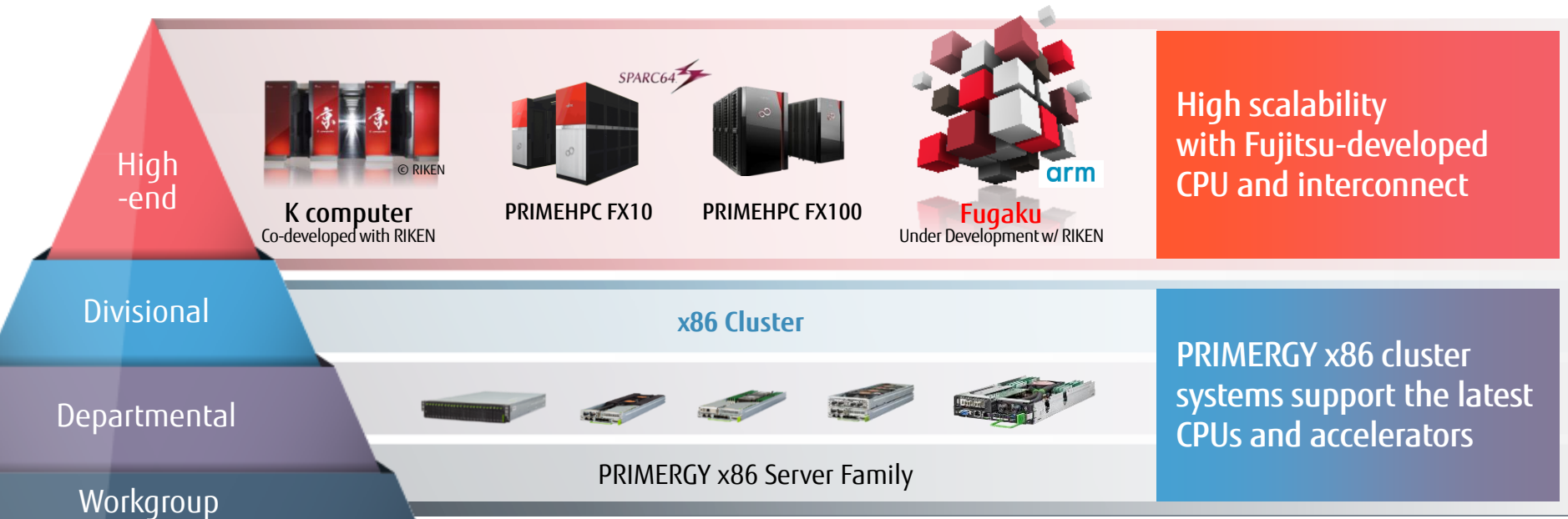# Fujitsu HPC Solutions to Meet Customers' Demands

- Supercomputers, both Fujitsu-developed CPUs and x86
- Single system image operation with Fujitsu system software
- High application performance, availability, and reliability

High-end

SPARC64

arm

K computer
Co-developed with RIKEN

PRIMEHPC FX10

PRIMEHPC FX100

Fugaku
Under Development w/ RIKEN

© RIKEN

High scalability with Fujitsu-developed CPU and interconnect

Divisional

x86 Cluster

Departmental

Workgroup

PRIMERGY x86 Server Family

PRIMERGY x86 cluster systems support the latest CPUs and accelerators

Supercomputer "**Fugaku**", Formerly Known as Post-K

FUJITSU

| Focus	Approach
Application performance	Co-design w/ application developers and Fujitsu-designed CPU core w/ high memory bandwidth utilizing HBM2
Power efficiency	Leading-edge Si-technology, Fujitsu's proven low power & high performance logic design, and power-controlling knobs
Usability	Arm®v8-A ISA with Scalable Vector Extension ("SVE"), and Arm standard Linux

A64FX chip performance measurements & architectural contributions

Performance increase normalized by SPARC64 XIfx

512-bit SIMD	Memory BW	Combined gather	L1$ BW	L2$ BW	INT8 partial dot product

DGEMM	STREAM Triad	Fluid dynamics	Atomosphere	Seismic	Conv. FP32	Conv. INT8
2.5TF	840GB/s	3.0x	2.8x	3.4x	2.5x	9.4x
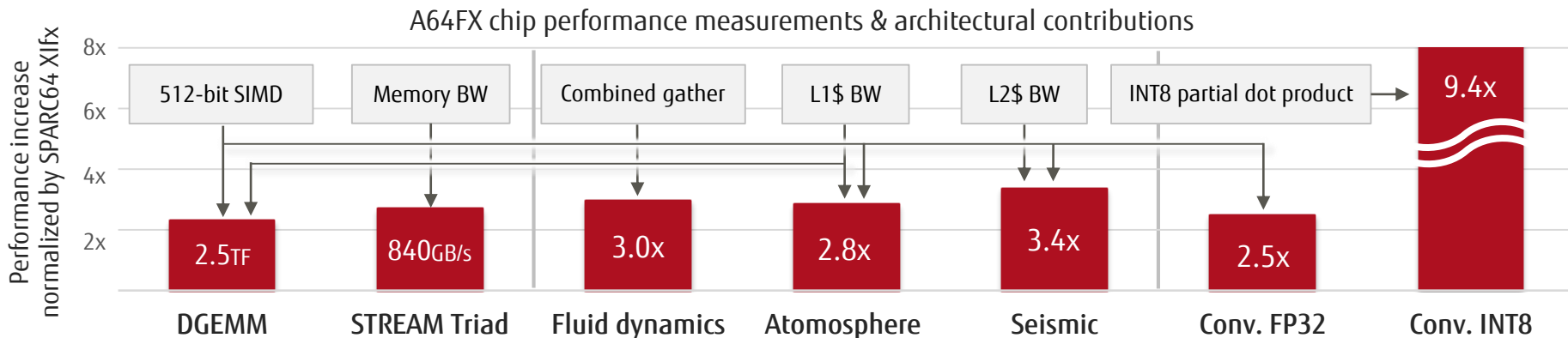
"Fugaku" and Fujitsu Commercial Units for an Evolving HPC

FUJITSU

- "Fugaku" is designed and runs applications at the highest level performance to be worthy of the name

- Arm HPC ecosystem and expanding apps portfolio are likened to the broad gradual slopes of Mt. Fuji

Image of commercial unit from Fujitsu

Fujitsu designed 48-core CPU

A64FX™
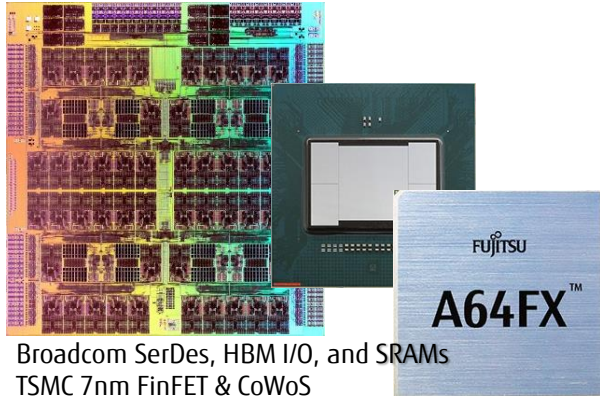
Broadcom SerDes, HBM I/O, and SRAMs
TSMC 7nm FinFET & CoWoS

- Fujitsu began production of "Fugaku", also advances productization of commercial units based on the supercomputer technology