March 12, 2019

# Marvell Revolutionizes Edge Data Center Switching

## Prestera CX 8500 Family Enables Composable Infrastructure Leveraging Leading-Edge 400 Gbps Network Interfaces, Ushering in a New Era in Connected Intelligence, Edge Computing and 5G Applications

SANTA CLARA, Calif., March 12, 2019 /PRNewswire/ -- Marvell (NASDAQ:MRVL), a leader in infrastructure semiconductor solutions, today announced a breakthrough Ethernet switch solution portfolio, ranging from 2 to 12.8 Terabits per second (Tbps), designed for edge and private data centers utilizing composable infrastructure. The Marvell® Prestera® CX 8500 family is architected with a robust feature-set to meet the distinctive data center requirements needed to support the approaching tsunami of connected intelligence, edge computing and 5G applications.

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Connected intelligence is gaining momentum and evolving at an astonishing rate. An ever-expanding network of connected cars, 5G wireless base stations, smart cities, robotic factories and tens of billions of IoT devices will commensurately generate an enormous amount of data. Meanwhile, artificial intelligence and machine learning is fostering the need for data and services to be processed and stored as close to the edge of the network rather than at mega-scale cloud data centers. Utilizing composable infrastructure, a framework providing flexibility of compute, storage and networking resources managed by software, the traditional need to physically configure hardware can be eliminated. Data centers require

new technologies to support composable infrastructure as well as to enable reduced power consumption, low latency and smaller footprints.

The Marvell Prestera CX 8500 portfolio represents a revolutionary approach to data center architectures with features offering unprecedented workflow visibility, analytics and network simplification to support QoS, traffic management and scalability. To manage the network complexity of composable infrastructure, Marvell's new switch solutions utilize groundbreaking Storage Aware Flow Engine (SAFE) technology. SAFE facilitates virtual storage orchestration by providing greater insight into network flows with per flow visibility, advanced telemetry and comprehensive diagnostics that identify and resolve network congestion.

At the same time, integrating innovative Forwarding Architecture using Slices of Terabit Ethernet Routers (FASTER) technology, the Marvell Prestera CX 8500 family brings high radix cores and congestion-aware load balancing. By enabling virtualization for scalability, FASTER results in a reduction in the number of network layers and simplifies complexity, allowing edge data center networks to be collapsed into a single layer, ultimately lowering power, space and latency. Most importantly, FASTER can reduce overall network costs by more than 50%.

"Leveraging two decades of field proven deployments of Prestera technology with more than three billion Ethernet switch ports shipped as well as demonstrated leadership in Ethernet networking and storage technology, Marvell is revolutionizing data center switching," said Eric Hayes, senior vice president and general manager of the Networking Business Unit at Marvell Semiconductor, Inc. "Specifically, our newest Prestera CX solutions incorporate cutting-edge SAFE and FASTER technologies at bandwidths up to 12.8 Tbps, unleashing 32 ports of 400 Gbps or 256 ports of 50 Gbps network throughput. Marvell's innovations are enabling edge data centers to implement a higher performance network in a smaller footprint, with substantially lower power and cost."

**"**Marvell's new switch introduction strengthens the company's excellent infrastructure semiconductor solutions and delivers on the vision of the optimized modern data center," said Bob Wheeler, vice president and principal analyst for networking, The Linley Group. "This new solution from Marvell includes meaningful industry firsts that address the demand for composability of storage and compute functions in edge data centers."

The Marvell Prestera CX 8500 solutions, with 25 Gbps and 50 Gbps I/O options, provide at the system level greater than 35% lower power consumption and 25% more total buffer memory compared to traditional switching ICs.

KEY FEATURES

- Packet Processor:
  - 9th generation Ethernet switch pipeline deployed in enterprise, service provider and data center networks
  - Leverages stable 16nm high volume process node enabling quick time-to-market for customers
- Storage Aware Flow Engine (SAFE)
  - Support for elephant flow detection and packet prioritization using advanced proactive hardware probes that can predict congestion before the event occurs
  - Multi-lookup flow engine capable of using both TCAM and SRAM for lookups on more than 500K flows

    - RoCEv2 awareness provides flow level diagnostics to identify and resolve network congestion
- Forwarding Architecture using Slices of Terabit Ethernet Routers (FASTER)
    - Up to 8K queues with 3 level H-QoS and VoQ support for up to 1K ports
    - Congestion aware load balancing/dynamic load balancing
    - Supports scaling of ports from 1 Gbps through 400 Gbps
- Telemetry
    - Dedicated flow-based hardware engines with programmability addressing the latest telemetry packet formats and monitoring data exporting methods (INT, iOAM, TAM, etc.)

The Marvell Prestera CX family is supported by the CPSS (Core Prestera Software Suite) and maintains API compatibility with the Marvell Prestera DX and EX families. In addition, Marvell Prestera CX reference designs and white box systems are supported by a production-qualified version of Open Compute Project's open Networking Operating System SONiC. SONiC enables advanced data center features that are deployed in complex environments for intelligent data storage and machine learning. Marvell also partners with third party NOS suppliers such as Aricent®, enabling customers to accelerate their time to market.

The Marvell Prestera CX 8500 portfolio is currently sampling.

