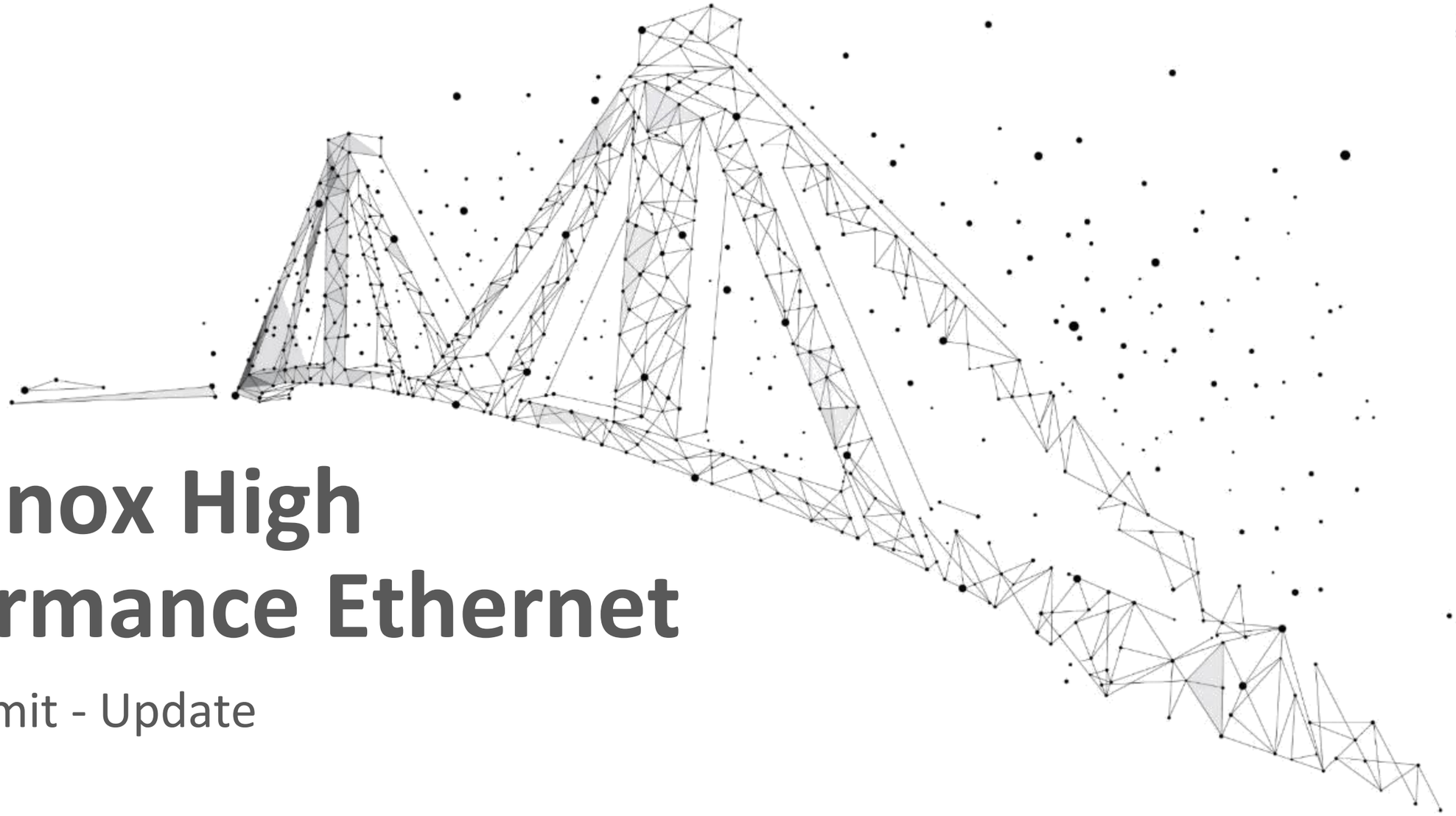


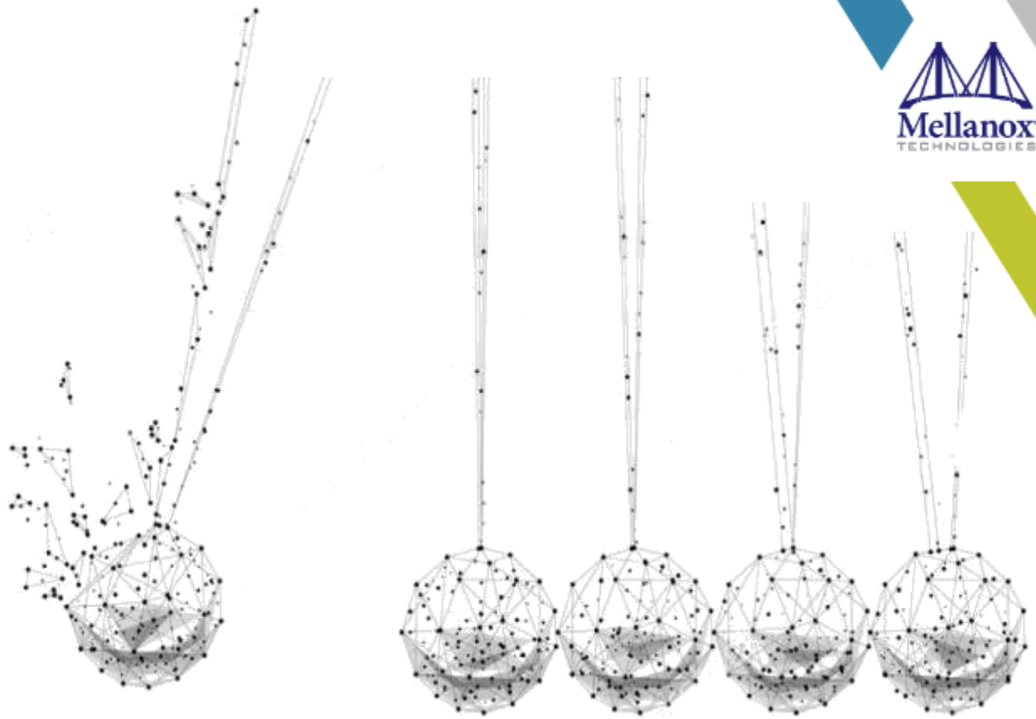
Mellanox High Performance Ethernet

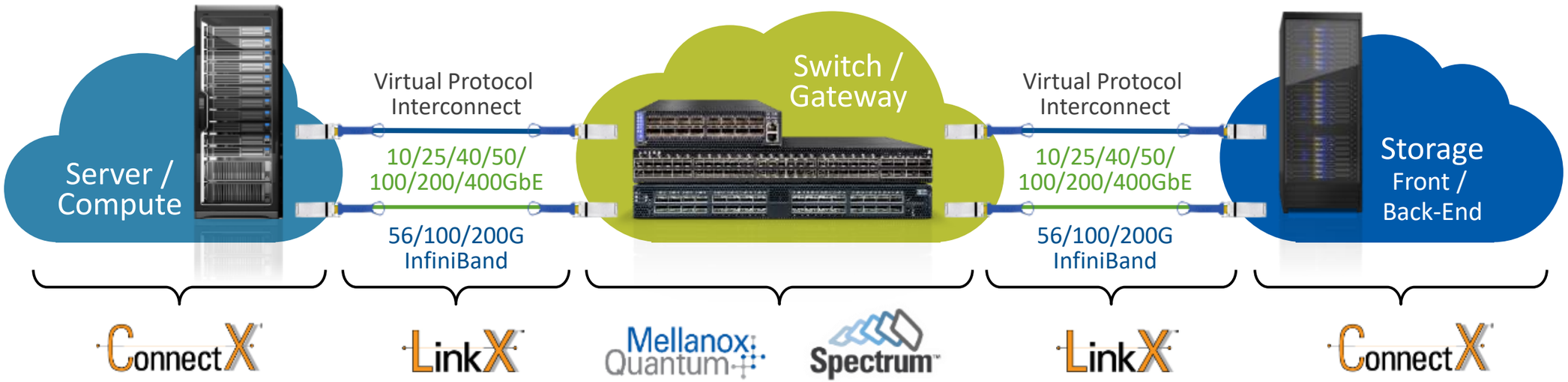
STAC Summit - Update

Oct 2019

Leading Supplier of Intelligent End-to-End Interconnect Solutions

The Smart Choice for High Performance Low Latency Workloads





Mellanox Delivers Superior Performance for FSI & HFT

Spectrum™

32x 100GbE Ports
300ns 25GbE+ latency
3.2 Tb/s throughput

Spectrum™-2

16x 400GbE Ports
360ns 25GbE+ latency
6.4 Tb/s throughput
Highest Scale NAT

ConnectX®-6
ConnectX®-5 Ex

- ❑ LowEST latency technology for 25GbE+
- ❑ VMA kernel bypass performance
- ❑ RDMA, SRIOV, NVMEoF, Stateless Offloads
- ❑ Best for Virtualization and Containers

