

FUJITSU: Comprehensive HPC System Provider

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Fujitsu's mission for HPC



Provides HPC solution for every aspect of customer requirements

- Provides comprehensive single system image HPC environment
- Develops SPARC & x86 platforms and software stack
- Realizes higher performance with greenness, usability, and reliability



Top500 11/2011 BOF Slide
Fujitsu has 2nd share for performance

K computer



Developed with RIKEN

Petascale Supercomputer



PRIMEHPC FX10

Petascale supercomputer, PRIMEHPC FX10

→ Fujitsu developed SPARC chips and Tofu interconnect for high performance, high reliability, and high operability

x86 HPC Cluster



CX400

x86 HPC cluster with PRIMERGY

→ PRIMERGY follows Intel's CPU & MIC and GPGPU etc. roadmaps and adopts Fujitsu's latest packaging technologies for high performance and high operability



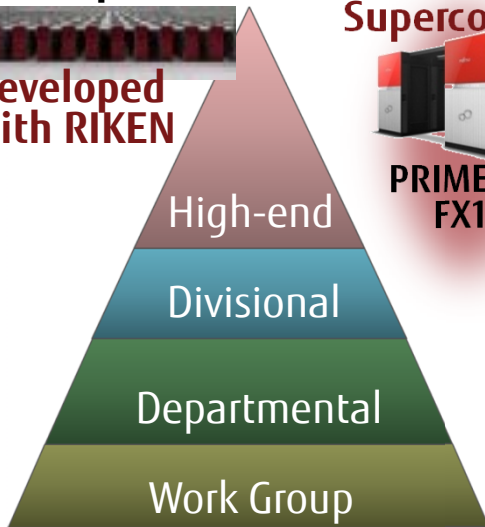
BX900/BX400

RX200

Large-Scale SMP System



RX900



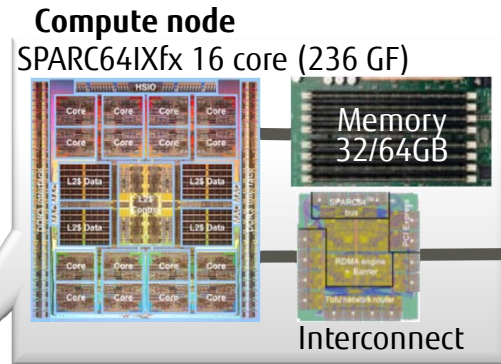
Fujitsu HPC R&D focus



- High performance & practical use for real applications
- High reliability & scalable performance w/ lower power consumption
- Based on the de facto standard Linux OS

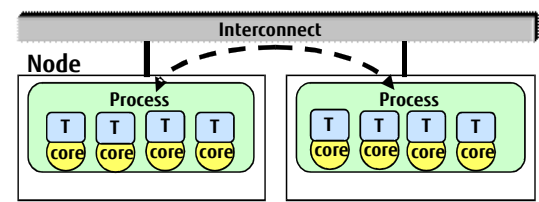
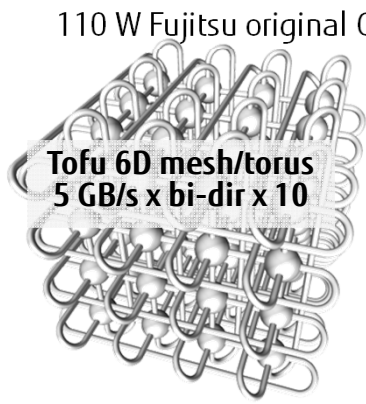
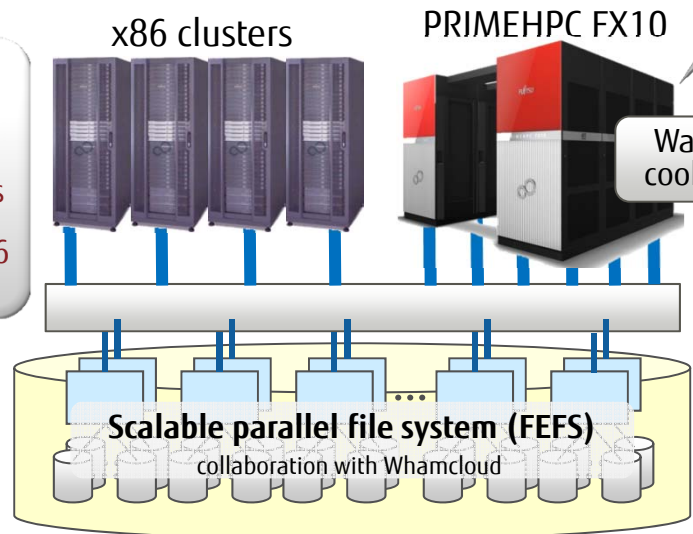
K computer results for Nov., 2011

No. 1 at Top500: 10.51 PF(93.17%), 830 MF/W
 ACM Gordon Bell Prize for peak performance of
 3.08 PF (43.63%)
 HPC: No.1 in all class 1 award categories
 HPL/RandomAccess/STREAM/FFT



- General purpose CPU
- SIMD & software controlled cache (HPC-ACE)
- Single socket compute node
- High-memory BW (85 GB/s)

Fujitsu developed software stack & compilers for both SPARC & x86 platforms



Low-latency and high BW interconnect with collective communication support (Tofu)

Fujitsu's approach



- Fujitsu is developing a Trans-Exa system as a midterm goal
 - CPU, interconnect, and software needed to continue the performance growth trend and to enable good usability and compatibility for applications
- Supports x86 for a variety of applications & customer requirements
- Continues to invest effort in R&D for the exascale system
 - Higher performance and lower power consumption technologies for HW & SW
- Requests to the customers
 - Develop new applications or algorithms targeted for the new architecture and fully enjoy platform performance
 - Continue to invest in optimizing their existing application designs to gradually adapt them to the newer architecture

**No.1 in Top500
(June, Nov. 2011)**



K computer


2010

2015

2020

Trans-Exa system

Exascale system



FUJITSU

shaping tomorrow with you