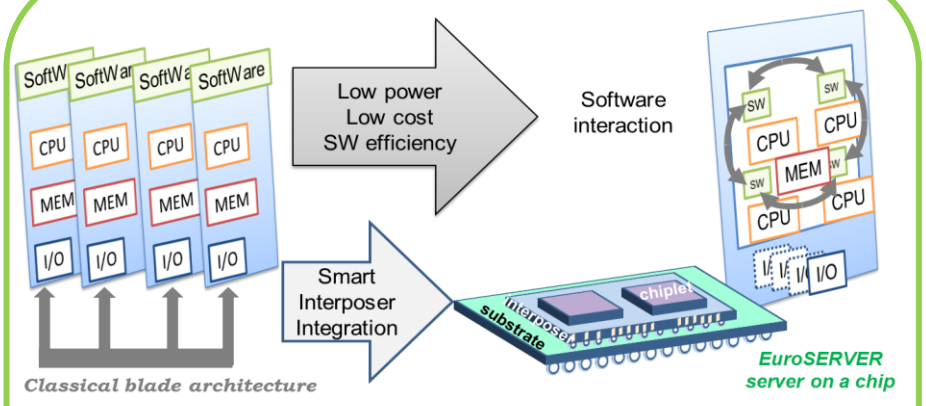
EURO SERVER

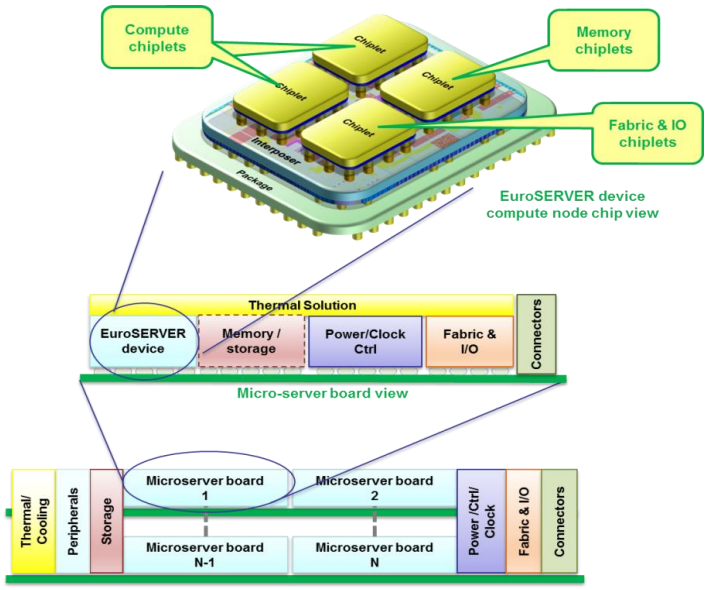
GREEN COMPUTING NODE FOR EUROPEAN MICRO-SERVERS

VISION



Innovative design:
64-bit ARM cores, 2.5D heterogeneous integration, FD-SOI, coherence islands

INTEGRATION



OBJECTIVES

Combine micro-server architecture, silicon implementation, system integration and software development to

- **Improve Energy efficiency**
- **Improve Total cost of ownership**
- **Improve Software efficiency**

To redesign "Micro-Servers" to be used in building datacenters

APPLICATIONS

- Data Centers & Cloud computing
- Telecom infrastructures
- High-end Embedded systems

Typical workloads:

- Web-server hosting (LAMP/WAMP),
- Distributed databases (HADOOP)
- OLAP, OLTP workloads
- Relational databases (MySQL)
- Network communications,
- Vehicle on-board computer,
- Automatic vehicle location tracking

FACTS

- FP7 collaborative project, 9 partners
- Started in Oct 2013, 41 months duration
- Total budget 11.4 M€, EU contr. 8.15 M€
- www.euroserver-project.eu

DISCRETE PROTOTYPE

Architecture:

- Hierarchical Interconnect
- Partitioned Global Address Space (UNIMEM)
- Shared 10 GigE NIC
- Shared NVM-based storage
- Hardware-assisted virtualization

Systems Software:

- UNIMEM support
- MicroVisor (xen-based) distributed hypervisor
- Sockets over RDMA, Mailbox notifications
- Device drivers for shared I/O

EXPLOITATION

KALEAO

KALEAO introduces the new generation server solutions.

ZeroPoint TECHNOLOGIES

ZeroPoint Technologies introduces ultrafast and effective compressed memory for servers.

cea · neat EMBEDDED COMPUTING · life.augmented · CHALMERS UNIVERSITY OF TECHNOLOGY · ARM · FORTH Institute of Computer Science · BSC Barcelona Supercomputing Center Centro Nacional de Supercomputación · onapp · TECHNISCHE UNIVERSITÄT DRESDEN

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 610456.