

Eliminate Network Bottlenecks with Cisco's UEC-Ready AI Networking

Cisco Nexus 9000 Series Switches

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Webex App

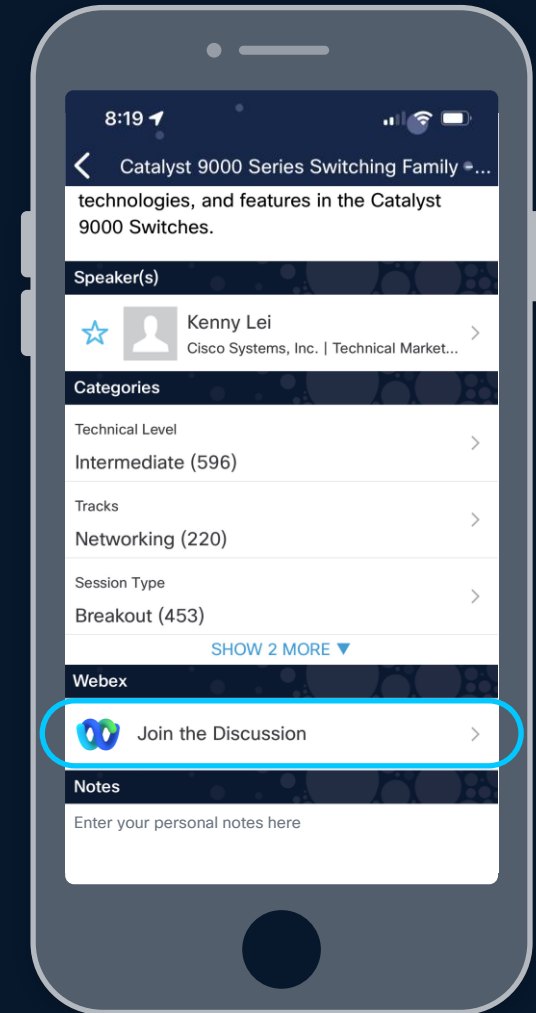
Questions?

