NEWS RELEASE

Marvell and Penguin Solutions Collaborate to Address Data Center AI Memory and Accelerate Inference at Scale

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Collaboration Brings Together Complimentary CXL-based and Photonic Memory Technologies to Unlock Greater Memory Capacity

SANTA CLARA, Calif. – November 16, 2026 – **Marvell Technology, Inc.** (NASDAQ: MRVL), a leader in data infrastructure semiconductor solutions and **Penguin Solutions, Inc**. (NASDAQ: PENG), the AI Factory Platform Company, today announced a strategic collaboration to address AI memory demands. This collaboration brings together two complementary technologies: CXL-based memory expansion that enables data centers to extend server memory capacity using existing DDR4 memory, and advanced photonic technology designed to enable high-bandwidth, low latency memory sharing across multiple racks.

As AI workloads shift from model training to large-scale inference and agentic AI, memory capacity, bandwidth, and latency are becoming critical constraints on application performance and token economics. Growing model sizes, longer context windows, and expanding KV-cache requirements are driving memory needs into hundreds of gigabytes and increasingly terabytes per node. These demands are accelerating the shift beyond traditional server-attached memory toward memory expansion, pooling, and disaggregation technologies such as CXL and optical shared-memory fabrics, enabling memory capacity to scale independently of compute.

Two Complementary Levels of Memory Expansion

Marvell and Penguin Solutions are developing two complementary memory expansion technologies designed to address AI infrastructure needs at the server and pod levels:

- Direct-attach memory expansion: The planned addition of Marvell® Structera™ X memory-expansion

controllers within Penguin Solutions SMART® CXL AICs enables data centers to unlock additional memory capacity by recycling existing high-density DDR4 memory modules from decommissioned servers and connecting them directly to servers through PCIe 5.0 and CXL 2.0. This approach provides scalable, low-latency memory expansion in a standard form factor designed for broader industry adoption.

- Multi-rack photonic memory pooling: By integrating Marvell® Photonic Fabric™ optical interconnect technology-based memory modules and NICs into Penguin Solutions MemoryAI™ memory appliances and ComputeAI™ systems, AI data centers will be able to support low-latency, high-bandwidth, multi-rack disaggregated memory sharing across longer distances, enabling petabyte-scale memory pools for context-rich agentic AI inference.

These two technologies are highly complementary. Direct-attach memory expansion addresses immediate, server-level capacity needs today, while multi-rack photonic memory sharing is designed to enable high-bandwidth, low-latency memory sharing across multiple racks to support increasingly demanding AI workloads. Together, these approaches are designed to provide customers with greater flexibility to expand memory capacity and scale AI infrastructure as its needs evolve, offering a single upgrade path from direct-attach expansion to disaggregated, multi-rack sharing, without re-architecting their infrastructure at each step.

An additional benefit of the standard AIC form factor is its ability to support memory expansion beyond direct server attachment. A Structera X-powered Penguin SMART CXL add-in card can be used to build dedicated CXL memory appliances, allowing operators to pool recycled DDR4 capacity for disaggregated allocation across multiple hosts, not just within a single server.

“AI memory demand is growing rapidly, while adding new memory production capacity takes time and substantial investment. Elevated memory prices are also increasing the cost of scaling AI infrastructure,” said Jihoon Han, senior technology and market analyst, Memory, at Yole Group. “This creates a need for solutions that bridge the gap by making better use of available memory resources. Memory expansion and pooling, supported by optical interconnects to help manage latency as pools scale across racks, offer a promising option for meeting growing capacity needs while managing costs over the next few product cycles.”

“For AI inference to scale, it requires delivering tokens at a higher economic efficiency,” said Preet Virk, senior vice president and general manager, Photonic Fabric Business Unit at Marvell. “Marvell is a leader in memory expansion with an unmatched portfolio of products. By combining CXL-based memory expansion with a roadmap to optical memory sharing, Marvell and Penguin Solutions are giving CIOs and AI data center leaders a practical path to improve accelerator utilization which directly leads to increased token revenue, eases pressure from constrained HBM and DDR5 supply and builds more flexible AI memory architectures without wholesale infrastructure replacement.”

“As inference and agentic AI workloads accelerate in data centers, memory is becoming increasingly critical to the performance and economics of AI factories,” said Kash Shaikh, president and CEO of Penguin Solutions. “Our expertise at the intersection of AI infrastructure and memory uniquely positions us to address these evolving demands. Through our collaboration with Marvell, we are advancing our memory innovation roadmap with CXL-based memory and advanced photonic solutions designed to address the memory bottlenecks. We expect this to strengthen our Full-Stack AI Factory Platform to help customers scale data center AI infrastructure efficiently and maximize the return on their AI investments.”

Availability

Penguin SMART CXL add-in cards powered by Marvell Structera X memory-expansion controllers are expected to be available for qualification and enterprise customer deployment by the end of 2026. Joint development with Photonic Fabric integrated memory expansion servers are expected to sample in the second half of 2027.

To learn more about Marvell and Penguin Solutions, visit Marvell Booth #4003 at **Supercomputing26**, November 16-20, McCormick Place, Chicago.

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 30 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 and carrier architectures transform—for the better.

About Penguin Solutions

Penguin Solutions is the AI Factory Platform Company. We design, build, and manage next-generation data centers for enterprises, sovereign AI initiatives, and AI cloud providers.

With deep design expertise at the intersection of data center AI infrastructure and memory solutions, our Full-Stack AI Factory Platform combines differentiated infrastructure software, advanced memory, compute systems, end-to-end services, and industry-leading partner technologies to help customers accelerate deployment, optimize token economics, and maximize the return on their AI investments.

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Media Contacts:
Erica Coleman
pr@marvell.com

Lerin O’Neill
pr@penguinsolutions.com