Liberouter

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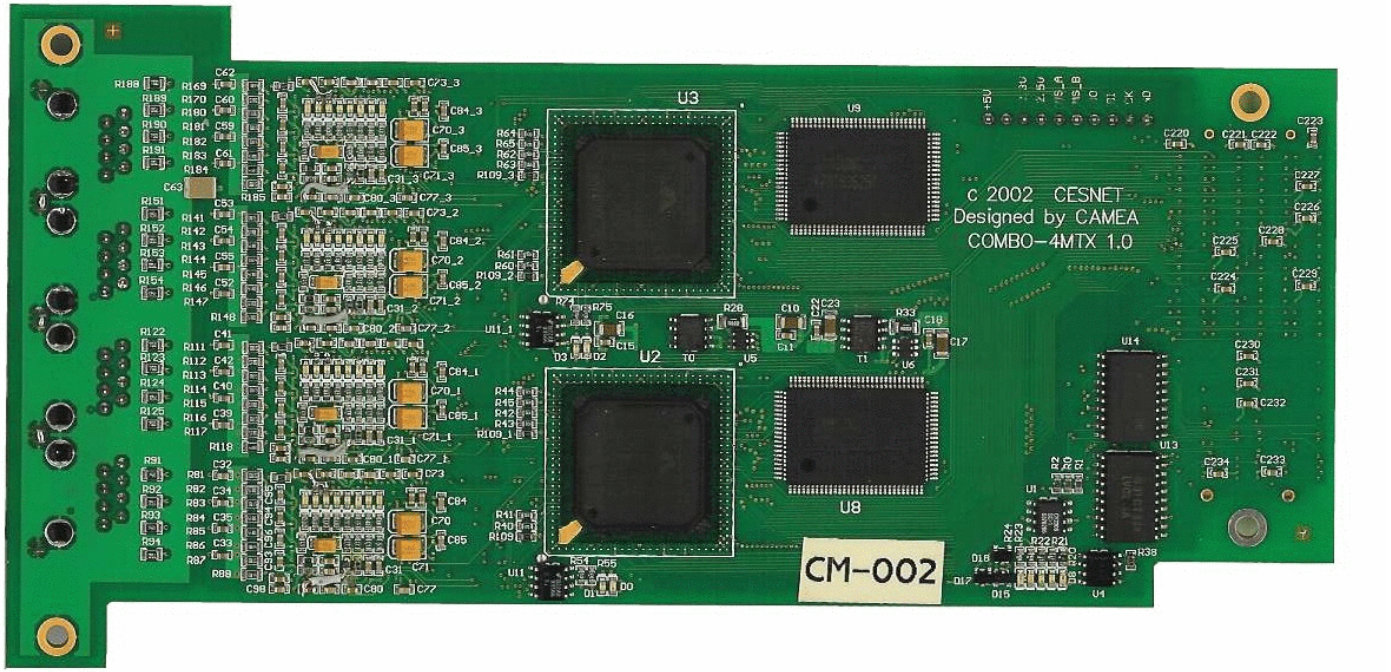
Project goals

- PC router for IPv6 and IPv4 (NetBSD and Linux)
  - ▷ Improve the forwarding performance by adding a hardware accelerator – target througput 5–10 Gbps
  - ▷ Create a consistent configuration interface
- Entirely open design – GPL, OHGPL, BSD licenses