Use Webex app to chat with the speaker after the session

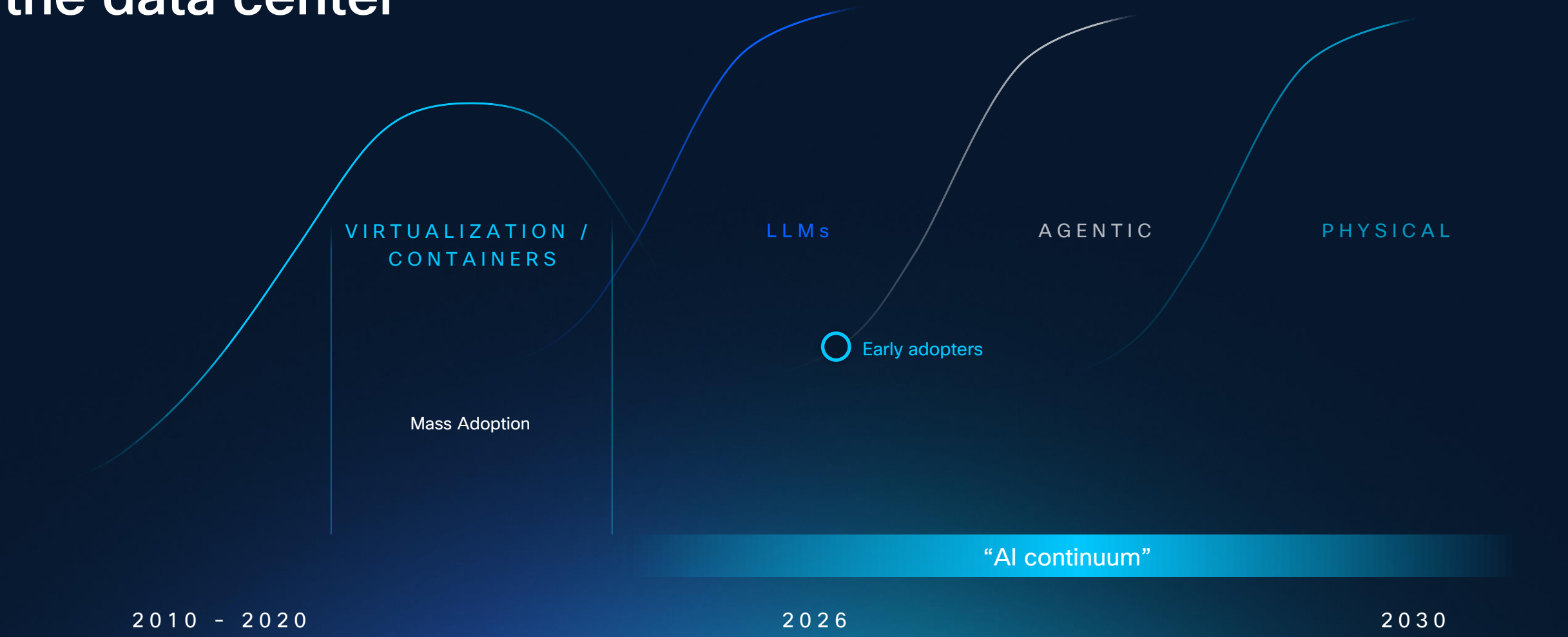
How

- 1 Find this session in the Cisco Events app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 27, 2026.



