

# PRIMEHPC FX1000/FX700

A64FX powered new two models fulfill various user requirements

# Fujitsu Supercomputer PRIMEHPC

A64FX powered new two models fulfill various user requirements



PRIMEHPC FX10



PRIMEHPC FX100



PRIMEHPC FX1000 / FX700

New

New PRIMEHPC Lineup



# PRIMEHPC FX1000

Supercomputer optimized for large scale computing

High Performance

High Scalability

High Density

A64FX processor  
384 nodes/Rack  
Tofu Interconnect D  
Water Cooling  
Fujitsu Software Stack  
for Supercomputing

# PRIMEHPC FX700

Supercomputer based on  
standard technologies

Ease to use

Installation

A64FX Processor  
8 nodes/2U Rackmount  
InfiniBand  
Air Cooling  
Utilize ISV and Open Source Software Stack

# PRIMEHPC FX1000



## ■ High-performance Arm HPC server based on Fugaku

SVE	ISA extension for HPC
HBM2	High memory bandwidth
FP16	Enhancement for AI workloads

## ■ High scalability

- Tofu Interconnect D supports over 100,000 nodes

## ■ High-density mounting

- Over 1 PFLOPS per 1 rack (100x compute density over the K computer)
- Efficient heat removal by water cooling



Shelf (48 CPUs)



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FUJITSU

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# PRIMEHPC FX700

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Ease to use

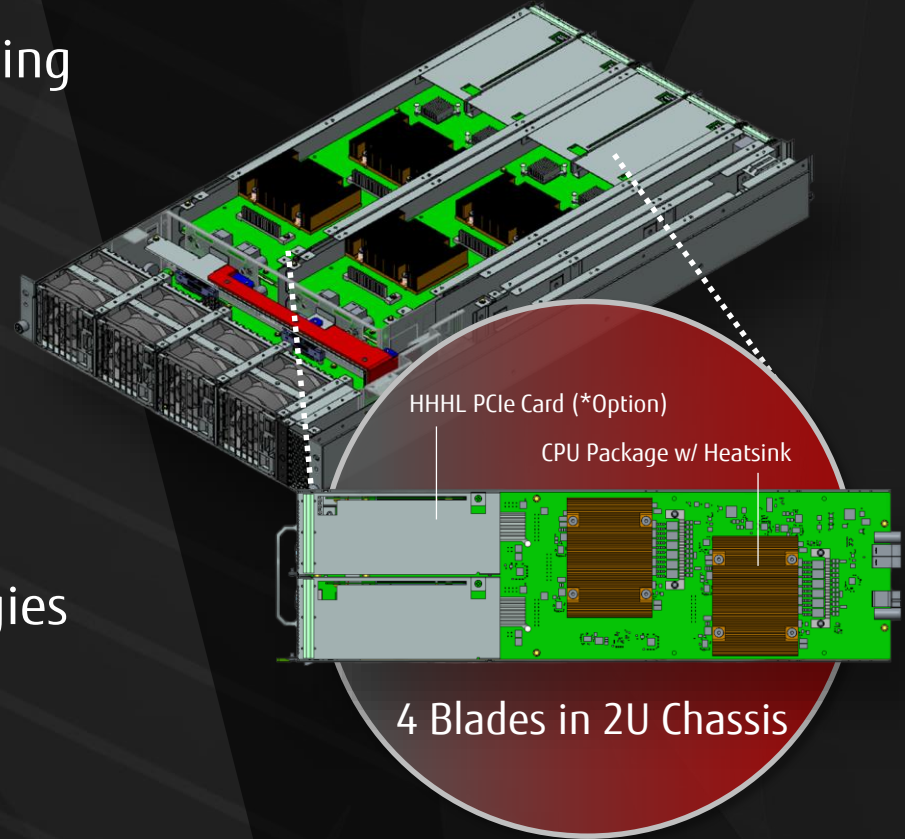
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# PRIMEHPC FX700



