System Software Support for High Performance Servers

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Problem

- Server performance is critical
  - ... and getting more so
- Servers are not like other applications
  - Different model of computing
- Current abstractions are wrong
  - Poor match to server needs

Solution

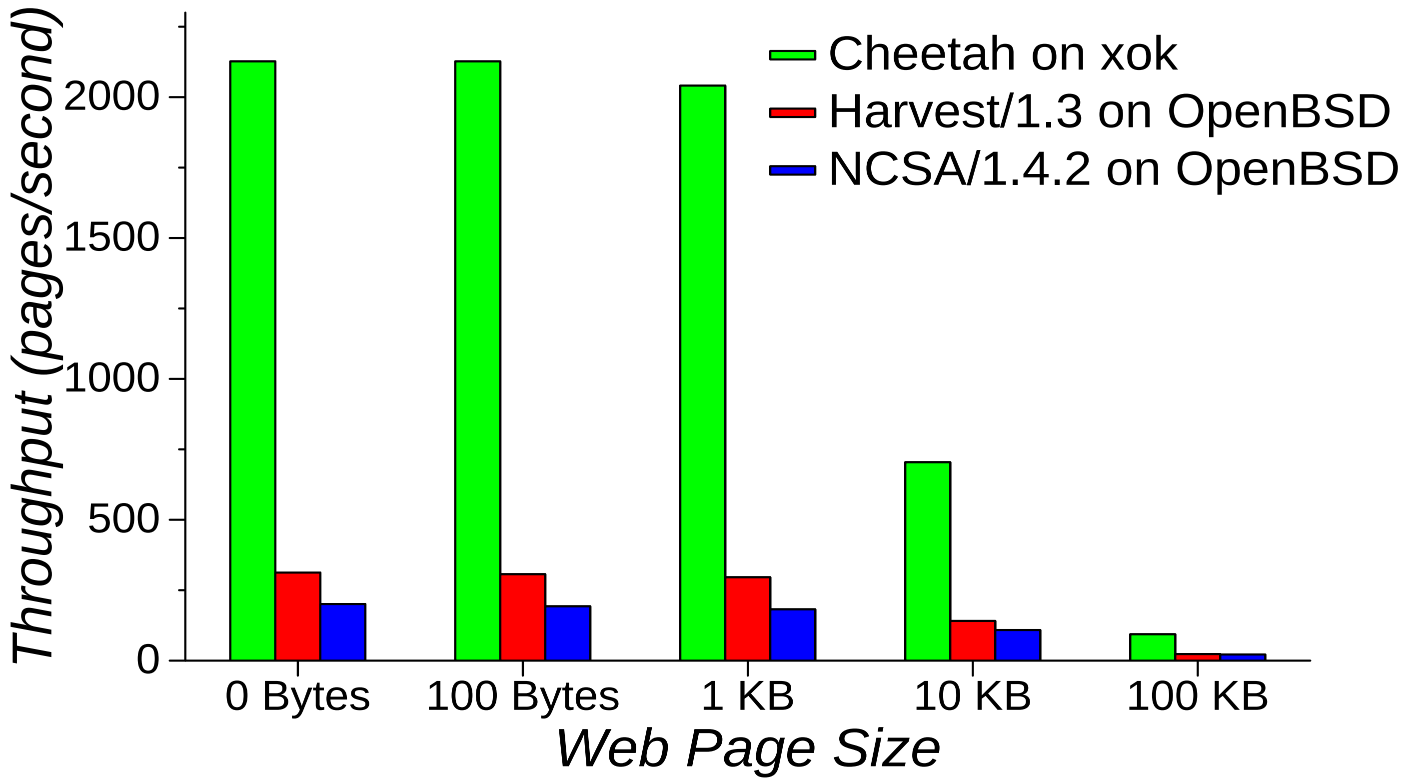
Better Abstractions for Servers

- Specialized resource management
- Integrated management of resources
- Event-driven organization
- Aggressively-optimized protocol stacks

Example: HTTP Server

- Combined disk cache/retransmission pool
- Precomputed checksums and HTTP headers
- HTML-based disk allocation and caching
- Merged network packets (header, data, FIN)
- Integrated, pre-initialized per-request structures

Dramatic Performance Increase



Delivers Hardware Performance