Big shifts are redefining the data center



HYPERSCALE

ENTERPRISE

SERVICE PROVIDER

NEOCLOUD

SOVEREIGN CLOUD

We are
redefining
infrastructure for
every kind of
customer



Data Center Networking Vision

**Power both traditional and AI workloads
with a secure, intelligent network fabric.**



Silicon



Systems



Software



Optics

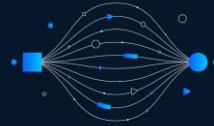


Operating Model

Challenges in AI/ML Fabrics



Link Failures



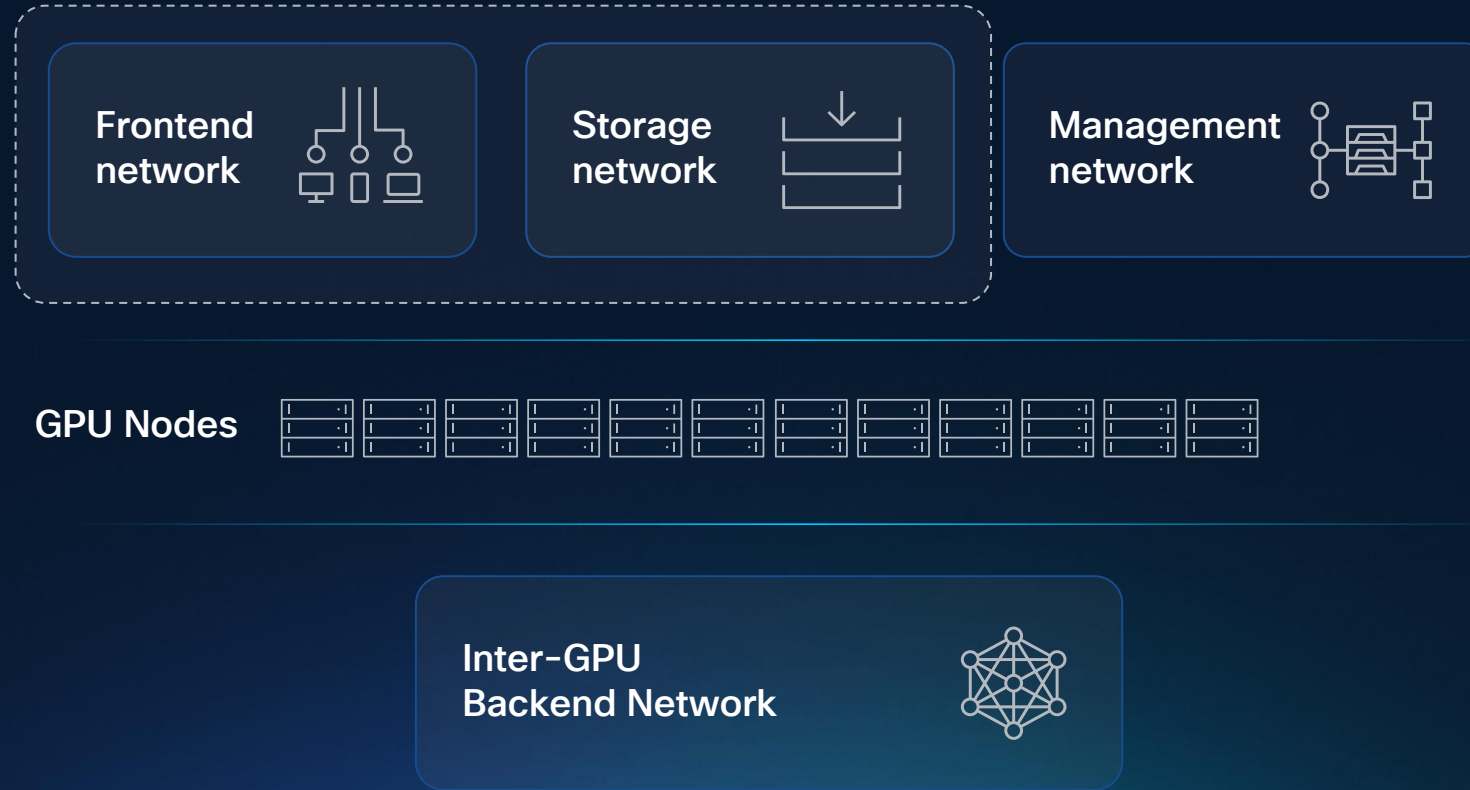
Congestion



Uneven Load Balancing

UEC specifies techniques to detect and avoid congestion, improve throughput, and reduce job-completion time

Cisco Nexus: Network Fabric for the AI Era



Customizable and
turnkey ready solutions

High performance Cisco N9000
fixed & modular platforms

Managed with Nexus Dashboard
and Hyperfabric

Deployed in Enterprise AI,
Sovereign AI and Neo Clouds

Introducing Cisco N9364F-SG3 Series Fixed 1.6T Switches



100% Liquid Cooled | 20U

Redundant integrated power supplies | Advanced leak detection



100% Air Cooled | 3RU

Redundant replaceable power supplies

Cisco Silicon One G300

64-port OSFP-RHS 1.6T Ethernet

Scale Out networking for next-generation AI/ML fabrics

- High capacity, high radix, low-latency switching
- Cisco Intelligent Packet Flow with Nvidia Spectrum-X integration
- Choice of operating systems

Reliable connectivity for AI data centers

Cisco OSFP 1.6T Pluggable Optics

High-performance and reliability

Cisco Silicon Photonics technology

Advanced DSP-based diagnostics and monitoring



High bandwidth AI scale-out

1.6T switch-to-NIC connectivity and high-density fabrics for massive AI cluster builds (2x800G, 4x400G, and 8x200G links)

Diversified supply chain

Seamless AI cluster scaling with diversified supply chain and interoperability across Cisco and 3rd party DSPs

Efficiency and flexibility

Fully retimed and linear optics for power-efficiency and deployment flexibility in liquid cooled and air-cooled platforms

Cisco N9000 Series Fixed 64-port 800G Switches

NEW



Cisco N9100 NS4
(Q2CY26)

Backend | Scale Out

- Nvidia Spectrum 4
- Nvidia Cloud Partner (NCP) Reference Architecture Compliant



Cisco N9300 SG2
(Shipping)

Frontend | Backend | Scale Out

- Cisco Silicon One G200/G200X
- Cisco Intelligent Packet Flow w Nvidia Spectrum-X integration
- Nvidia Enterprise Reference Architecture Compliant



Cisco N9300 SP2R
(Q3CY26)

Scale Across

- Cisco Silicon One P200
- Integrated line-rate encryption
- Support for ultra long reach coherent optics

Cisco N9800 Series 36-port 800G line card



High-radix AI/ML Spine
Enterprise & Telco DC Spine

Cisco Silicon One P200

36-port OSFP 800G Ethernet

High port density Scale Out networking for AI/ML fabrics

- Integrated line-rate MACsec encryption
- Interoperable with X9836DM-A and X98900CD-A line cards
- 144MB on-die packet buffer + 16GB on-chip HBM3

Cisco 800G Linear Pluggable Optics (LPO) Solutions

Introducing AI Scale-out power efficiency and reliability for 800G Networks



Cisco L800G OSFP LPO
50% less power per module*

Powered by Cisco Silicon Photonics
Integrated designs reduce system
power consumption 30%*