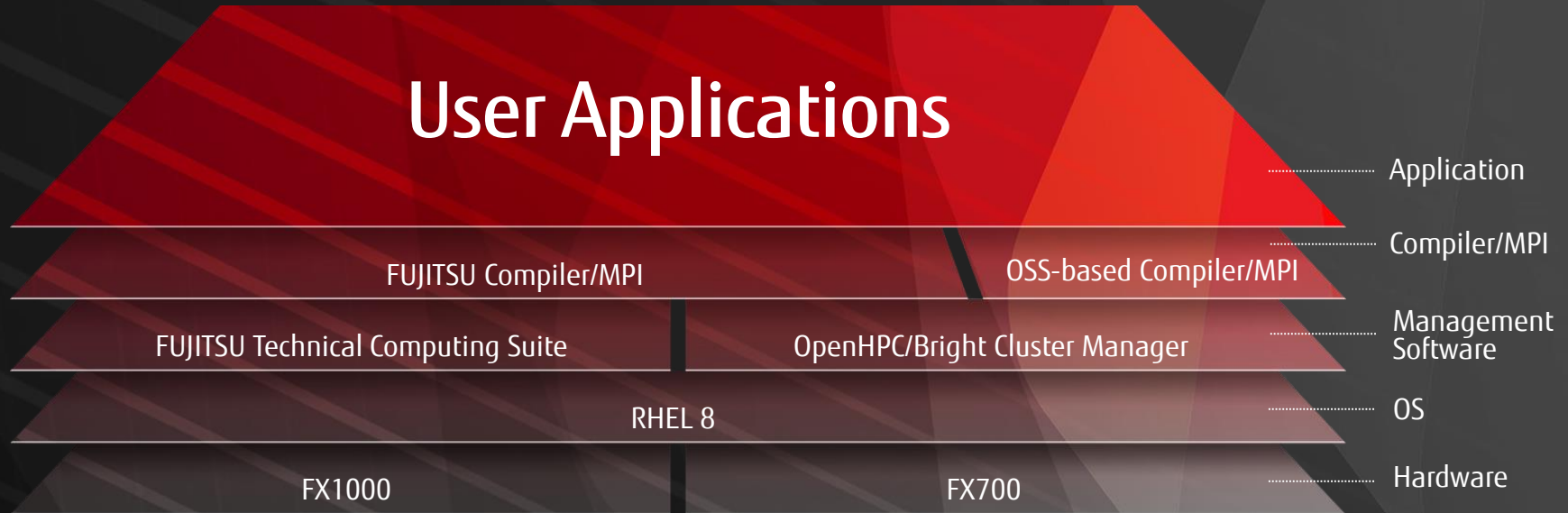
- High-performance Arm server featuring the A64FX CPU
  - Same CPU as Fugaku and FX1000
- Easy deployment and flexible configuration
  - Air-cooled, 2U rack-mountable chassis
  - From 2 to 8 CPUs per chassis
- Utilize open and standard technologies
  - InfiniBand EDR
  - RHEL 8, OpenHPC, Bright Cluster Manager, etc.



# Software Stack



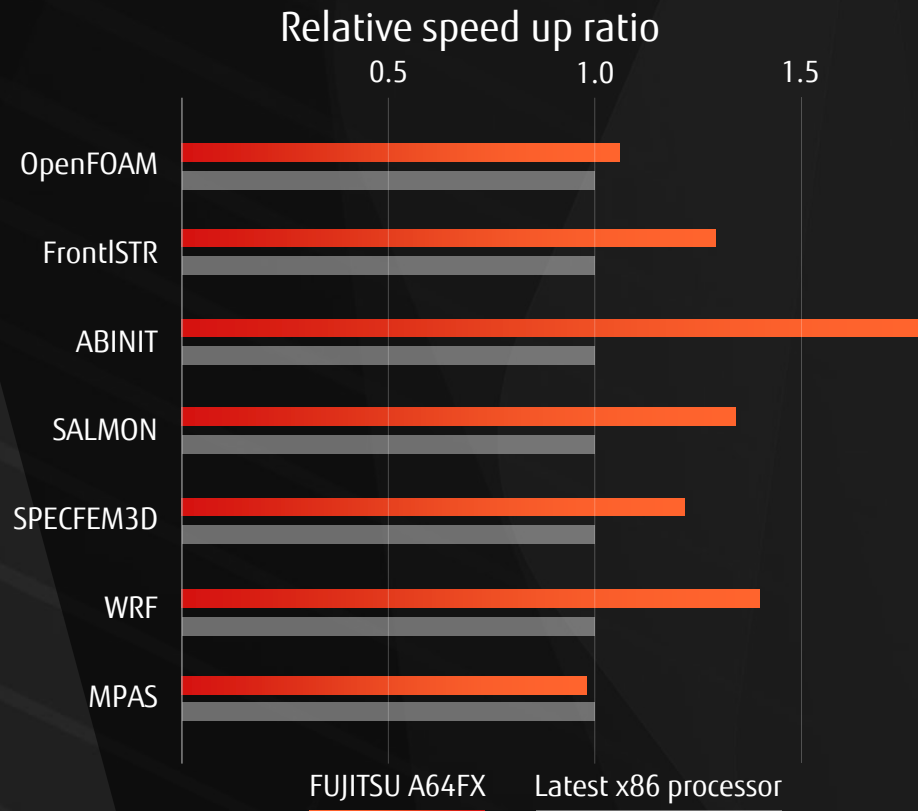
Fujitsu software stack provides powerful support for the A64FX CPU and open software stack is also available for wide range of applications



