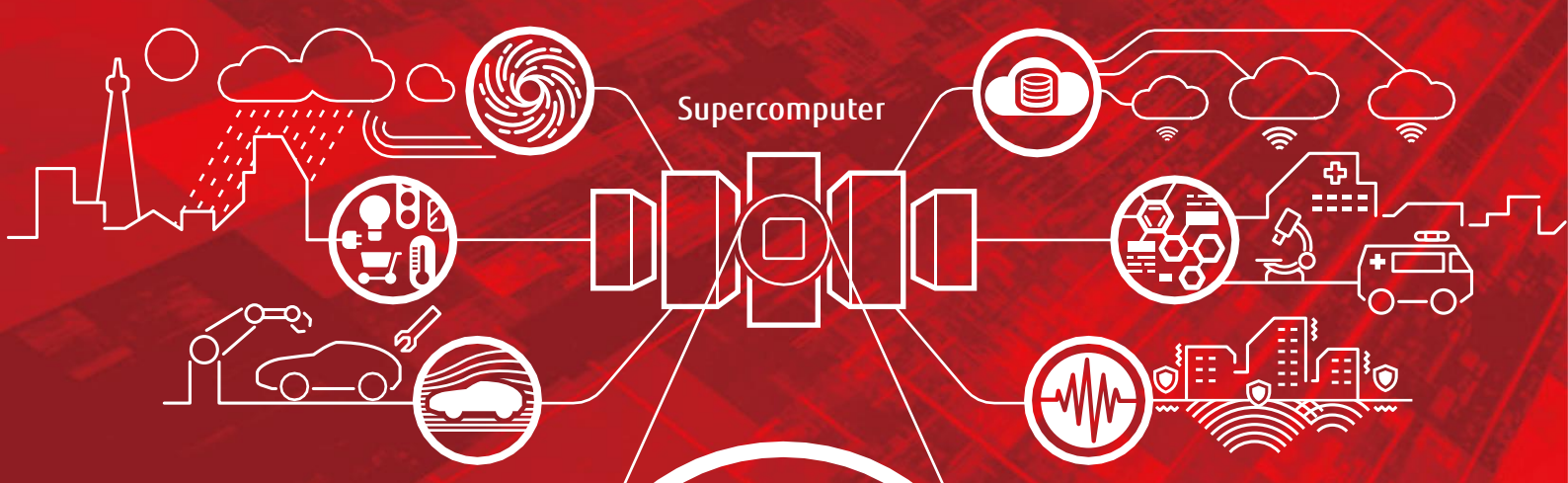
Fujitsu Processor A64FX

The Best CPU for HPC

FUJITSU

Accelerating Digital Transformation to Trusted Society



3 Keys to A64FX

A64FX is in the world's top-level supercomputer **Fugaku**

World-leading Performance | **Evolved Power Efficiency** | **Extensive Data Integrity**

World-leading Performance

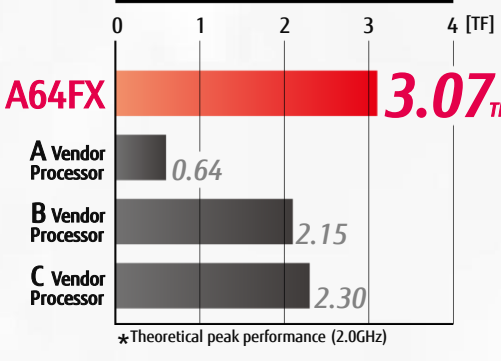
World-first combination of HBM2 and SVE 512-bit wide SIMD (No.1 of TOP500,HPCG,HPL-AI,Graph500,2021.11)

High throughput from

High memory bandwidth + **SVE 512-bit wide SIMD** + **Many core architecture**

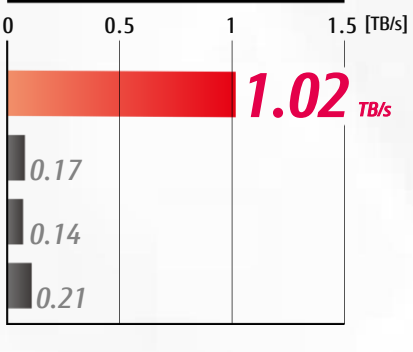
A64FX is specifically designed for high performance in HPC

Peak Flops

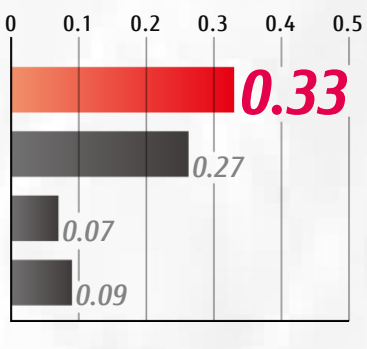


*Theoretical peak performance (2.0GHz)

