

NetFPGA

Open Source Network Hardware

The NetFPGA project, an NSF funded collaboration with Stanford University, provides a flexible teaching and research tool – permitting instrumentation and prototyping of real router functionality at real network speeds.

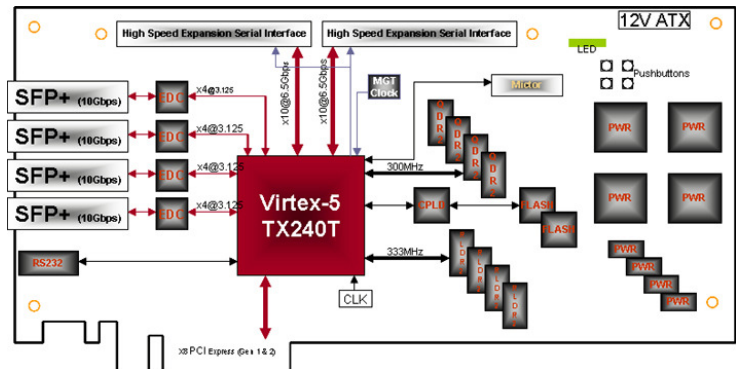
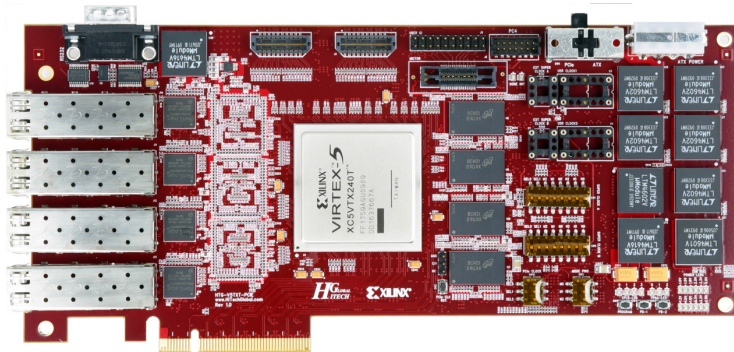
- Put a NetFPGA into a PC to build hardware-accelerated, gigabit-speed network appliance.

- Features:

- Wire-speed packet processing
- Cost-Effective
- Can be programmed as:
 - **Any-protocol Router, Ethernet Switch, NIC, etc.**

- Interfaces:

- Four 10G Ethernet ports
- PCIe x8 Gen2 host interface



- Building the NetFPGA follows Cambridge Computer Laboratory tradition of working with both hardware and software.

- Past networking projects have included the:

- ✓ original Cambridge Ring
- ✓ Cambridge Fast Ring
- ✓ Fairisle ATM switch
- ✓ Desk Area Network
- ✓ Home Area Network

- Programmable network hardware allows students and researchers to do practical prototyping at real-world line-speeds.

- Current Projects:

- @ Building accurate, fast, network emulation
- @ Hardware prototyping of power-efficient networking
- @ A platform for exploring novel datacenter architectures
- @ Flexibility allowing us to explore the I/O boundary
 - > Leading to SDN done right!
- @ Open Source Network Testers
- @ Test novel ideas for control mechanisms (buffer management, scheduling) in Optical Networks

An **open** network hardware platform implemented with Field Programmable Gate Array (FPGA) logic.

Support for the NetFPGA project has been provided by the following companies and institutions

