NetFPGA SUME
Open Source Network Hardware
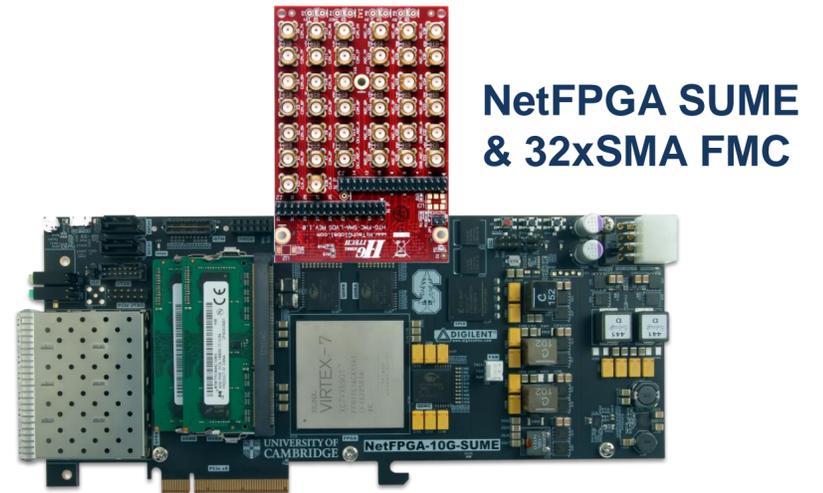
NetFPGA
http://www.netfpga.org

The NetFPGA project provides a flexible research and teaching tool – permitting instrumentation and prototyping of hardware-accelerated networking systems running at line rate.
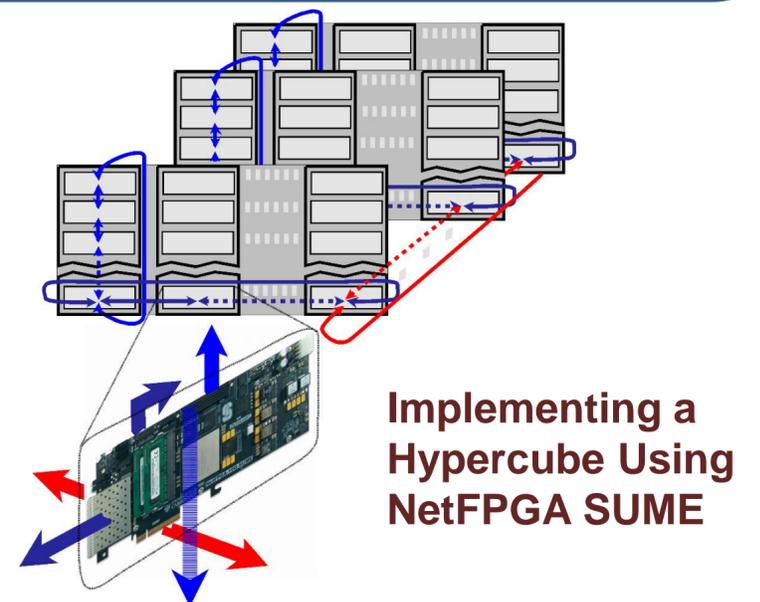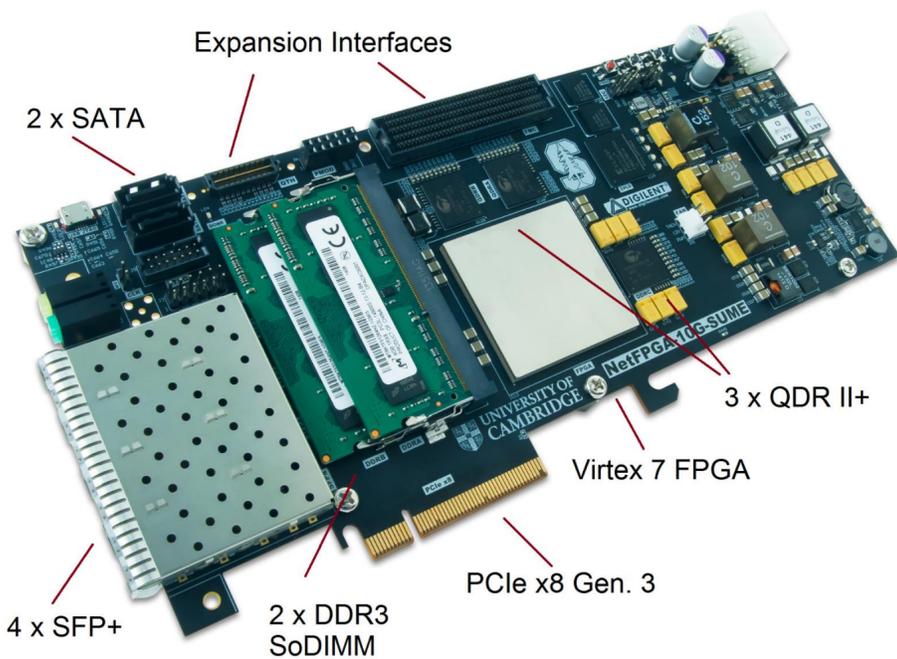
Main Features