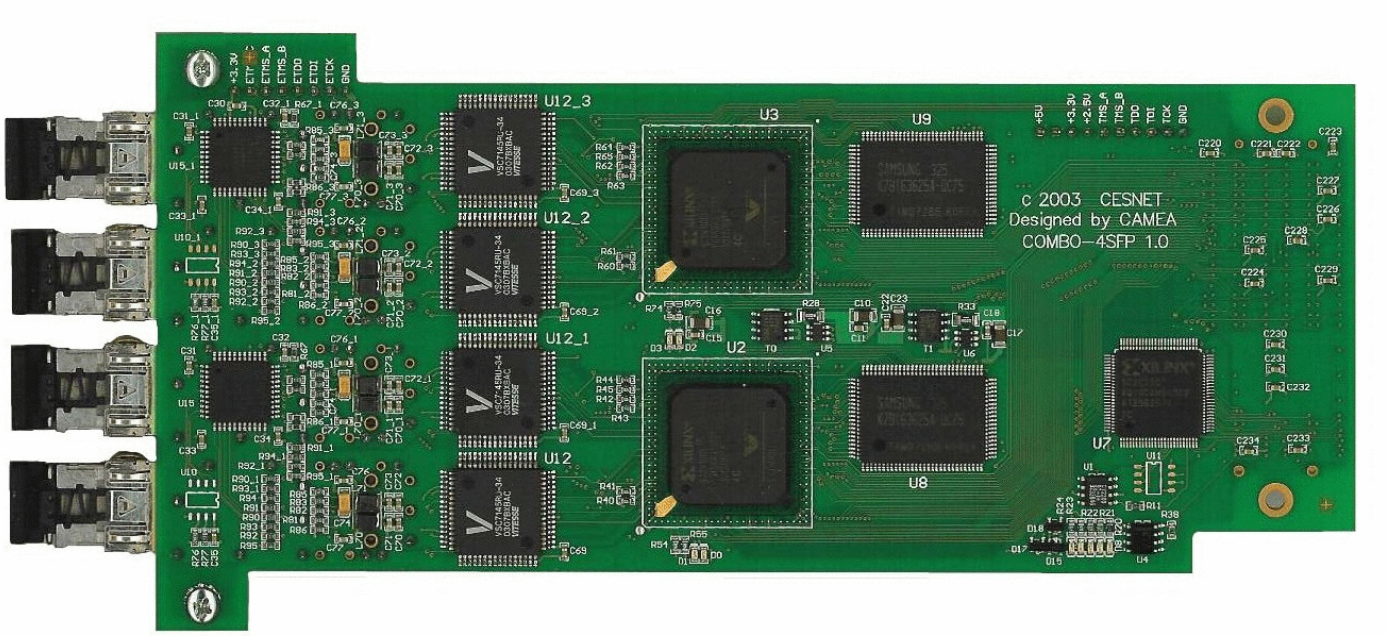
COMBO6

- Main components:
  - ▷ FPGA – Virtex II from Xilinx
  - ▷ Ternary CAM

