 200, & 400 GbE
- Significant Fiber Density; Max 16 FPs
- Multi-GB On-Board Memory; Max 64GB
- MAC-Level Timestamp, PCAP & Port Span
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ÜberNIC Qualified Vendor List



Server & Mainboard

- Jabil J322-S
- SuperMicro X13SEI-F
- Others Pending...

CPU

- 8470L (Xeon 4th Gen)
- 8480+ (Xeon 4th Gen)
- 6458Q (Xeon 4th Gen)
- 6448Y (Xeon 4th Gen)
- 6442Y (Xeon 4th Gen)
- Others Pending...

Transceiver & Fiber

- Molex 200G-SR8 QSFP-DD Transceiver, 8x 10G or 25G (P/N 1837150046)
- Molex x8 Breakout Cable (P/N 1062836338) Compatible w/1837150046
- FS.com 10G-SR SFP+ Transceiver (P/N SFP-10GSR-85)
- FS.com 25G-SR SFP28 Transceiver (P/N SFP28-25GSR-85)
- FS.com 40G-SR4 QSFP+ Transceiver (P/N QSFP-SR4-40G)
- FS.com 100G-SR4 QSFP28 Transceiver, 4x 25G (P/N QSFP28-SR4-100G)
- FS.com 200G-2SR4 QSFP-DD Transceiver , 8x 10G or 25G (P/N QSFPDD-2SR4-200G)
- FS.com 40G QSFP+ to 10G SFP+ Adapter Converter Module (P/N CVR-QSFP-SFP10G)
- FS.com 100G QSFP28 to 25G SFP28 Adapter Converter Module (P/N VR-QSFP28-SFP28)
- FS.com x4 Breakout Cable (P/N 8FMTPLCOM4)
- FS.com x8 Breakout Cable (P/N 24FMTPLCOM4) Compatible w/QSFPDD-2SR4-200G
- Others Pending...





Thank You



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