Data Center Business Strategy

Kevork Kechichian - Executive Vice President and General Manager, DCG

Broad Range of Data Center Requirements

Broad Range of Data Center Requirements

drive unique optimization vectors that need to be balanced

Database

Online transaction processing
data warehousing

Storage

Object storage
high perf block store

Cloud

VM orchestration
content delivery

Digital Services

E-comm. backend
media streaming

Telco

5G core
vRAN/openRAN

Media

Content distribution
Virtual Desktop Infra

HPC

Climate modelling
Genomic sequencing

Network Compute

Packet processing
content accel.

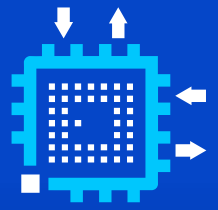
AI

Inference
training

Core/vCPU density	Memory capacity	Power envelope	Latency	Core frequencies
Mem bandwidth	Perf/watt	Perf/core	Security	I/O bandwidth

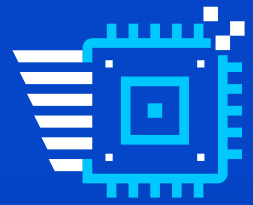
3 Lanes for Workload Optimization

Across customer needs and challenges



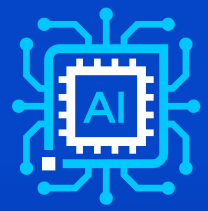
High-density & Scale-out Workloads

Maximum cores per rack, performance-per-watt, TCO for cloud-native, microservices, 5G core.



General-purpose Workloads

Balanced performance, reliability, broad ecosystem support — the workhorse of every estate.



Compute-intensive & AI Workloads

Per-core performance, large memory bandwidth, accelerator coupling for training & inference.

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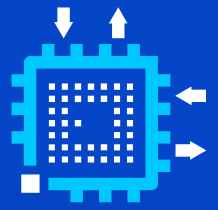

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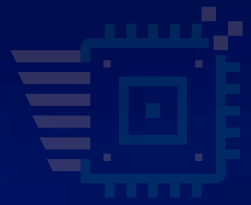

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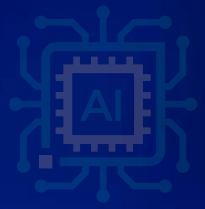

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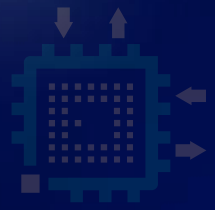

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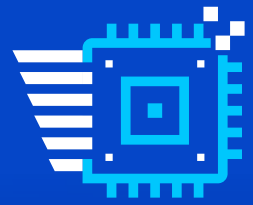

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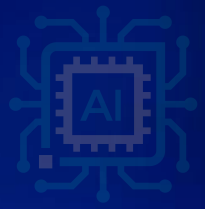

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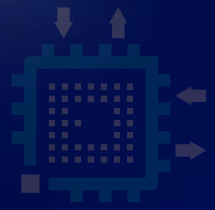

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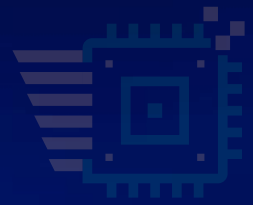

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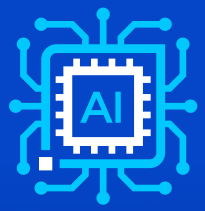

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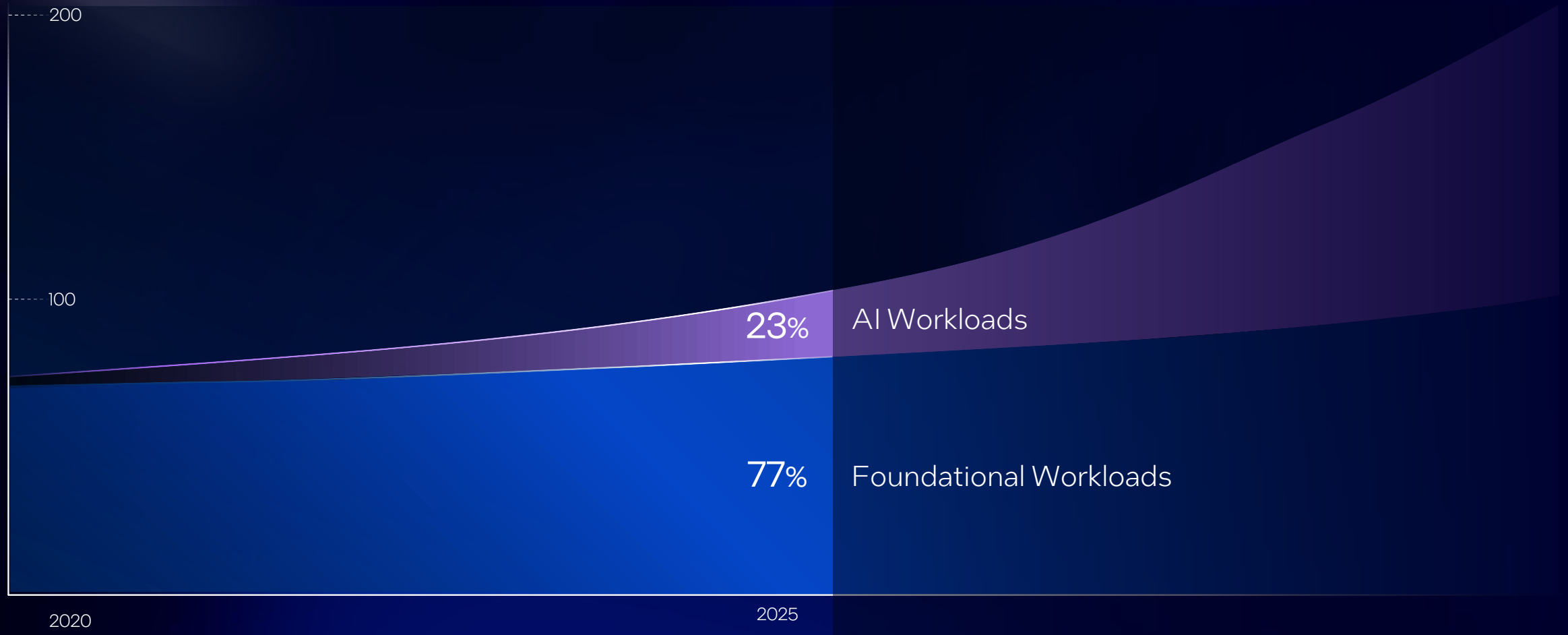
Rapid Growth of AI in Last 5 Years



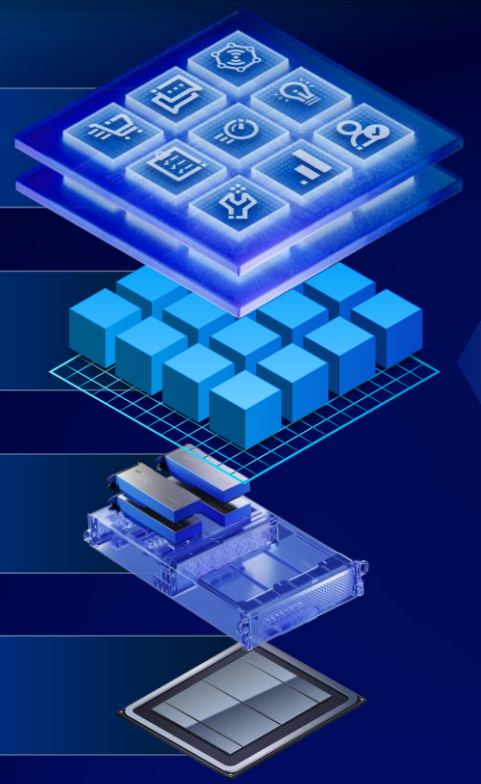
JLL Data Center Outlook (2025)

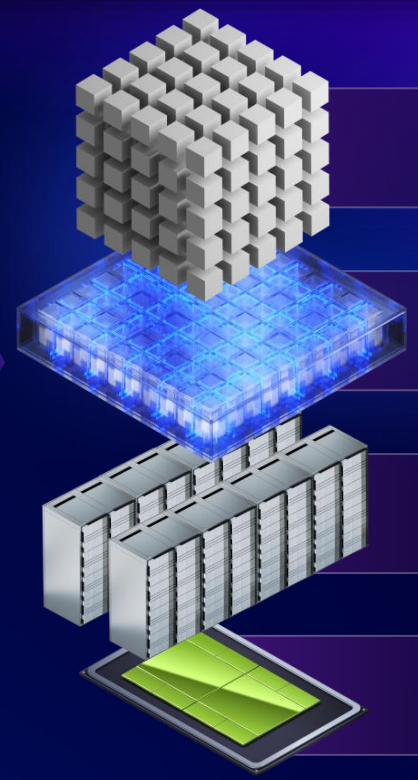
intel

A Divergence of Infrastructures

Specialized infrastructures for AI training

Foundational **Data Centers**	Frontier **AI Training Center**
Enterprise & cloud apps	Frontier AI training
Linux & orchestration	AI runtimes
Compute nodes	Training pods
X86 CPU - heavy	GPU heavy





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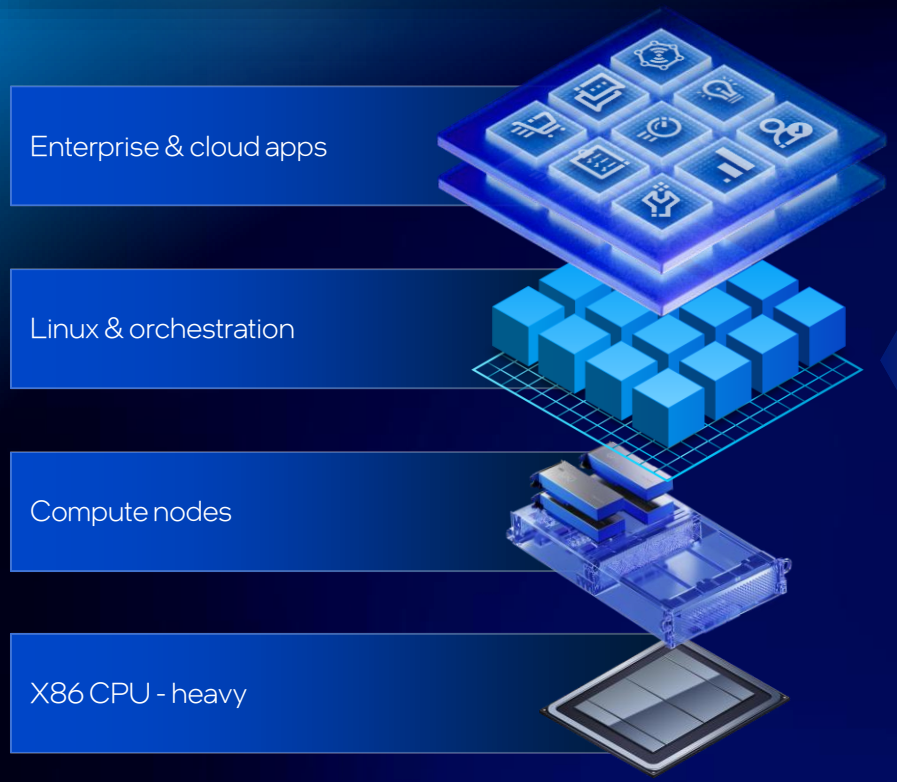
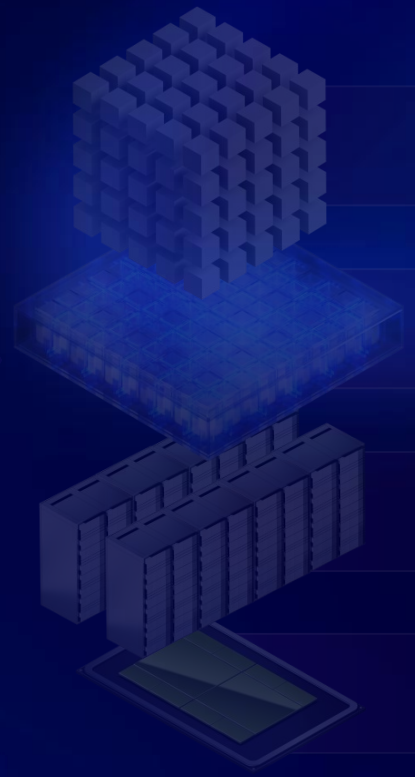


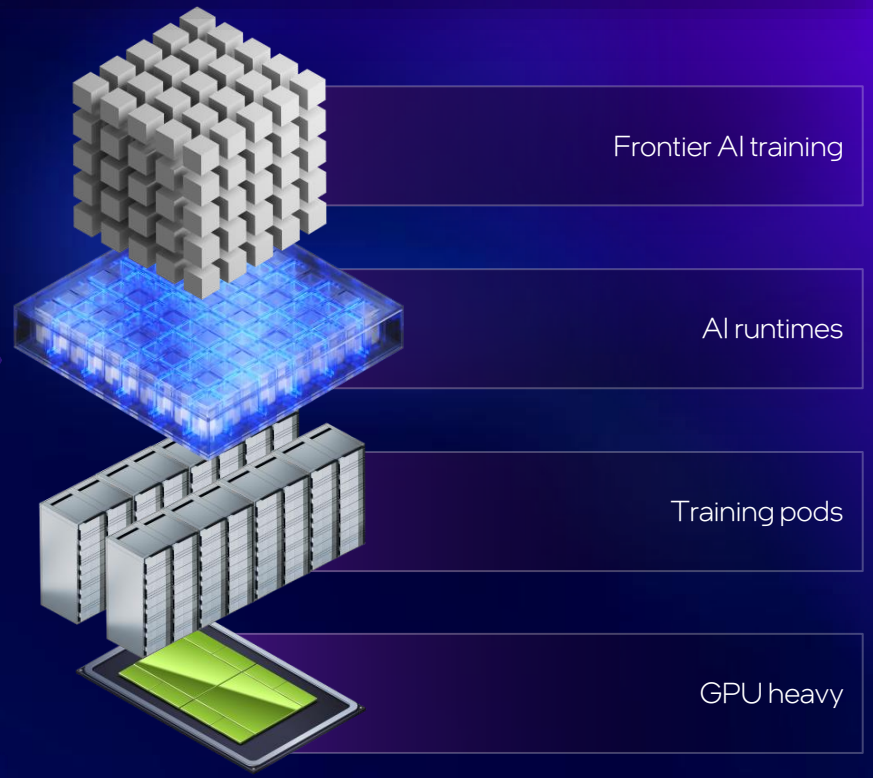


A Divergence of Infrastructures

Specialized infrastructures for AI training

Foundational Data Centers

Frontier **AI Training Center**



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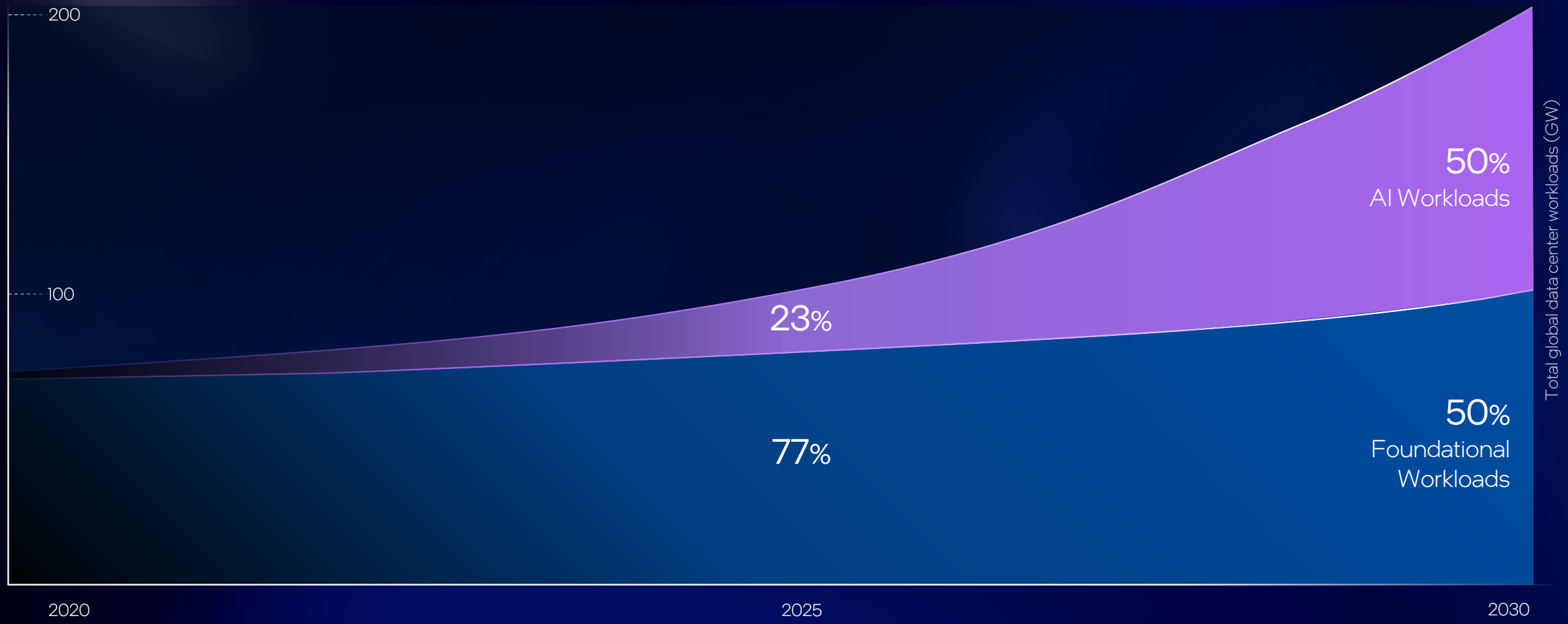
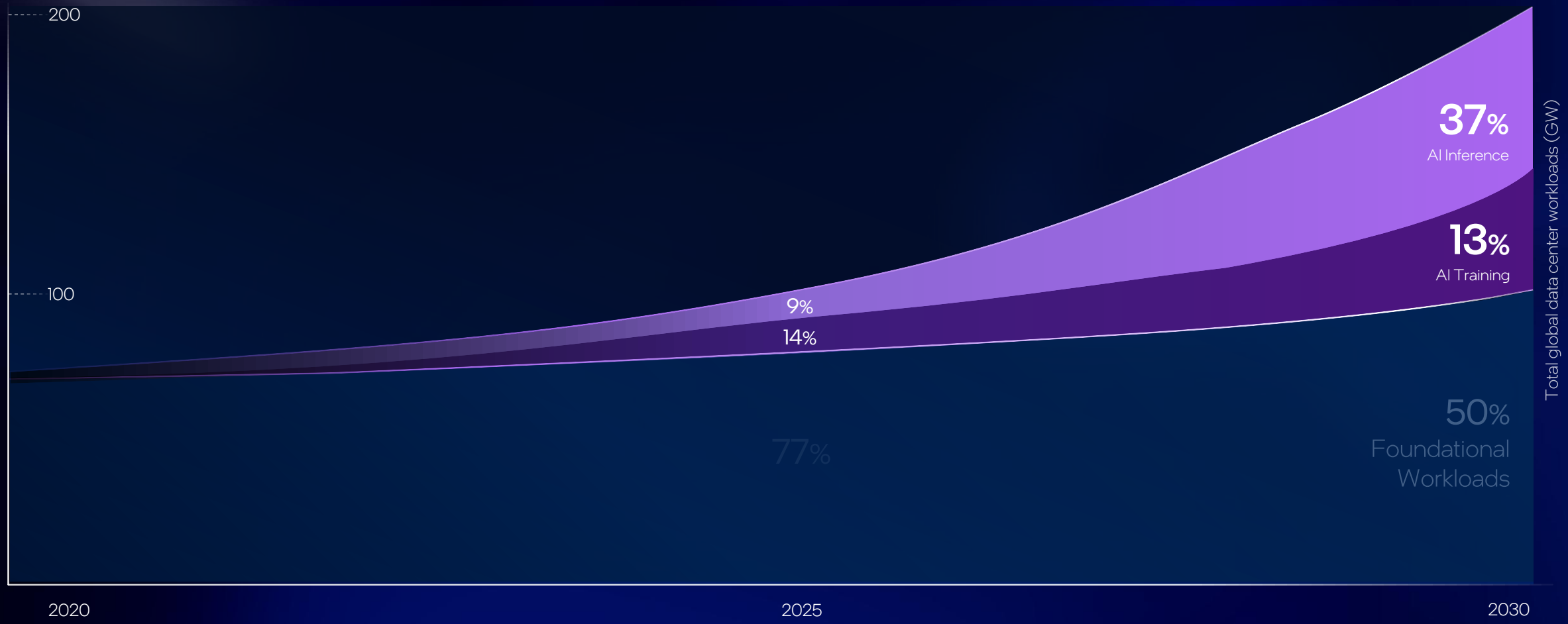
Overall Data Center Demand Expected to Double within 5 Years



JLL Data Center Outlook (2025)

Majority of Growth in AI Driven by AI Inference

Driven largely by AI agents & inference workloads

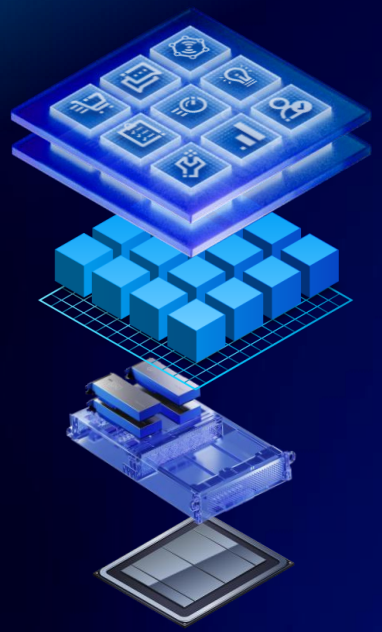


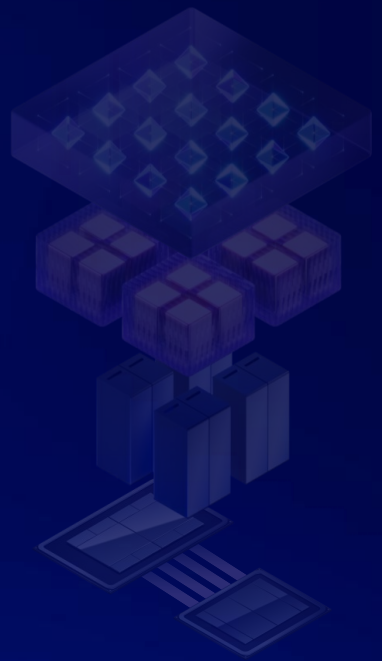
JLL Data Center Outlook (2025)

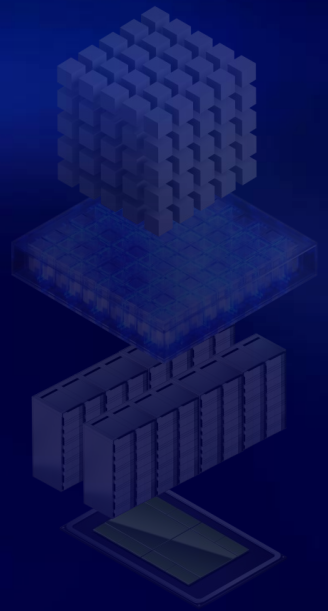
A New Compute Paradigm for Intelligence at Scale

With a fundamentally different infrastructure need than frontier AI training

Foundational **Data Centers**	**Intelligence Center**	Frontier **AI Training Center**
Serving Applications	*Serving Intelligence*	*Building Intelligence*
The execution backbone of enterprises running general purpose workloads	The cognitive layer of enterprises through high-volume inference & agent execution	Creation and adaptation of foundational models through AI training (at hyperscale)







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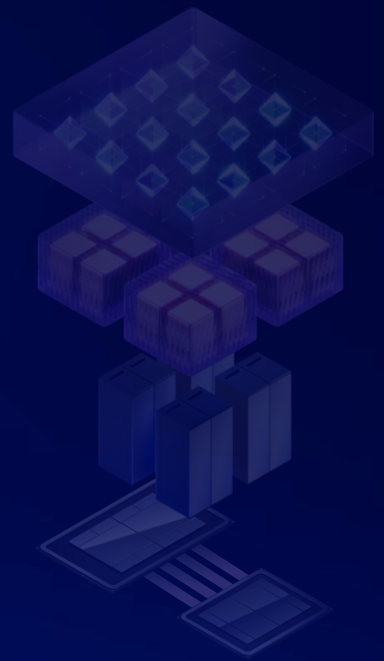

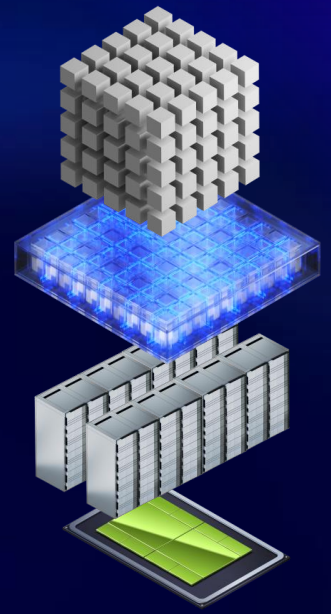

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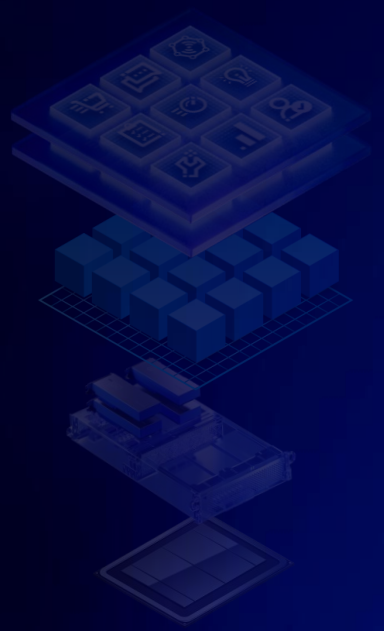
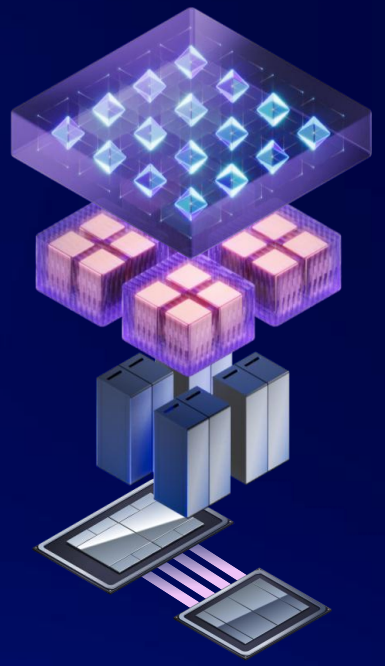
The execution backbone of enterprises running general purpose workloads



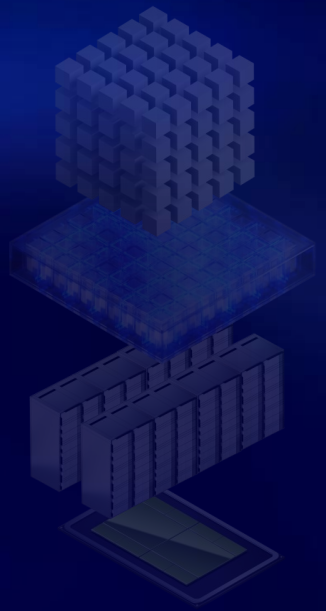
Serving Intelligence

The cognitive layer of enterprises through high-volume inference & agent execution