Peak Memory B/W

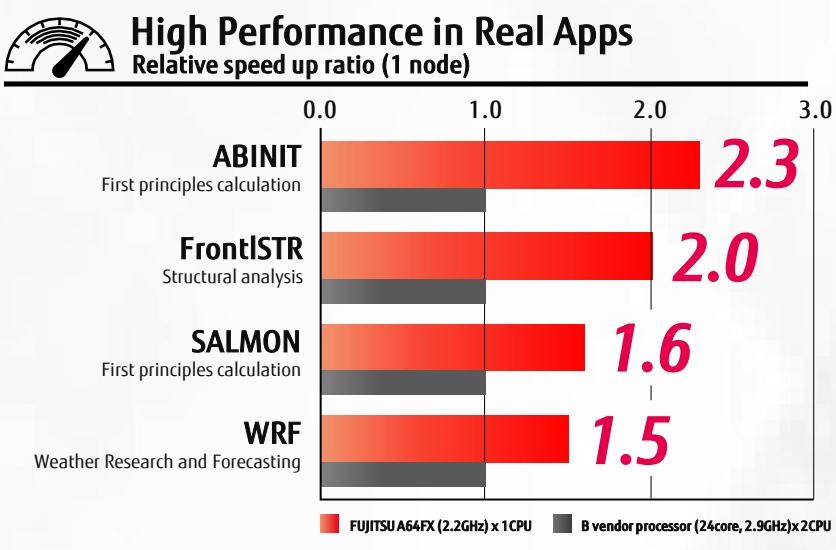


BF Ratio



High Performance in Real Apps

Relative speed up ratio (1 node)



Measured on FUJITSU Supercomputer PRIMEHPC FX1000, A64FX 2.2GHz

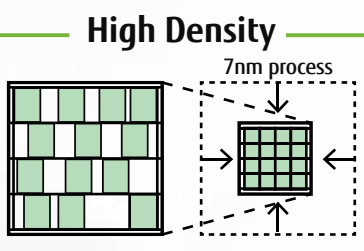
For more information on other apps, please contact Fujitsu.

Evolved Power Efficiency

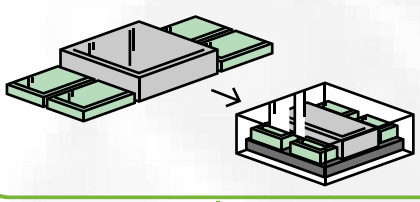
Fujitsu's circuit technology and power management

High Density

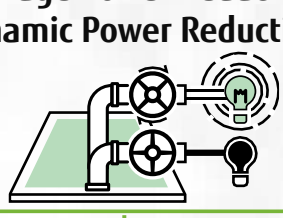
7nm process



2.5D Packaging Technology



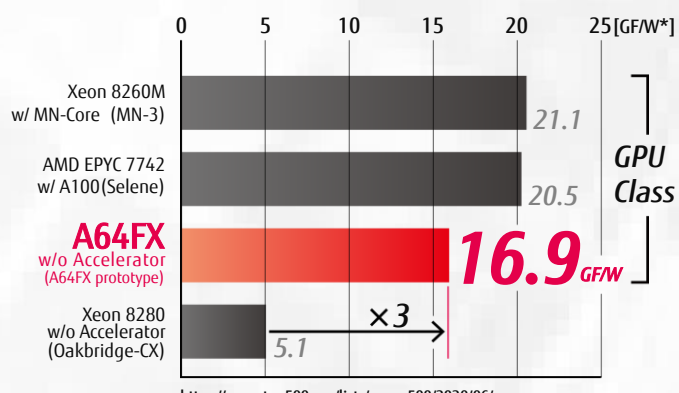
・Leakage Power Reduction
・Dynamic Power Reduction



A64FX is the power efficient design for HPC

Power Performance

Green500 (June 2020)