Shift power consuming optics
DSP functionality to Cisco Silicon
One platform

High signal integrity driven by
Cisco Silicon Photonics and Cisco
Silicon One

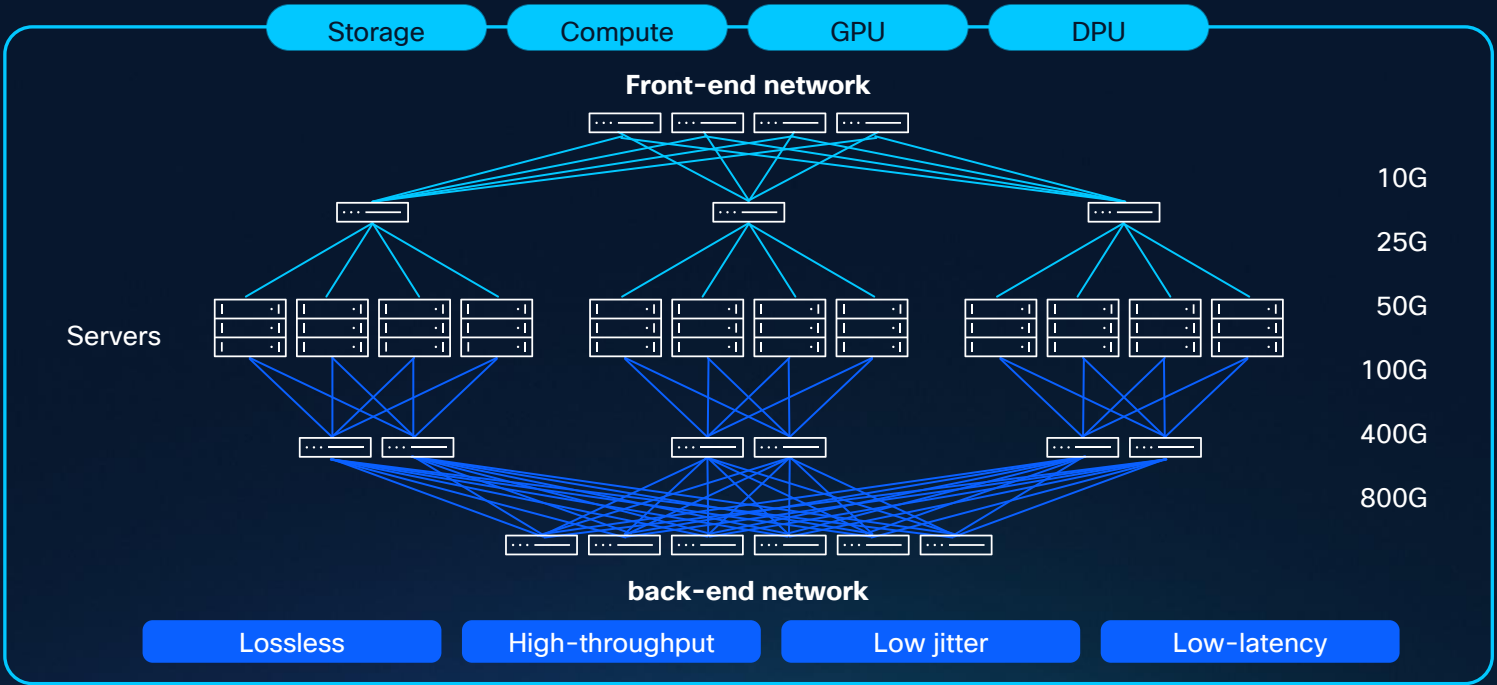
High reliability with lower
thermal stress

Increase port density without
PDU upgrades

* Transforming Infrastructure for the AI Era (<https://blogs.cisco.com/sp/transforming-infrastructure-for-the-ai-era>)

AI Network Fabric

A Typical DC Design for AI Cluster



FEATURES

Best performing:
AI networks, front-end, and back-end

Cisco Intelligent Packet Flow
Advanced load balancing, Adaptive Routing, UEC features