Building Intelligence

Creation and adaptation of foundational models through AI training (at hyperscale)



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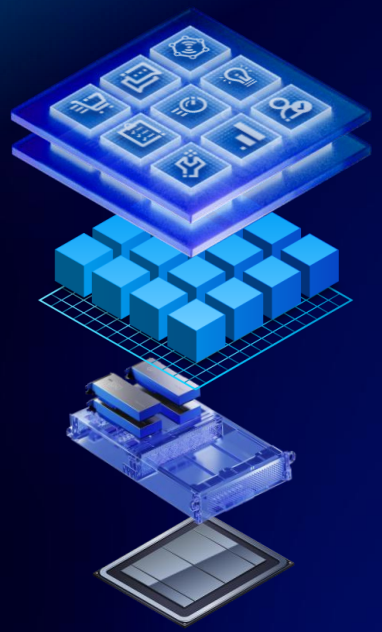
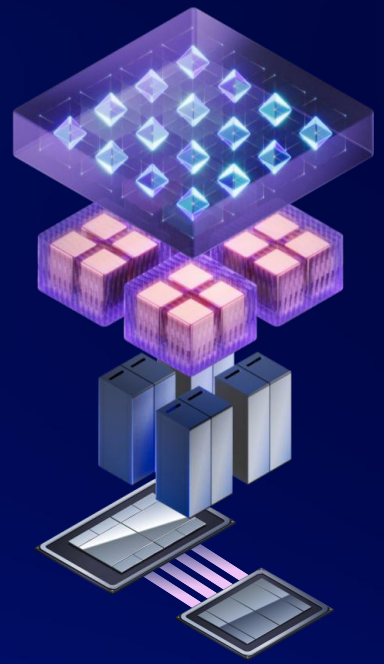
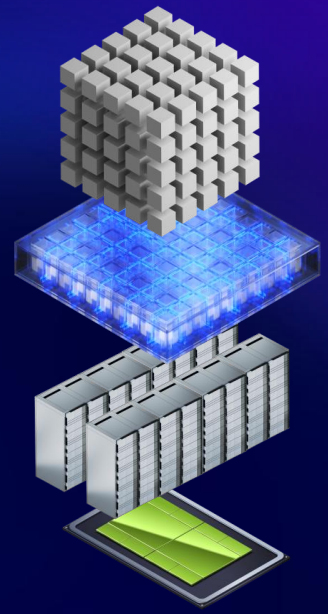






A New Paradigm Built a Stable Foundation

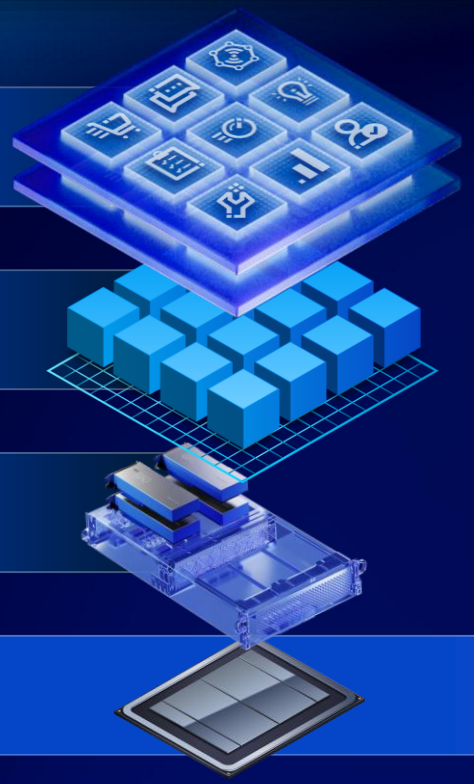
Foundational **Data Centers**

Enterprise & cloud apps

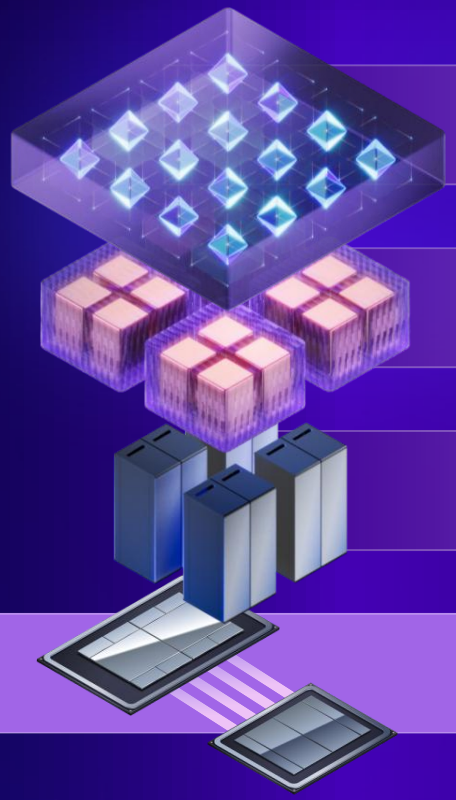
Linux & orchestration

Compute nodes

X86 CPU - heavy



Intelligence Center



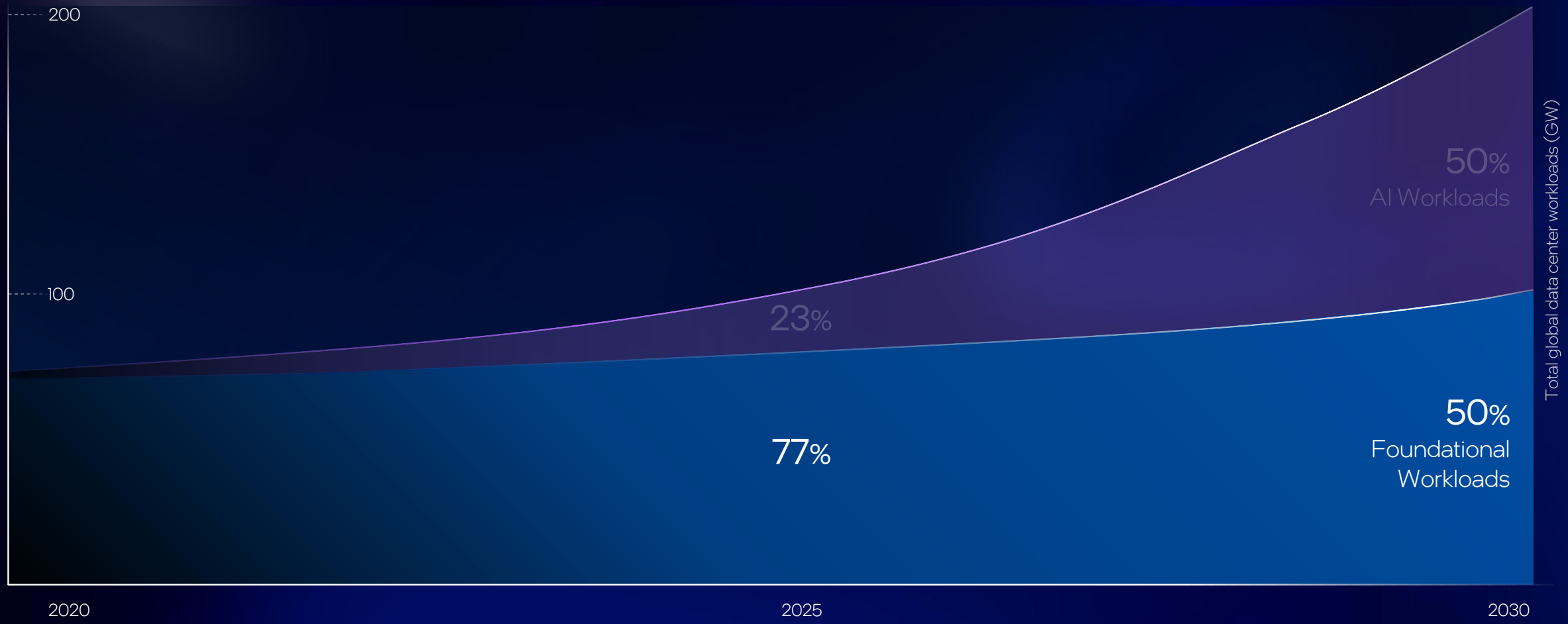
Large scale inference & agentic AI

Agent runtimes, orchestration & policy

Rackscale solutions

X86 CPU + acceleration
(with high bandwidth memory & I/O)

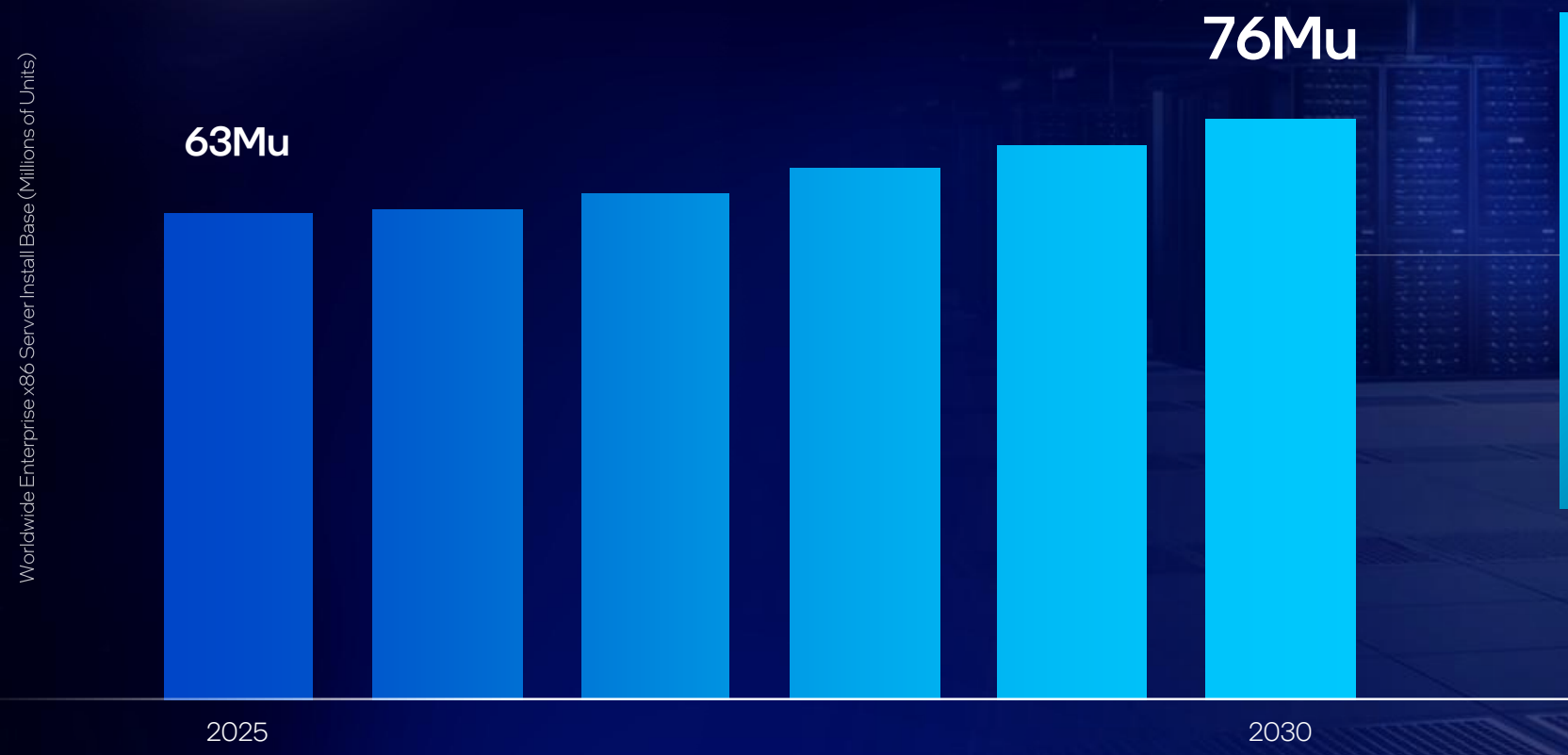
By 2030, Foundational Workloads Will Still Anchor Half of All Data Center Capacity



JLL Data Center Outlook (2025)

x86 the Enterprise Computing Backbone

A robust and growing foundation for the next phase of AI



80%

of total worldwide server install base will be **x86**

Source: IDC Quarterly Enterprise Infrastructure Tracker - Forecast Installed Base 2025Q4

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Foundational Data Center

Processors & connectivity

Intel® Xeon® 6 with P-cores

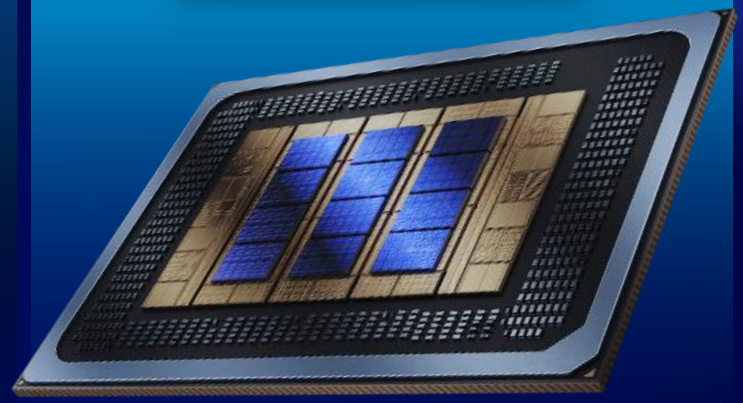
Throughput & memory optimized x86 CPU

Launched in 2025

Intel® Xeon® 6+ with E-cores

Next-level server CPU density & efficiency, built on Intel 18A

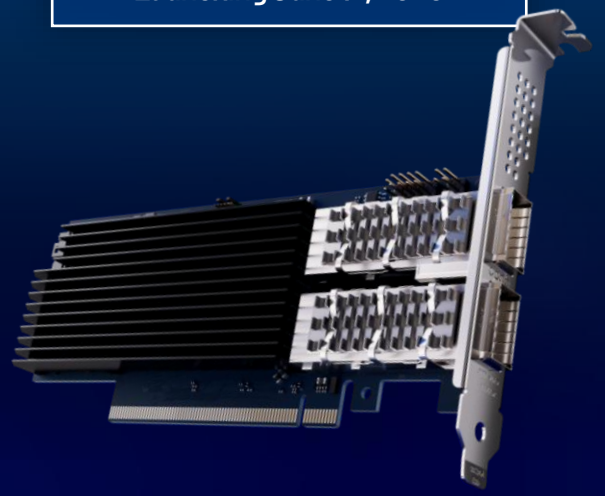
Launching June 1st 2026



Intel® Ethernet E835

Secure, manageable and scalable optimization

Launching June 1st, 2026



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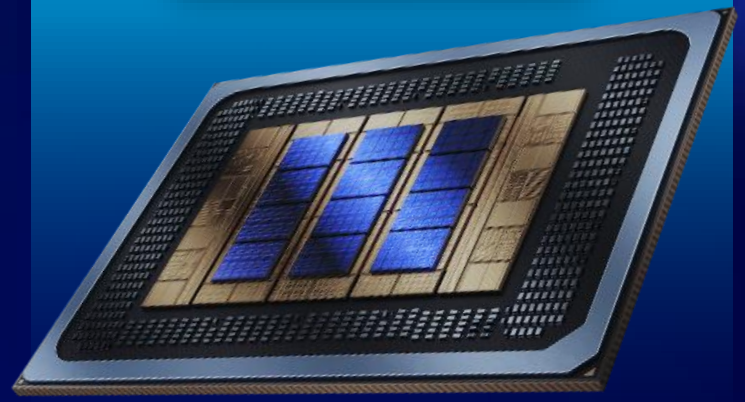

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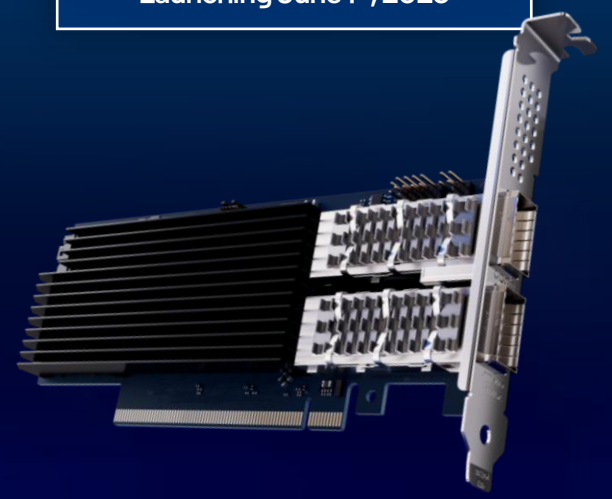

Pre-empting the Demands of Modern **5G Core & Cloud-Native**

Increasing Performance Density

TCO and Performance Efficiency

Robust and Reliable in Any Scenario

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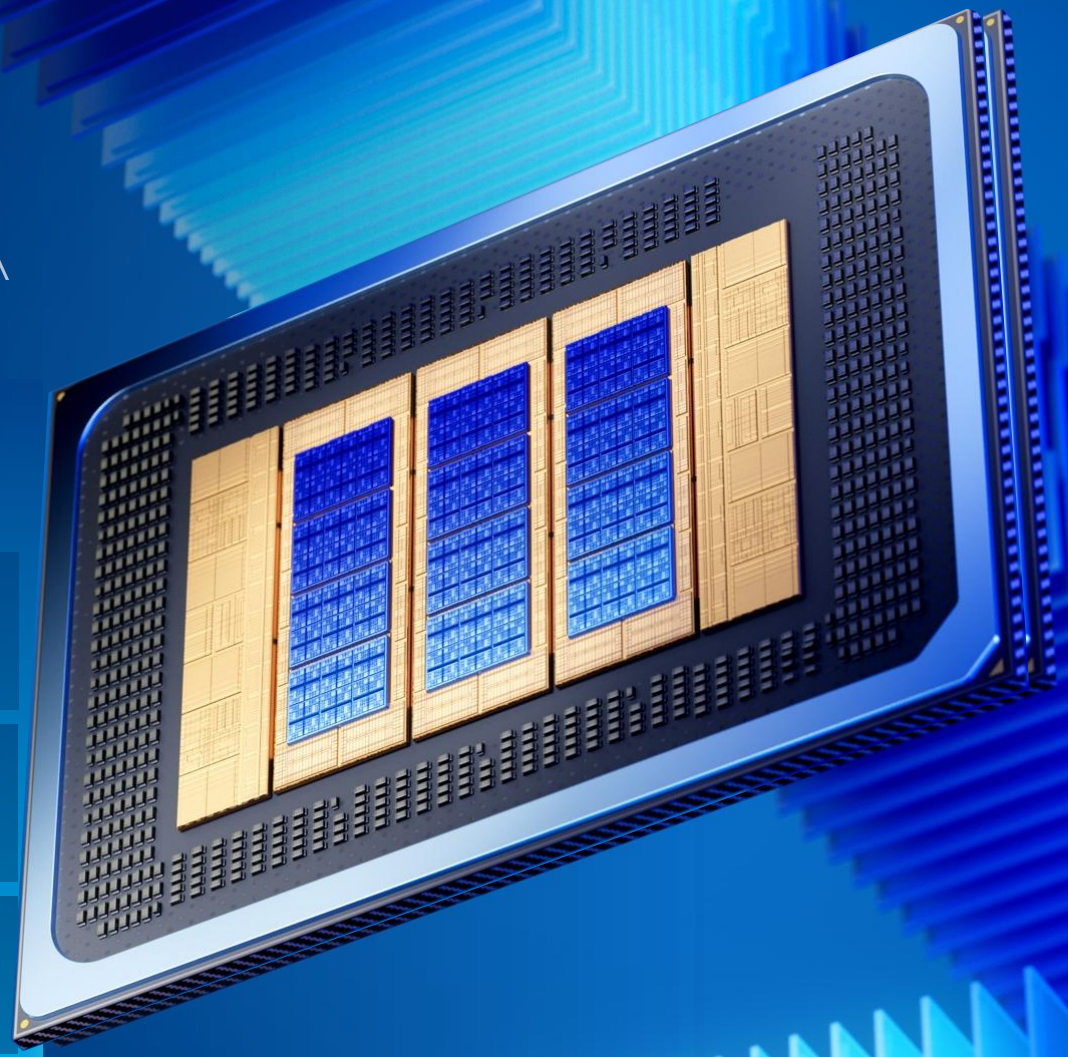
LAUNCHING JUNE 1ST

Intel® Xeon® 6+

Next-level server CPU density & efficiency, built on Intel 18A



Exceptional performance

Up to
288 E-cores
Highest core density

Up to
8000 MT/s DDR5
Improved memory

Up to
576 MB
Enhanced low latency LLC

Efficient compute

Intel 18A
PowerVia & RibbonFET

Market leading
Rack density

Intel® AET
Intel® Application Energy Telemetry (Intel® AET)

Trusted and secure

Confidential compute
Most comprehensive portfolio

Intel® SGX and Intel® TDX

Crypto algorithm acceleration
for SHA-512, SM3 and SM4

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Intel® Xeon® 6+

Next-gen performance for foundational workloads

Network Infrastructure

5G Core
5G control plane
Subscriber management

Data Plane
Next gen firewall
Service mesh
Routing
5G user plane

Media

CDN
Content streaming services
Cybersecurity services

Media Transcode
Live media processing

Web & Microservices

Web Services
Service mesh, Proxy servers
Web hosting, CMS
Digital services
Data analytics

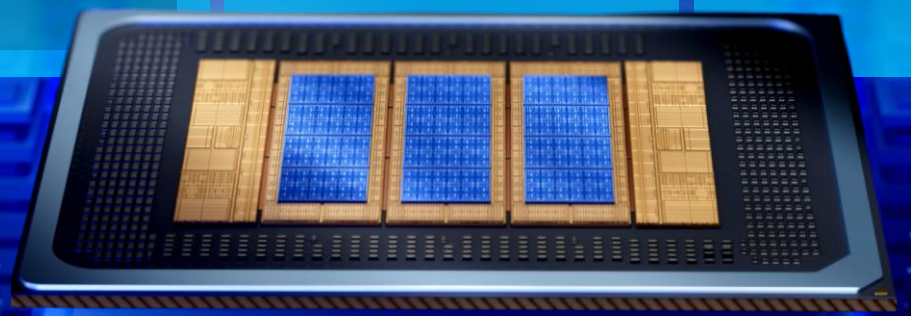
Storage

Distributed Storage
Cold storage
Warm storage

Database

OLTP
Web CMS
E-commerce platforms
Social media infra
Business apps

Non-Relational
Document databases
Key value stores
Wide-column stores
Graph databases



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Tangible Performance Jumps for Telco Leaders

Intel® Xeon® 6+ for ERICSSON

30%
Higher performance at the same core count

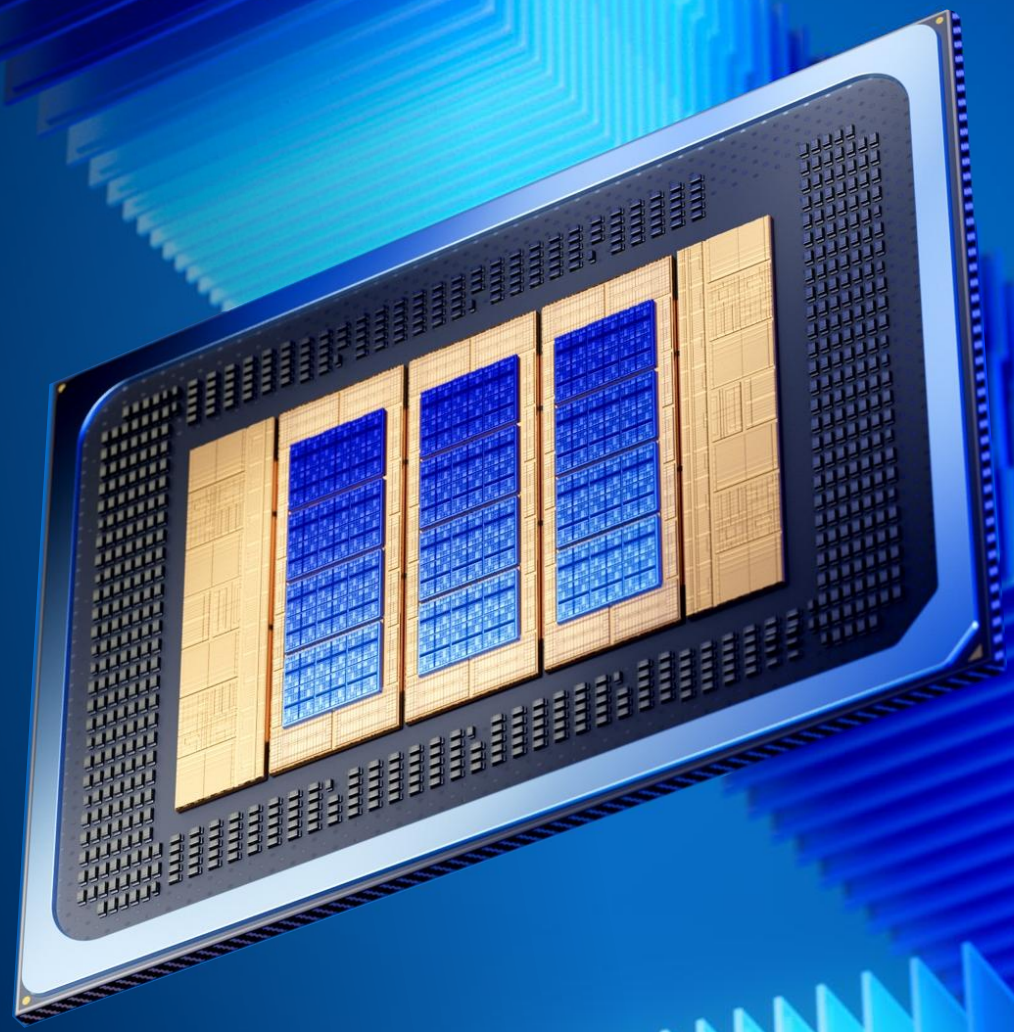
60%
Greater performance per watt

38%
Reduction in runtime rack power

Ericsson Packet Core on Xeon 6+ vs. Xeon 6780E at equal core counts. Tested in live operator deployments.

intel

T Systems



"As a leading European cloud provider, T-Systems requires energy-efficient processors with massive core counts for T-Cloud Private cloud infrastructure powering Agentic AI workloads.

We are excited about the new Intel® Xeon® 6+ processor, for improved total cost of ownership (TCO), enhanced memory bandwidth, superior reliability, robust security, and more precise energy telemetry."