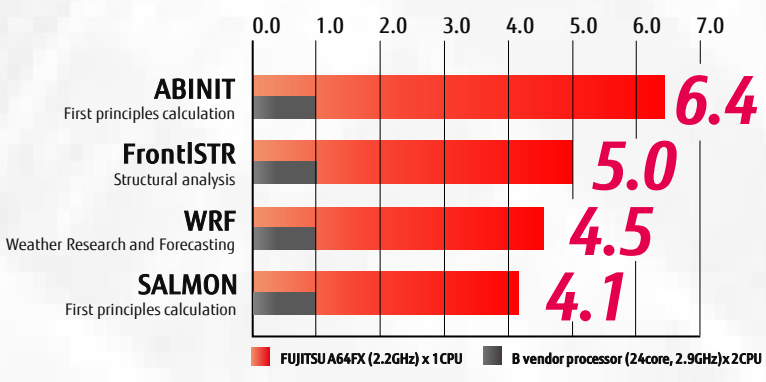


https://www.top500.org/lists/green500/2020/06/

*GFlops per watt

High Performance in Real Apps

Relative power efficiency ratio



Measured on FUJITSU Supercomputer PRIMEHPC FX1000, A64FX 2.2GHz

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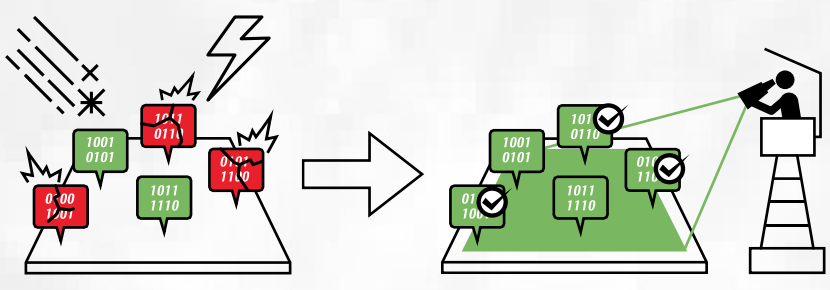
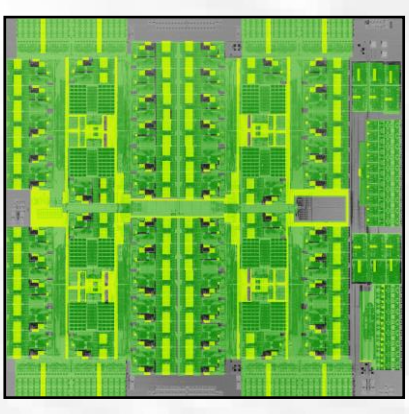
Extensive Data Integrity

Unique 128,400 error checkers to correct or detect all 1-bit errors on a chip

~128,400 error checkers in total





■ A64FX Applicable Area

Academia

- Nano-science
- Particle physics

Government

- Long-range forecasting
- Disaster prevention

Oil and Gas

- Exploration and production
- Seismic analysis

Manufacturing

- Structural Analysis
- Aerodynamics
- Computational fluid dynamics
- Crash test simulations

■ Systems Powered by A64FX

Supercomputer Fugaku

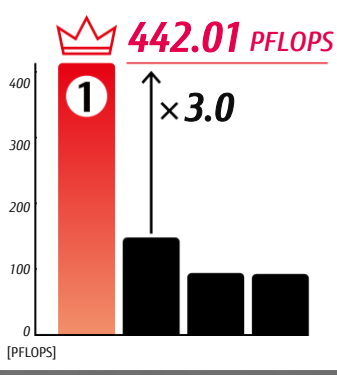
FUJITSU Supercomputer
PRIMEHPC FX1000
PRIMEHPC FX700

■ Awards

Fugaku Retains Title as World's Fastest Supercomputer for fourth consecutive term (November 2021)

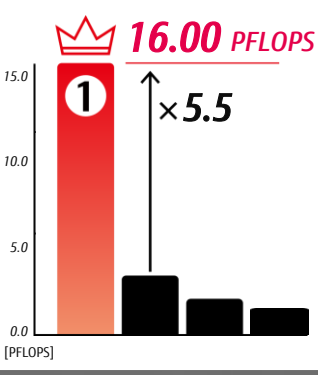
TOP500

442.01 PFLOPS



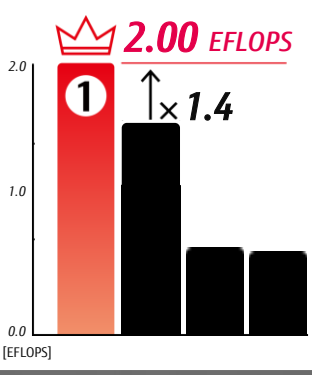
HPCG

16.00 PFLOPS



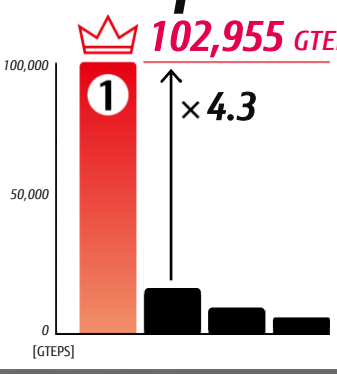
HPL-AI

2.00 EFLOPS



Graph500

102,955 GTEPS



■ Learn More

https://www.fujitsu.com/supercomputer/a64fx/