# High Performance on Real Applications

The performance on 1 node is evaluated for seven OSS applications

- Measured on PRIMEHPC FX1000, A64FX 2.2GHz
- Up to 1.8x faster over latest x86 processor (24 core, 2.9GHz) x2
- High memory B/W and long SIMD length work effectively with these applications

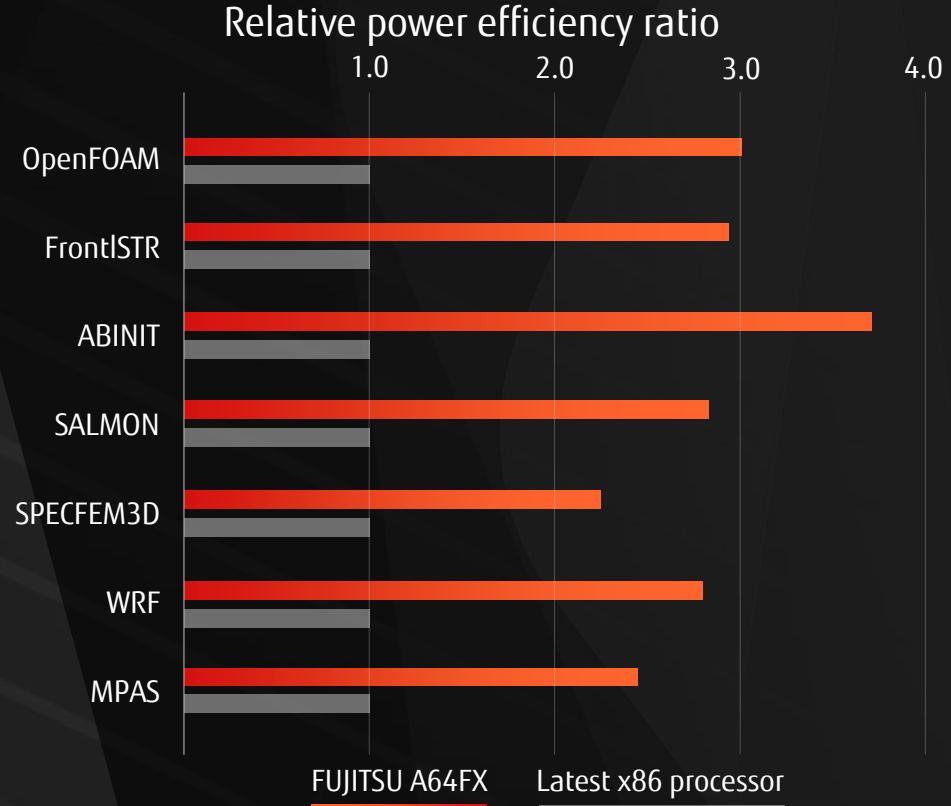




# High Performance in Power Efficiency

The power efficiency on 1 node is evaluated for seven OSS applications

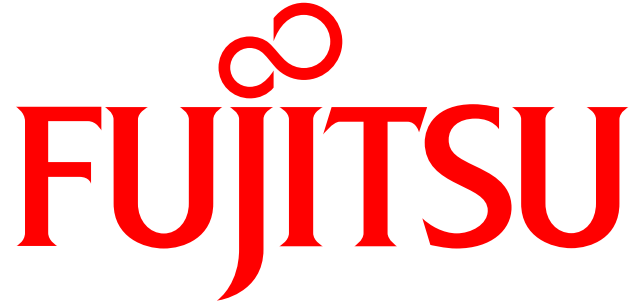
- Measured on PRIMEHPC FX1000, A64FX 2.2GHz
- Up to 3.7x more efficient over latest x86 processor (24 core, 2.9GHz) x2
- High power efficiency is achieved by energy-conscious design and implementation



# Specifications



		FX1000	FX700
CPU	Name	A64FX	A64FX
	ISA	Armv8.2-A SVE	Armv8.2-A SVE
	Cores	48 computation cores + 2-4 assistant cores	48 computation cores
	Frequency	2.2 GHz	2.0 GHz / 1.8 GHz
	Theoretical peak performance	3.3792 TFLOPS	3.072 TFLOPS / 2.7648 TFLOPS
Node	CPUs	1 CPU	1 CPU
	Memory capacity	32 GiB (HBM2)	32 GiB (HBM2)
	Memory bandwidth	1,024 GB/s	1,024 GB/s
	Interconnect	Tofu Interconnect D	InfiniBand EDR
Enclosure	Form factor	Dedicated rack	2U rack-mountable chassis
	Node per rack or chassis	384 node/rack	8 node/chassis
	Cooling method	Water cooling	Air cooling



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