Platforms:
Cloud Scale, Silicon One, Spectrum-X
400G, 800G and 1.6T switches

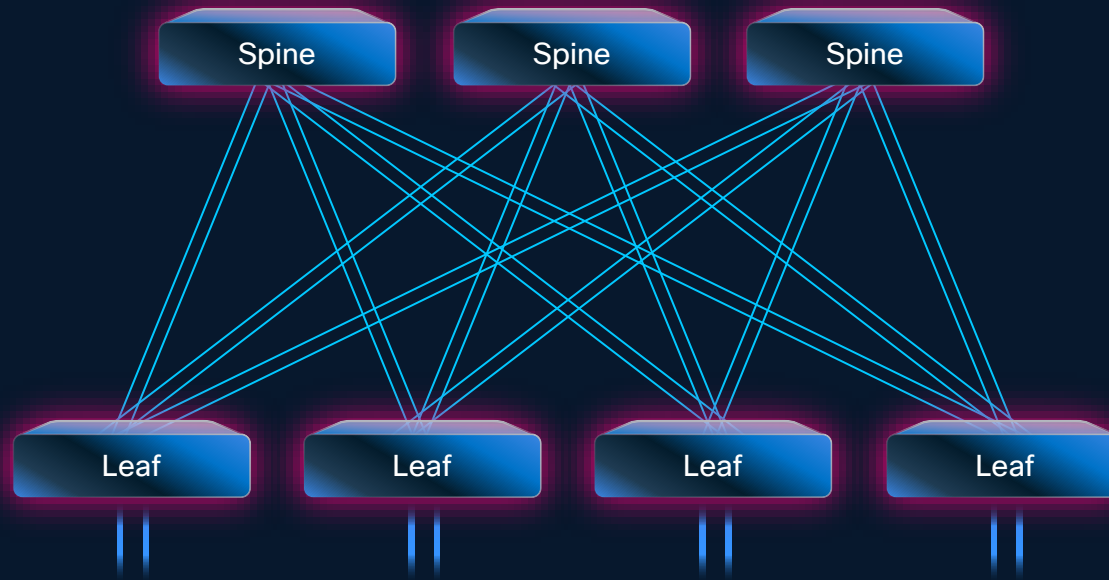
Cisco Nexus Dashboard
AI fabric templates, AI analytics, telemetry, congestion scores, job monitoring, GPU/NIC stats