Christian Klie

Business Owner & Tribe Cluster Lead "T-Cloud Private", T-Systems International GmbH

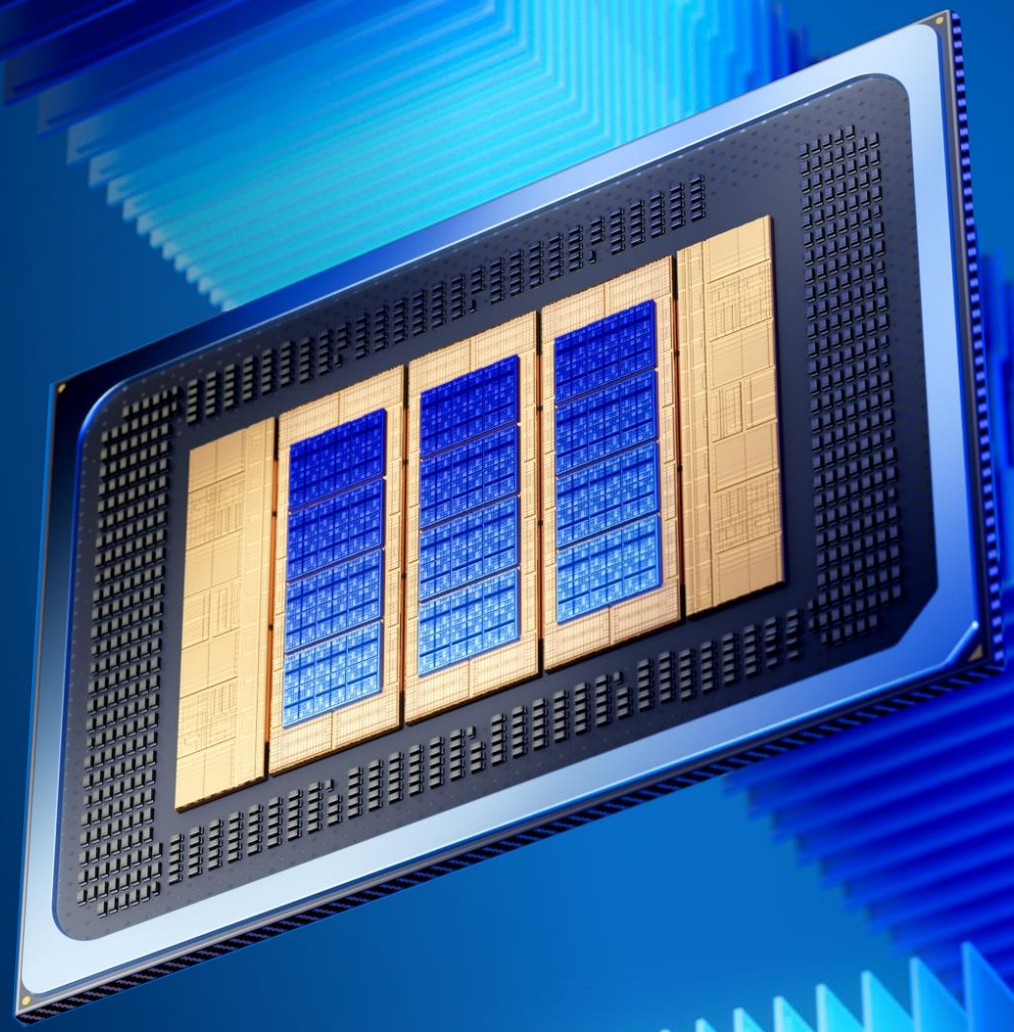
intel

Canonical

"The combination of Intel Xeon 6+ processors and Canonical's Ubuntu platform is purpose-built for the economics of modern data centers. By leveraging this joint solution's virtualization capabilities and long-term support, telecommunications operators and enterprise customers can maximize their investments and significantly reduce operational overhead."

Cindy Golberg

VP Cloud & Silicon Partnerships at Canonical



intel

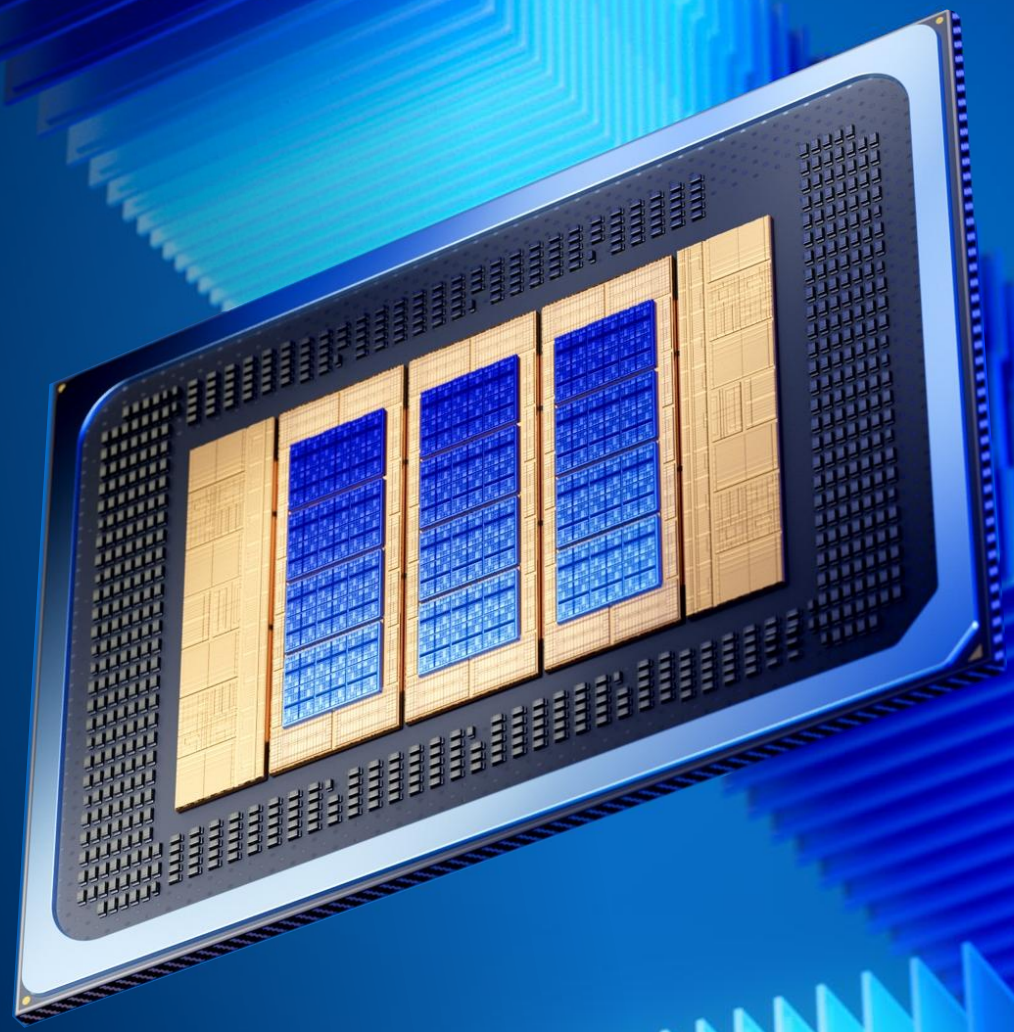
SAMSUNG

"With Intel® Xeon® 6+ processors, Samsung is positioned to take cloud-native core networks to the next level—delivering breakthrough performance per watt, significant performance gains, and strong security capabilities. Based on our evaluations to date, we expect more than 2.2x performance advancement versus our existing offering.

Targeting early 2027 availability, Samsung's Xeon 6+ based cloud native core will help us extend the market traction we're seeing today with Samsung core network solutions that support Intel® Xeon® 6 processors with E-cores."

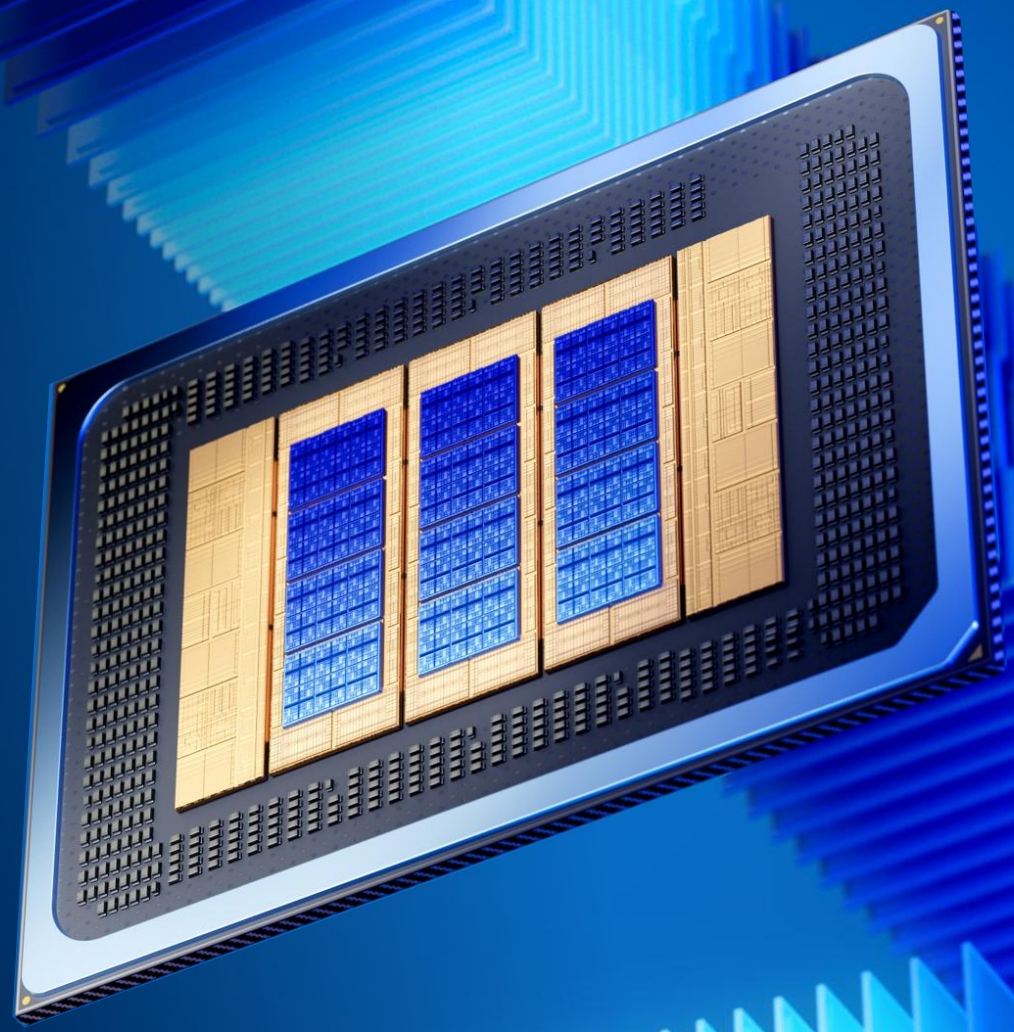
Boyoung Yoon

VP and Head of Cloud Solution Business at Samsung Electronics



intel

HPE



"HPE and Intel are helping customers address growing data-intensive workloads where higher memory bandwidth and core density unlock performance.

By combining the efficiency and scalability of Intel's Clearwater Forest 1 socket solution with HPE's leadership in secure, optimized, and automated computing, we're helping customers modernize with high-density infrastructure designed to improve efficiency and simplify operations."

Krista Satterthwaite

Senior Vice President & General Manager, Compute Hewlett Packard Enterprise

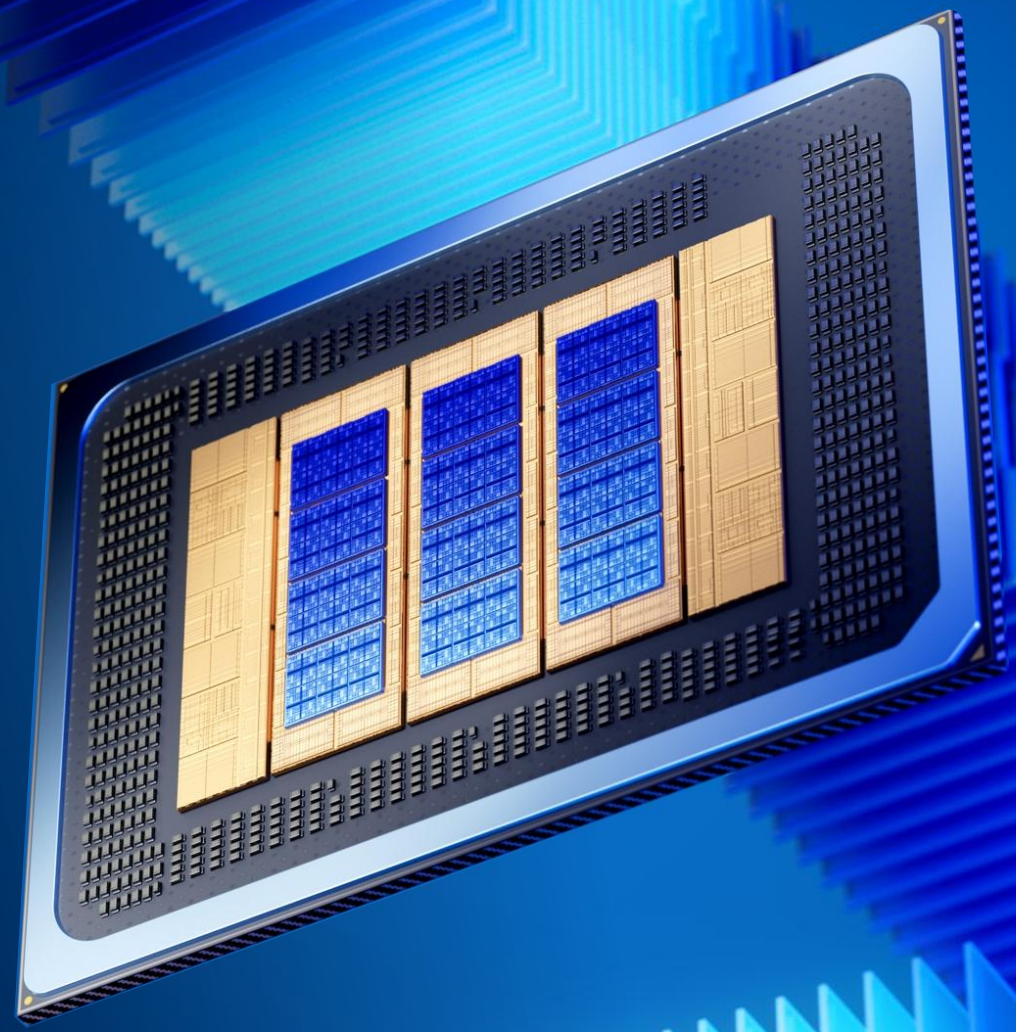
intel

SUPERMICRO

"Supermicro and Intel continue to deliver highly efficient, high-density infrastructure that helps customers deploy cloud and enterprise workloads faster while reducing power consumption and overall data center TCO."

Ray Pang

Senior Vice President, Technology and Business Enablement, Supermicro

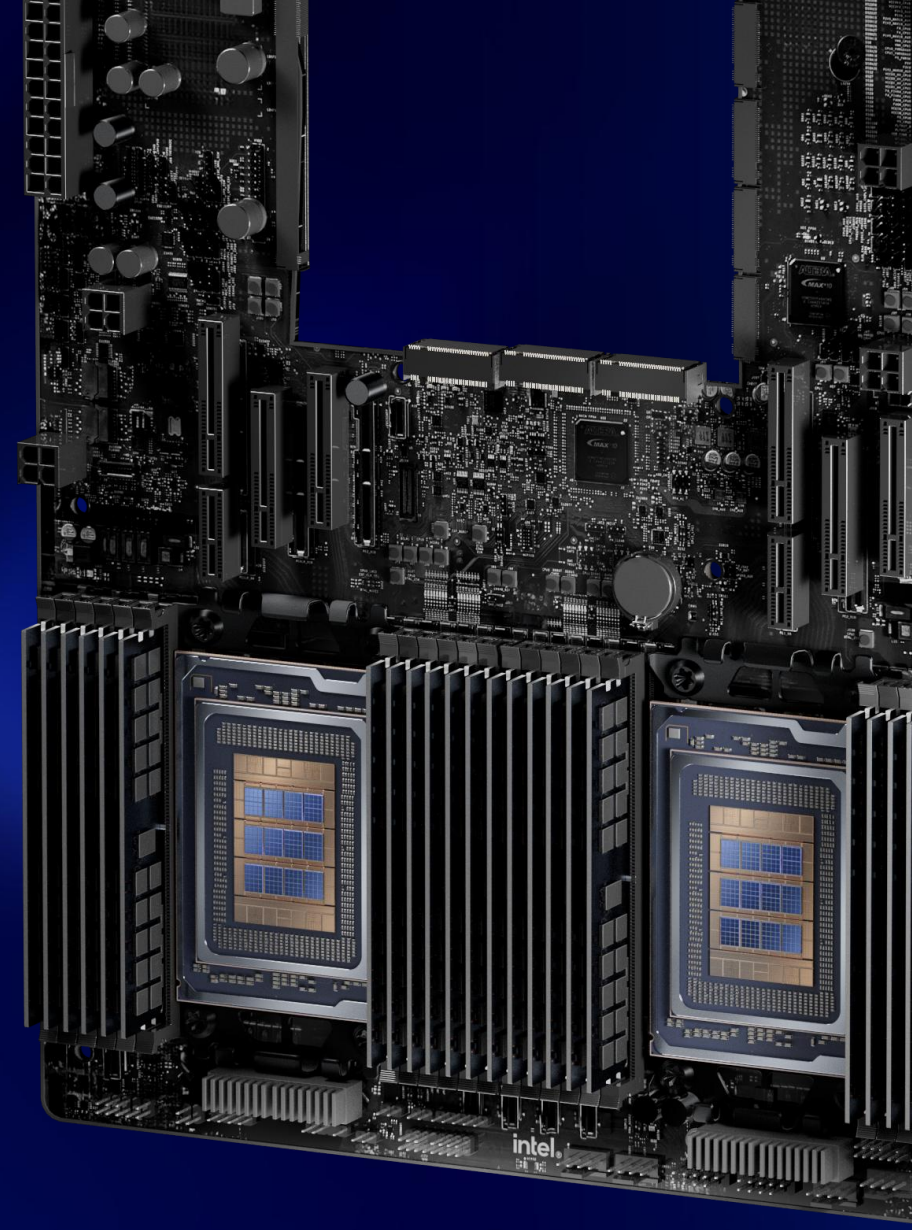


intel

Next-Level Density Available in a Breadth of Options

Hardware solutions with Intel® Xeon® 6+ processors

AMAX
ASRock Rack
ASUS
DELL Technologies
FOXCONN 鴻海科技集團
GIGA COMPUTING
GIGABYTE
HPE
Inventec
Lenovo
MiTAC MiTAC Computing
msi
PEGATRON
QCT
SUPERMICRO



Render for Illustrative Purposes only

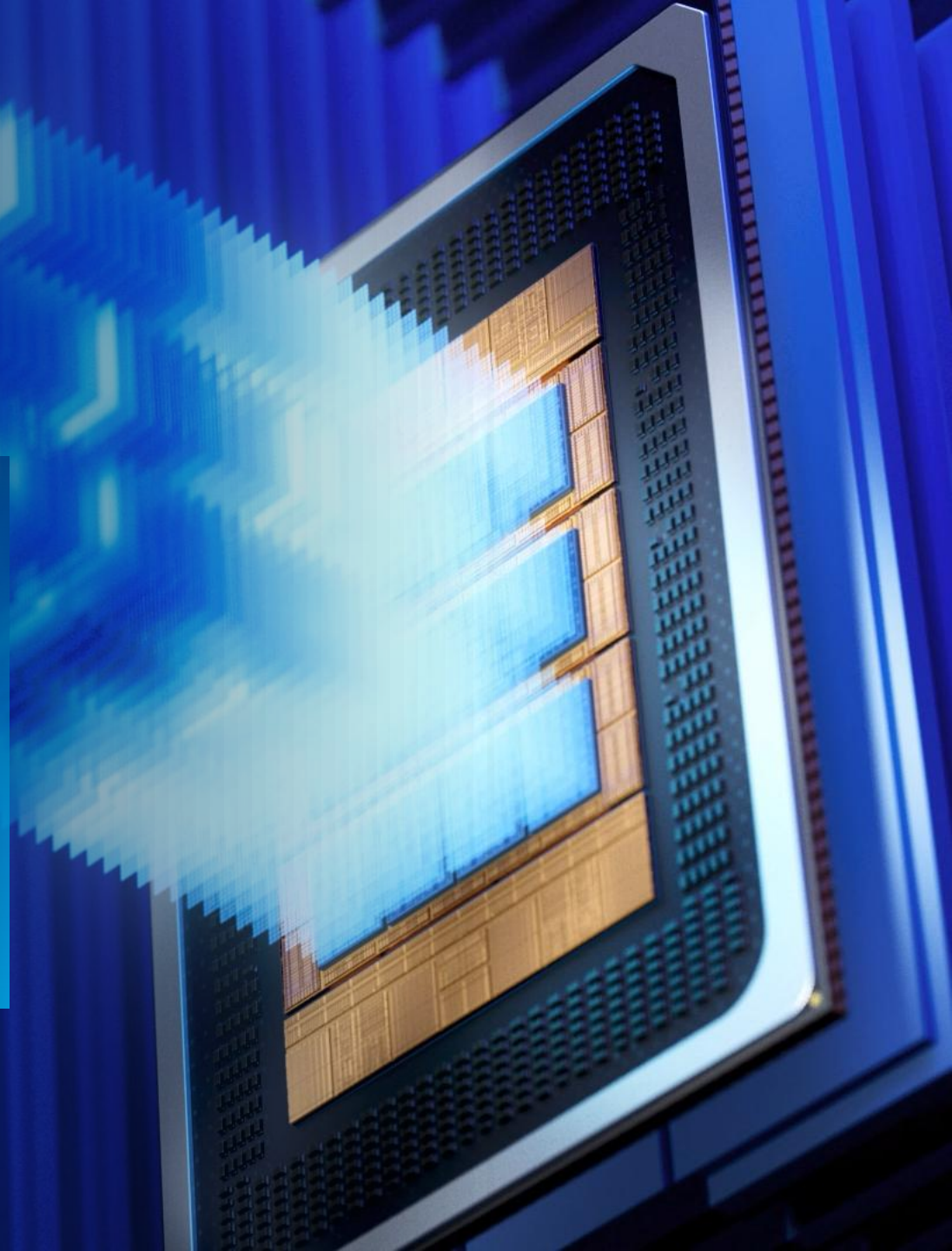
* Provided through Dell's custom configuration process

intel

Intel® Xeon® 6+

Next-level server CPU density & efficiency, built on Intel 18A

Leadership Performance Density	Uncompromised Performance Efficiency	Next Level Infrastructure TCO
30%	55%	Up to 9:1
Greater average performance / thread vs. Competition	**Greater average performance / watt** Gen over Gen	**Server consolidation** vs. 2nd Gen Xeon

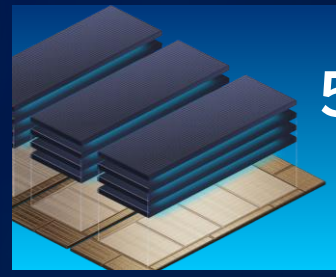


See backup for workloads and configurations. Results may vary

intel

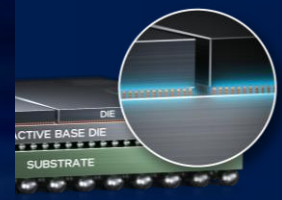
Intel® Xeon® 6+

First 18A CPU in the Data Center



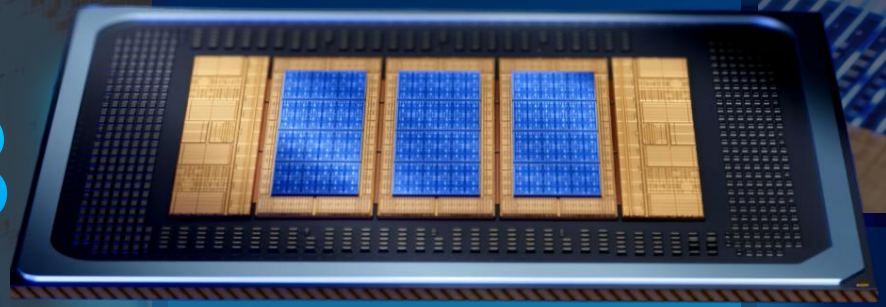
576MB
LLC

96 lanes
PCIe Gen 5



Foveros
Direct 3D

12ch DDR5 8000



288
Next-gen E-cores

intel 18A

Security built in

Intel SGX
Intel TDX

330–450W
TDP

Next-gen
Darkmont
E-cores

Intel Application Energy Telemetry

64 lanes
CXL Compute Express Link

1-2
Socket

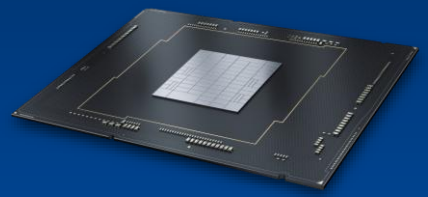
intel XEON

intel

Intel's Disaggregation Journey

Intel Xeon 3rd Gen

Ice Lake

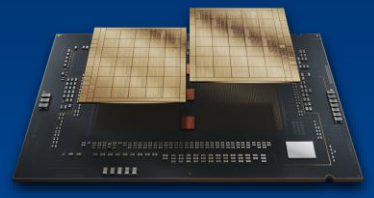


Monolithic

10nm

Intel Xeon 4th & 5th Gen

Sapphire & Emerald Rapids



Tiles with I/O mem & compute

EMIB

intel 7

Intel® Xeon® 6

Granite Rapid & Sierra Forest

I/O tiles

Compute tiles (E-core & P-core)