GPUDirect™ RDMA
GPU Acceleration Technology

NVIDIA

Mellanox VMA

Critical for the **LowEST** latency NIC performance

RoCE • InfiniBand RDMA

400-600ns

Not STAC Benchmarks

What is Mellanox VMA?

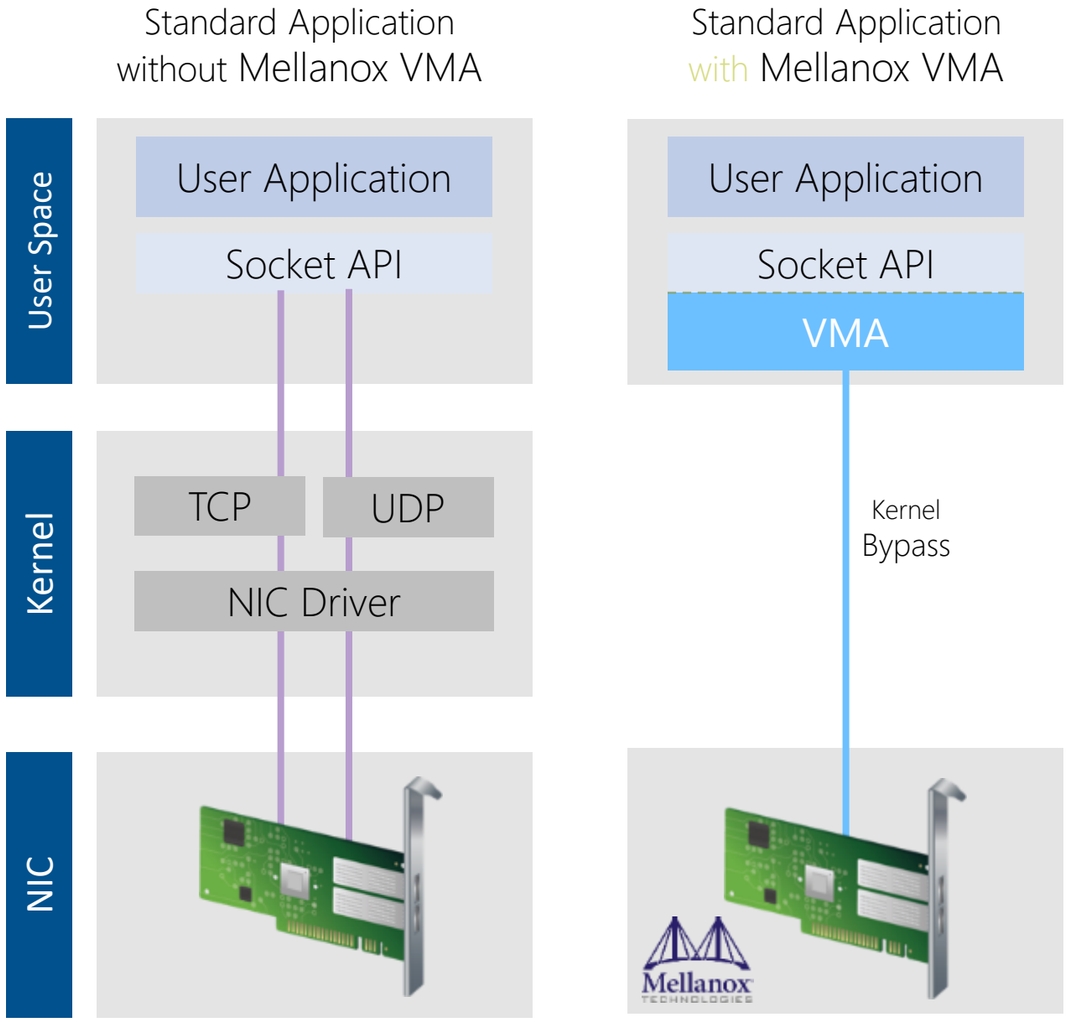
KERNEL BYPASS

Reduce Kernel overhead with direct network adapter access

SINGLE SIDED

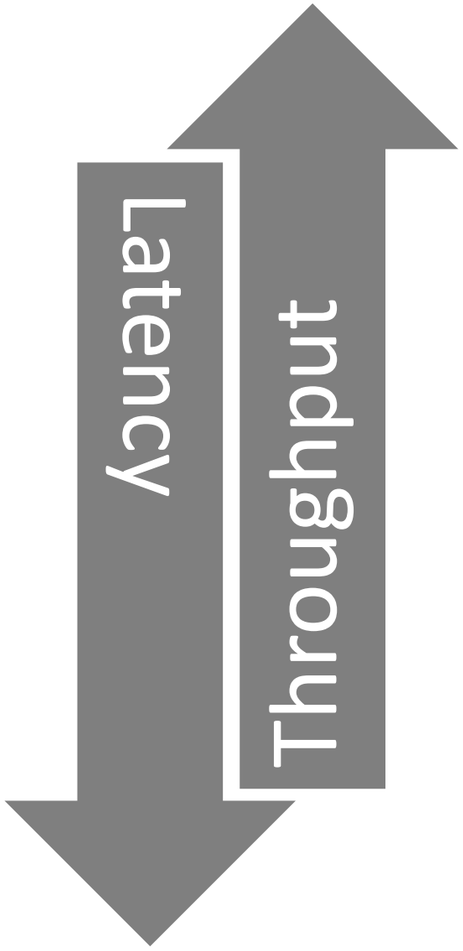
Requires no application changes – Standard sockets TCP, UDP (Unicast, Multicast)

https://www.mellanox.com/related-docs/applications/SB_HighFreq_Trading.pdf



Mellanox VMA – For Latency and Throughput

Mellanox VMA Kernel Bypass Brings Low Latency to Financial Market Applications



Lower Latency
LOWER IS BETTER
80% Lower LATENCY*

Lower CPU utilization
LOWER IS BETTER
85% Less CORES*

Lower Jitter
LOWER IS BETTER
90% Less JITTER*

Highest throughput
HIGHER IS BETTER

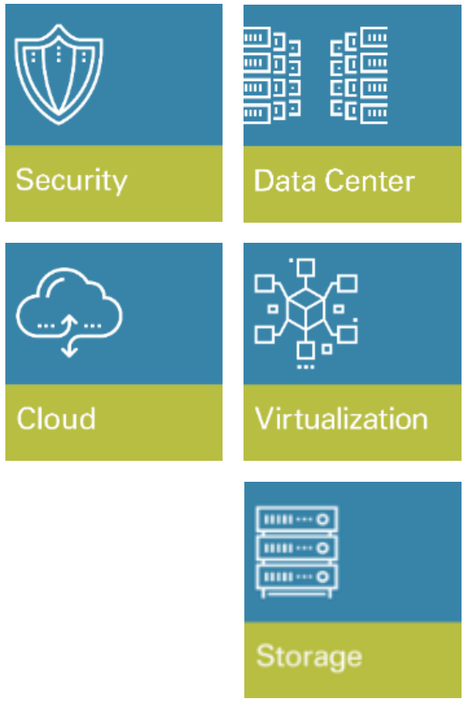
Not STAC Benchmarks

* Comparing to Kernel performance

BlueField SmartNIC – The Next Generation NIC

- Accelerates wide range of security, networking and storage workloads
  - Offloading Control and Data Planes
  - Functional Isolation
  - Security

- Range of Flavors available
  - 4/8/16 cores
  - 25Gbs and 100Gb/s dual port cards
  - Standard PCIe form factors
  - Ethernet and InfiniBand (100Gb/s)



- Combines best-in-class hardware network offloads with ARM processing power
  - Reduces TCO by offloading main CPU
  - Main CPU is left for compute and applications rather than security or networking functions

- Standard embedded Linux software stack

Highest Ethernet Performance 100, 200 and 400Gb/s Interconnect Solutions

ConnectX-6 Adapters

200Gb/s, 0.4us Latency
215 Million Messages per Second
(10 / 25 / 40 / 50 / 56 / 100 / 200Gb/s)