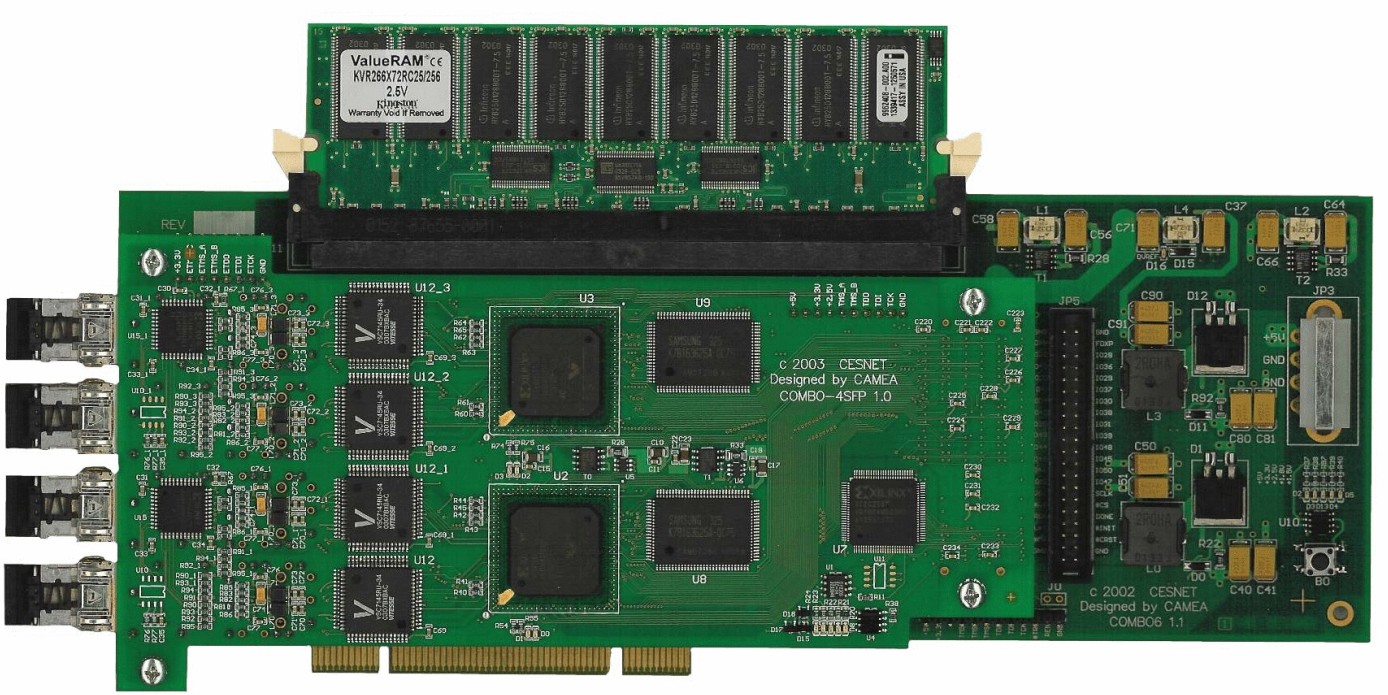
4× GigE copper



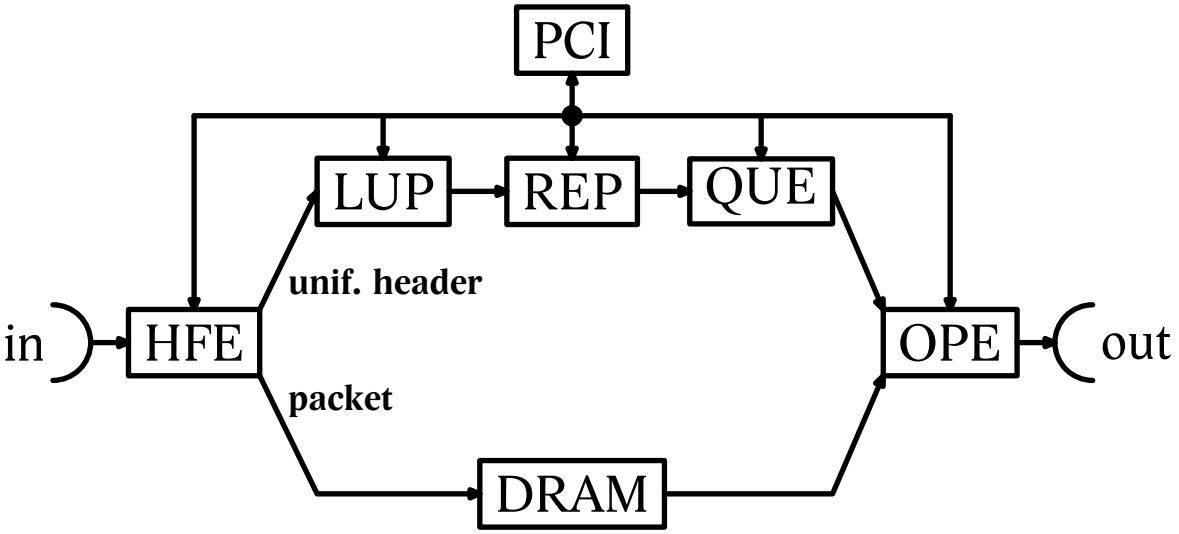
4× GigE optical (SFP)



