

# NetFPGA – Programmable Hardware for high-speed network prototypes



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*The NetFPGA platform 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,...**

Interfaces:

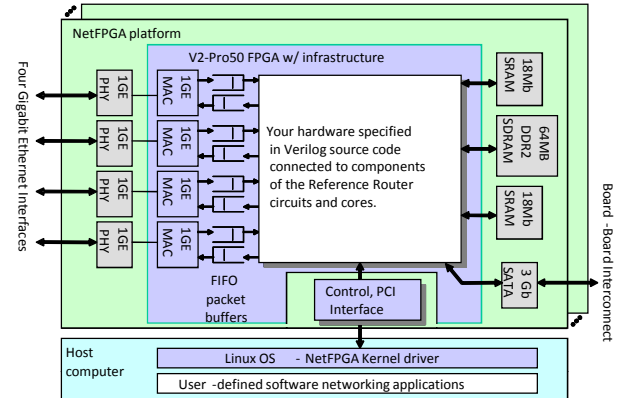
- Four Gigabit Ethernet ports
- Standard PCI host interface
- Gigabit serial I/O



Current Projects and Plans:

- Test novel ideas for control mechanisms (buffer management, scheduling) in Optical PCI Networks
- Build an accurate, fast, network emulation
- Hardware implementations of behavioural classifier
- Hardware supporting virtual routers/hosts
- Provable routers as an F#/Kiwi target
- Provable routing through Metarouting

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



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

Past networking projects have included the original Cambridge Ring, the Cambridge Fast Ring, the Fairisle ATM switch, the Desk Area Network and the Home Area Network.

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

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



<http://www.netfpga.org>



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