Spectrum-2 Switch

16x 400GbE Ports, 32x 200GbE Ports
64x 100GbE Ports, 128x 25/50GbE Ports
Throughput of 6.4Tb/s

BlueField SoC

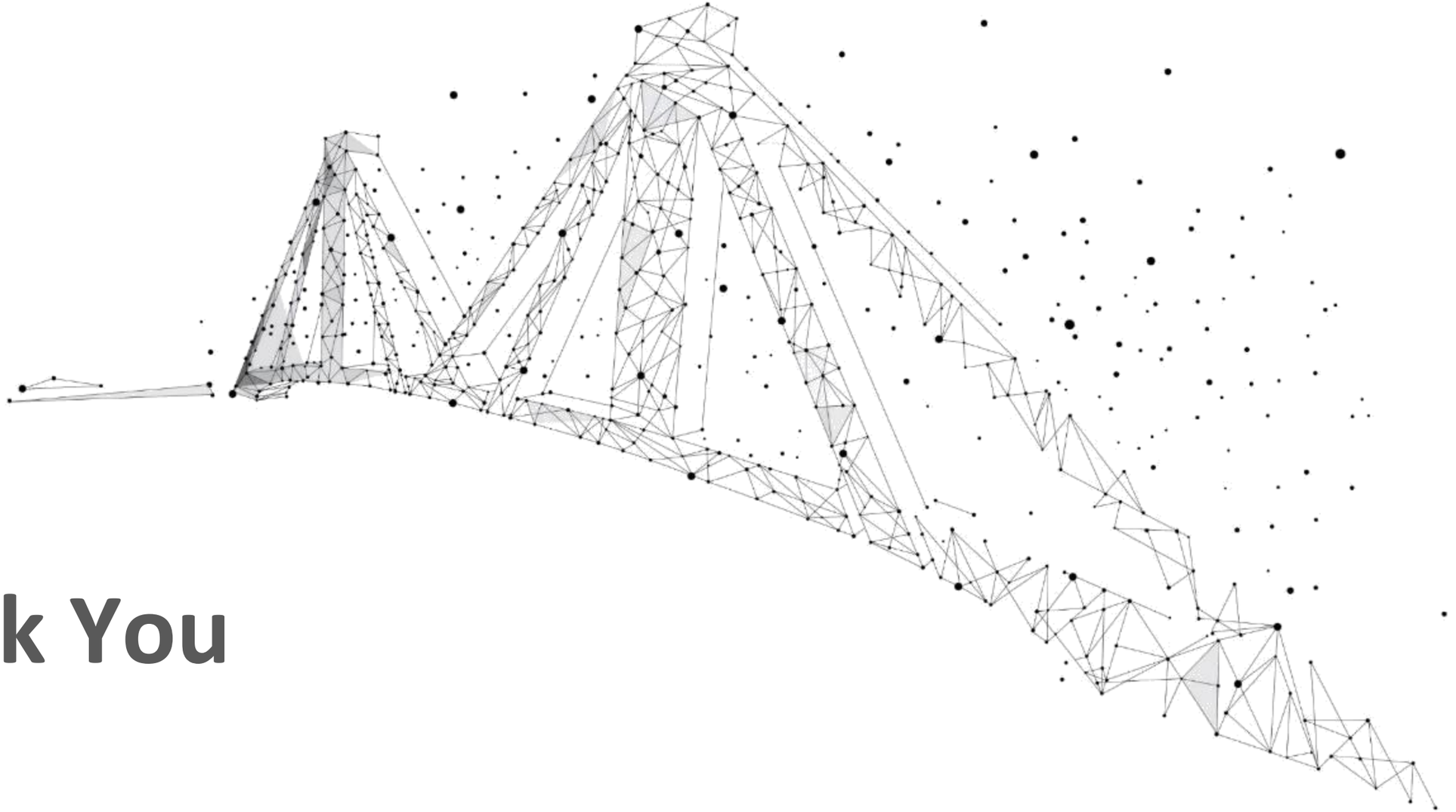
System on Chip and SmartNIC
Programmable adapter
Smart Offloads

LinkX Interconnect

Transceivers
Active Optical & Copper Cables (No FEC)
(10 / 25 / 40 / 50 / 56 / 100 / 200Gb/s)

SoC: System on Chip

Not STAC Benchmarks



Thank You