Cisco Redefines Data Center Architecture with New Smart Switches, Embedding Services Directly into the Network

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New switches with embedded AMD Pensando DPUs are highly adaptive and scalable for AI demands— enabling enterprises to add services as needs evolve

News Summary

- Cisco announces the Cisco N9300 Series Smart Switches with a new class of intelligent networking silicon alongside embedded DPUs, reimagining AI data center designs.
- Cisco Hypershield will be offered as the first service available embedded on the new switches; narrowing the gap between security and networking layers by converging them into a single solution.
- Featuring Cisco Silicon One E100 and AMD Pensando DPUs, complex data processing tasks can be offloaded to the DPUs on the switch to improve both network architecture and security posture.

AMSTERDAM, Feb. 11, 2025 /PRNewswire/ -- **CISCO LIVE** -- Today, Cisco (NASDAQ: CSCO) announced a family of data center Smart Switches, disrupting traditional data center network design by enabling networking and security services in a compact all-in-one solution. Utilizing programmable [AMD Pensando™](#) data processing units (DPUs), the switch functions as a high-capacity, multifunctional service-hosting device, architecturally transforming data centers to simplify their design and make them more efficient. Cisco's first integrated offering, the Smart Switch with [Cisco Hypershield](#), introduces a new approach to securing AI data centers by fusing security directly into the network fabric.

As AI workloads multiply, building and managing data centers has become much more complex. Data center operators require a simpler way to design, build, and deploy infrastructure to fully benefit from AI. AI applications must sit where they are needed, whether a massive large language model sitting in centralized hyperscale facilities or a network drone monitoring crop irrigation at the very edge of the network. This shift in where data is created, accessed, and stored requires a new type of simplified

data center infrastructure–one that integrates compute, storage, networking, and security in new ways, and allows for automated and predictive operations via simplified management platforms.

"Data center infrastructure needs be reimagined for both AI training and inferencing workloads that dwarf even the largest enterprise jobs of the past," said Jeetu Patel, EVP and Chief Product Officer, Cisco. "Simply upgrading data center infrastructure with higher 'speeds and feeds' switches does not address the requirements of modern data centers, which require acceleration of security and network services natively within the data center fabric."

"Cisco's innovative approach to data center design, leveraging leadership AMD Pensando DPUs, marks a significant milestone in transforming enterprise infrastructure to address the evolving security demands of data center networks while dealing with the fast paced AI deployments," said Soni Jiandani, senior vice president and general manager, Networking Technology and Solutions Group, AMD. "Our collaboration with Cisco enables enterprises to achieve high-capacity throughput and impressive network security without compromising on workload performance on Cisco UCS servers or Hypershield enabled platforms. Together, we are paving the way for a new era of intelligent, adaptive, and secure data centers."

Cisco Smart Switches: a Game Changer
As AI drives rapid growth, organizations must manage significantly increased power, compute, and networking demands. In traditional data center architectures, when each new service required a specific device, growth led to complexity. It also required adding, changing, or upgrading the enforcement of security policies with each new service or workload. Cisco Smart Switches offer a simpler, more efficient and extensible architecture by integrating services directly with the data center fabric, rather than bolting them on top.

By combining Cisco data center networking, Silicon One, and AMD DPUs, customers can scale services and adapt quickly to evolving business needs, all without the need for any additional hardware. The switches feature two processing engines: a high-performance network processor for stable data transfer and a network services sidecar for agile security processing. Traffic is intelligently steered between the two engines for optimal performance. This architectural shift drives cost savings through hardware consolidation, reduced power consumption, and operational simplicity. Cisco Smart Switches embrace all the capabilities of a [NX-OS](#) switch and management through [Nexus Dashboard](#), and will unlock a diverse set of use cases like stateful segmentation, IPSec encryption, enhanced telemetry, DDoS protection and more.

Reimagining Data Center Security with Smart Switch and Hypershield
The first integrated service will combine Cisco Smart Switches and Hypershield to form a new approach to data center security. It will combine an advanced, AI-native, hardware-accelerated, distributed security architecture directly within the data center fabric to:

- **Provide security that's melted into the data center network.** Hypershield embedded in the switching layer reduces the number of appliances and allows data center operators to create a 'micro perimeter' around each service that makes up a workload.
- **Enable autonomous segmentation policies.** Customers can benefit from automatically updating security policies to the right enforcement points, ensuring consistent security with minimal manual effort.
- **Keep security posture up to date reducing disruption.** Organizations can minimize risks and drive policy lifecycle management at scale by using self-qualifying policy updates before deployment.
- **Easily extend consistent policy enforcement across multiple domains.** With the ability to manage policies consistently across a library of enforcement points in the cloud, on-prem, and on

traditional next-gen firewalls, customers now have a single management system with Cisco Hybrid Mesh Firewall.
- **Manage network and security workflows with persona-driven operations.** The solution seamlessly integrated into existing processes, and supports common and separate workflows for NetOps, SecOps, or NetSecOps teams using a single solution to maintain connectivity and security.

Fusing security directly into the data center network changes the fundamentals of data center security. Combined with Cisco Firewall Threat Defense, new AI Defense capabilities, and Security Cloud Control, Cisco will offer the first Hybrid Mesh Firewall optimized to protect AI applications in the data center and public cloud.

General Availability
The first available Cisco N9300 Smart Switch, which features 24 100G ports, is targeted for shipment in spring 2025. A top-of-rack model, which will feature 48 25G ports, two 100G ports, and six 400G ports, is targeted for first availability in summer 2025.

Additional Resources:

- Executive blog post: Meeting the Moment: Innovation for Unprecedented Times, Jeetu Patel
- Executive blog post: Cisco Silicon One Powers New Service Provider and Enterprise Data Center Solutions, Martin Lund
- Blog Post: Fortify Your Data Center with New Cisco N9300 Series Smart Switches, Murali Gandluru and Rick Miles
- For more information on Cisco Live EMEA, please visit The Newsroom

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