Combo6+4sfp sandwich

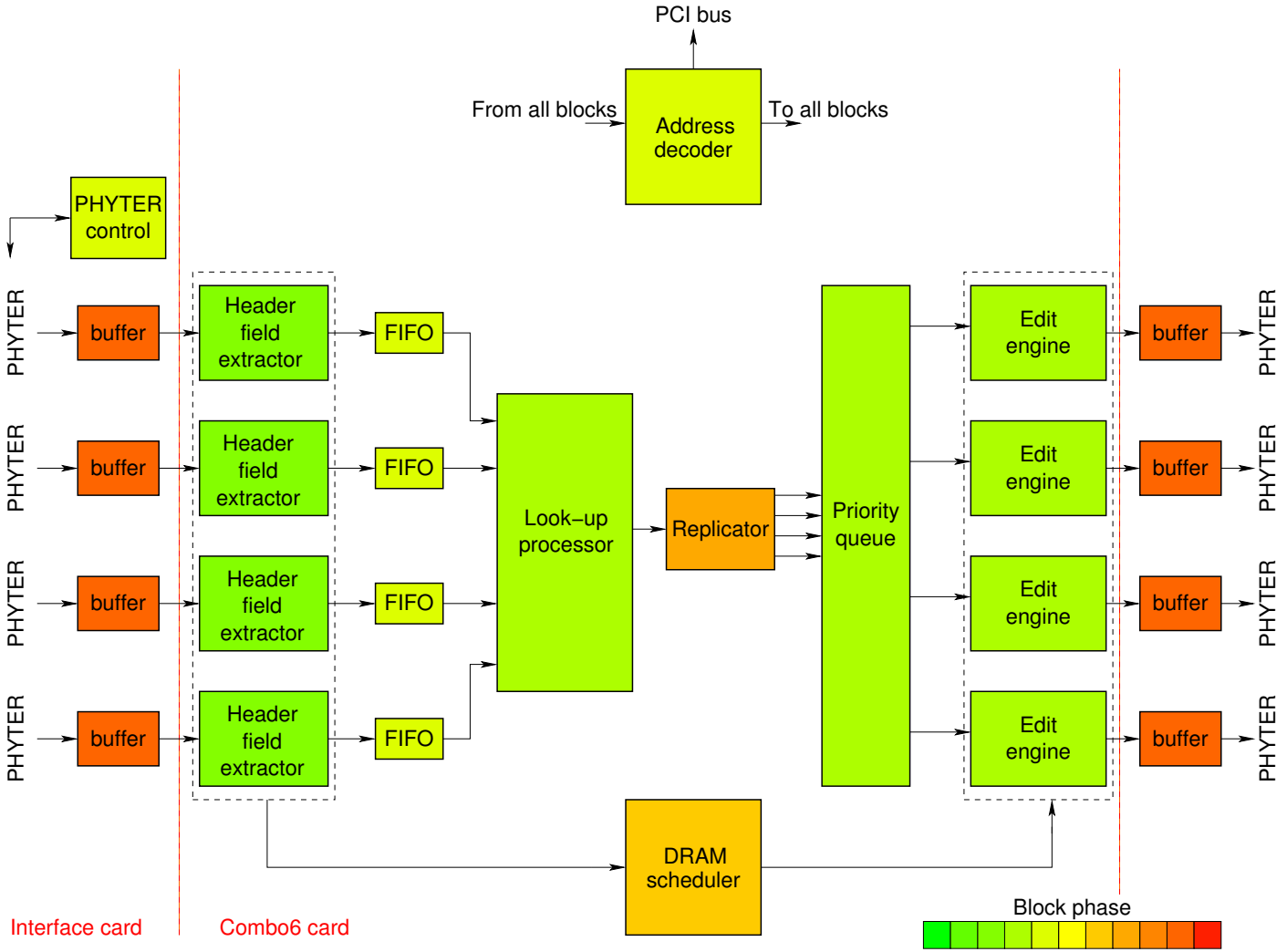


Firmware



HFE Header field extractor
LUP Look-up processor
REP Replicator
QUE Priority queues
OPE Output packet editor