- Virtex-7 690T FPGA
    - 693K Logical Elements
    - 51Mb On-Chip Memory
- 2 x 4GB DDR3 SoDIMM, 1866MT/s
- 3 x 72Mb QDR II+, 500MHz
- PCIe x8 Gen. 3 Host Interface
- 4 x 10Gb/s SFP+ Ethernet Ports
- 18 x 11.3Gb/s Expansion Serial Links
- Fabric Mezzanine Card (FMC) Interface
- 2 x SATA
- Micro SD
- 128MB FLASH

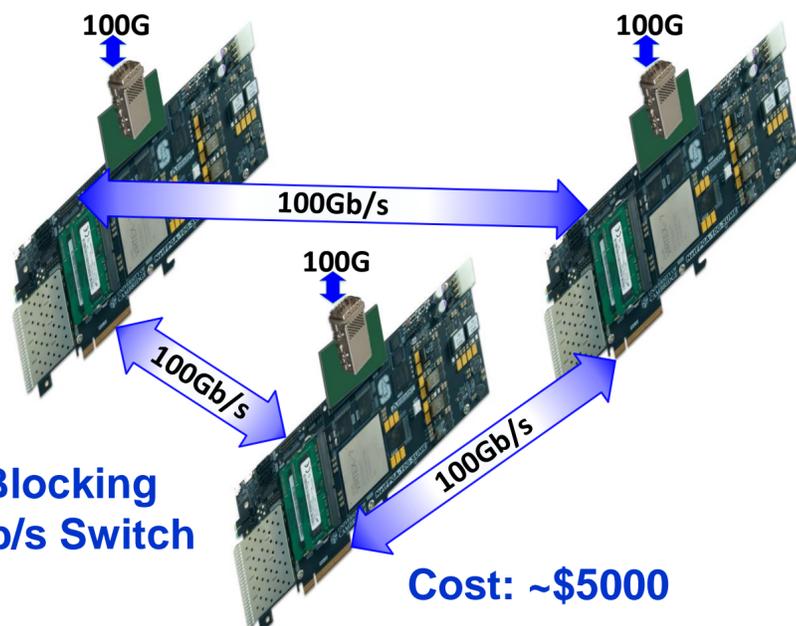**NetFPGA SUME & 32xSMA FMC**

Using NetFPGA-SUME:
- ✓ Permits replacement of physical-layer
- ✓ Provides high-speed expansion interfaces with standardised interfaces
- ✓ Allows researchers to design custom daughterboards
- ✓ Permits closer integration

Expansion Interfaces
2 x SATA
3 x QDR II+
Virtex 7 FPGA
4 x SFP+
2 x DDR3 SoDIMM
PCIe x8 Gen. 3

Implementing a Hypercube Using NetFPGA SUME

A 100Gb/s Design Enabler

100G
100G
100G
100Gb/s
100Gb/s
100Gb/s
100Gb/s

Non-Blocking 300Gb/s Switch

Cost: ~$5000

Example Use Cases

- 👍 Stand Alone Device
- 👍 PCIe Host Interface
- 👍 100Gb/s Switch
- 👍 Physical Layer and Media Access Control
- 👍 Novel Interconnect

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