Enabling Effective and Easy to Access Simulation

Germany LS-DYNA Conference 2016

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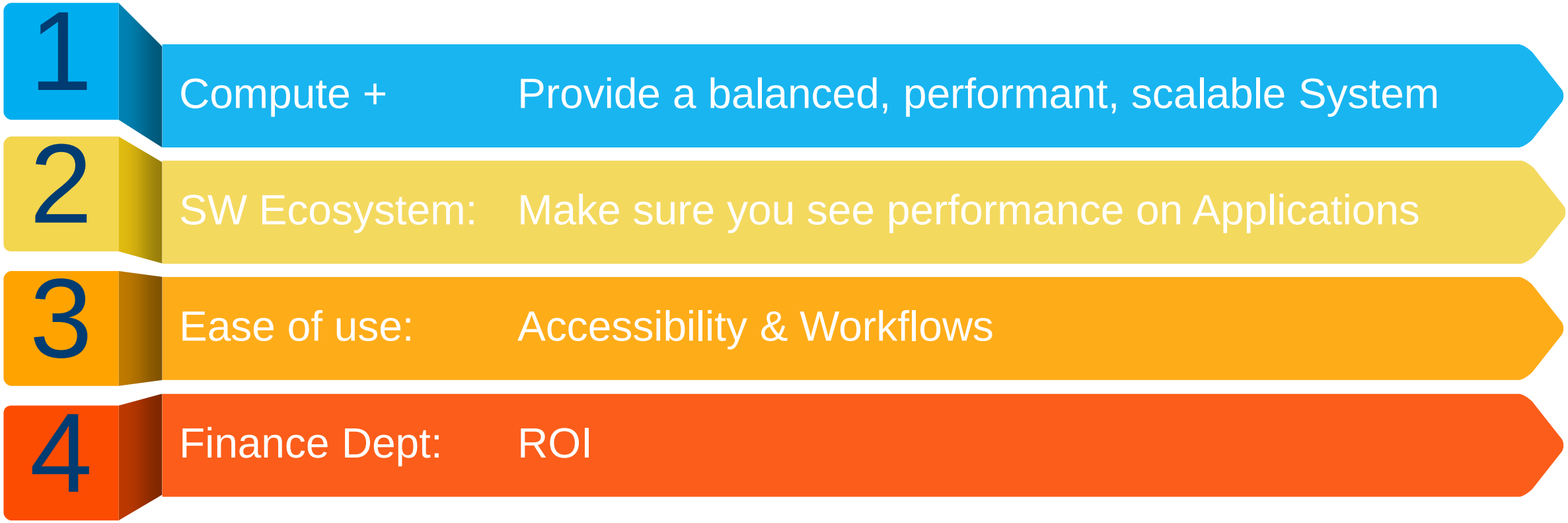
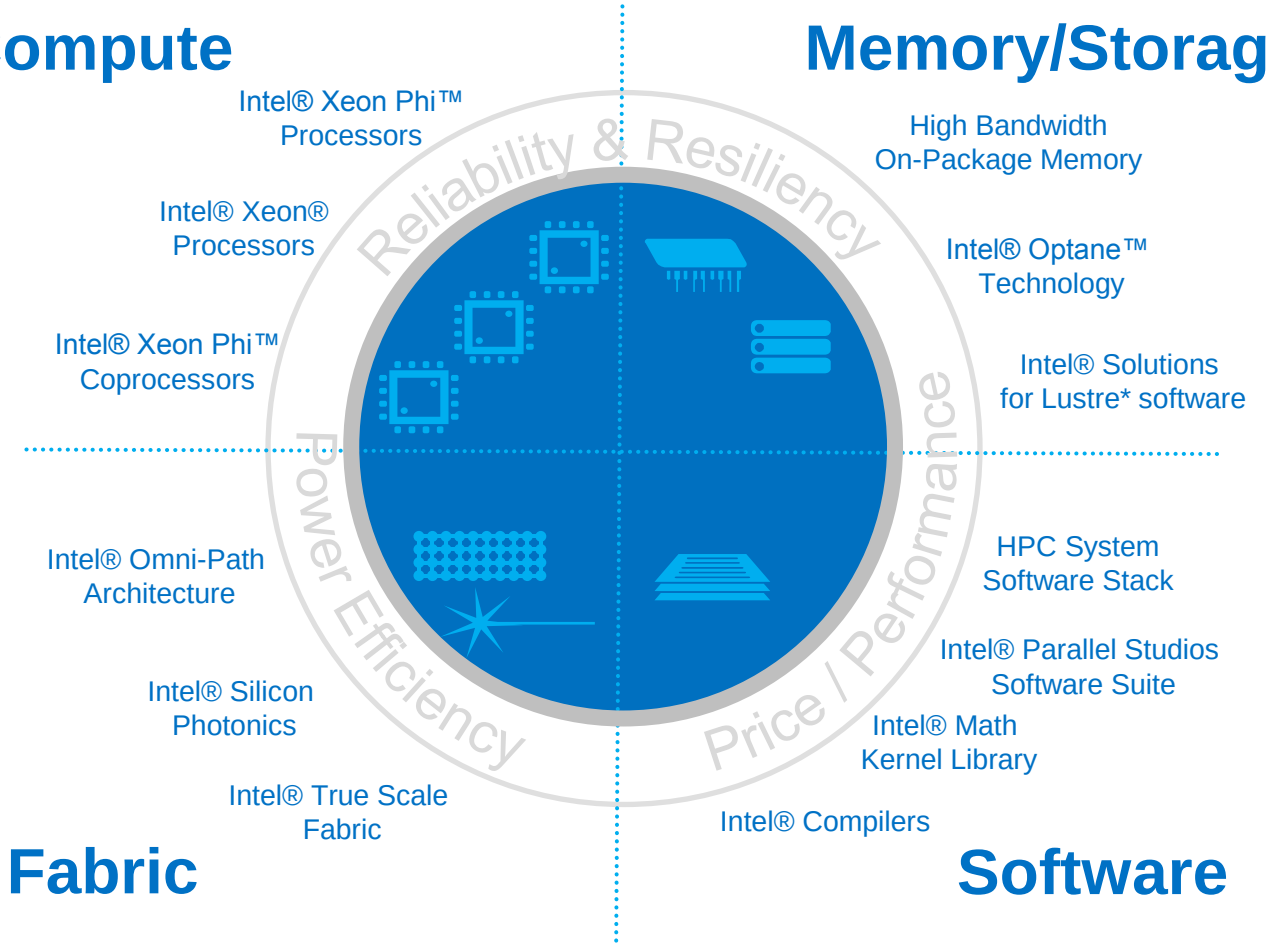
What is needed for YOUR success with simulation