Open SONIC or NX-OS
low latency, non-blocking RoCEv2 lossless network

Validated designs
for network and ecosystem partners

Powering AI Fabrics with Intelligent Packet Flow

UltraEthernet
READY



Cisco Intelligent Packet Flow

Advanced
load-balancing

Hardware-accelerated
telemetry

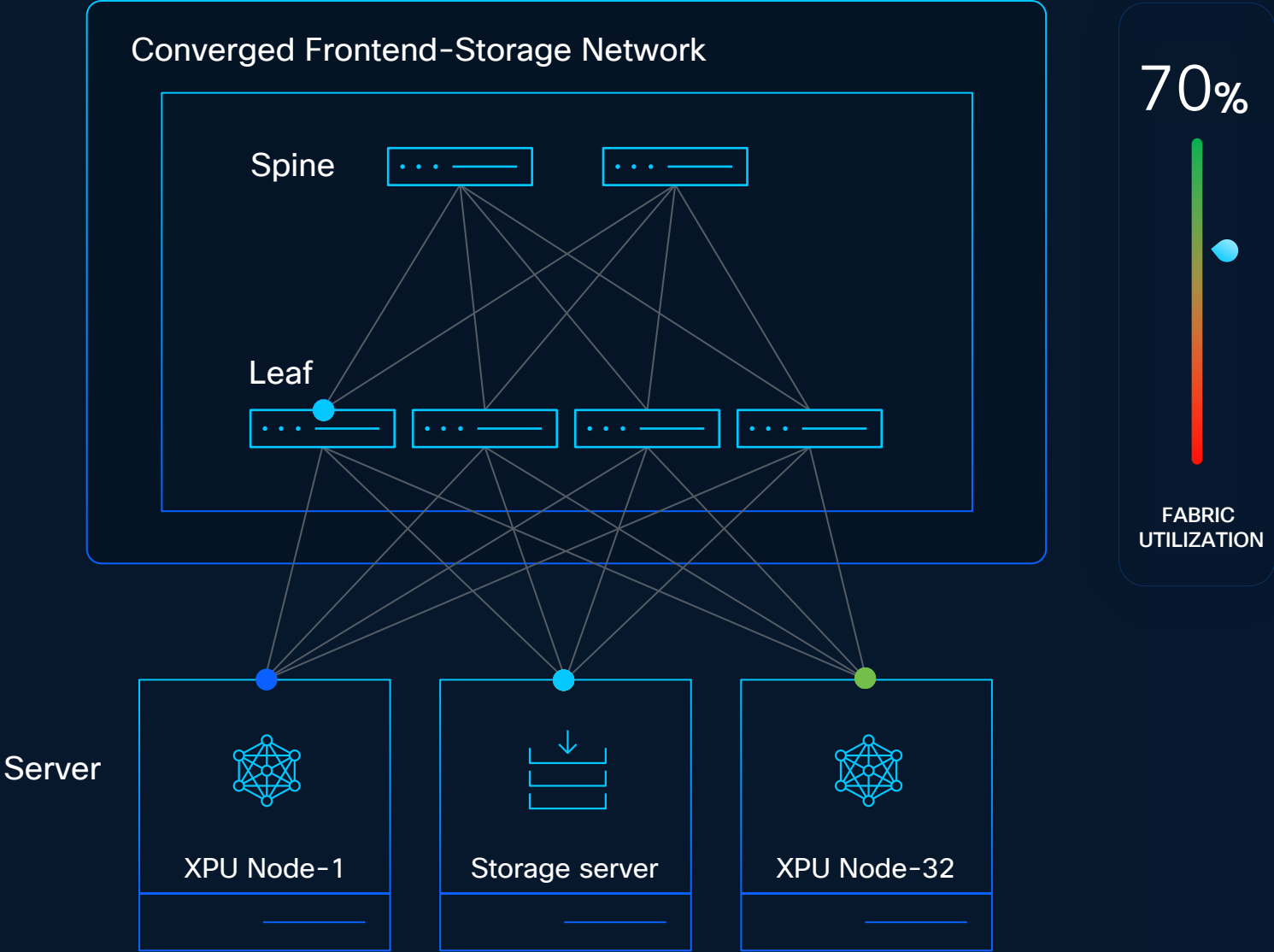
Fault-aware
recovery

Innovating in the Fabric: Cisco Intelligent Packet Flow

Per flowlet, per-packet, a mix of both, or dynamically switch between

- Flow1* ● ● ●
- Flow2* ● ● ●
- Flow3^x ● ● ●
- Flow4 ● ● ●

* DLB enabled flow
^x QoS Policy flow



Cisco Nexus Dashboard

Advanced Congestion detection

Nexus Dashboard provides critical insights into network health, detecting congestion even without Dynamic Load Balancing (DLB) enabled. This deep visibility ensures optimal performance for your AI workloads.

PFC Pattern Analysis

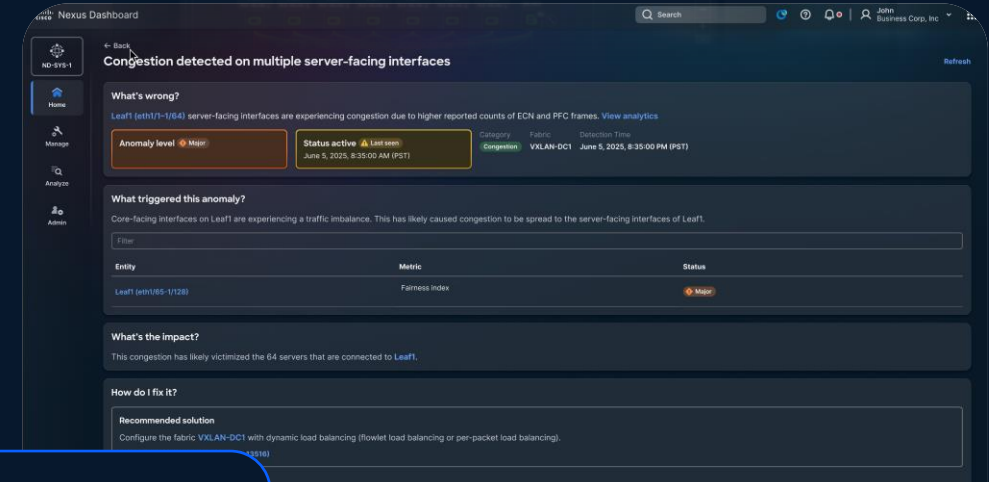
Detects congestion through detailed Priority Flow Control (PFC) patterns.

ECN Packet Monitoring

Analyzes Explicit Congestion Notification (ECN) packets for early warnings.

Hierarchical Scoring

Applies a hierarchical congestion score from interface to switch to the entire fabric.