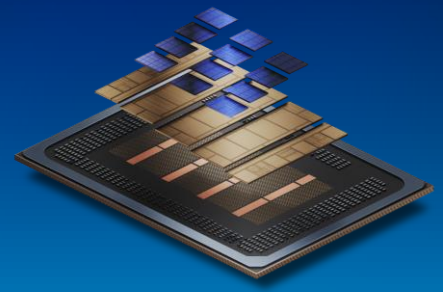
EMIB

intel 7

intel 3

Intel® Xeon® 6 +

Clearwater Forest



I/O tiles

Base tiles

Compute tiles

EMIB

Foveros Direct 3D

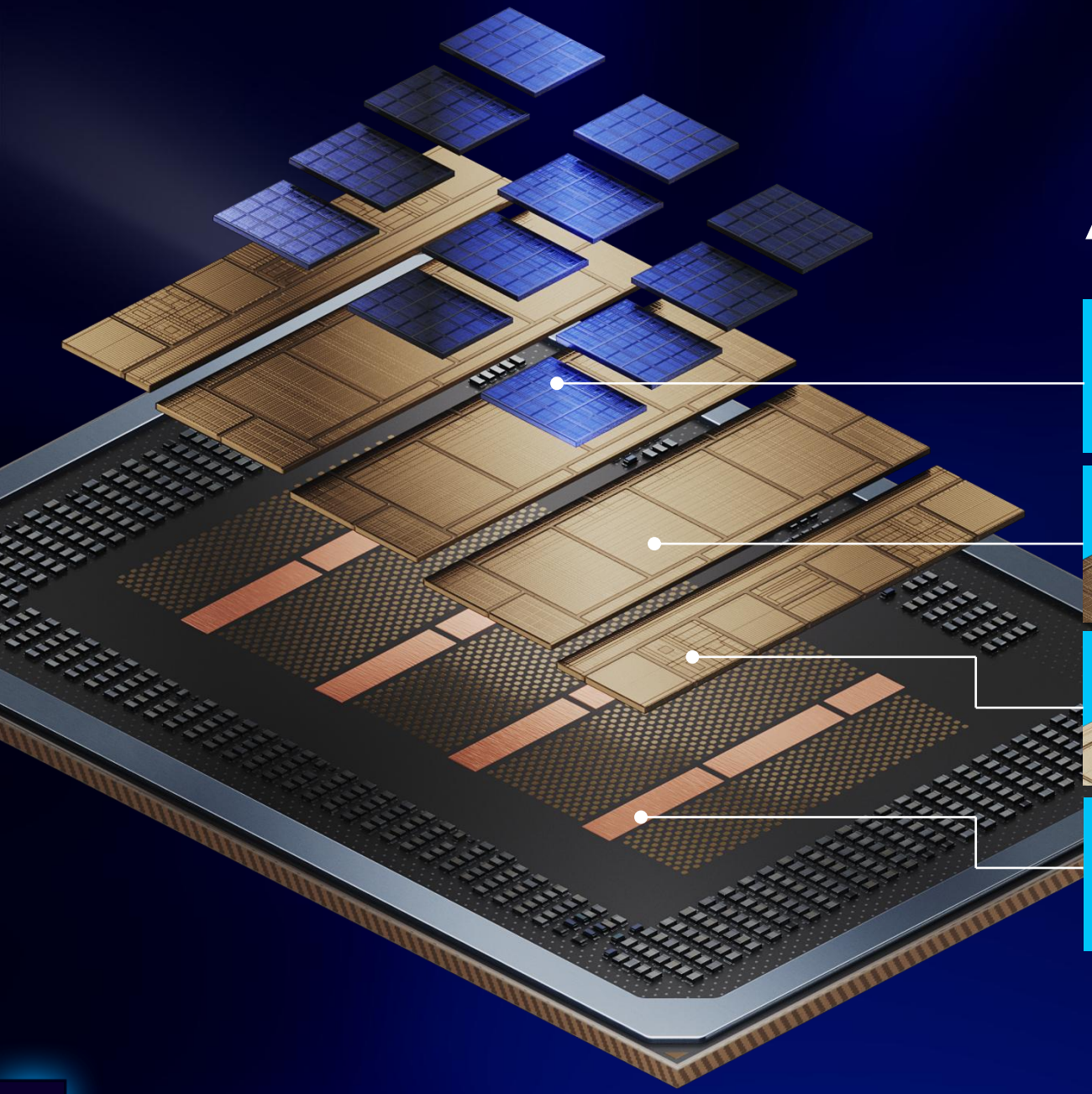
intel 7

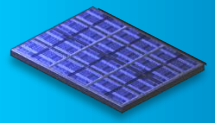
intel 3

intel 18A

intel

Intel® Xeon® 6+ Architecture Recap



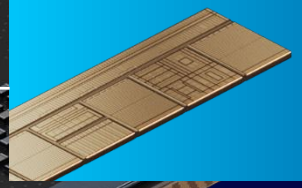


12x Compute tile

intel 18A

3x Active base tile

intel 3



2x I/O tile

Same as Granite Rapids

intel 7

12x EMIB tile

EMIB 2.5D

intel

Built for Confidential Computing

App Isolation
Intel® SGX

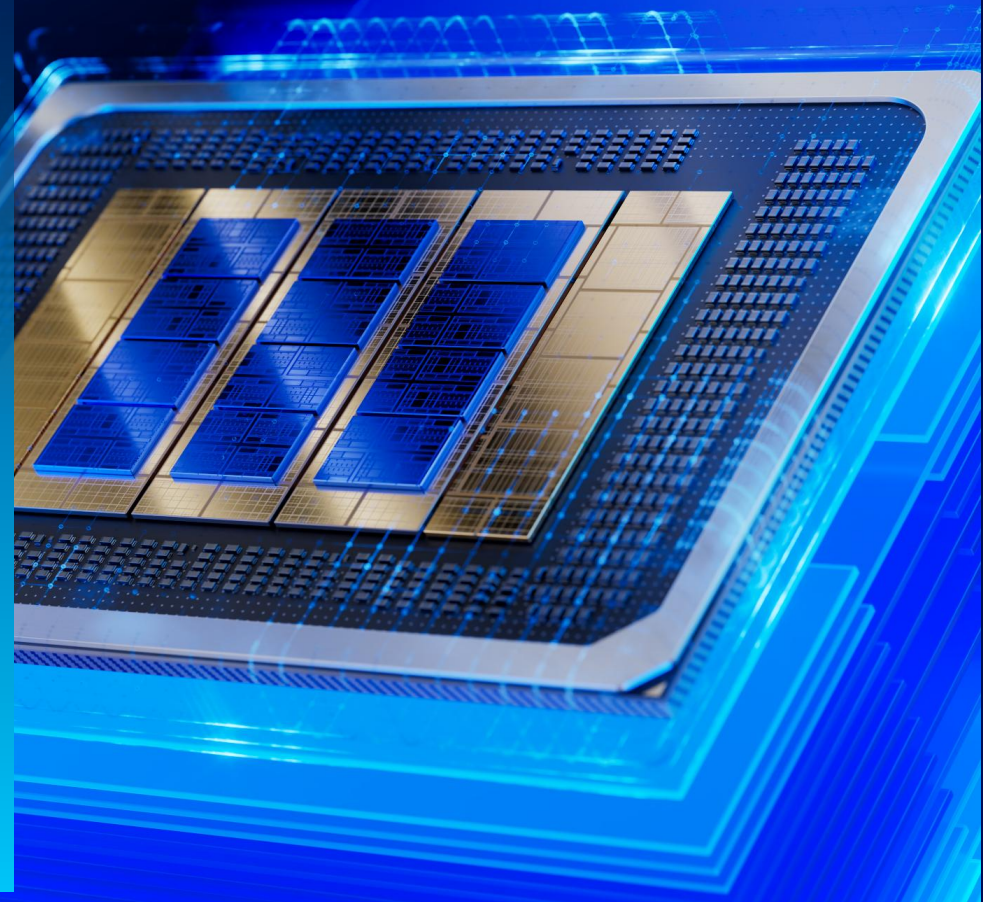
Smallest trust boundary for greatest data protection & code integrity

- Trust boundary
  - **Confidential data**
  - Enclave
- Applications
- Guest OS
- VM Admin
- Hypervisor
- BIOS & Firmware
- Cloud stack & admins

VM Isolation
Intel® TDX

Most straightforward path to greater security, compliance & control for legacy apps

- Trust boundary
  - **Confidential data**
  - Applications
  - Guest OS
  - VM Admin
- Hypervisor
- BIOS & Firmware
- Cloud stack & admins



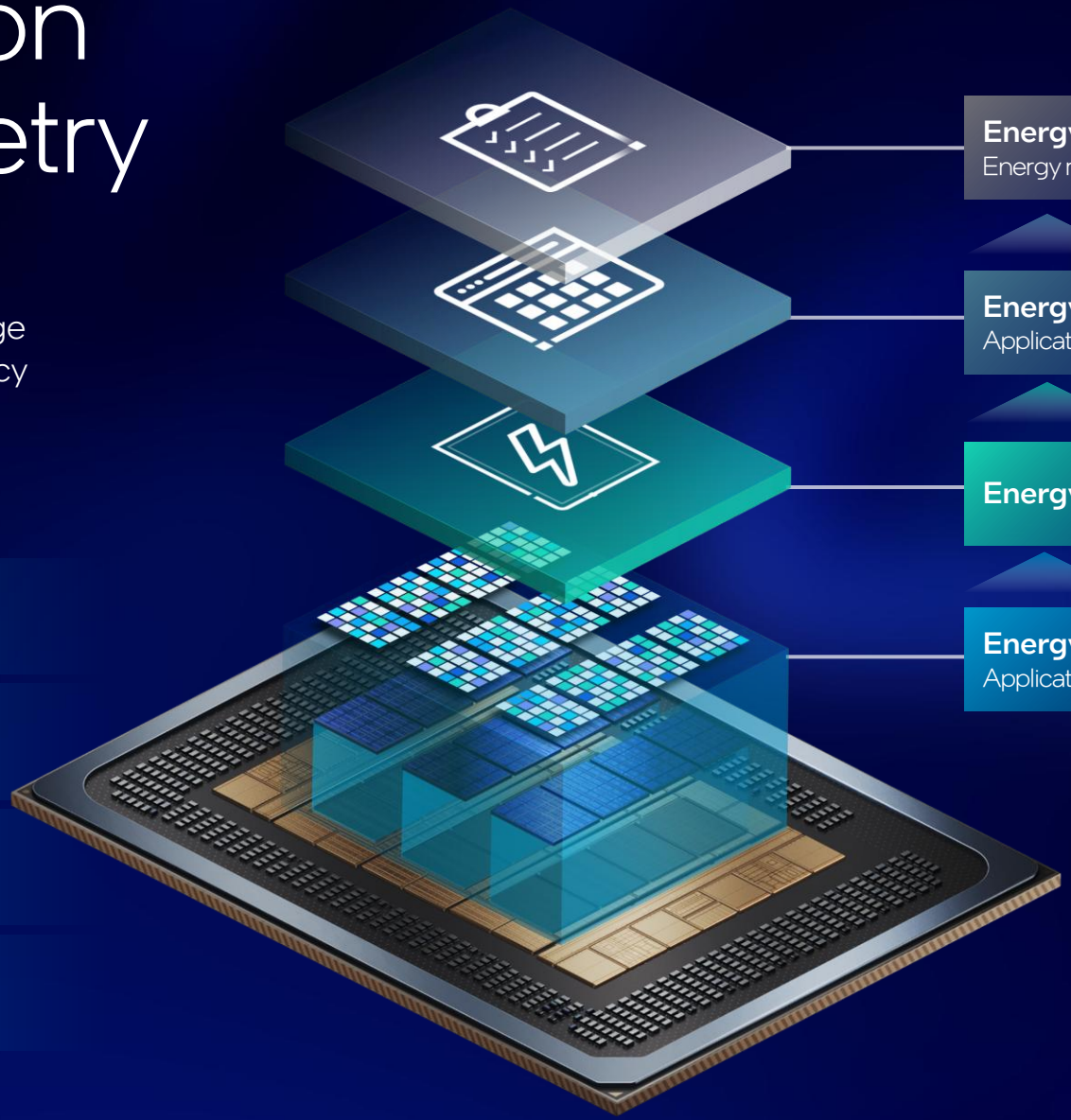
intel

Intel® Application Energy Telemetry

(Intel® AET)

First to market per application core energy usage information enables greater energy transparency in data centers.

- Insight into end-user app energy usage
- Identify problem workloads
- Improve operational efficiency
- Accurate reporting



Energy readout
Energy reporting in Intel PMT

Energy data reporting
Application specific

Energy telemetry aggregation

Energy Data
Application tagging with Intel® RDT

1. Check with your account representative for enablement.

intel

schwarz digits

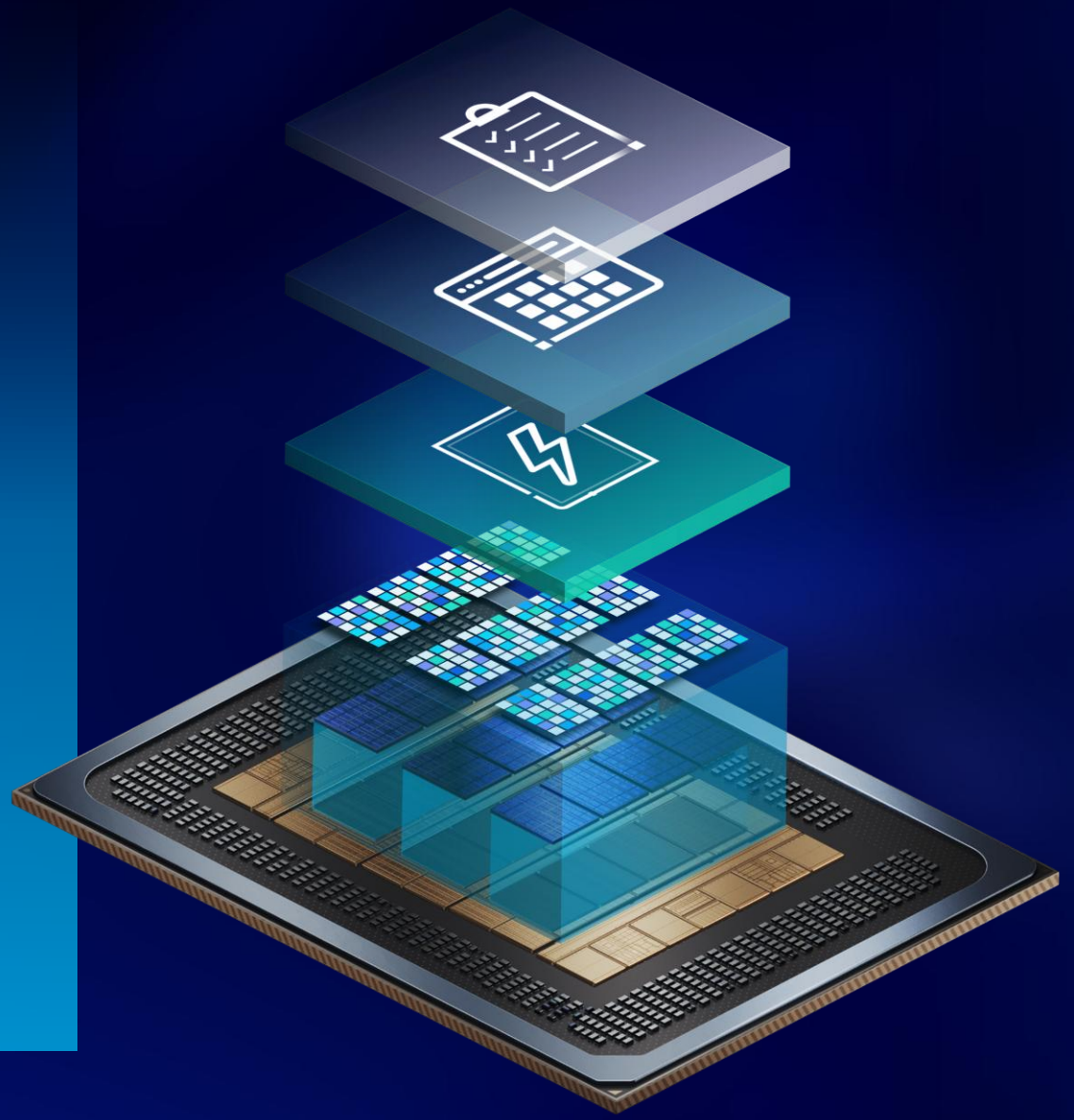
"For Schwarz Digits, energy efficiency isn't just about power savings - it's about making smarter infrastructure decisions dynamically.

Intel Xeon 6+ with Intel Application Energy Telemetry is able to give us real-time, low-overhead insight into workload energy behaviour.

Our goal is to optimize placement, balance power and reduce total cost of ownership across the fleet.

Matthias Sutter

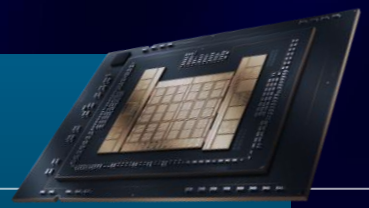
Chief Product Owner STACKIT Cloud at Schwarz Digits

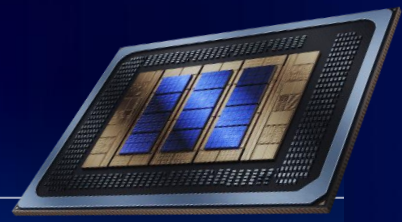


1. Check with your account representative for enablement.

intel

Addressing Tomorrow's Data Center Needs

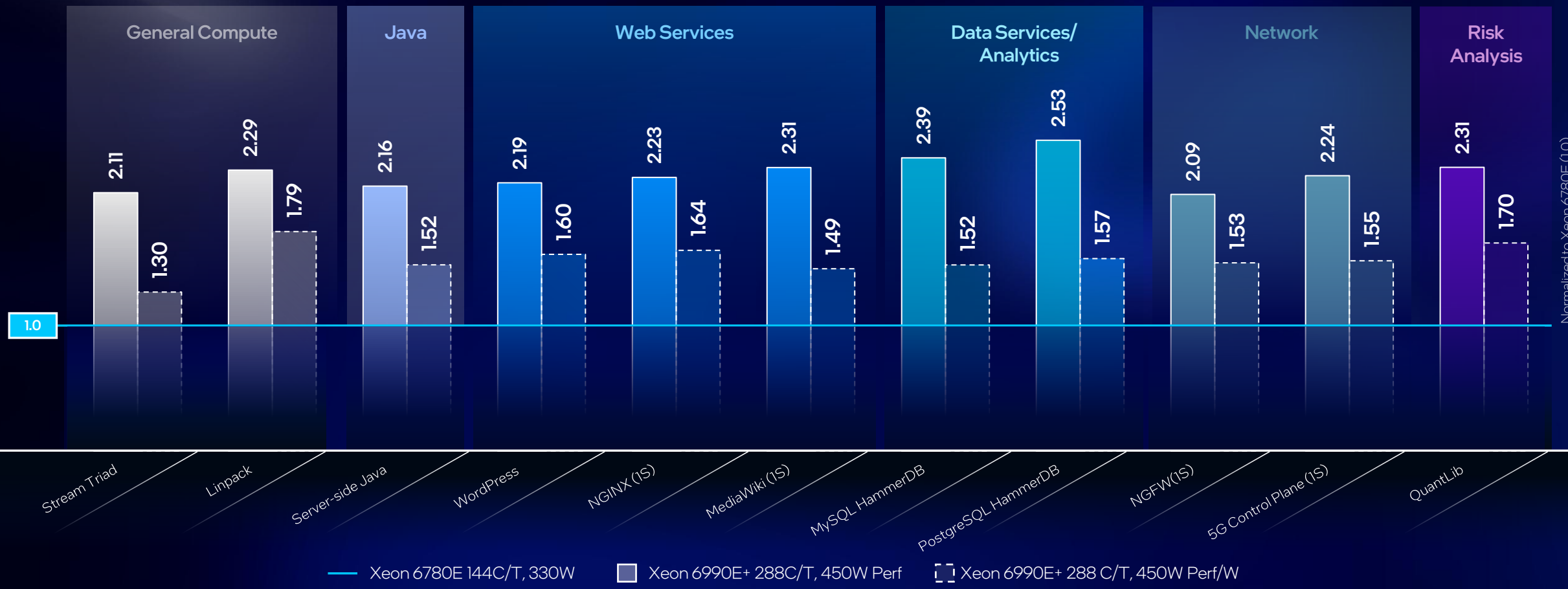




Intel® Xeon® 6700E CPU		Intel® Xeon® 6+ CPU
144 E-cores	CPU	288 E-cores
1S | 2S	Socket Support	1S | 2S
330W	Max TDP per CPU	450W
8ch	Memory Channels	12ch
6400MT/s DDR5	Memory Support	8000MT/s DDR5
88 lanes PCIe | 64 lanes CXL	PCIe G5 | CXL 2.0	96 lanes PCIe | 64 lanes CXL
4 links – 24GT/s	UPI 2.0 Links	6 links – 24GT/s
108MB	Last Level Cache	576MB
-	Energy	Intel® Application Energy Telemetry (Intel® AET)
-	Crypto	SHA512 | SM3 | SM4
Intel® Software guard extensions | Intel® Trust domain extensions	Security	Intel® Software guard extensions | Intel® Trust domain extensions
Intel® QAT | Intel® DLB | Intel® DSA | Intel® IAA	Accelerators	Intel® QAT | Intel® DLB | Intel® DSA | Intel® IAA

Intel® Xeon® 6+ Generational Gains

Intel Xeon 6990E+ delivers **2.26x higher average performance**
and **1.55x higher average performance/watt** vs Intel® Xeon® 6780E

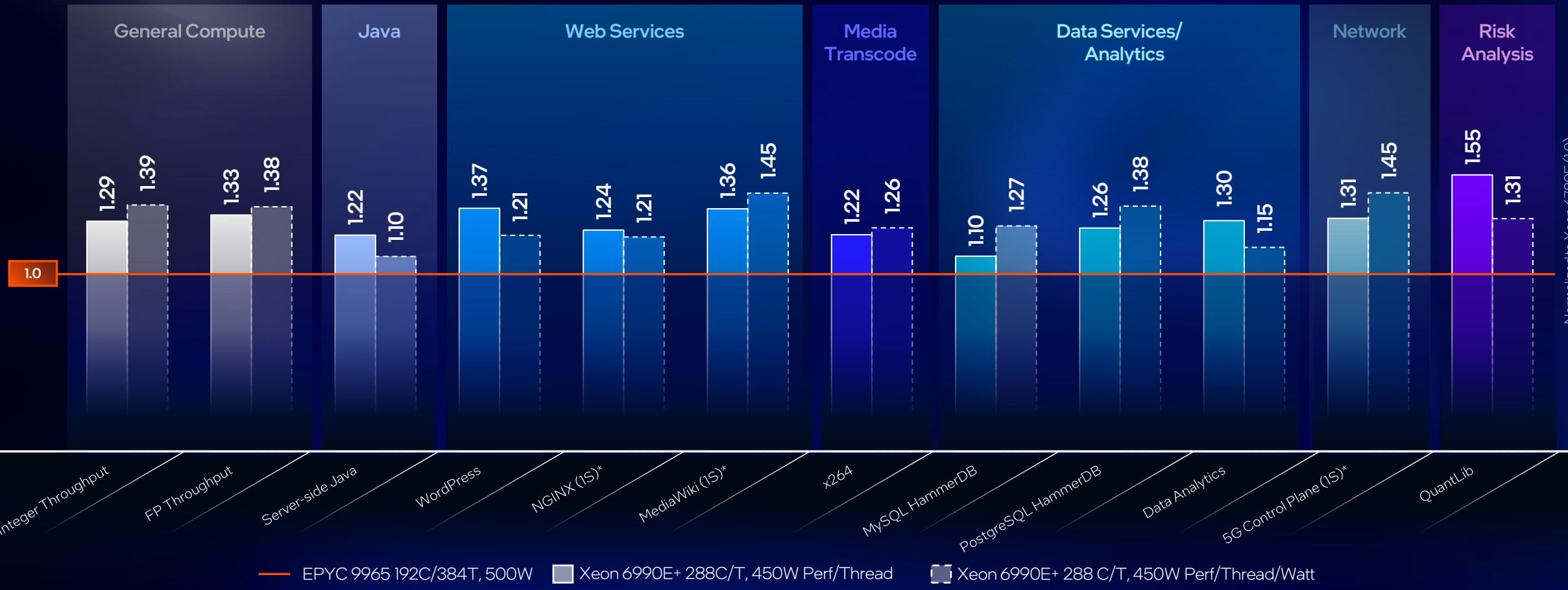


* Perf /watt based on socket power. See backup for workloads and configurations. Geomean of Stream Triad, Linpack, Server-side Java, WordPress, NGINX(1S), MediaWiki(1S), MySQL, PostgreSQL, NGFW (1S), 5G Control Plane(1S), QuantLib.
Results may vary.

intel

Intel® Xeon® 6+ Competitive Performance

Intel Xeon 6990E+ delivers **1.3x higher average performance per thread** and **1.3x higher average performance/thread/watt** vs AMD EPYC 9965



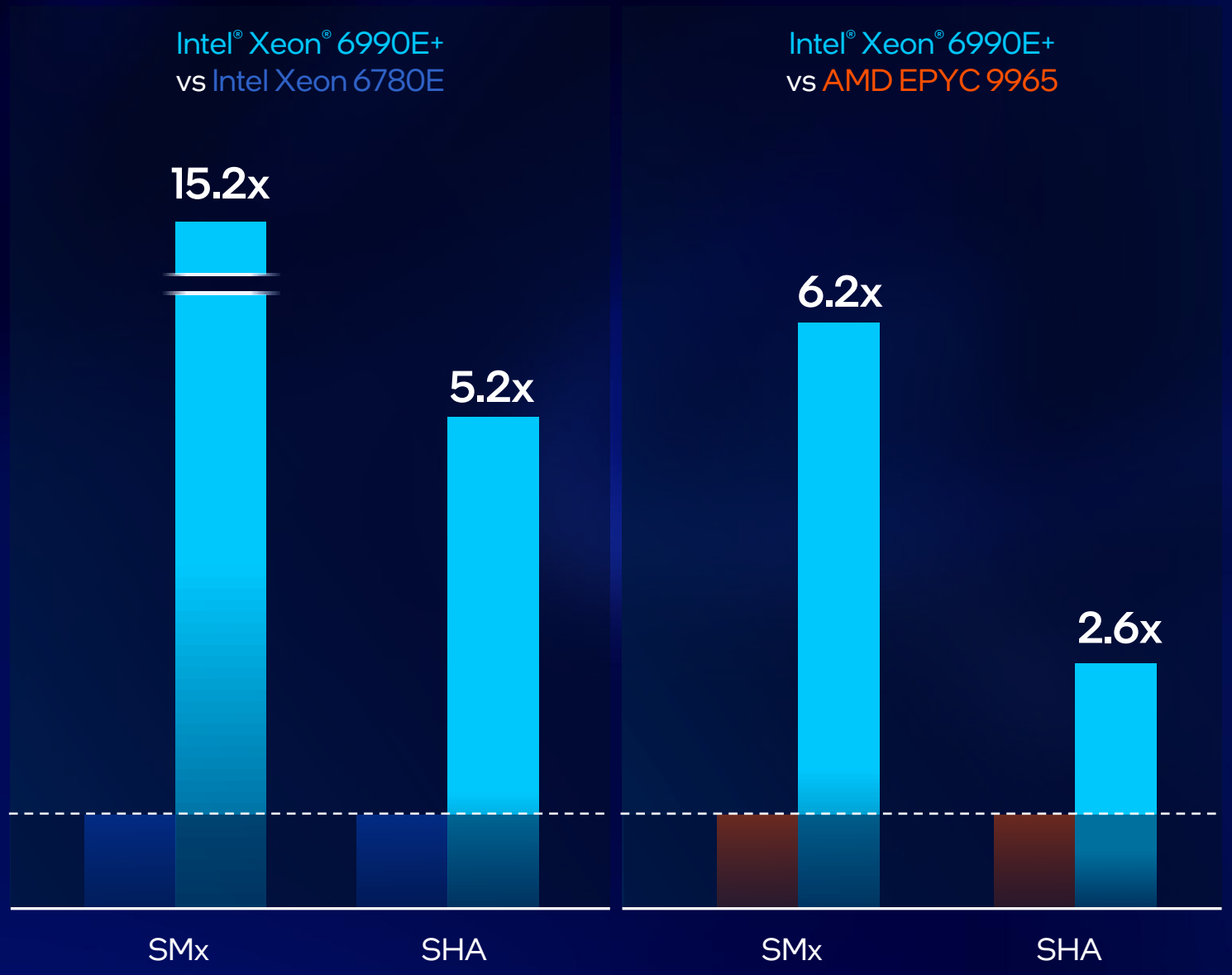
* Perf/thread/watt calculations used wall power, except for NGINX, MediaWiki and 5G Control Plane which are based on socket power. See backup for workloads and configurations. Geomean of integer throughput, floating point throughput, Server-side Java, WordPress, NGINX(1S), MediaWiki(1S), x264, PostgreSQL, Data Analytics, 5G Control Plane(1S), QuantLib. Results may vary.

intel

Security and Crypto Supremacy

Intel® Xeon® 6990E+ delivers unmatched crypto workload performance. Delivered through new instruction support:

