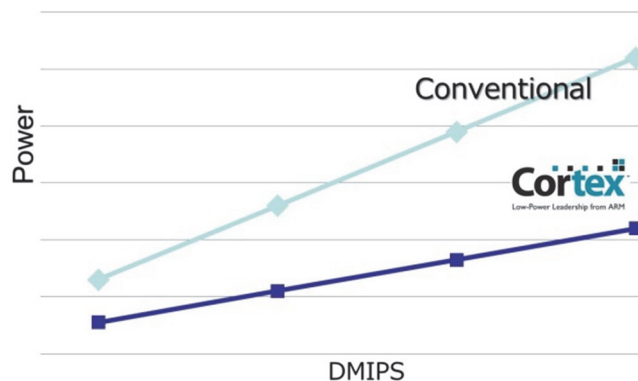# SynQuacer™ Server system
NEO-concept by Socionext

■Overview

➢ Prototype system connecting 64 CPUs via proprietary switch architecture

➢ High frequency CPU : well-tuned many cores

➢ Absolute low power consumption "Down to 30%"

➢ Flexible scalability

➢ Variety of use-case

30%

✓ Cloud service
✓ Media server
✓ CDN
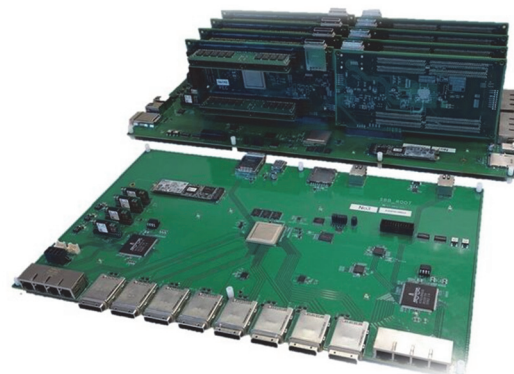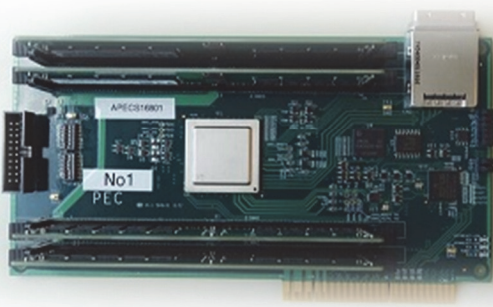✓ File system

*:CDN
  Content Delivery Network

■Configuration of prototype system

➢ 24 of power efficient Core are on CPU

➢ CPU and local memory are on PEC[*1]

➢ 8 PECs are connected via Switch SoC on SBB[*2]

➢ 8 SBBs are connected via SBB-R[*3]

➢ Total 1536 cores (24 x 8 x 8)

*1: PEC: Processor Element Card
*2: SBB: System Bridge Board
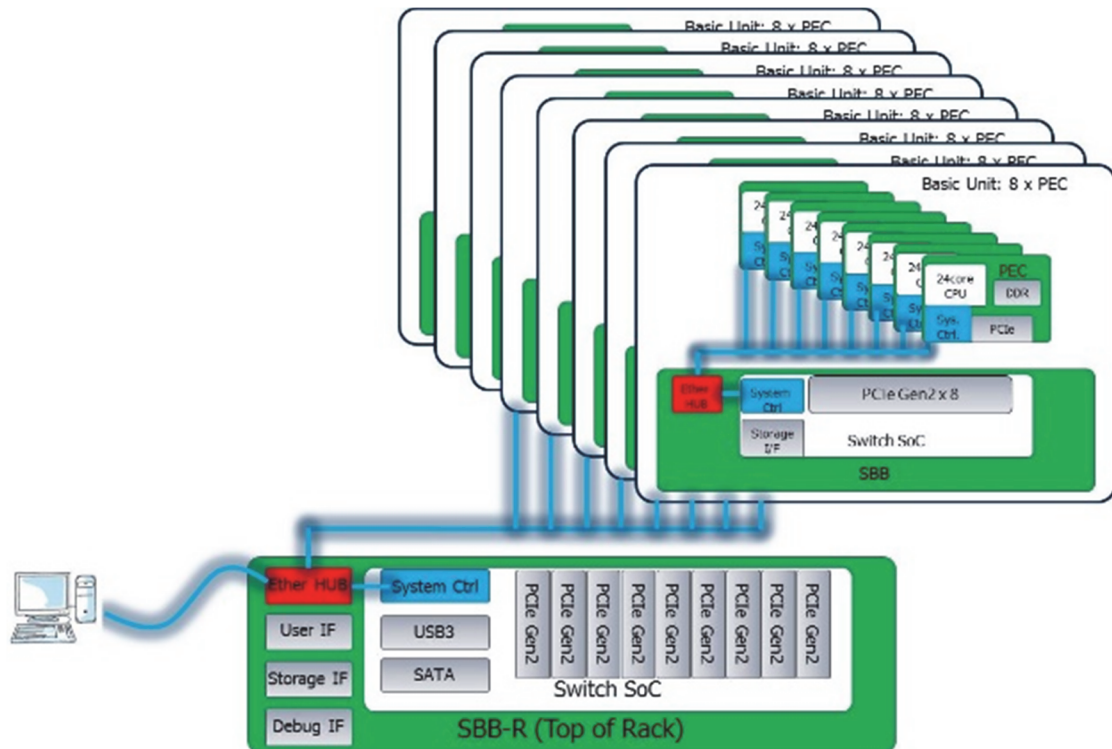*3: SBB-R: Top of Rack

<Notes>
- Lower power consumption is confirmed on real board (measured at our company).
- SynQuacer is a trademark of Socionext Inc.

■Maintenance and Management Features

- ➢ Network using internal system control block
- ➢ Central control by Socionext proprietary processing unit
- ➢ Online board replacement
- ➢ Encryption protected network

■Specifications

CPU	ARM® Cortex-A53, 24core, 1GHz[*1]
PEC (Processor Element Card)	1 CPU, 4 RDIMM Slots
Number of CPU	1 [24core] - 64 [1536core]
SBB (System Bridge Boards)	1 [8 CPU] - 8 [64 CPU][*2]
Memory type	16GB DDR4-RDIMM, ECC
Memory Min. config.	128GB [8 CPU] - 1TB [64 CPU]
Memory Max. config.	512GB [8 CPU] - 4TB [64 CPU][*3]
Srorage type	M.2 SSD/SATA3-6Gbps/512GB/Type2280
Storage capacity	512GB [1 System Bridge Board] - 4TB [8 System Bridge Boards]
External LAN connection	GbEthernet
PCI Express (System Slot)	x4lane 1ch Root Complex
PCI Express (Extension)	x4lane 1ch x64 PECs
System Management Facility	Installed

*1: Performance of 2x System Bridge Board will be equivalent to x86 server.

*2: 8 CPUs on 1 SBB, 8 SBBs are connected.

*3: 4x RDIMM are on Processor Element Card.