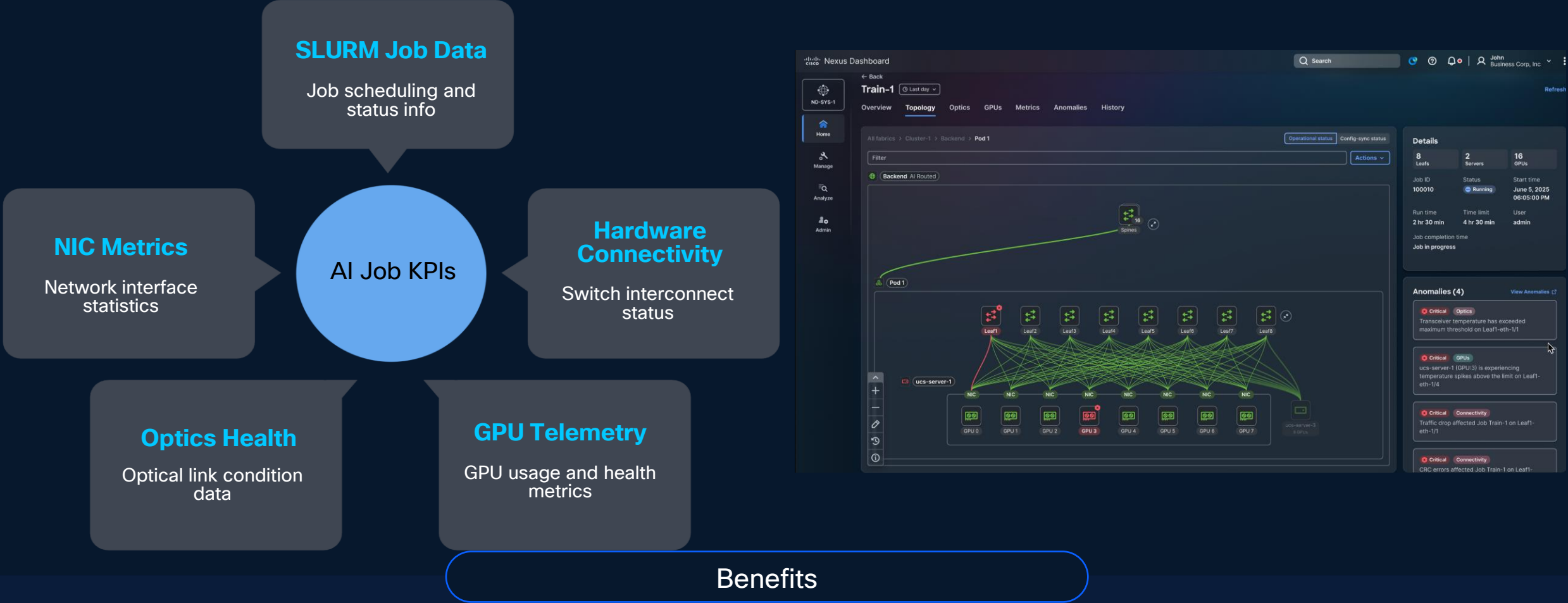
Benefits

Topology-driven visualization enables rapid drill-down, allowing targeted mitigation through flowlet-based or per-packet load balancing.

Cisco Nexus Dashboard

Integration with SLURM for AI Job monitoring, Job-Centric Correlation for AI Fabrics

Optimizing performance for complex AI workloads requires a comprehensive understanding of interactions across the entire fabric, achieved by correlating diverse data streams.



This multi-faceted correlation, spanning orchestration, connectivity, and hardware telemetry, enables proactive detection of potential performance bottlenecks before they impact critical AI application throughput

AI Infrastructure Validations



Ultra Ethernet Vision

Cisco Founding and steering member

Deliver an Ethernet based open, interoperable, high performance, full-communications stack architecture to meet the growing network demands of AI & HPC at scale

**THE NEW ERA
NEEDS A
NEW NETWORK**

Ultra~~E~~*thernet*

- UE from a switch perspective does not require any L1 or L2 requirements
- Cisco Silicon complies with UE fabric baseline requirements (PFC, ECN, Multiple Traffic classes etc..)
- Cisco Silicon one is future proof because of its programmable architecture.

Cisco Nexus 9000 Series

Customer outcomes

Fastest network operations time-to-value

Unparalleled visibility & security across the network

Flexible deployment models for key use cases

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Thank you



