

## Two New Marvell OCTEON 10 Processors Bring Server-Class Performance To Networking Devices

*Broadly available to OEMs, the Marvell® OCTEON® 10 CN102 and CN103 triple the performance of existing Marvell solutions while cutting power by 50%*

SANTA CLARA, Calif., Dec. 6, 2023 /PRNewswire/ -- [Marvell Technology, Inc.](#) (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions, is enabling networking equipment and firewall manufacturers achieve breakthrough levels of performance and efficiency with two new [OCTEON 10 data processing units \(DPUs\)](#), the OCTEON 10 CN102 and OCTEON 10 CN103.

The 5nm OCTEON CN102 and CN103, broadly available to OEMs for product design and pilot production, are optimized for data and control plane applications in routers, firewalls, 5G small cells, SD-WAN appliances, and control plane applications in top-of-rack switches and line card controllers. Several of the world's largest networking equipment manufacturers have already incorporated the OCTEON 10 CN102 into a number of product designs.

Containing up to eight Arm® Neoverse™ N2 cores, OCTEON 10 CN102 and CN103 deliver 3x the performance of Marvell current DPU solutions for devices while reducing power consumption by 50% to 25 watts<sup>1</sup>. Achieving SPEC CPU® (2017) integer rate (SPECint®) scores of 36.5, OCTEON 10 CN102 and CN103 are able to deliver nearly 1.5 SPECint points per watt<sup>2</sup>. The chips can serve as an offload DPU for host processors or as the primary processor in devices; advanced performance per watt also enables OEMs to design fanless systems to simplify systems and further reduce cost, maintenance and power consumption.

Announced in 2021, the OCTEON 10 DPU platform addresses the growing requirements for network, storage and security processing among cloud service providers, telecommunications carriers, enterprises, and other end users. OCTEON 10 DPUs share a common foundation of 5nm process technology, Arm Neoverse N2 processors, hardware accelerators, industry-leading I/O, and DDR5 support, among other technologies. Marvell varies the number of CPU cores, the optimal data paths, the type and number of hardware accelerators and other technologies to create different models optimized for specific applications, customer segments and performance requirements. OCTEON 10 CN102, for instance, is designed with a 10G SerDes to better suit entry-level equipment while CN103 contains a 56G SerDes for higher throughput.

Other OCTEON 10 DPUs include OCTEON 10 CN106 designed for cloud, enterprise and baseband for 5G wireless networks. It contains artificial intelligence (AI)/machine learning (ML) cores that analyze operational data to enhance system performance and up to 24 Arm Neoverse N2 server processor cores. OCTEON 10 CN106 was also the industry's first DPU to feature inline AI/ML acceleration, an integrated 1-terabit switch and vector packet processing (VPP) hardware accelerators<sup>3</sup>.

OCTEON 10 Fusion® CN105 features a lower maximum number of server cores and adds additional hardware accelerators and proprietary signal processing to optimize the chip for the intense radio processing demands of massive MIMO and other 5G RAN tasks. [Carriers](#)<sup>4</sup>, [equipment vendors](#), and other [semiconductor designers](#)<sup>5</sup> are collaborating with Marvell on ways to incorporate OCTEON technology into their platforms.

"The new OCTEON processors are a natural extension of the Marvell compute strategy," said Joseph Byrne, editor in chief of TechInsights' *The Microprocessor Report*, which earlier this year named [OCTEON 10 the Best Embedded Processor for 2022](#). "Specialized processors can increase overall performance while holding down power and chip cost."

"The idea behind the Marvell OCTEON 10 DPU platform is that every market and every customer segment deserve optimized processors. With Moore's Law becoming more challenging, optimized design methodologies will become the primary engine propelling innovation in semiconductors," said Will Chu, senior vice president, Compute and Custom Business Unit at Marvell. "OCTEON 10 CN102 and CN103 fulfill that vision by delivering technology normally associated with hyperscale cloud data centers for accelerating network, storage and security workloads to OEMs and enterprises in a way that fits their stringent space, power and cost requirements."

### Key Features of OCTEON 10 CN102 and CN103

- 5nm process
- 64-bit Arm Neoverse N2 core

- High integration with 20 Ethernet media access control (MAC) with MACsec support
- Inline IPsec engine to enable 50 Gbps IPsec with 50% of single N2 core
- Hardware packet acceleration with VPP optimization
- DDR5 up to 5600MT/s
- PCIe 5.0 (CN103xx only)
- 56G SerDes (CN103xx only)

### **Availability**

Sampling already, the Marvell OCTEON 10 CN102 and CN103 DPUs are available in production quantities in Q4 of this year and Q1 of 2024, respectively.

### **About Marvell**

To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for over 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

- Compared to the [OCTEON TX2 CN9130](#).
- Marvell testing.
- Marvell [June 28, 2021](#).
- [Carriers](#)
- [Semiconductor designers](#)

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