Compute+: Intel® Scalable System Framework

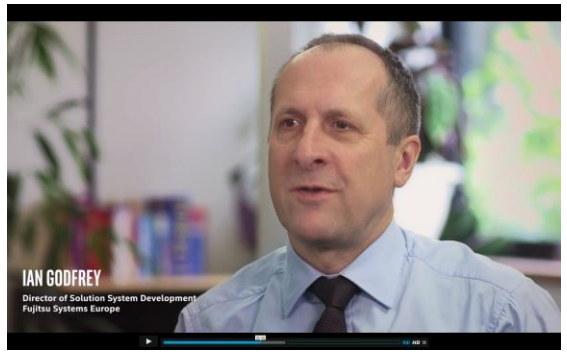


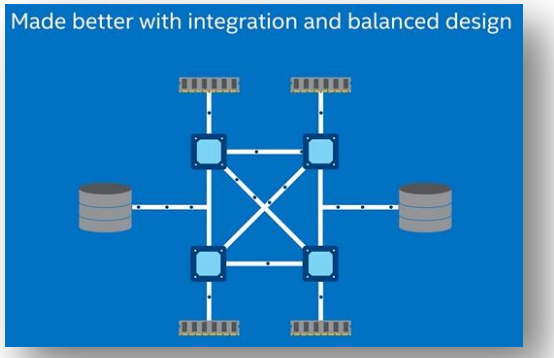
- Overcomes common obstacles in HPC concerning memory, fabric, storage & power

- Enables users to achieve performance with:
  - ✓Flexibility
  - ✓Scalability
  - ✓Balance
  - ✓Portability

Ease of USE: Solutions Ecosystem- hpc simplified

- Intel® HPC Orchestrator simplifies the installation, management, and ongoing maintenance of a high-performance computing system
- Reducing the amount of integration and validation effort required for the HPC system software stack.
- Intel® HPC Orchestrator can help accelerate your time to results and value in your HPC initiatives.