SHA512 | SM3 | SM4



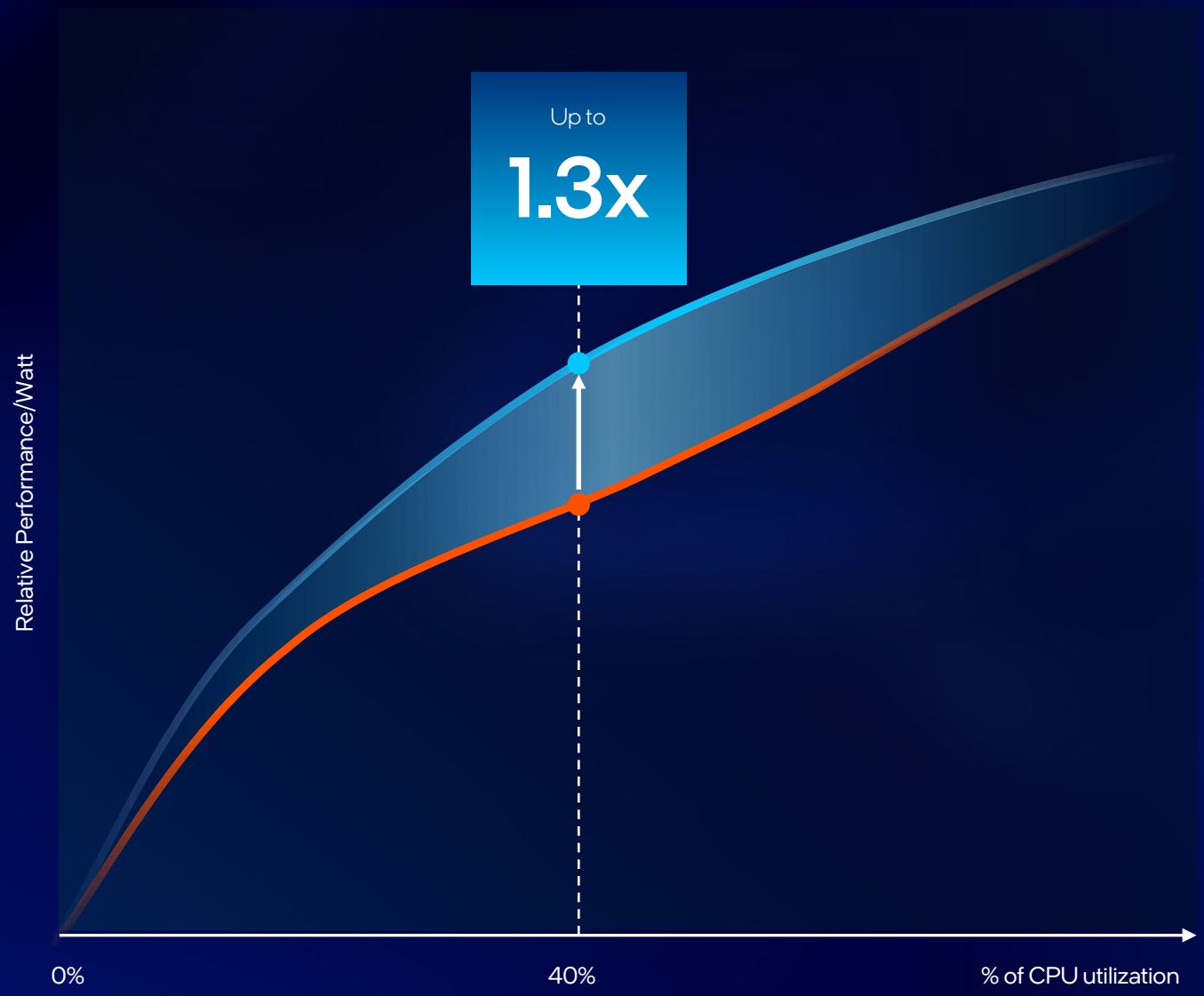
*Estimated over 4 years. See backup for workloads and configurations. Using WordPress workload. Your results may vary.

intel

Higher Performance Efficiency Across Server Utilization

Intel Xeon 6990E+ delivers significant advantages vs. AMD EPYC 9965 in performance per watt at a typical 40% CPU utilization

- Xeon 6990E+288C/T, 450W
- AMD EPYC 9965 192C/384T, 500W



See backup for workloads and configurations. Results may vary

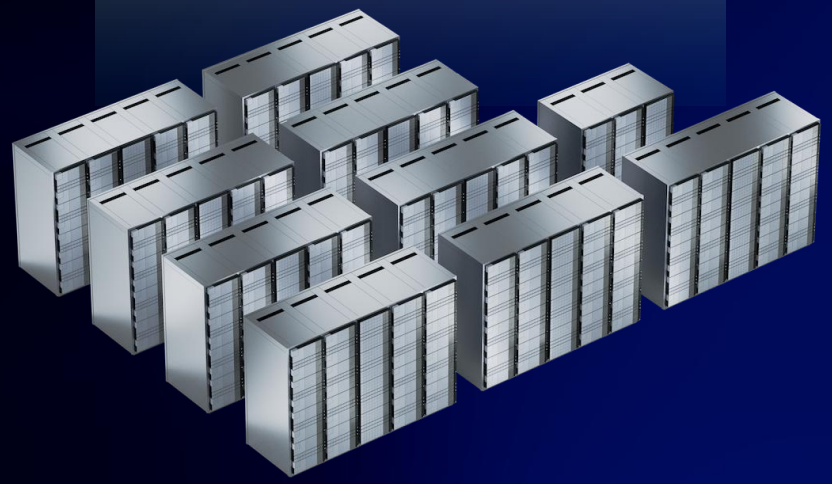
intel

Consolidate and Save with Intel® Xeon® 6990E+

2nd Gen Intel® Xeon® 6258R

48 Racks

960 Servers



9:1
Server consolidation ratio

79%
fleet space reduction

23 GWh
Fleet Energy Saved *

73%
%energy saved*

9.8kt
Reduced CO2 emissions

Intel® Xeon® 6990E+

10 Racks

100 Servers

*Estimated over 4 years. See backup for workloads and configurations. Using WordPress workload. Your results may vary.

intel

Intel® Xeon® 6+

Next-level server CPU density & efficiency, built on Intel 18A

30% **Greater Average Perf/Thread** vs competition	**55%** **Greater Average Performance/Watt** Gen-on-Gen	Up to **9:1** **Server Consolidation** vs 2nd Gen Intel Xeon
Up to **1.3x** **Greater Perf Efficiency at Avg Utilization** vs competition	**2.26x** **Greater Average Performance** Gen-on-Gen	**15.2x** **Faster Average Crypto** Gen-on-Gen

See backup for workloads and configurations. Results may vary

Foundational Data Center

Processors & connectivity

Intel® Xeon® 6 with P-cores

Throughput & memory optimized x86 CPU

Launched in 2025

Intel® Xeon® 6+

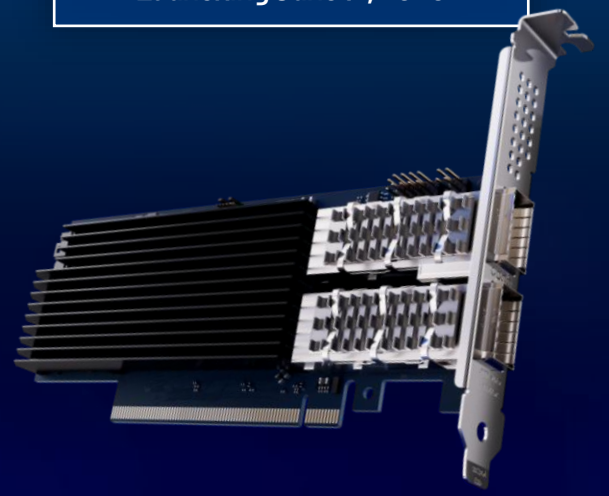
Next-level server CPU density & efficiency, built on Intel 18A

Launching June 1st, 2026

Intel® Ethernet E835

Secure, manageable and scalable optimization

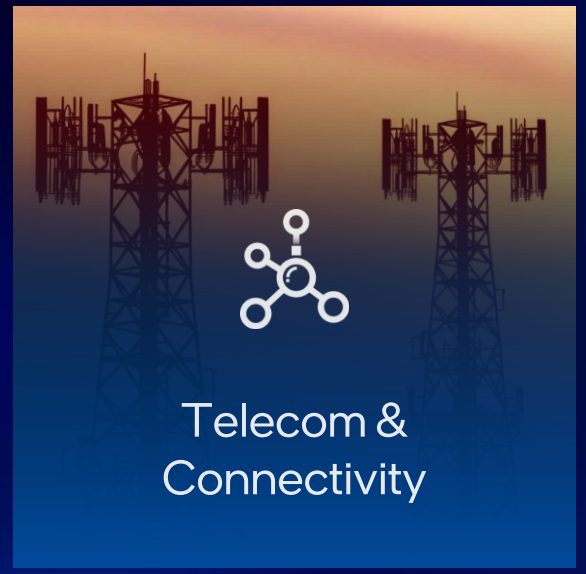
Launching June 1st, 2026

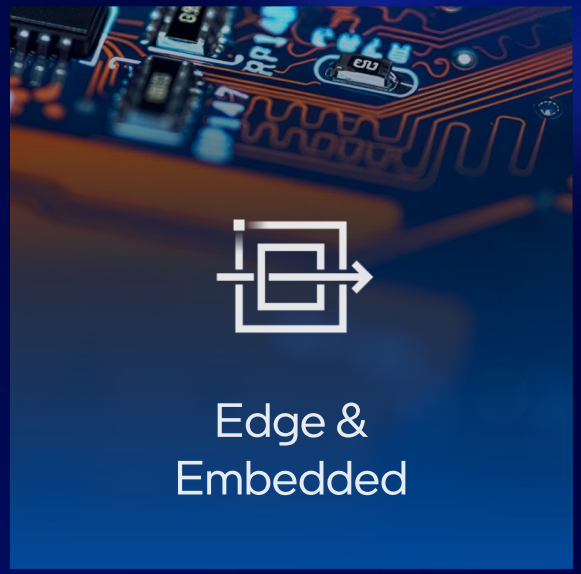


intel.
ETHERNET

Secure, Manageable, and Scalable Optimization

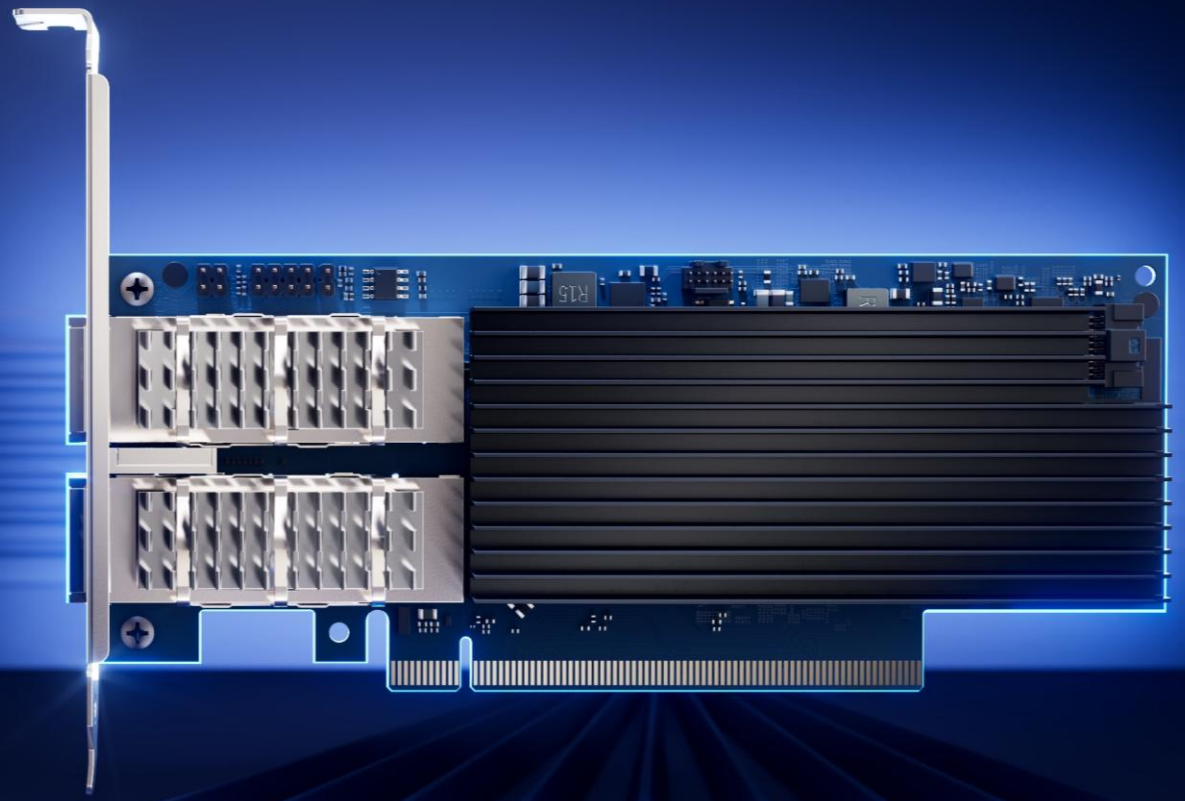
The Foundation of Network Efficiency





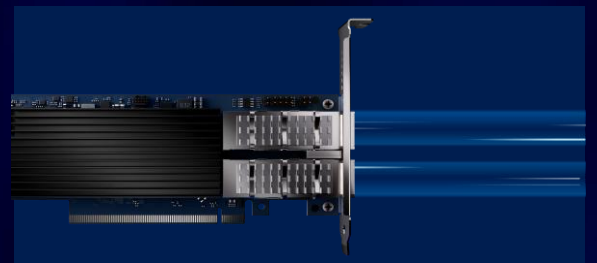
Intel® Ethernet E835 Series

Optimized for mobile core, cloud, enterprise networking, AI and data centers — engineered for/to meet the demands of modern distributed infrastructure.



- Performance
- Security
- Flexibility
- Efficiency

Intel® Ethernet E835 Controllers & Network Adapters



Optimized Performance

Up to **200GbE**

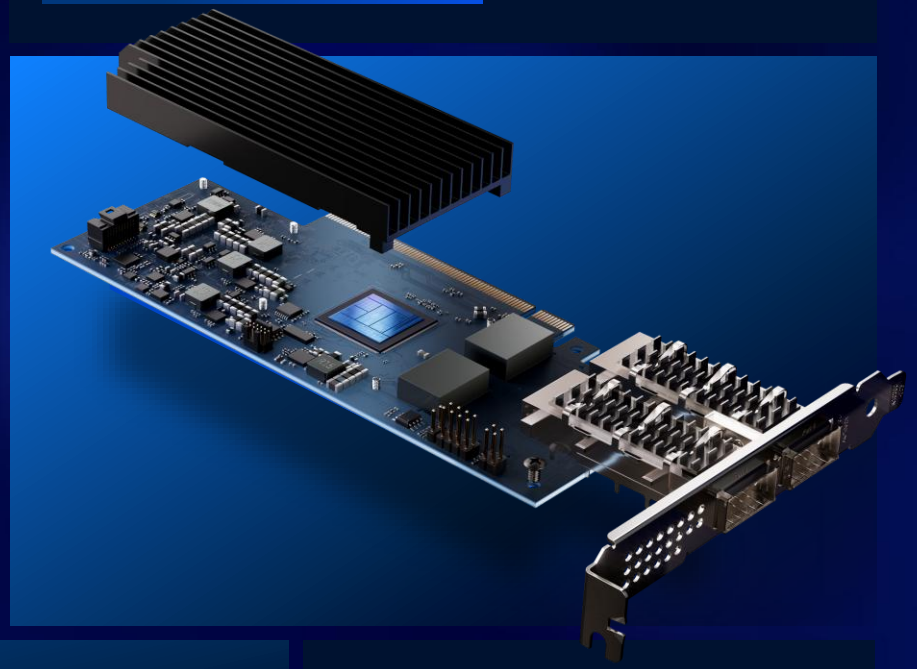
Flexible 200/100/50/25/10GbE data rate. Multiple port configurations with 2x25, 4x25, 2x100, 1x200. More configurations available with Intel Ethernet Port Configuration Tool – EPCT

Portfolio breadth 25G – 200G

Broad OS Support

PCIe & OCP form factors

Comprehensive Ecosystem Support



Comprehensive Manageability

Using the latest Distributed Management Task Force (DMTF) specifications including NC-SI 1.2, modern industry-standard driving internal efficiency, hardware communications and operational efficiency.

Robust Security

- Hardware RoT
- RSA3K/SHA2-384
- Signed SPDM
- FIPS 140-3 Level 1

Advanced Features

- **E-Temp Support** Tj:-20° C to +105° C
- **RDMA** Remote Direct Memory Access
- **DDP** Dynamic Device Personalization

Leading Power Efficiency*

~1.9x
higher perf per watt
vs. NVIDIA Connect X-6 DX (6141 06A)

~1.4x
higher perf per watt
vs. Broadcom BCM957508-P2100G

10+ Years

Long Product Life Cycle

With world-class Intel support

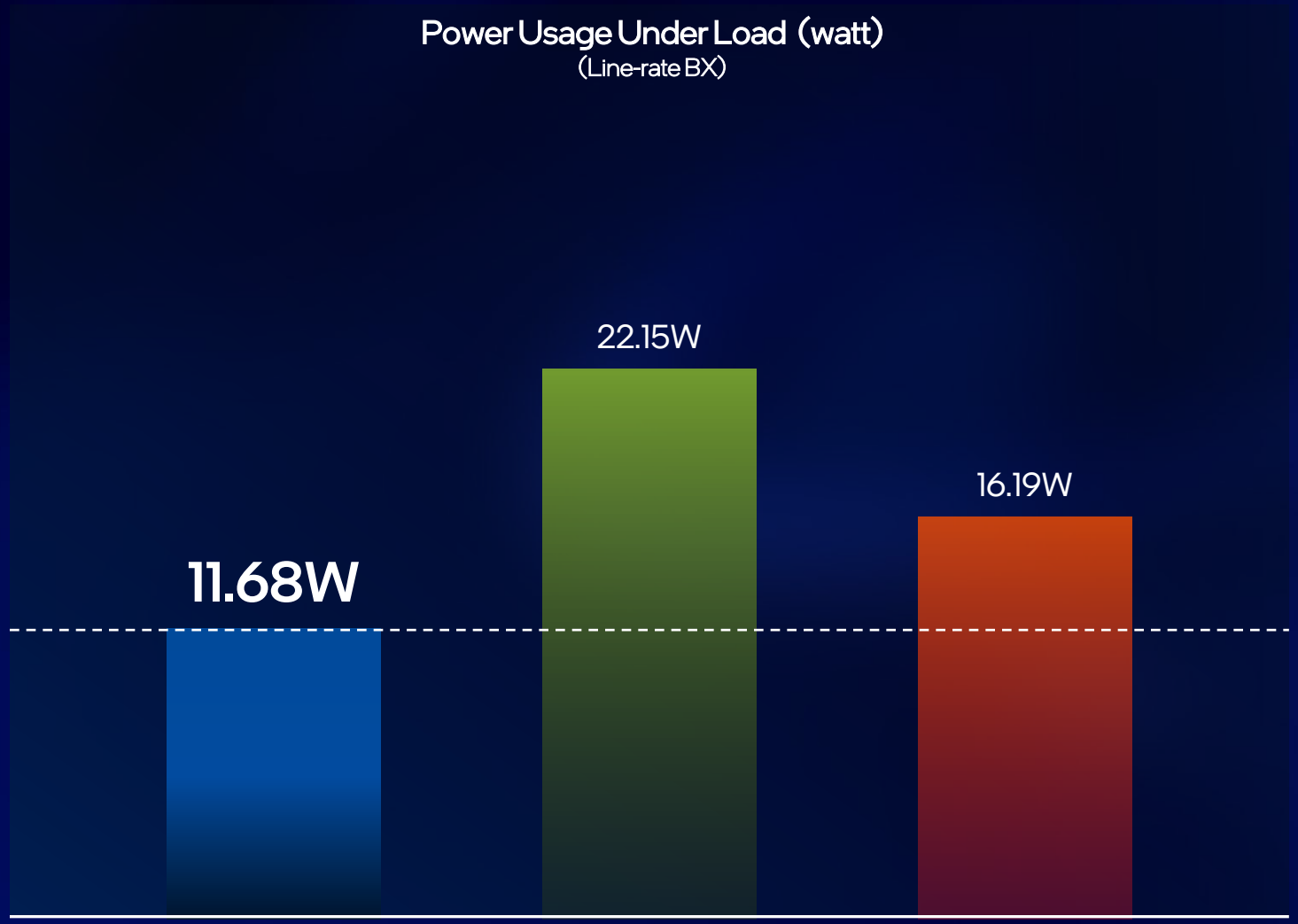
*See backup for workloads and configurations. Results may vary

intel

Leadership Ethernet Performance & Efficiency

Intel® Ethernet Network Adapter E835-CQDA2 vs. competition

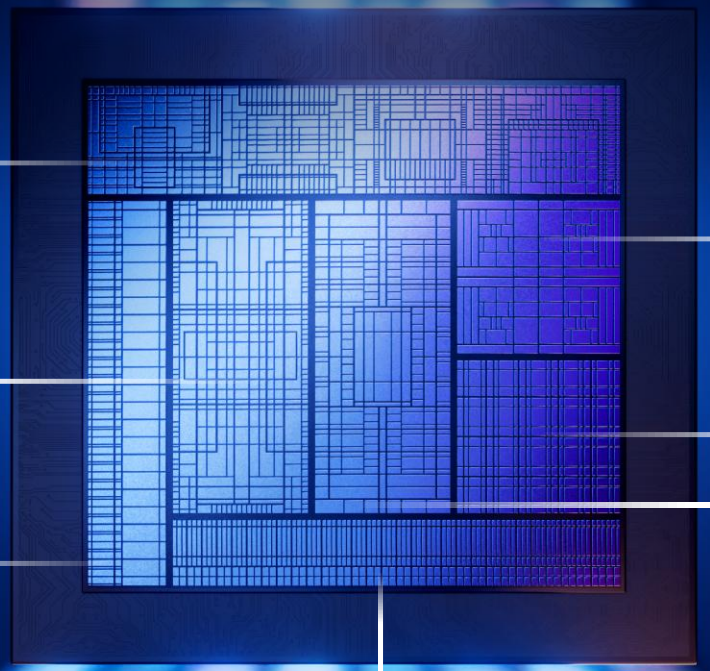
Lower power consumption and higher performance per watt



See backup for workloads and configurations. Results may vary

E835 Controller & Network Adapter Capabilities

Intel® Ethernet E835 combines flexible 200GbE performance, a broad portfolio and ecosystem, integrated RDMA and precision timing, and comprehensive security and modern manageability to maximize efficiency, simplify scaling, and optimize throughput-per-watt.



Broad Portfolio & Ecosystem

Eight 25G -200G PCIe & OCP adapters
Broad Port confugrations across 4 silicon SKUs
Extended temperature support
Linux + ARM, Windows, ESXi OS support
Modern & open standards w 10+ year lifecycle

Robust Capabilities

200G Maximum Throughput
PCI Express 5.0 x 8
Fully programmable pipeline with DDP
Flow Director (up to 32K entries)
8PF / 256VF virtualization density

Security

FIPS 140-3 L1
CNSA1.0 Compliant
HW RoT+ Secure Boot
SPDM 1.1
FW Security enhancements

Precision Clock Synchronization

IEEE 1588 PTP/802.1AS
Integrated SyncE Support
PCIe PTM v1.0a

RDMA/ Storage Networking

RoCEv2 and iWARP
Data Center Bridging (DCB)
Server Message Block (SMB)
NVMe-oTCP, iSCSI

