INNOVATION ACCELERATION FOR
SERVER, STORAGE, AND NETWORK
SOLUTIONS

ENGINEERING THE NEXT DATA CENTER BREAKTHROUGH: PROGRAMMABLE SILICON PLATFORMS THAT BRING HIGHER VALUE INTO THE CLOUD

⟩ Xilinx Solution Highlights

- Programmable, scalable silicon optimized for addressing technology gaps and keeping up with evolving standards

- High-capacity devices, driving higher levels of system integration while reducing system power and lowering bill of materials (BOM) costs

- Powerful development platforms, design tools, and services, raising overall levels of productivity for research and development (R&D) projects

- Cost effectiveness for low- to high-volume applications

- Design services and architectural collaboration for customized or turn-key solutions

Year after year, the rapid pace of technology change in the data center is pushing solution providers to shorten time to market and making it hard for IT to meet the rising expectations of their end users. Today's tech-savvy consumers of IT services want it all—mobility, instant access to information, boundary-less collaboration—and management wants it all for less.

Xilinx silicon advancements provide data center innovators with the freedom to build more value and cost effectiveness into the latest cloud environments. The power of programmability, combined with the inherent parallelism of the Xilinx FPGA architecture, accelerates processing and throughput for new classes of servers, storage, and network solutions. With the freedom to choose from an extensive portfolio of productivity-boosting IP, design tools, and design services, R&D teams can stay ahead of the competition and maximize success with the latest generation of programmable devices.

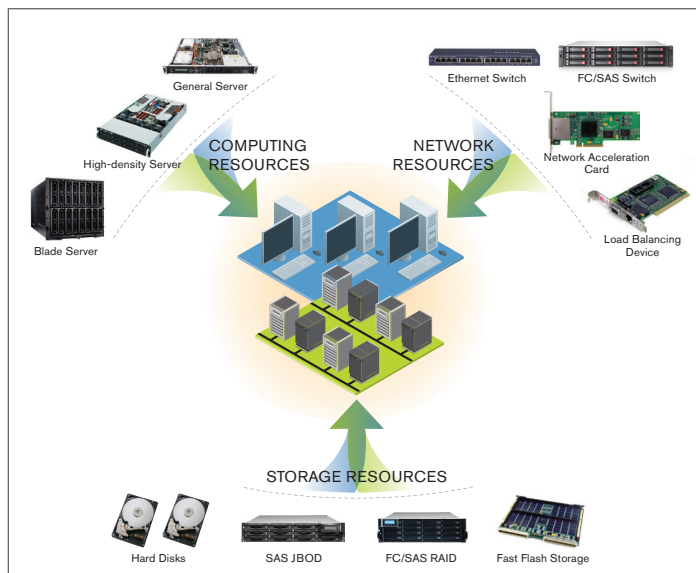### Cloud-Ready Data Center Solutions

Consolidation and virtualization are at the heart of next-generation data center architectures. Xilinx 28nm devices make it possible for solution designers to achieve very high levels of functional integration, maximize performance and value, and lower costs and power consumption. Fewer chips mean fewer interconnects, for lower system latencies. The built-in industry-leading Xilinx I/O optimizes throughput and eliminates bottlenecks throughout the compute, storage, and network fabric of the data center.

Xilinx FPGAs, with the power of programmability, simultaneously enable differentiation and extend the life of a design. Developers can rapidly adapt to changing requirements, introduce key new features, and comply with the latest data center standards such as those relating to solid-state drives (SSD storage devices), Fiber Channel over Ethernet (FCoE), and processor-to-processor interconnects. The on-chip functionality, consolidation, and integration also enable new ways of solving problems, and provide opportunities to increase the levels of innovation built into products.

XILINX®

XILINX DATA CENTER INNOVATION AND SOLUTION ENABLERS

SEGMENTS	INNOVATION EXAMPLES	XILINX ENABLERS
Servers	QuikPath Interconnect (QPI) processor-to-processor interfaces	Low-latency, high-bandwidth devices and support for QPI protocol
Networks	I/O virtualization switch (24+ ports aggregated to one switch using PCI Express to the server and Ethernet port to the network)	Ability to increase bandwidth without additional hardware investment; cost comparable to ASSPs
Storage	Interface to flash memory and bridge to traditional serial storage protocols (SATA, SAS, PCI Express)	Rapid adaptation to evolving flash standards, especially compared to ASIC fabrication delays; development of custom algorithms
Appliances	80G traffic management network interface cards	Silicon solution (no ASSP solution available); high-performance I/O and low power consumption

DATA CENTER TOPOLOGY

General Server

Ethernet Switch   FC/SAS Switch

High-density Server

COMPUTING RESOURCES   NETWORK RESOURCES

Network Acceleration Card

Blade Server

Load Balancing Device

STORAGE RESOURCES

Hard Disks   SAS JBOD   FC/SAS RAID   Fast Flash Storage

From Devices to Solutions

The breadth of the Xilinx portfolio gives developers cost-effective choices, with a scalable, optimized architecture connecting device families and providing a roadmap to future advancements. Xilinx and its ecosystem partners also offer a range of design tools and design services, including collaborations with system architects or the delivery of turn-key solutions tailored to the customer's portfolio.

Take the NEXT STEP

Contact a local Xilinx representative to learn more, or visit **www.xilinx.com/datacenter**.

For details about the latest generation of Xilinx devices., please visit: **www.xilinx.com**.

Corporate Headquarters

Xilinx, Inc.
2100 Logic Drive
San Jose, CA 95124
USA
Tel: 408-559-7778
www.xilinx.com

Europe

Xilinx Europe
One Logic Drive
Citywest Business Campus
Saggart, County Dublin
Ireland
Tel: +353-1-464-0311
www.xilinx.com

Japan

Xilinx K.K.
Art Village Osaki Central Tower 4F
1-2-2 Osaki, Shinagawa-ku
Tokyo 141-0032 Japan
Tel: +81-3-6744-7777
japan.xilinx.com

Asia Pacific Pte. Ltd.

Xilinx, Asia Pacific
5 Changi Business Park
Singapore 486040
Tel: +65-6407-3000
www.xilinx.com

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