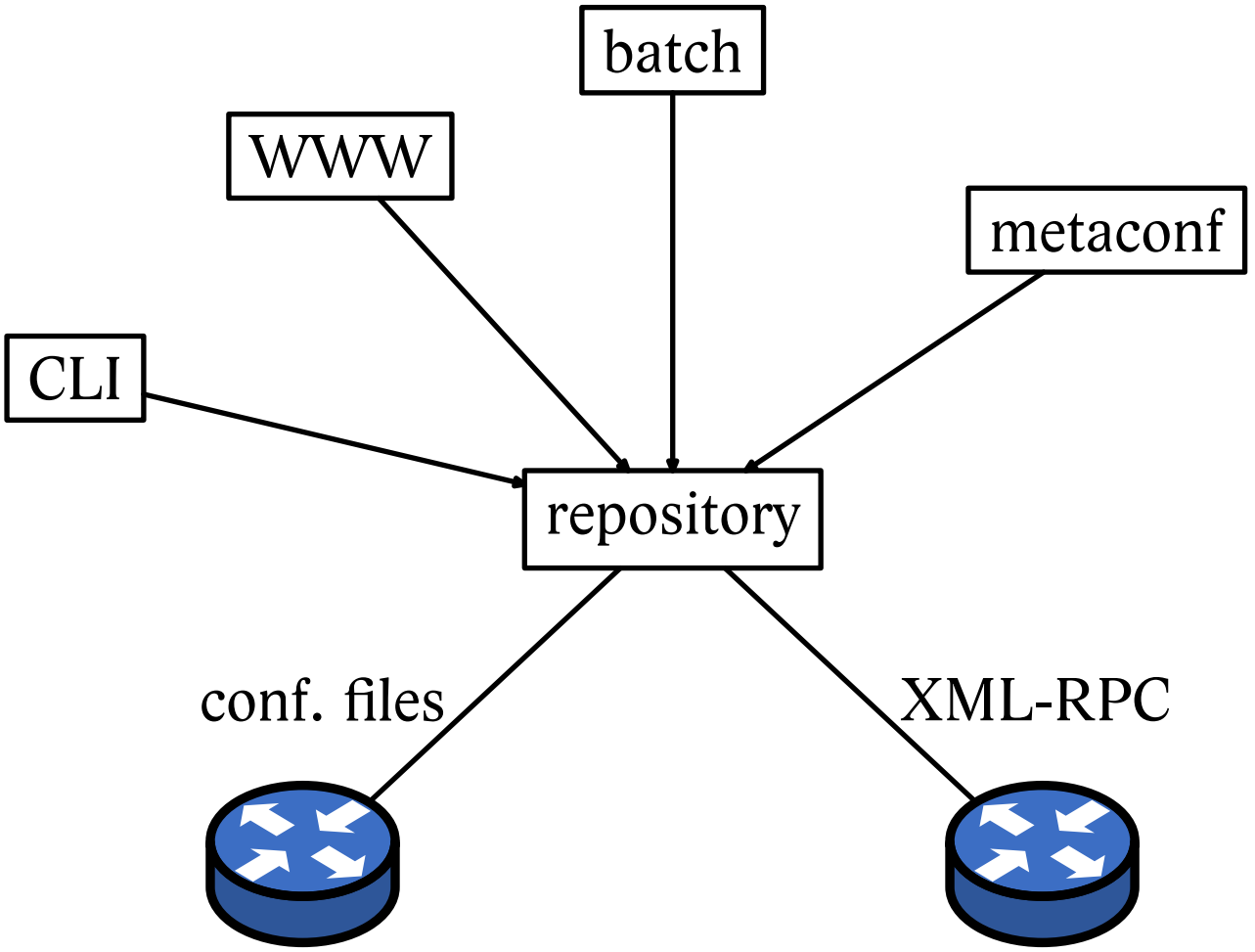
Current status



System software

- Low-level drivers for NetBSD and Linux
- Deamon *combod* – sync with the kernel
- High-level drivers – Combo6 appears to the OS as a normal 4-port GE card

Netopeer conf. system



Current status

- Repository based on Subversion, API
- Interim XML schema (interface config, packet and route filters, static routing, RIP, RIPng)
- XML library and API (file handling, validation, ...)
- Cisco IOS batch front-end
- JUNOS front-end (needs to be updated)
- Backends based on XSL transformations – Cisco IOS, Linux

Current status (cont.)

- Intensive work on CLI front-end
  - ▷ JUNOS-like syntax
  - ▷ configuration tree mapped one-to-one on XML schema
  - ▷ grammar autogenerated from XML schema
- Back-ends written in XSLT
  - ▷ Linux
  - ▷ Cisco IOS
- Metaconfiguration: specification in progress

IPv6 multicast router

- Flexible test/development platform
- Use COMBO6 for line rate multicast forwarding, RPF checks
- OS support (MLDv2, MLD proxy)
- PIM daemon supporting current drafts

More information

- `http://www.liberouter.org`
- Access to *cvsweb*
- Mailing lists `...@liberouter.org`
  - `announce` – announcements, low traffic
  - `combo6` – hardware and OS software
  - `netopeer` – Netopeer configuration system