Manageability

NC-SI 1.2
USB 2.0 manageability
PLDM over RBT

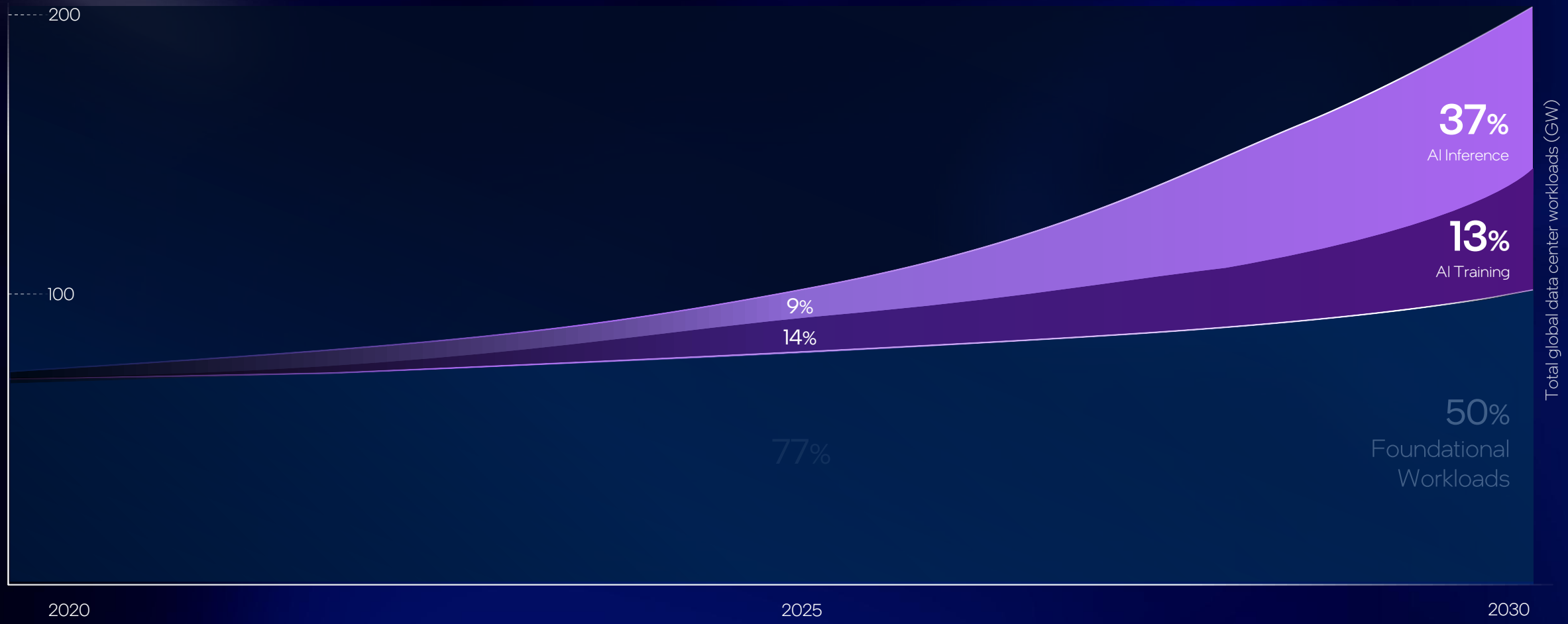
Power Efficiency

Delivers competitive 200GbE line-rate performance with low measured power and higher throughput-per-watt efficiency under load

intel

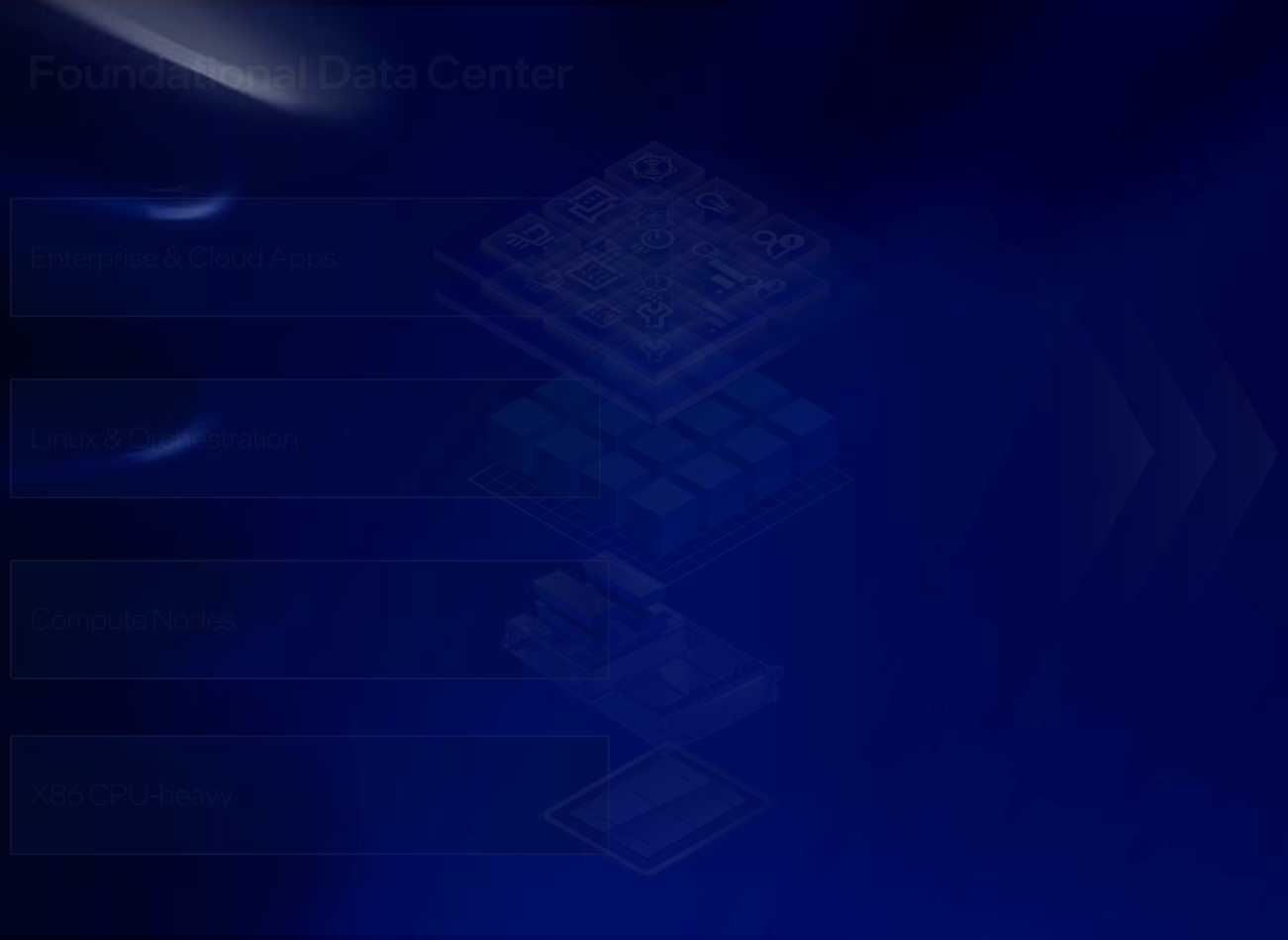
Emergence of Intelligence Center

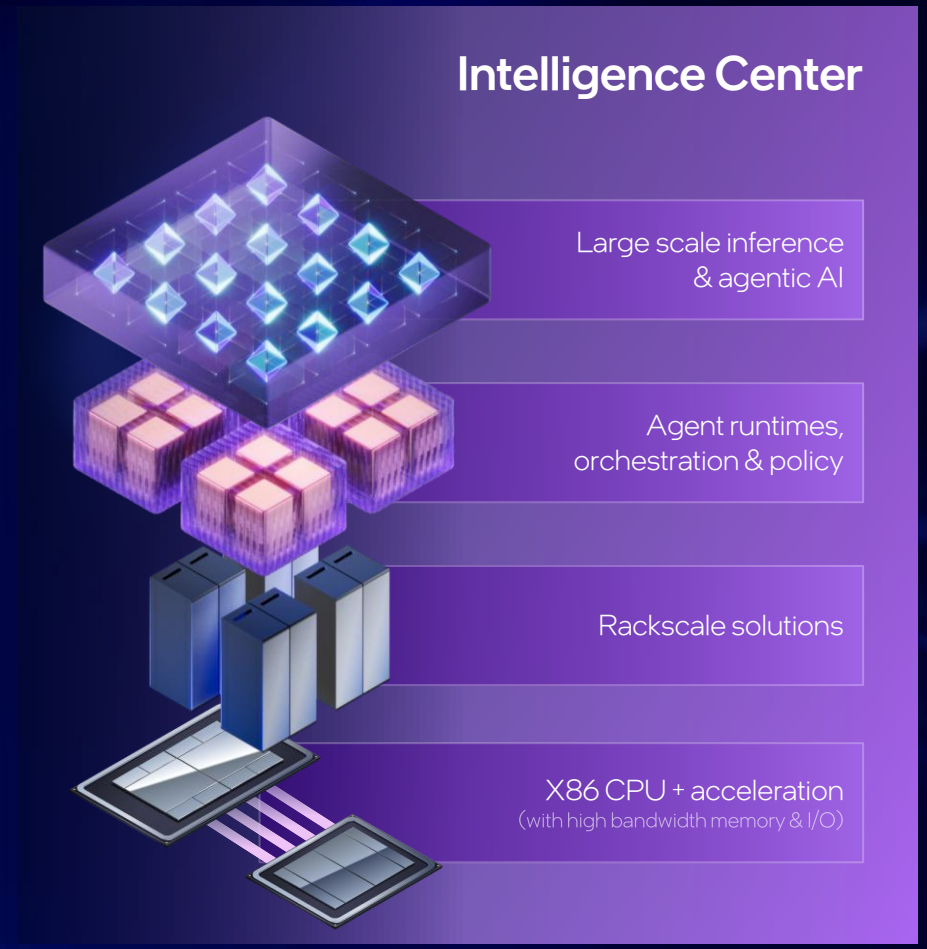
Driven largely by agentic AI & inference workloads



JLL Data Center Outlook (2025)

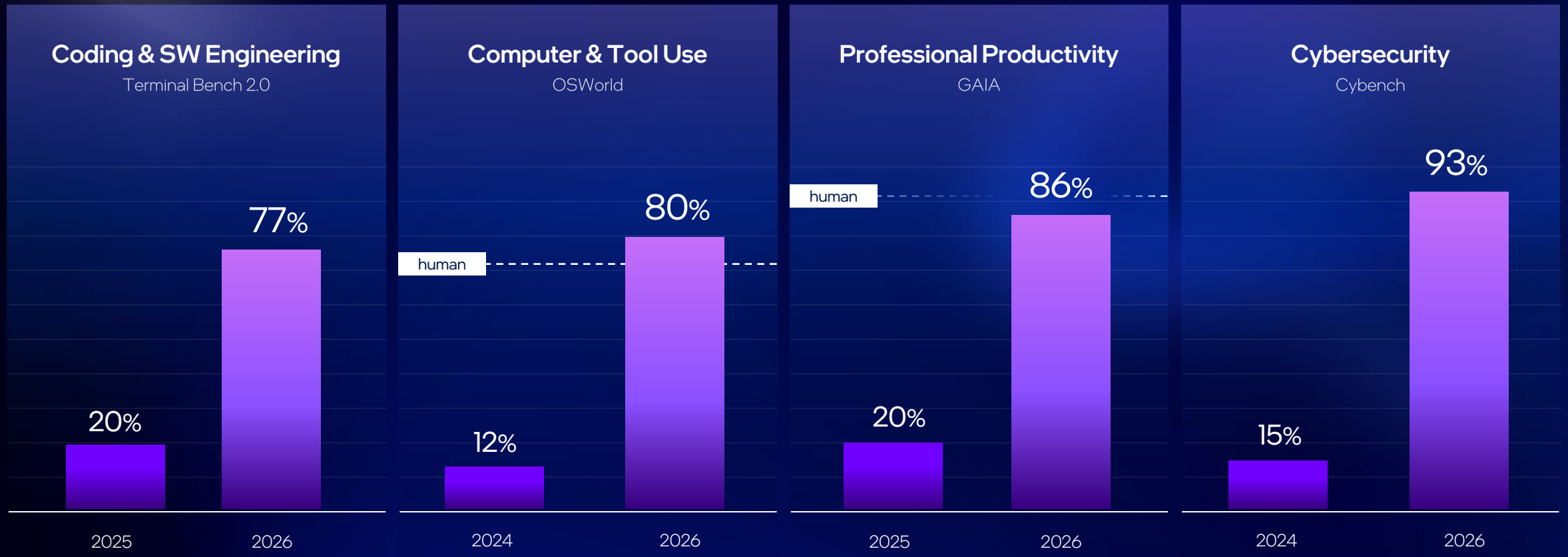
Expanding the Intelligence Center Infrastructure





AI Agents Rapidly Improving Across Many Disciplines

A pivotal moment where agents approach & exceed human capability

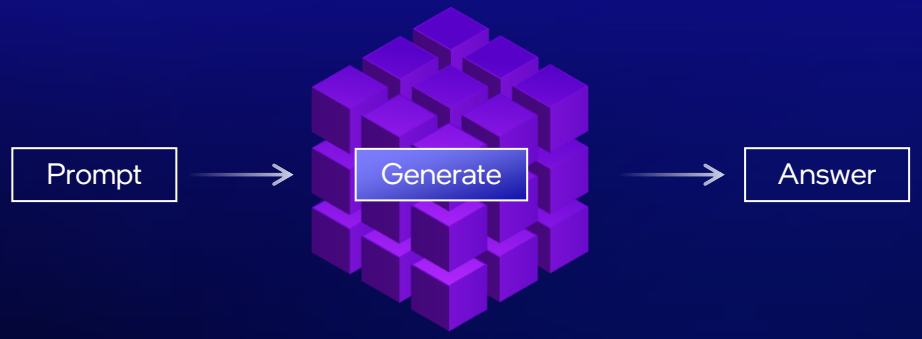


Source: https://hai.stanford.edu/assets/files/ai_index_report_2026_chapter_2_technical.pdf#:~:text=Terminal,2

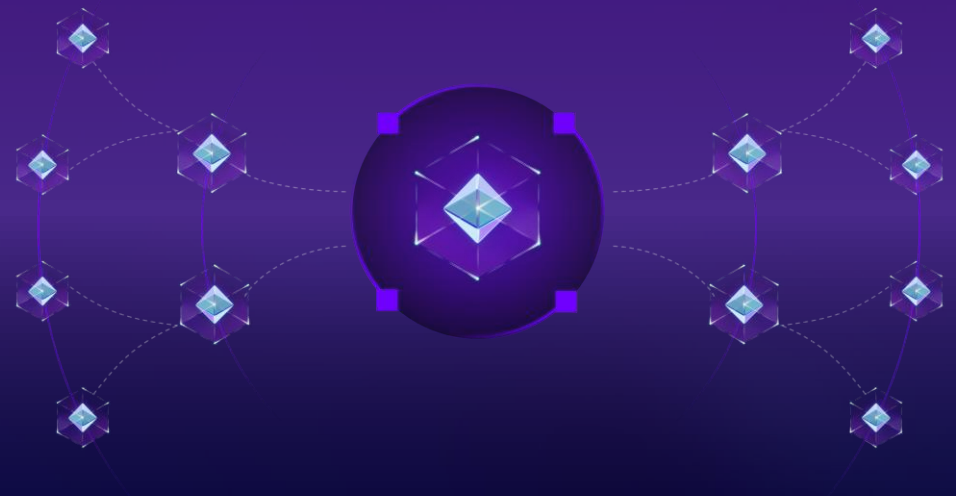
intel

Different Workloads, Shifting Needs

AI Inference



Agentic AI



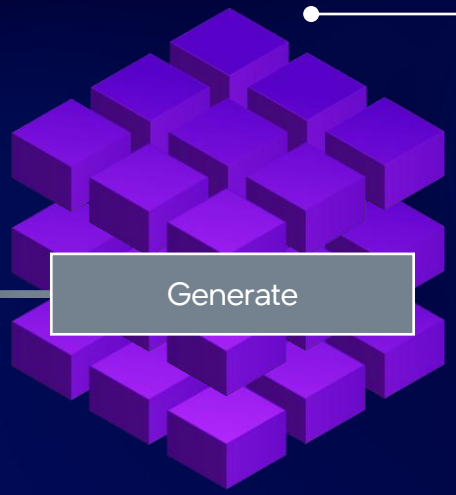
AI Inference (Single Turn)

Input

Single prompt based interaction to get to an answer

LLM

Quality and speed of answer driven by LLM

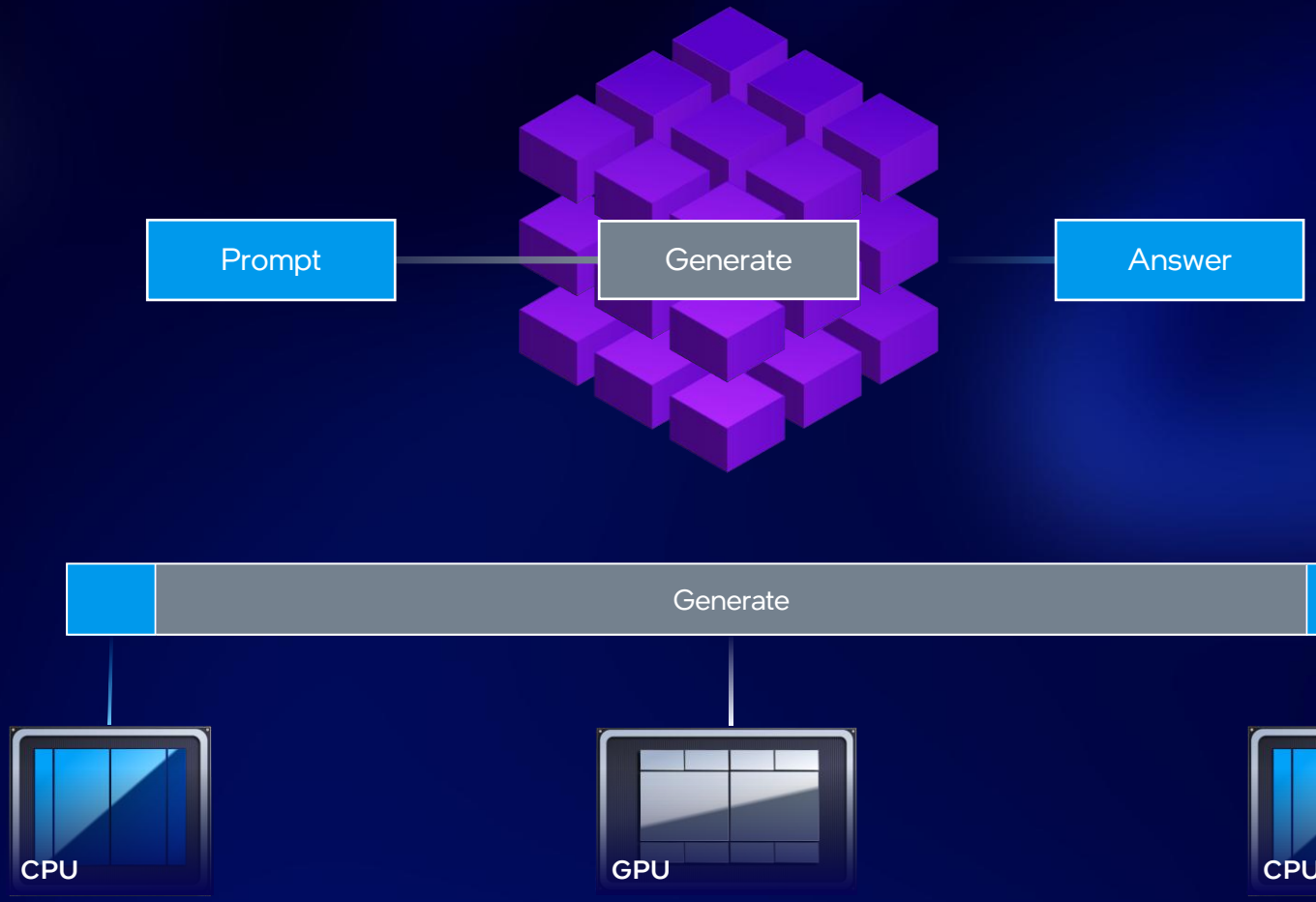


Prompt

Generate

Answer

AI Inference (Single Turn)



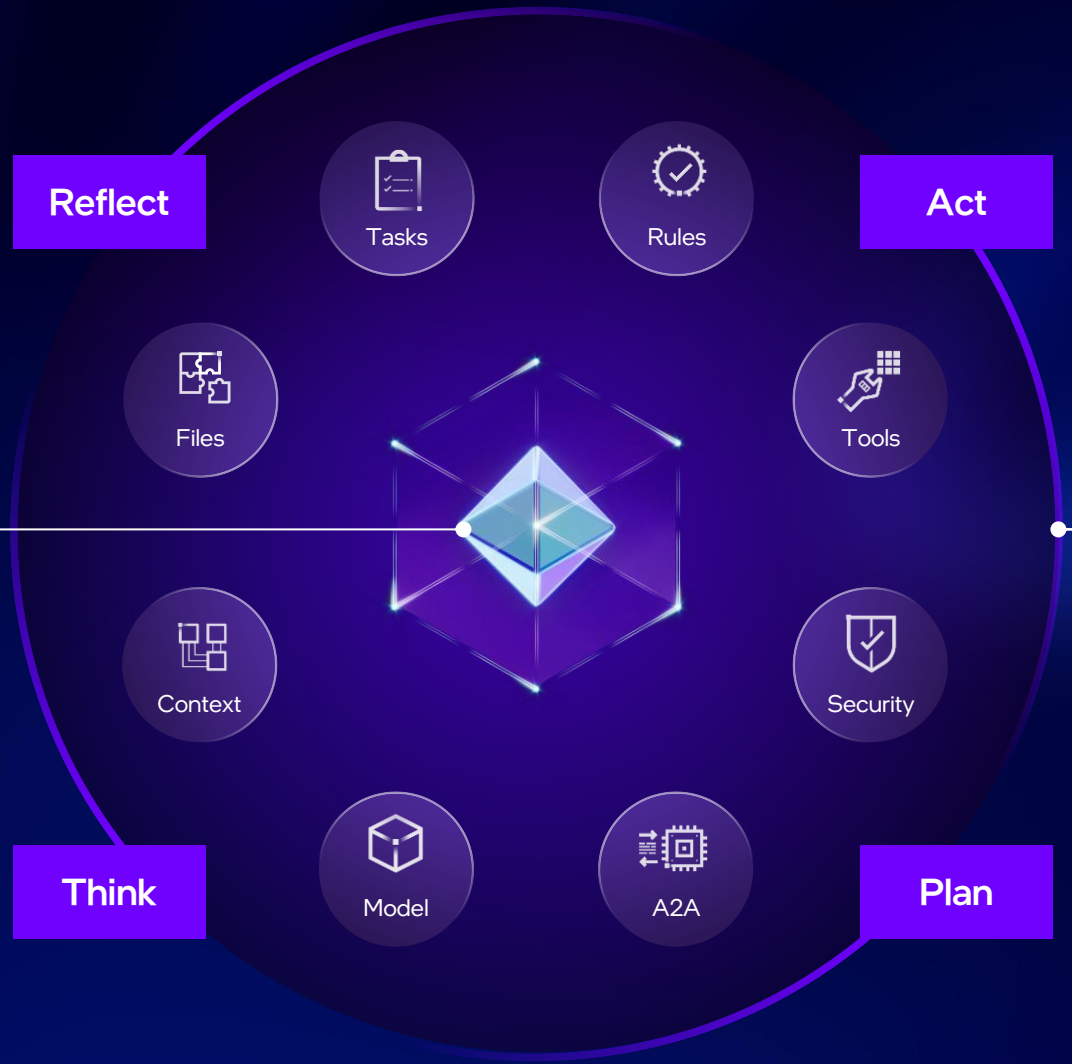
Compute

Most time spent inferencing, largely driven by FLOPS, best served with GPU/Accelerator

Agentic AI

Goal

AI agents are given **goals**, and drive towards outcome



Context

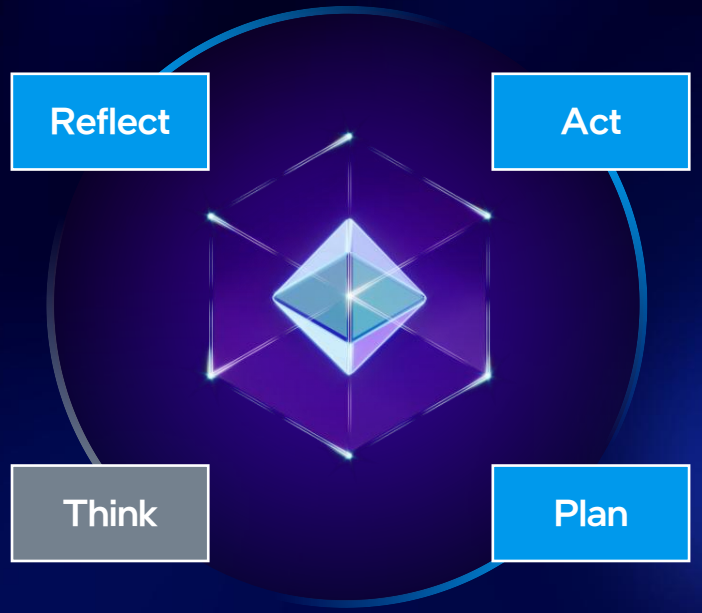
execute **continuously** within a given context to achieve the goal

intel

Agentic AI

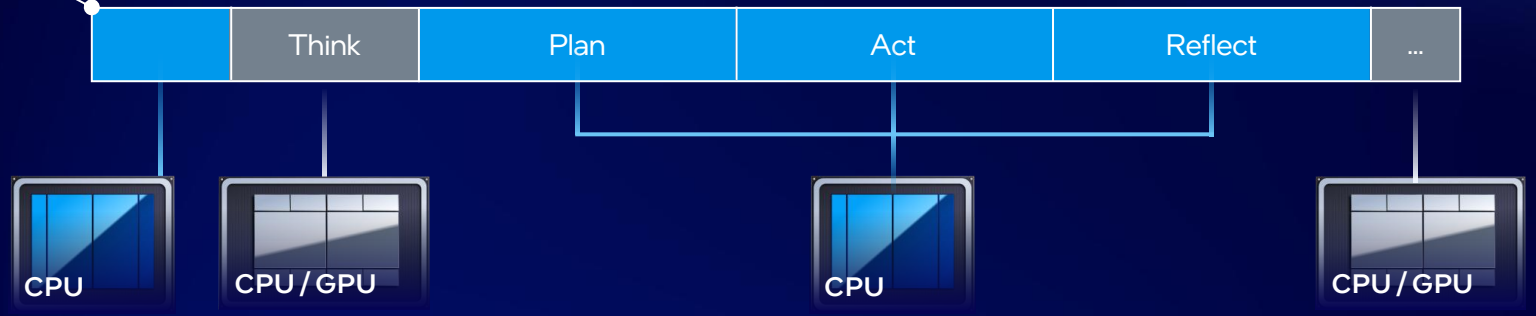

Reflect
Tasks
Rules
Act
Files
Tools
Context
Security
Think
Model
A2A
Plan

Agentic AI



Compute

Each step of the Agent flow has different compute needs



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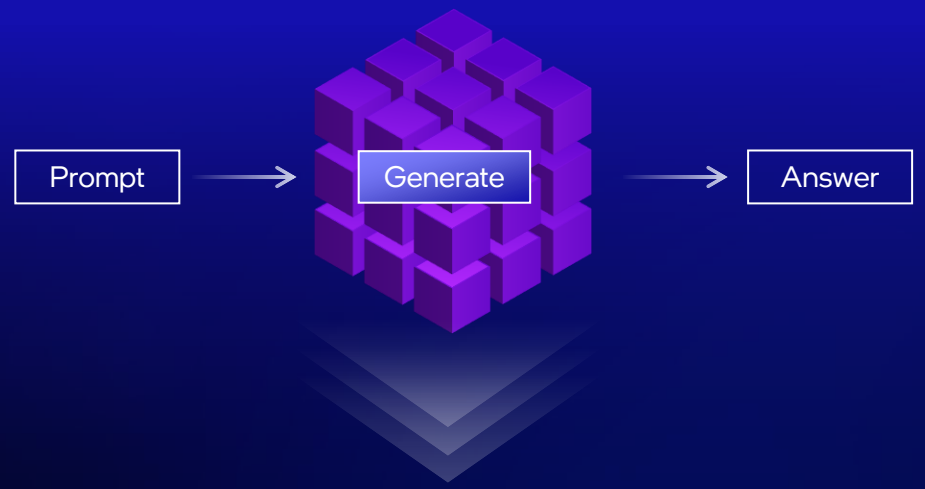
Agentic AI

Multi-Agent Complexity

AI agents Spin up other agents to Achieve Goals, increasing orchestration complexity