To see the full video, please follow the link: https://vimeopro.com/cmdvideogroup/hpc-orchestrator-v2

So how about the ROI?

Intel® Xeon® Processor E5-2600 v4 Product Family

Livermore Software Tech Corp*

LS-DYNA*

"We are excited about LS-DYNA performance on the new Intel® Xeon® processor E5-2697 v4. On the Explicit workload, our benchmark testing showed up to a 32% speed up in run times, leading to faster and more productive results for our LS-DYNA users. This performance will accelerate crash results in the automotive design phase, reducing time to market."[1]

***Nathan A. Hallquist* – Systems Software Specialist, LSTC**

- Intel® AVX2, Intel® Fast Memory Access (Intel® FMA), and better memory bandwidth are delivering significant speed up in element processing and contact algorithms which are very floating point intensive.
- LS-DYNA is the leading product in the crash simulation market. It is used by the automobile, aerospace, construction, military, manufacturing, and bioengineering industries in worldwide.

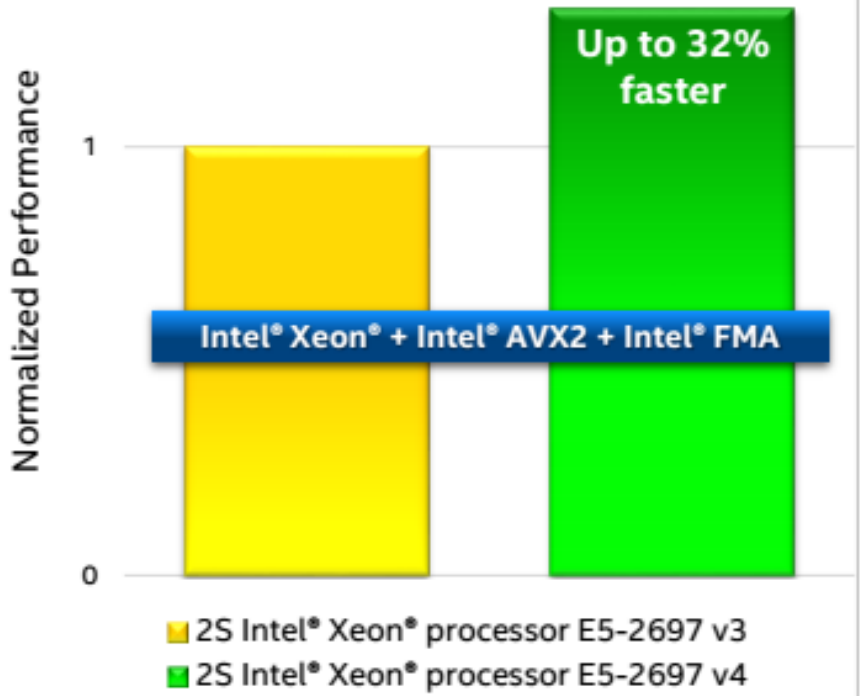
Accelerated crash results in the design phase reduces time-to-market for LS-DYNA users

LSTC Livermore Software Technology Corporation

www.lstc.com

Technical Computing

LSTC LS-DYNA increased performance by up to 1.32X with the 2S Intel® Xeon® processor E5-2697 v4



Workload: Topcrunch.org 3-cars model crash simulation.

1 - Testing conducted on LSTC* software comparing 2S Intel® Xeon® Processor E5-2697 v4 to 2S Intel® Xeon® Processor E5-2697 v3. Testing done by Intel. For complete testing configuration details, SEE SLIDE 103.
Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit http://www.intel.com/performance.