Marvell is showcasing its new Ethernet switching solutions along with its end-to-end compute, storage and networking solutions optimized for the modern data center at the OCP U.S. Summit 2019 in San Jose, Calif. (booth A5) March 14-15, 2019.

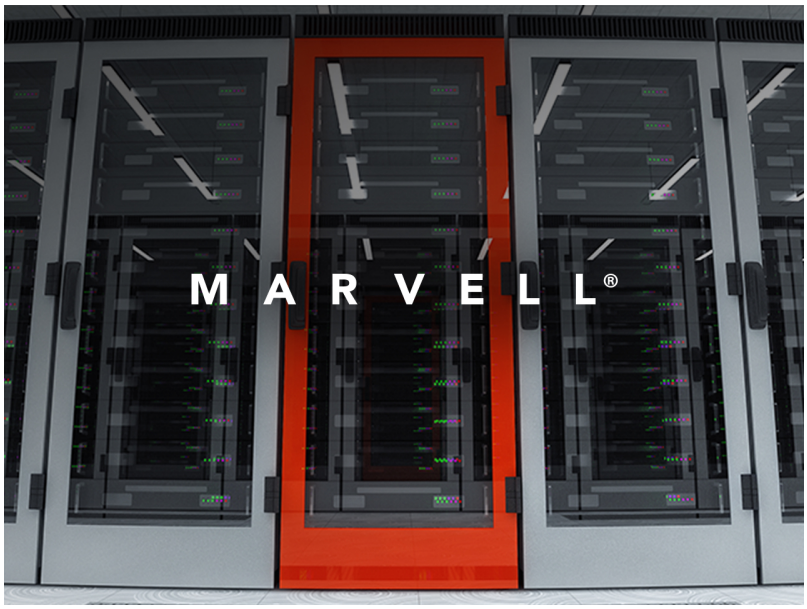
For further information on the Marvell Prestera CX 8500 suite, please visit https://www.marvell.com/switching/prestera-cx/98cx8500/.

**About Marvell**
Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, processing, networking, security and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell's semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial, and consumer markets. To learn more, visit: https://www.marvell.com/

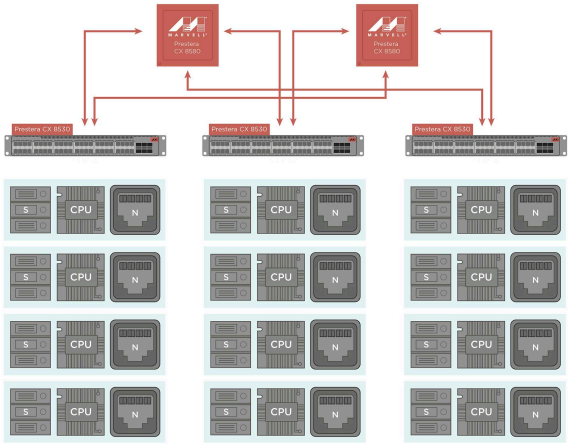
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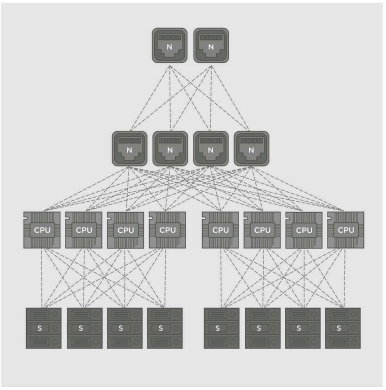
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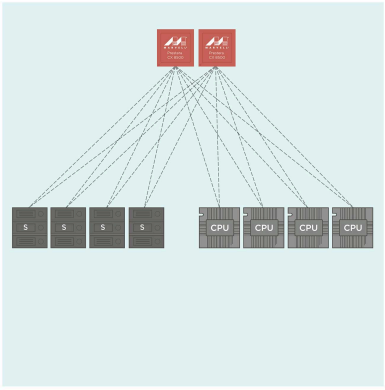

Storage Aware Flow Engine - "SAFE" Technology

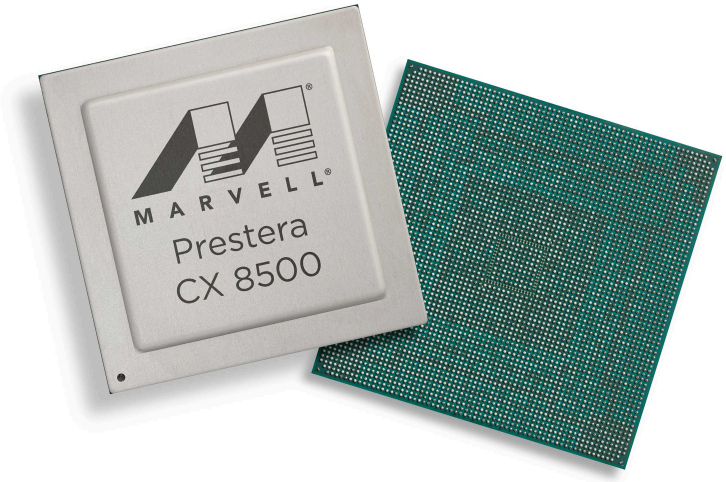



Legacy Networks




FASTER Enabled Network






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