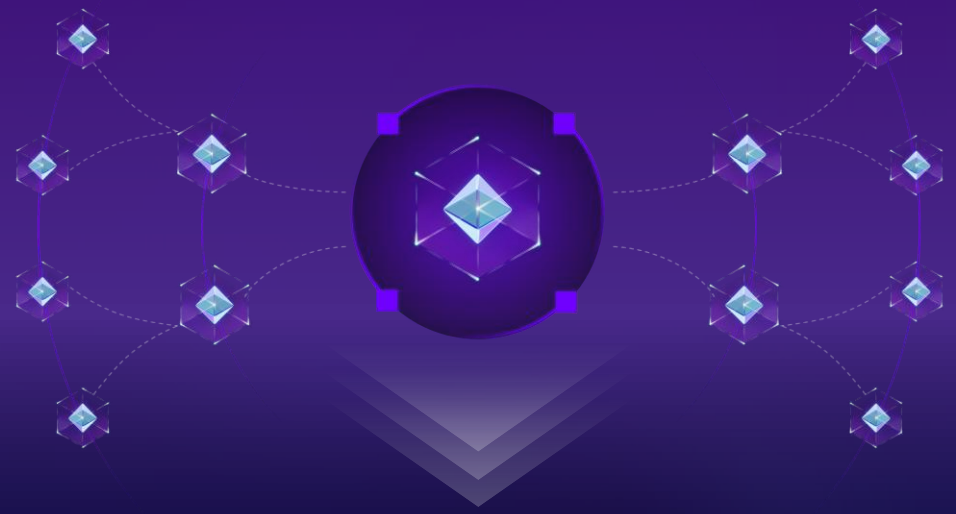
Different Workloads, Shifting Needs

AI Inference

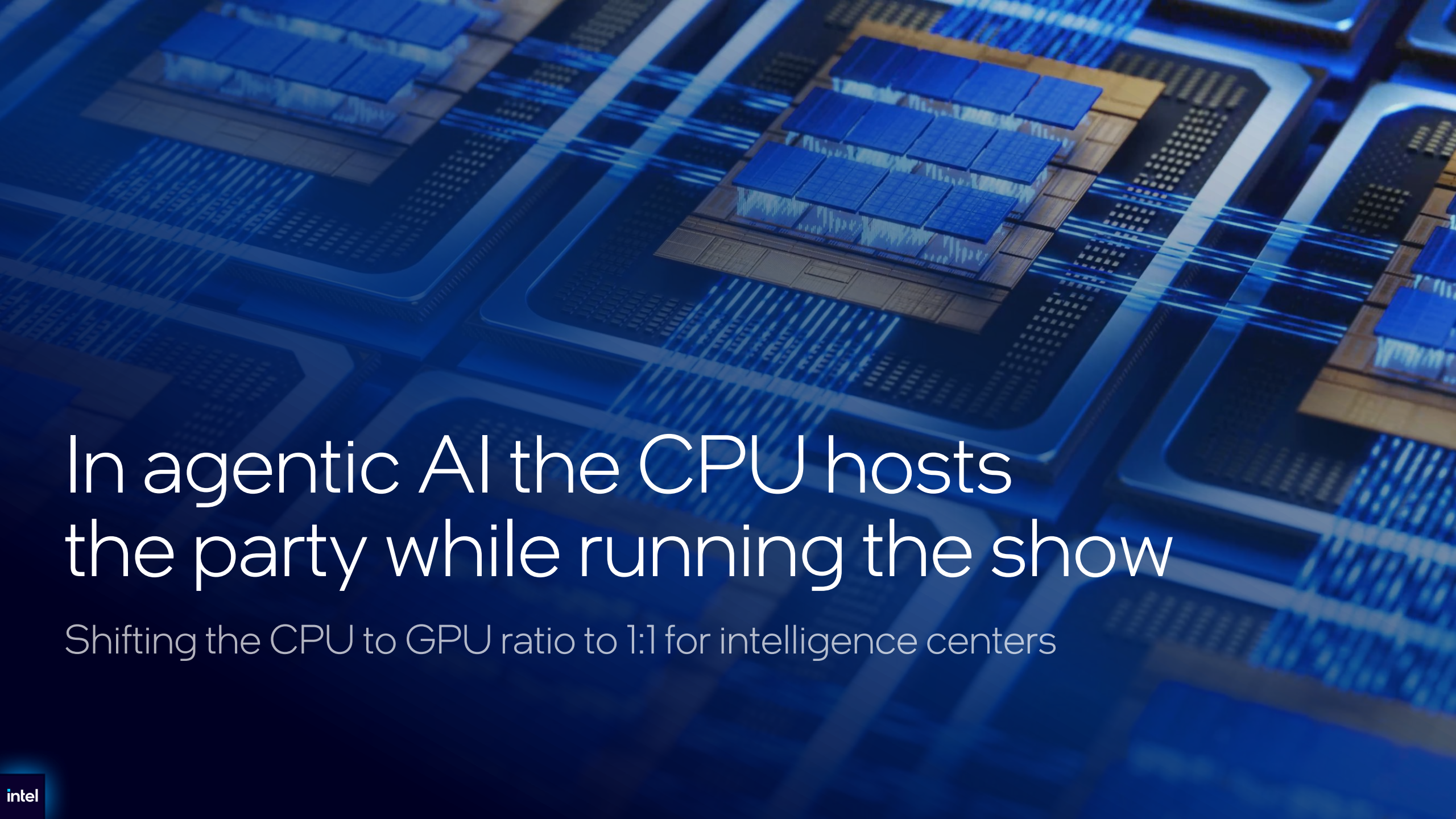


- Single-turn
- FLOPS driven
- Minimal coordination

Agentic AI



- Continuous
- Flexibility & general purpose - driven
- Coordination & execution-heavy



In agentic AI the CPU hosts the party while running the show

Shifting the CPU to GPU ratio to 1:1 for intelligence centers

intel

Intel® Xeon® CPUs for Agentic AI

Offering robustness and flexibility for end-to-end agentic flows

Context

Finding, securing, ranking, and preparing the right data

- RAG
- Database
- Vector search
- Pre-fill

Reasoning

Run <20B parameter models, or coordinate when larger

- Token generation
- SLM inference (<20B)
- Model routing
- Control plane

Acting

Connecting AI to enterprise systems, tools and workflows

- Tool use
- API calls
- Transactions
- Workflows

Governing

Making AI safe, compliant, observable, and trusted

- Identity
- Policy
- Guardrails
- Security

intel

Featured to Facilitate Agents at Scale

Intel® Xeon® provides a range of hardware features to cater to different Agentic AI needs

Intel Xeon 6 Processors with P-cores

Throughput first Agentic AI

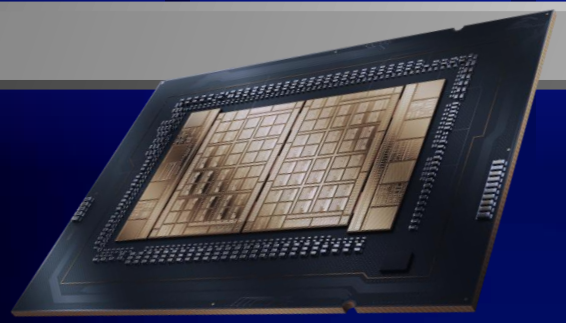
High memory bandwidth	Massive memory capacity for context	Matrix and vector acceleration
8000MT/s	4TB/socket	AMX and AVX 512

Intel Xeon 6+ Processors with E-cores

Agentic AI density & efficiency

High core count for agent density	Massive L3 cache for tool exec sandbox	ISA extensions for AI acceleration
288 cores	576MB	AVX 2

Security Intel SGX & TDX



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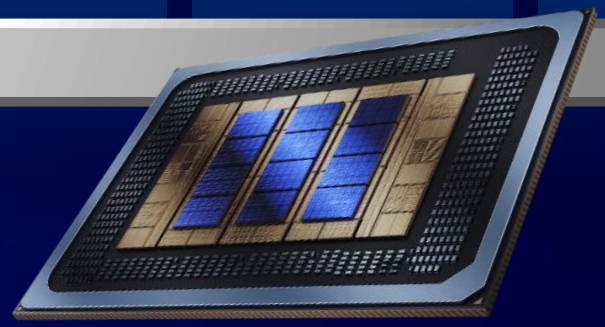

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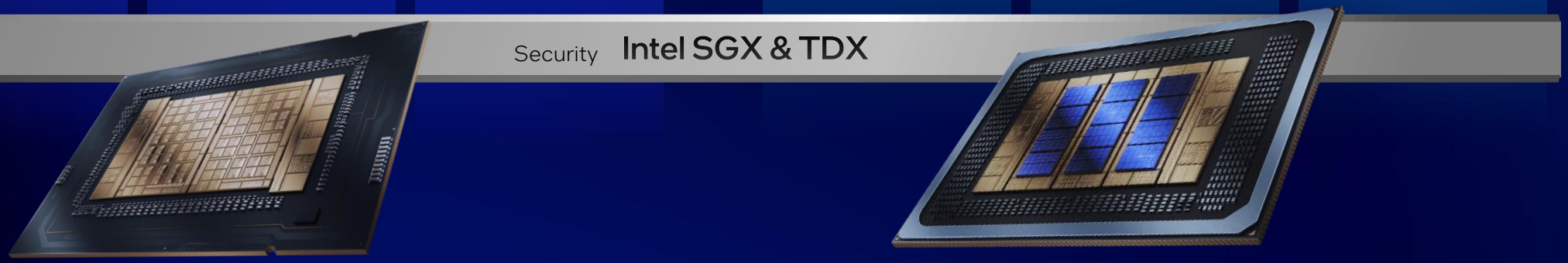
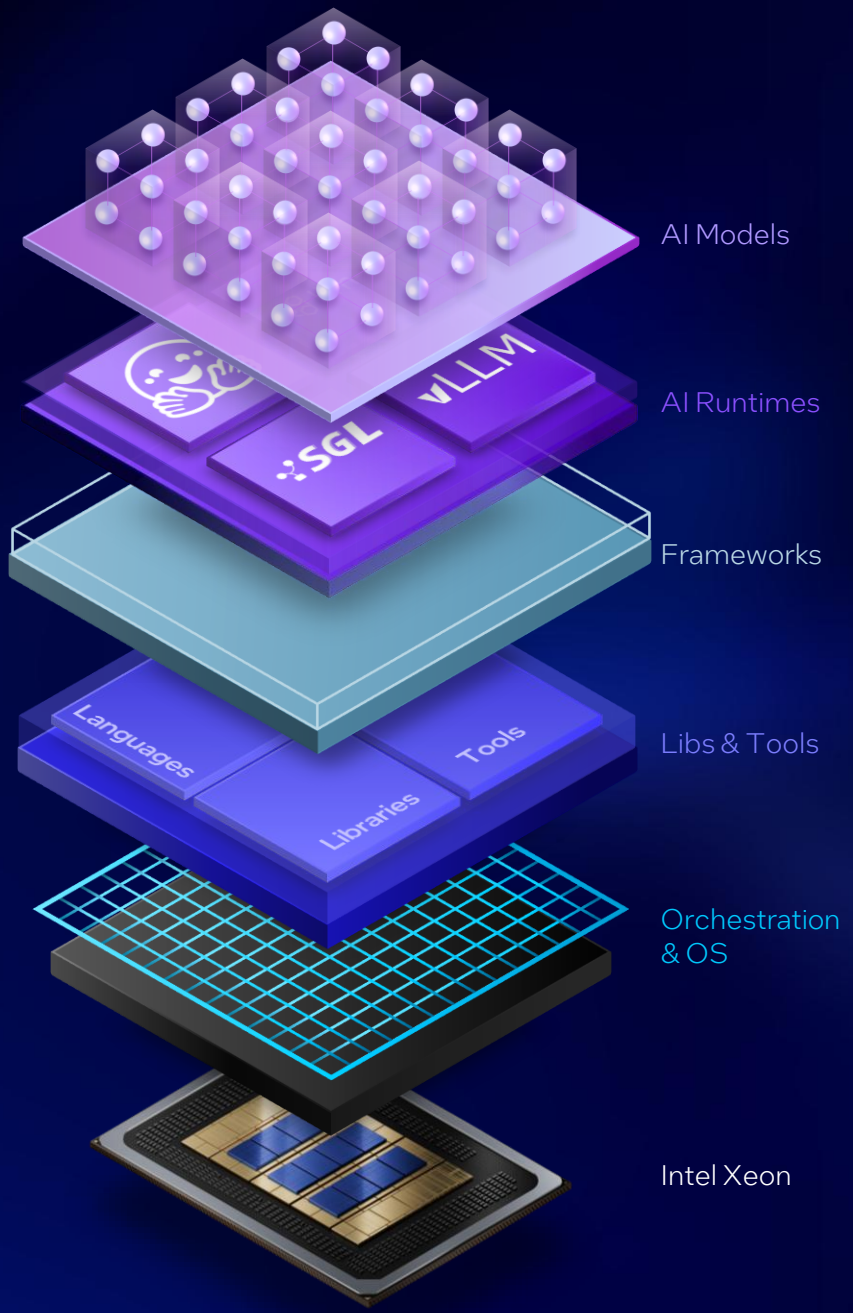


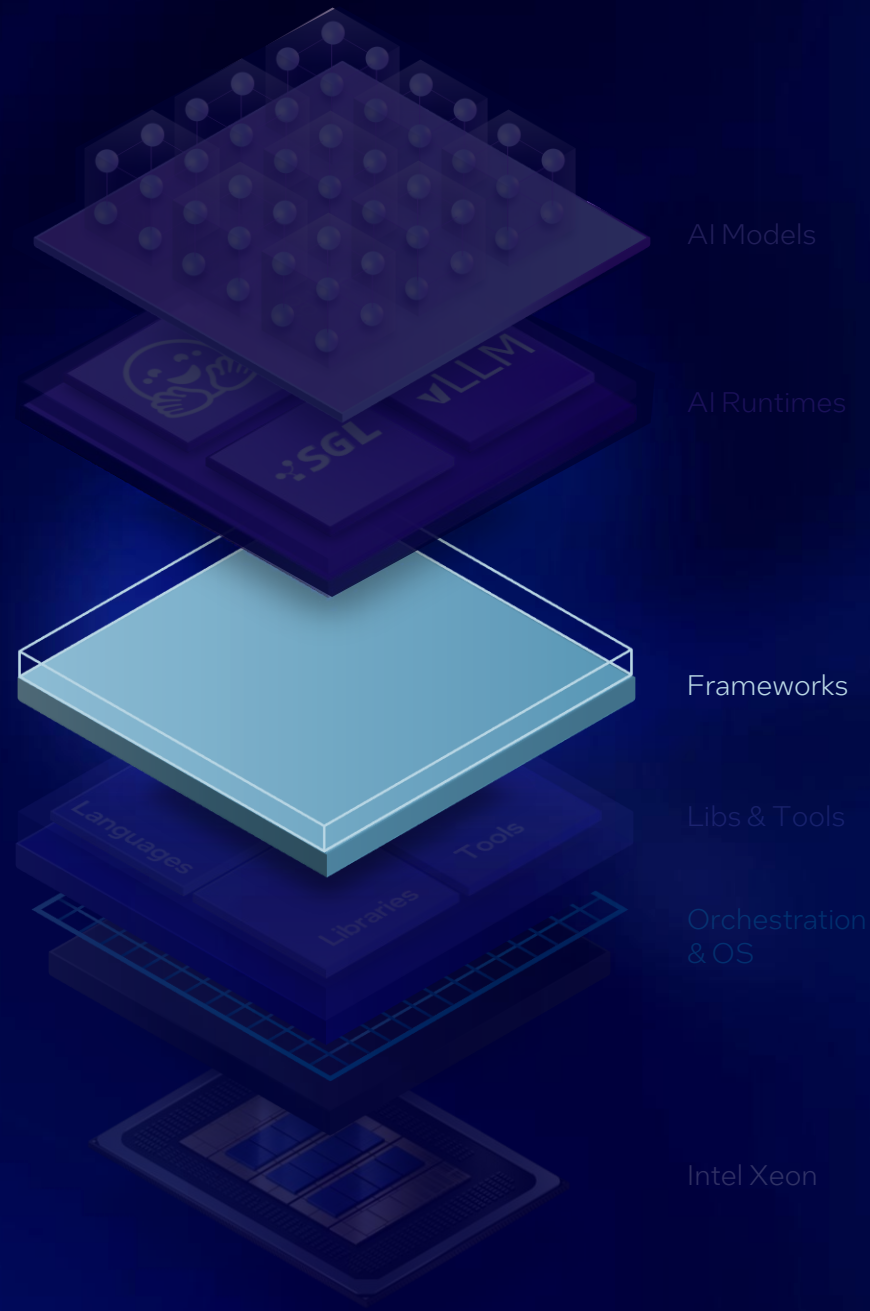
Intel® Xeon® Expanding AI Software Stack



Intel® Xeon® Expanding AI Software Stack

Working with Leading Frameworks

Pytorch	Tensorflow	HugginFace	OpenVINO	Scikit Learn	...



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Intel® Xeon® Expanding AI Software Stack

Upstreamed (Agentic) AI Foundations

vLLM	SGLang	LLM-d	Hugginface agents	AutoGen
LangChain	LangGraph	LlamaIndex	CrewAI	...

AI Models

AI Runtimes

Frameworks

Libs & Tools

Orchestration & OS

Intel Xeon

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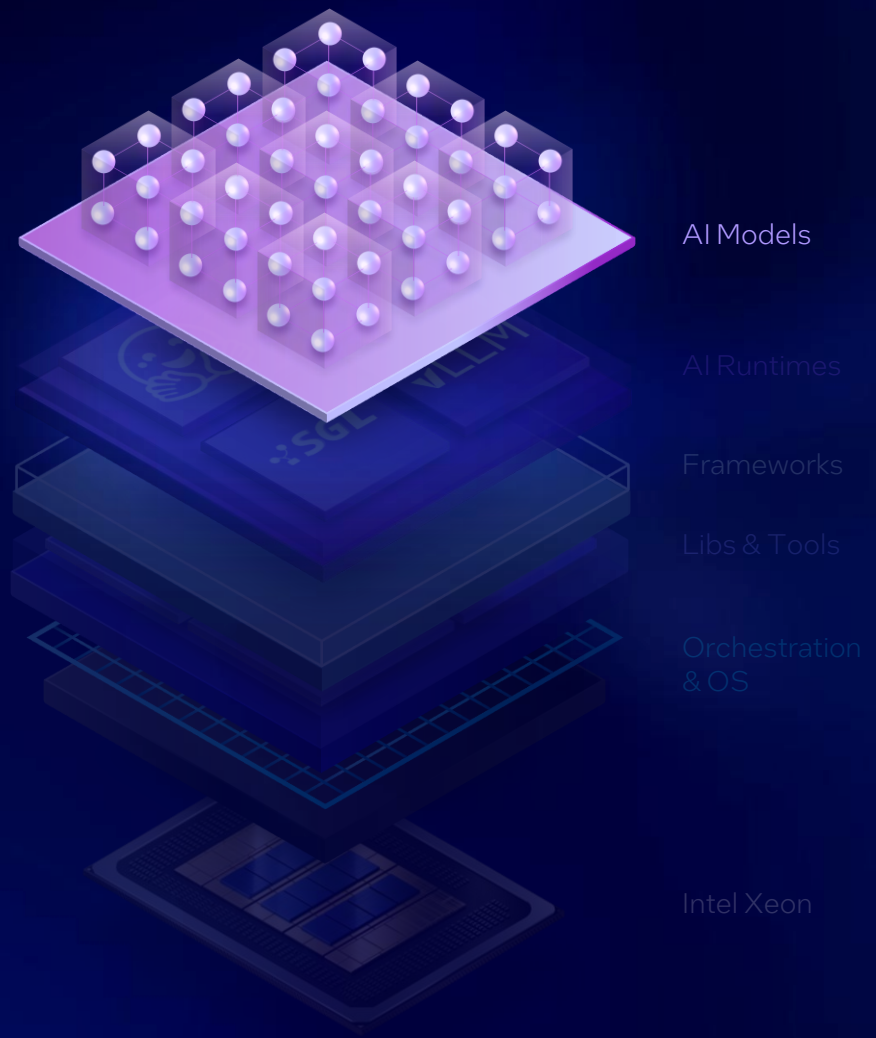
Intel® Xeon® Expanding AI Software Stack

Broad and Continuously Expanding Model Support

Qwen 3	DeepSeekR1	GPT OSS	Llama 3.x	Gemma 7B	Mistral 7B
Phi3 3.8B	DistillBERT 66M	BGE	OpenAI whisper	IBM Granite	...



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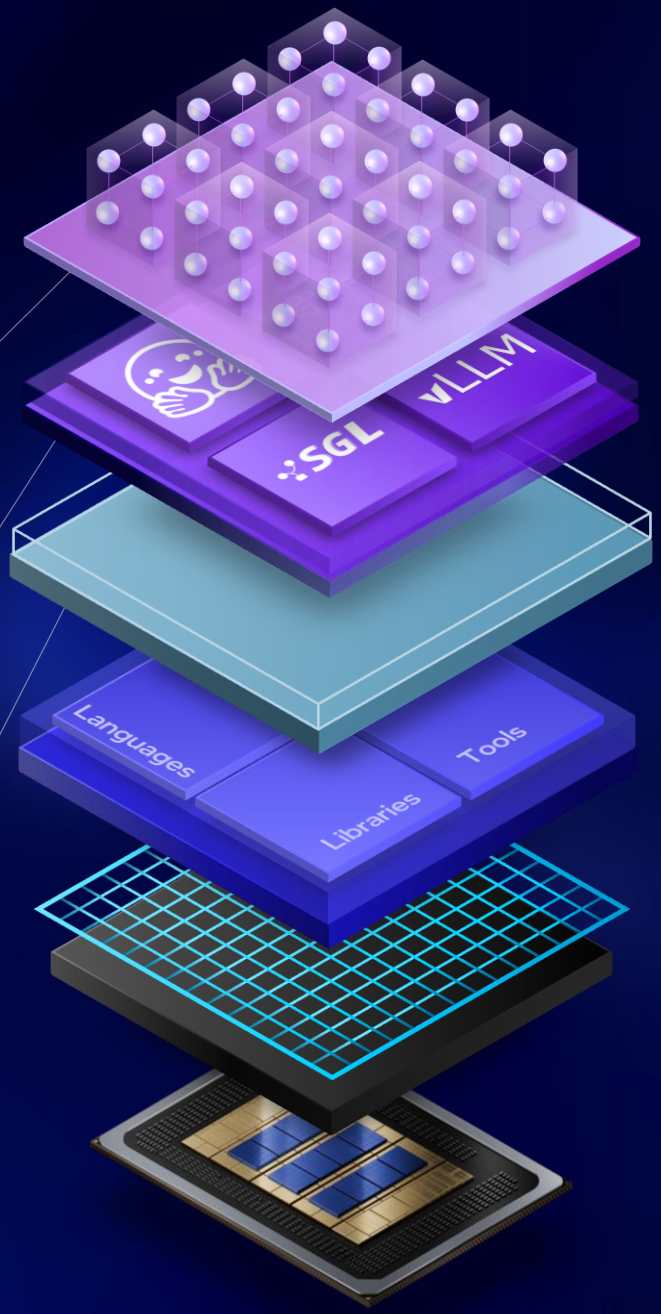

AI Models

AI Runtimes

Frameworks

Libs & Tools

Orchestration & OS

Intel Xeon

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Intel® Xeon® 6 is the Cornerstone of AI At Scale

Massive Momentum at Hyperscale

- aws — 8th Gen EC2
- Google Cloud — C4 VMs across all instance shapes
- Microsoft Azure — Dlsv7/Dsv7 virtual machines
- Oracle Cloud Infrastructure — OCI X12 Standard acceleron compute instances

Chosen by Industry AI leaders

NVIDIA DGX Rubin NVL8

Host CPU for NVIDIA's next-gen AI platform

NVIDIA Blackwell Platform

Architectural foundation for current GPU systems

Expanding AI Solution Ecosystem

- Lenovo — AI POD validated design for enterprise RAG
- NetApp — AIPod Mini: departmental AI inferencing
- NUTANIX — Turnkey enterprise RAG inference solution
- Red Hat — AI inference server – first native to CPUs

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End-to-End Data Center Solution Approach

Manufacturing

Silicon

Systems

Software

Intel's Entire Data Center Roadmap

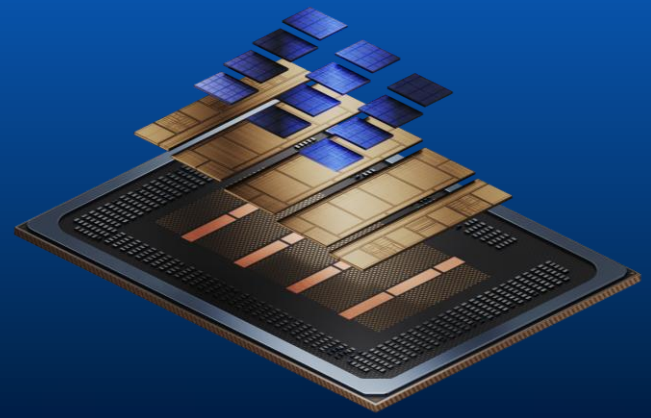
Powered by Intel Foundry

Intel® Xeon® 6

intel 7

intel 3

Intel® Xeon® 6 +



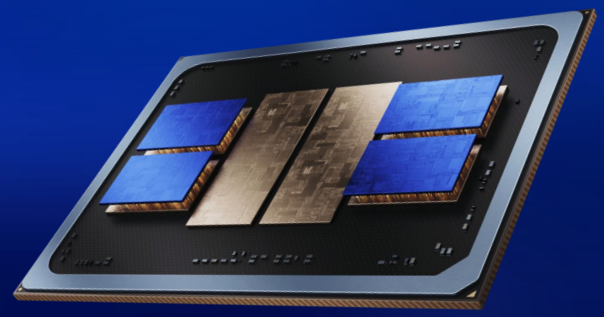
intel 7

intel 3

intel 18A

Next Gen Intel® Xeon®

Codenamed Diamond Rapids



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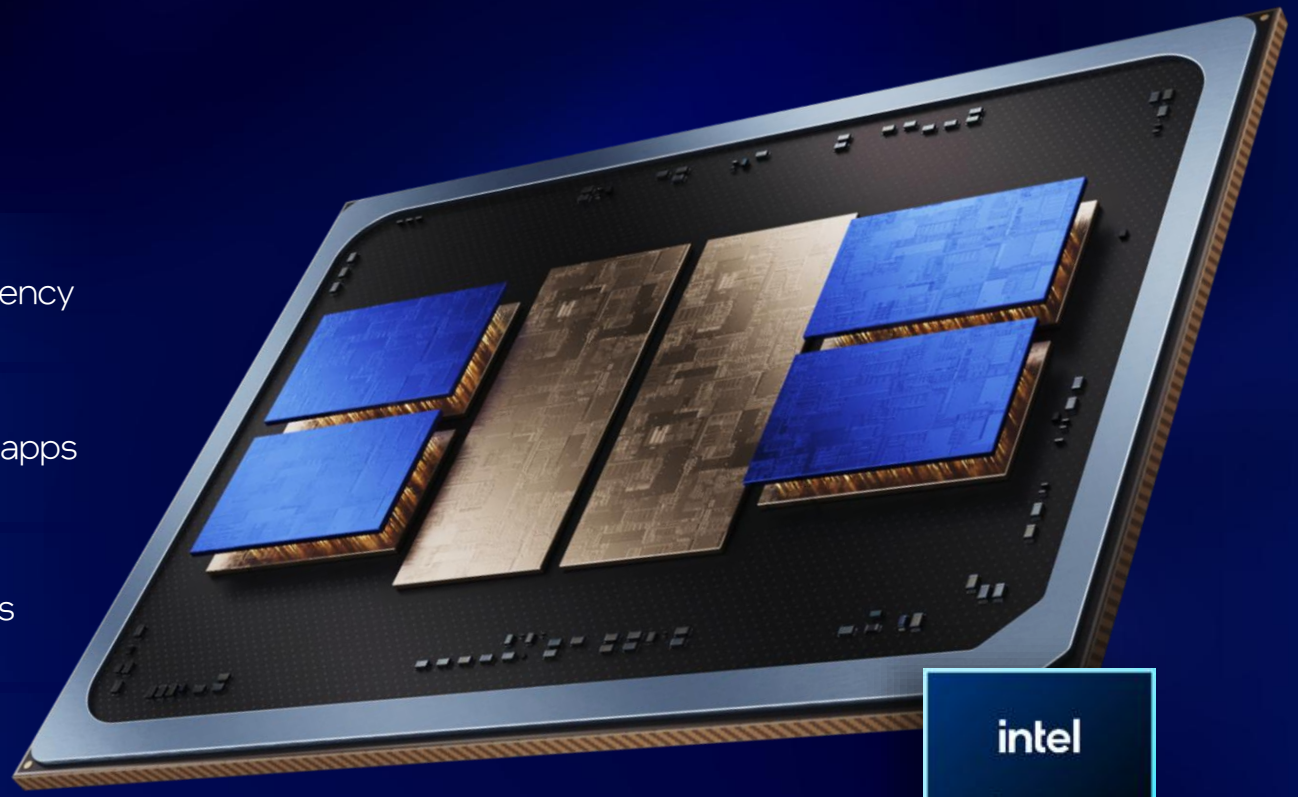
Diamond Rapids

Coming 2027

Next-gen Intel® Xeon® processor with latest I/O and core IP on Intel 18A-P process technology

Intel 18A-P	Scalable SOC architecture with Uniform Memory Latency
2x Mem BW	Increased Channel Count and speed for B/W limited apps
PCIe Gen 6	Extreme speed and scalability for I/O heavy use cases
50% more cores	Optimized for high demand IaaS, high perf/thread



Built with intel 18A-P

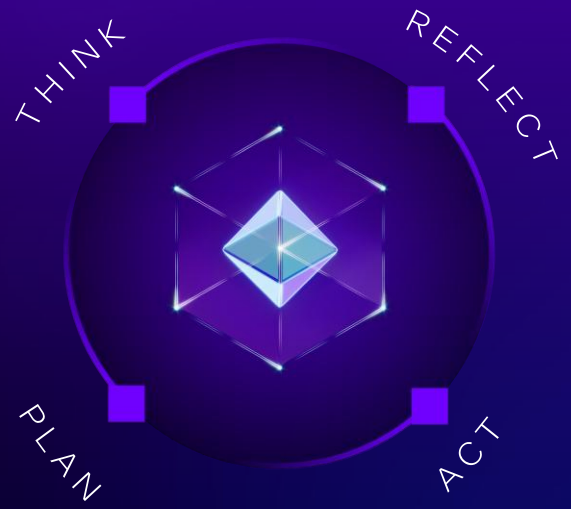
All comparisons are versus previous Xeon 6. Subject to change.

intel

Agentic AI Workload

Continuous Iteration

Multi-step reasoning,
act -reflect loops

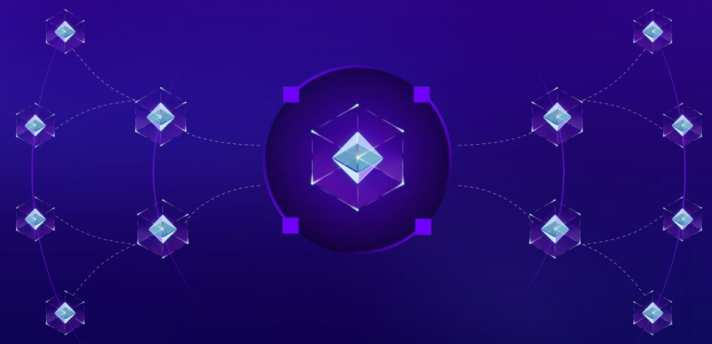


Expanding Context

Long & short-term memory, tool use,
model swapping, guardrails, ...