ROI: Advantages

Engineers

- Easy access to HPC and high end simulation
- Instant acceleration in development
- Better design capabilities
- Improving functionality

Managers

- Advantage in innovation
- Time-to-market
- Product quality
- Efficiency

Get more information

- Livermore Software Technology Corporation (LSTC). **www.lstc.com**
- Intel® Scalable System Framework. **www.intel.com/content/www/us/en/high-performance-computing/product-solutions.html**
- Intel® Xeon® Processor E5-2600 v4 Product Family Software Solutions. **www.intel.com/content/www/us/en/processors/xeon/xeon-e5-v4-software-solutions.html**

FUJITSU

shaping tomorrow with you

14. LS-DYNA Forum, Oktober 2016, Bamberg

Integrated HPC Solutions with Simplicity and Expertise

Eric Schnepf

Senior Sales Specialist HPC

Fujitsu Technology Solutions GmbH

PRIMEFLEX for HPC
Integrated HPC Solutions

Application Appliance	Reference Configuration		
Integration & Support services			
Assembly, Test & Delivery			
User workplace	HPC Gateway		
	HPC Gateway Add-ons		
Management software	Batch	Operation	Administration
System design	Head node	Compute nodes	Storage
	Interconnect	Rack & Power	Graphics

HPC Simplicity & Expertise

HPC Simplicity & Expertise

HPC Platform

Validated systems

- Optimal configuration
- Certified operation
- HPC software stack

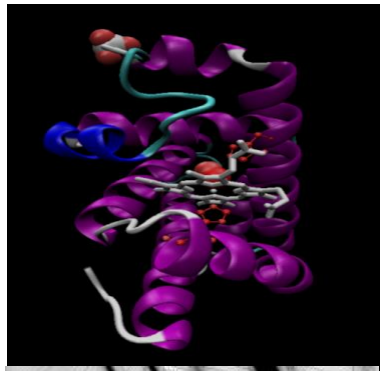
HPC Gateway

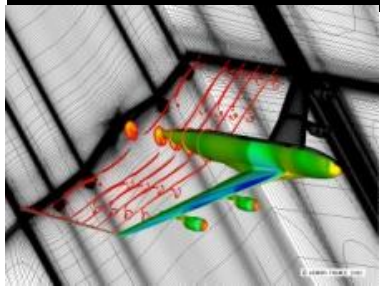
Adapted for HPC

- Application on-boarding
- Pre-defined workflow catalogue
- Collaboration & teamwork

Built-in expertise

HPC Simplicity & Expertise





Broader access

Fujitsu PRIMERGY Scale-out Systems

Platform for HPC, hosting, and hyper-converged stacks

- More computing power in less space
- Lower costs for energy due to shared power & cooling
- Optional liquid cooling for lower cooling costs and higher density

CX400

Compact server nodes with high power efficiency to realize large scale-out solutions for HPC, hosting, and hyper-converged computing at lower overall costs

Chassis

CX2550

Dual socket server node in a highly condensed half-wide, 1U form factor

CX2570

Dual socket server node for ambitious HPC, analytics and visualization solutions

Server Nodes

CX600

HPC optimized scale-out server platform based on Intel Xeon Phi x200 (“Knights Landing”) technology

Chassis

CX1640

Single socket Xeon Phi server node for significant performance boost in parallel-processing

Server Node

Fujitsu PRIMERGY CX600 M1

The new platform for highly parallel computing

The FUJITSU Server PRIMERGY CX600 M1 is the perfect choice for highly parallel applications in the area of scientific research, product development and business intelligence. Up to eight server nodes per 2U and Intel® Xeon Phi™ Processors make for new levels of compute density.

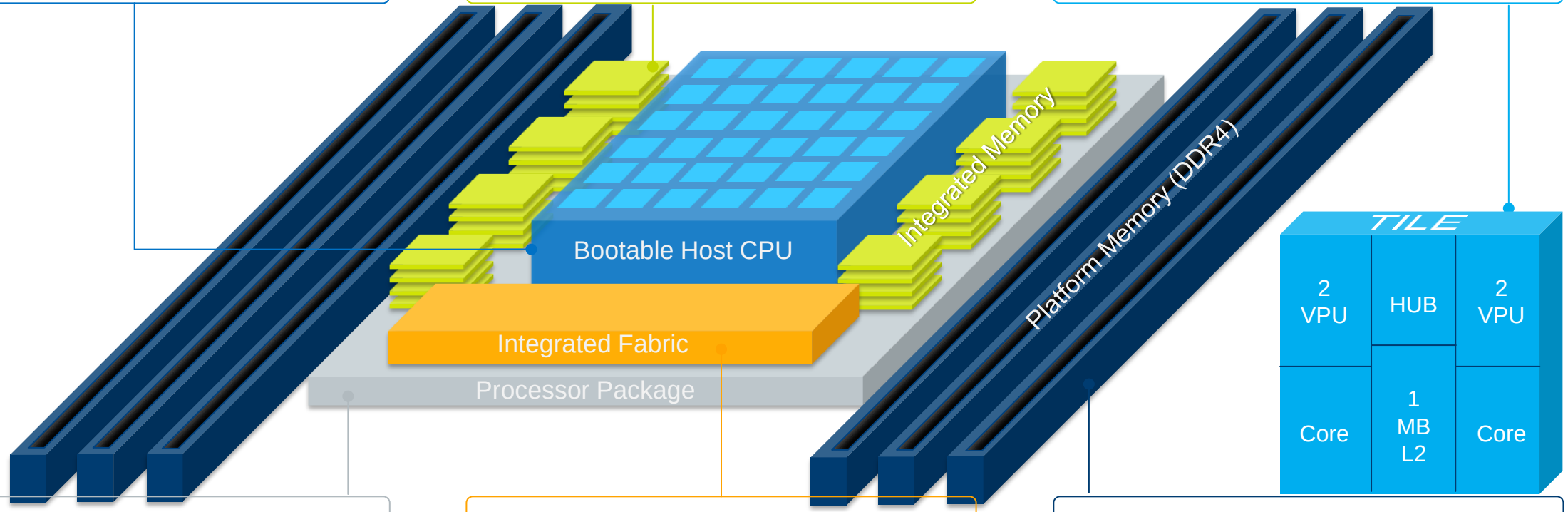
Intel® Xeon Phi™ Processor

A Highly-Parallel CPU

No PCIe Bottleneck
Bootable host processor

Topple Memory Wall
Integrated 16GB memory

Run Any x86 Workload
Intel® Xeon® processor binary-compatible

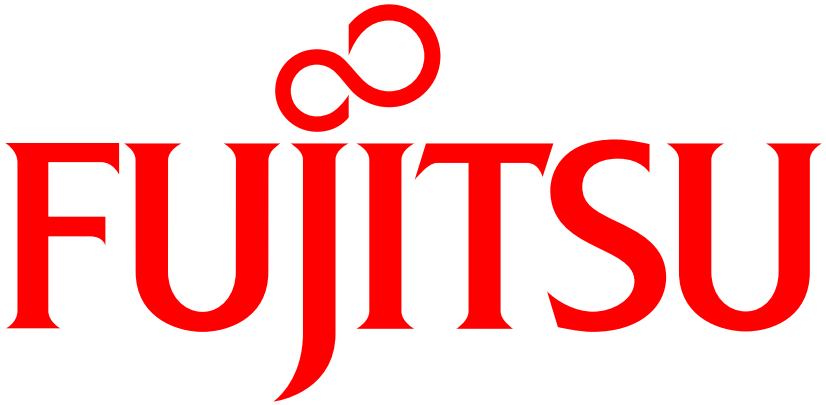


Scale Out Seamlessly
Efficient scaling like Intel® Xeon® processors

Reduce Cost
Dual-port Intel® Omni-Path Fabric

Raise Memory Ceiling
Platform memory up to 384 GB (DDR4)

[1]Reduced cost based on Intel internal estimate comparing cost of discrete networking components with the integrated fabric solution



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