Concurrent Orchestration

Multi-agent coordination, parallel tasks,
agent-to-agent comms



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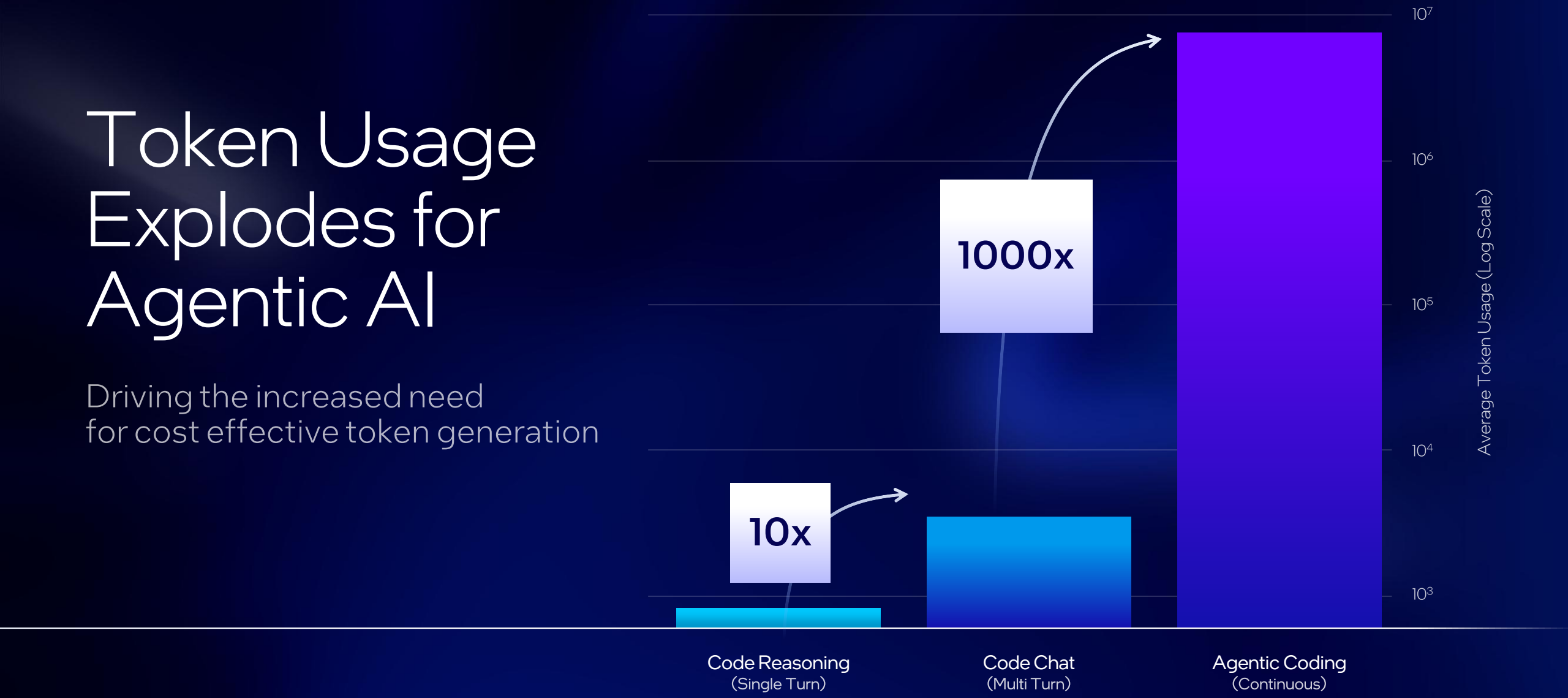
Token Usage Explodes for Agentic AI

Driving the increased need for cost effective token generation



Bai, L., Huang, Z., Wang, X., Sun, J., Mihalcea, R., Brynjolfsson, E., ... & Pei, J. (2026).
How Do AI Agents Spend Your Money? Analyzing and Predicting Token Consumption in Agentic Coding Tasks. arXiv preprint arXiv:2604.22750.

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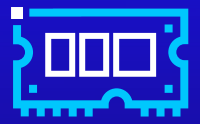
Agentic AI Workload Compute Demands

Continuous Iteration

More Steps Drive
Latency Pressure

- Single-turn inference time
- Tool call turnaround time
- Scheduling

Expanding Context



More Context Drives
Memory Pressure

- Memory capacity
- Memory bandwidth
- Long context handling

Concurrent Orchestration

More Agents Drive
System Throughput Pressure

- CPU-GPU coordination
- Heterogenous orchestration
- Power density management

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Accelerator Portfolio for Agentic AI

Scaling from local agents to large scale intelligence

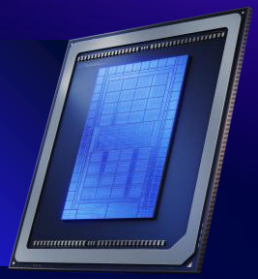
Local Agent Compute Boxes	Edge AI	AI Builder Workstations	Physical AI	Enterprise AI	Agentic AI Data Centers

Local Agent Computers → **Intelligence Centers**

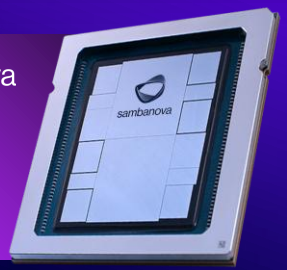
Integrated
Intel® Arc™ Pro GPUs

Discrete
Intel® Arc™ Pro GPUs

Intel® Data Center GPUs



sambanova
SN50 RDUs



A Robust AI-forward GPU Architecture

Shipped in millions of products

Xe LP

Low Power Graphics

for PC

- 11th Gen Intel® Core™
- 12th Gen Intel® Core™

Xe

First Scalable Gfx & AI

for PC

- Intel® Core™ Ultra Series 1
- Intel® Core™ Ultra 200H series
- ●●●

Xe2

Efficiency First Gfx & AI

for PC & Workstation

- Intel® Core™ Ultra Series 2
- Intel® Arc™ Pro B-Series
- ●●●

Xe3

Gfx & AI Powerhouse

for PC & Edge

- Intel® Core™ Ultra Series 3
- ●●●

COMING SOON

Xe3P

Performance-Forward

for PC, DC, Edge & Workstation

- Crescent Island
- *Next Gen PC*
- ●●●

2020 — 2026+

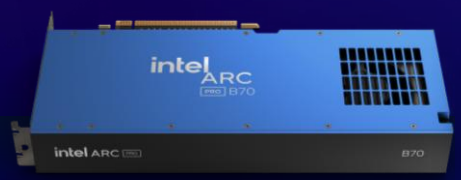
Selective products shown, not an exhaustive list for each generation of Xe IP

intel

intel ARC PRO Performance Workstation-class GPUs

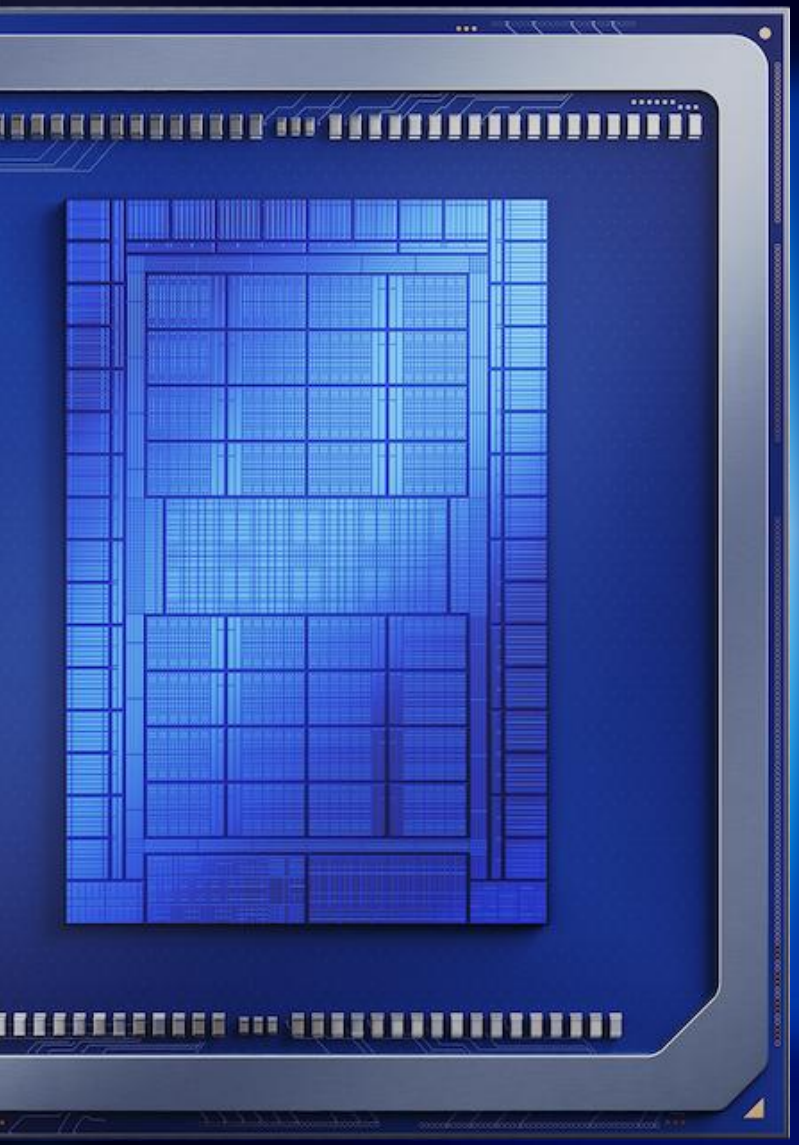
Ideal for AI builders, edge, and local agent workstations

Intel® Arc™ Pro B50	Intel® Arc™ Pro B60	Intel® Arc™ Pro B65	Intel® Arc™ Pro B70
16 Xe Cores	**20** Xe Cores	**20** Xe Cores	**32** Xe Cores
16GB	**24GB**	**32GB**	**32GB**
170 pTOPS	**197** pTOPS	**197** pTOPS	**367** pTOPS
70W	**120W – 200W**	**200W**	**160W – 290W** 230W for Intel Branded Card



See backup for workloads and configurations. Results may vary." PCR-approved claim and configs must be in backup to support 69% claim

intel



Next Gen

Intel® Data Center GPU

Codenamed
Crescent Island

Designed for tokens/watt, built on a reliable open software stack

Built for Agentic AI	Large Context Capability	Power Optimized
Xe3P AI optimized GPU IP	up to 480GB Capacity	350W Air-cooled PCIe
FP4 - FP64 Widest range datatypes	LPDDR5x Low power memory	Open & Robust software stack

*Intel branded PCIe card has 160GB LPDDR5x; design enables partners to build ODM branded cards with flexible options up to 480GB memory.

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An Industry Standard AI Development Stack

Open, Upstreamed and Day 0 Ready for Intel® Data Center GPU

Trusted by an Ecosystem

Used by 100s of ISVs across a wide variety of applications

Built to Feel Familiar

Open ecosystems, and developer-trusted libraries & frameworks

Support You Can Rely On

Day 0 functionality and performance with fully validated firmware, drivers and reference systems

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Pioneering Heterogeneous Orchestration

NVIDIA Dynamo

intel Xeon

intel Arc Pro

intel

An Industry Standard AI Software Stack

Open, Upstreamed and Day 0 Ready for Intel® Data Center GPU

Compilers
- Rapid kernel generation
- Triton
- SYCL-TLA

Libraries & Tools
- Multi-node & scale-out libraries: oneCCL; NIXL w UCX
- Performance libraries: oneDNN
- Heterogenous programming: SYCL (+OpenMP)
- Developer tools: Intel® vTune; Intel® GDB

Orchestration & OS
- OS
- Hypervisor
- Orchestration

Level Zero
- Hardware runtimes: Intel compute runtime
- Kernel launch & data control: OpenCL

AI Runtimes

Frameworks

Compilers

Libraries & Tools

Orchestration & OS

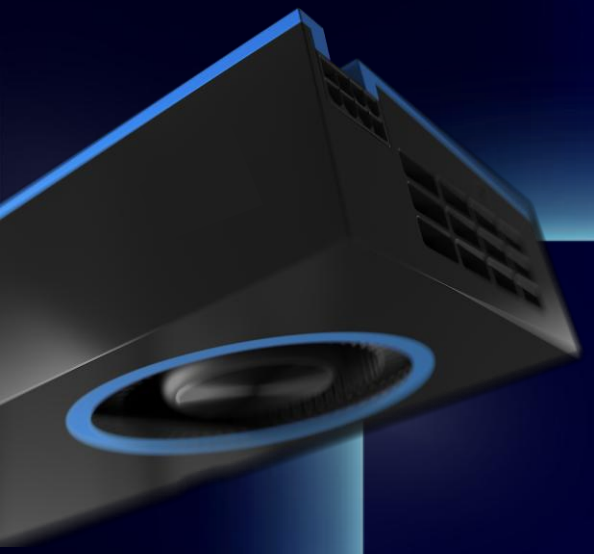
Crescent Island

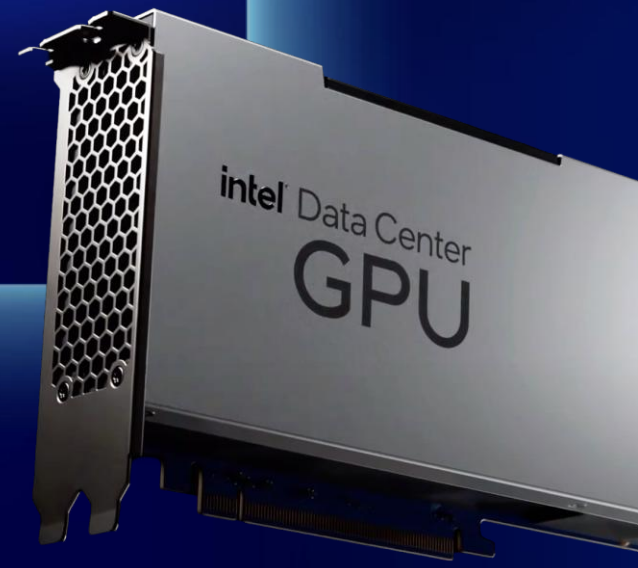
intel

Thank You!

GPU Partner Ecosystem

Delivering real world AI at Scale together





intel

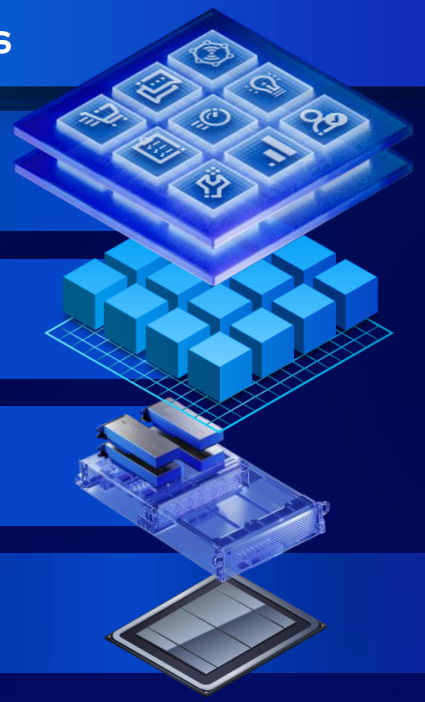
intel × sambanova

Expanding our systems-level collaboration

Two Paradigms - Built on a Shared Foundation

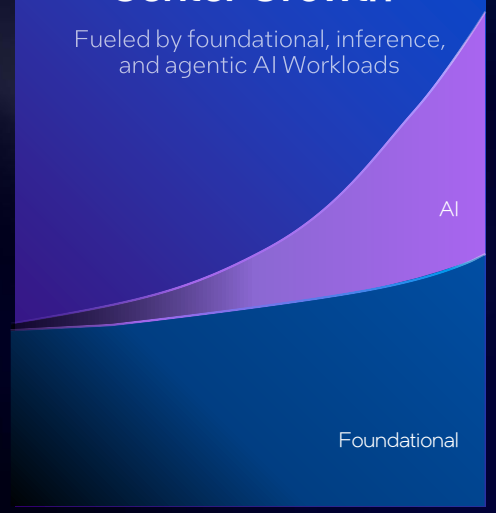
The computing backbone of today's world and tomorrow's intelligence

Storage | Telco | Network Compute | Media & Content | Digital Services | Cloud | Analytics & Database | HPC & Scientific AI | Agentic AI | AI Inference

Foundational **Data Centers**		Emerging **Intelligence Centers**
Enterprise & cloud apps		Large scale inference & agentic AI
Linux & orchestration		AI runtimes, orchestration & policy
Compute nodes		Heterogenous rackscale solutions
X86 CPU - heavy		x86 CPU + Acceleration (with high bandwidth memory & I/O)

Continued Data Center Growth

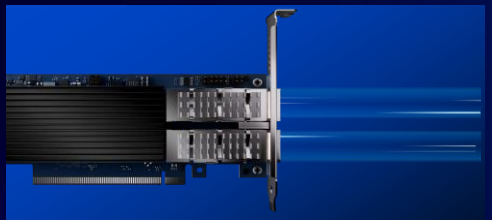
Fueled by foundational, inference, and agentic AI Workloads



Launch Intel® Xeon® 6+

Intel's First 18A CPU in the Data Center

Intel® Xeon® Continuously Expanding AI Software Stack

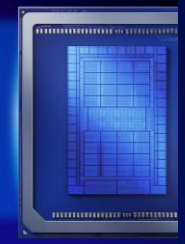


Launched Intel® Ethernet E835

Controllers & Network Adapters

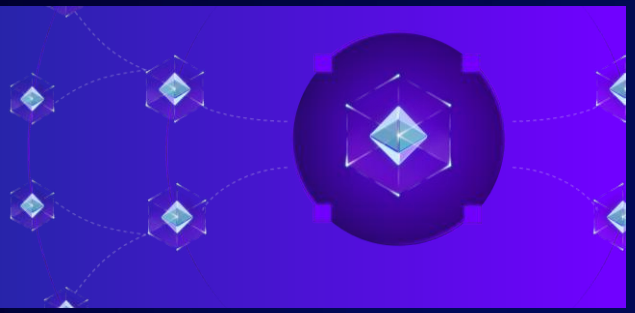
Next Gen Intel® Data Center GPU

Crescent Island Update



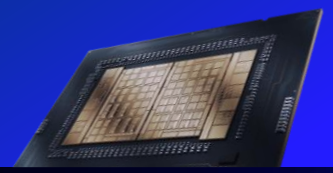
Agentic AI Orchestration Complexity

Shifts the CPU:GPU Ratio closer to 1:1



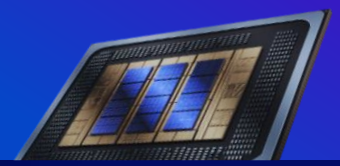
Intel® Xeon® 6 with P-cores

For Agentic AI Throughput



Intel® Xeon® 6 + with E-cores

For Agentic AI Density & Efficiency



Intelligence Centers

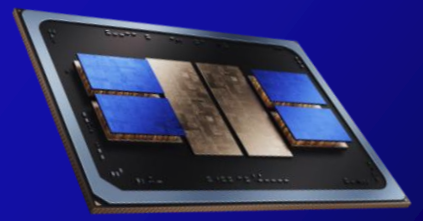
- Inference & agentic AI
- AI runtimes
- Heterogenous rackscale
- x86 CPU + Acceleration

Xe3P

Performance-Forward

General Purpose GPU IP

sambanova × intel



Next Gen Intel® Xeon®

Built with

intel 18A-P

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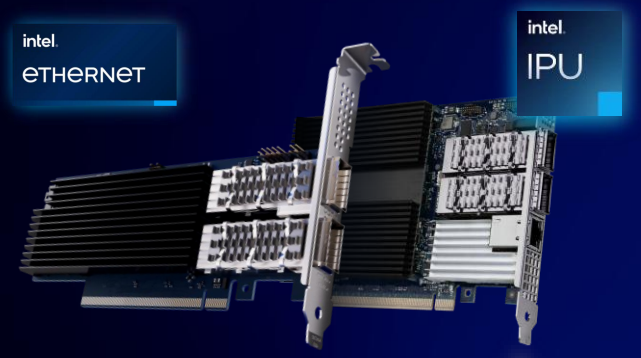
Intel's Portfolio for Computing at Scale

Delivering on the needs of traditional data centers and emerging intelligence centers

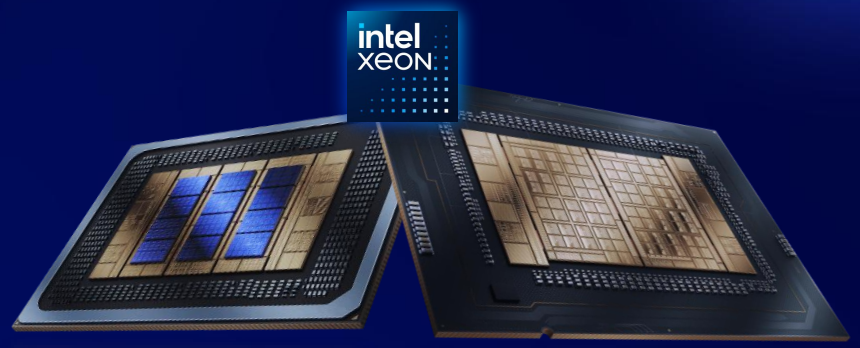
Storage | Telco | Network Compute | Media & Content | Digital Services | Cloud | Analytics & Database | HPC & Scientific AI | Agentic AI | AI Inference

Foundational **Data Centers** — Emerging **Intelligence Centers**

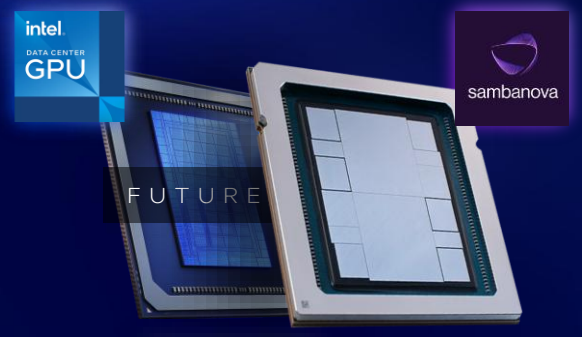
Network & data processing



Central processing



Accelerated processing



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See backup for configuration details.

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Appendix

Intel® Xeon® 6+ Processor SKUs - Overview

SKU	CPU Cores				Cache	Power & Scalability		Memory		Accelerators & Security		I/O		
	Cores	Base (GHz)	All core Turbo (GHz)	Max Turbo (GHz)	L3 cache (MB)	TDP (Watts)	Max. Scalability	Memory Channels	DDR5 Memory Speed	Default Accel. Devices	Intel TDX Keys (Per CPU)	UPI Links Enab.	PCIe Lanes	Intel® AET
6990E+	288	2.2	2.8	3.2	576	450	2S	12	8000	4/4/4/4	1024	6	96	Yes
	288	1.7	2.4	3.2	576	330	2S	12	8000	4/4/4/4	1024	6	96	Yes
6980E+	264	2.1	2.7	3.2	528	400	2S	12	8000	4/4/4/4	1024	6	96	Yes
	264	1.6	2.2	3.2	528	300	2S	12	8000	4/4/4/4	1024	6	96	Yes
6970E+	192	2.3	3.0	3.2	480	400	2S	12	8000	4/4/4/4	1024	6	96	Yes
6960E+	144	2.4	3.0	3.2	432	330	2S	12	8000	4/4/4/4	1024	6	96	Yes

*Accelerators List Order: DSA, IAA, QAT, DLB

Intel Xeon 6+ Full Feature Overview

Platform	
Sockets	1S - 2S (Xeon 6900P compatible)
Max TDP	330 to 450W per CPU

Compute & memory	
Cores	up to **288** efficient cores
L2 cache	up to **288MB** (up to 4MB / cluster)
Last level cache	**576MB**
Memory	**12ch DDR5 8000MT/s**

Compute & memory	
Intel® UPI	up to **6 UPI 2.0** (up to 24 GT/s per lane)
PCI Express	up to **96 lanes PCIe 5.0** (x16, x8, x4, x2)
Compute Express Link	up to **64 lanes** CXL 2.0

Security & efficiency	
Security	Intel Software Guard Extensions (Intel SGX) Intel Trust Domain Extensions (Intel TDX)
Power management	Intel Application Energy Telemetry (Intel AET) Intel Turbo Rate Limiter

Acceleration	
Acceleration	Intel Advanced Vector Extensions 2 (VNNI/INT8)
Integrated accelerators	up to **16 accelerators** 4x Intel QuickAssist Technology 4x Intel Dynamic Load Balancer 4x Intel Data Streaming Accelerator 4x Intel In-memory Analytics Accelerator

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Accelerator Engines Built-in

Intel® Quick Assist Technology

Intel® QAT

cryptography, en/decryption, compression

Intel® Data Streaming Accelerator

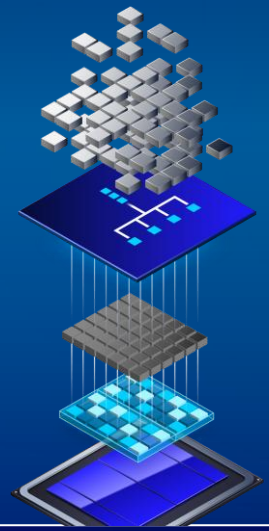
Intel® DSA

data movement and transformation operations

Intel® Dynamic Load Balancer

Intel® DLB

queueing, scheduling, packet/event distribution across cores



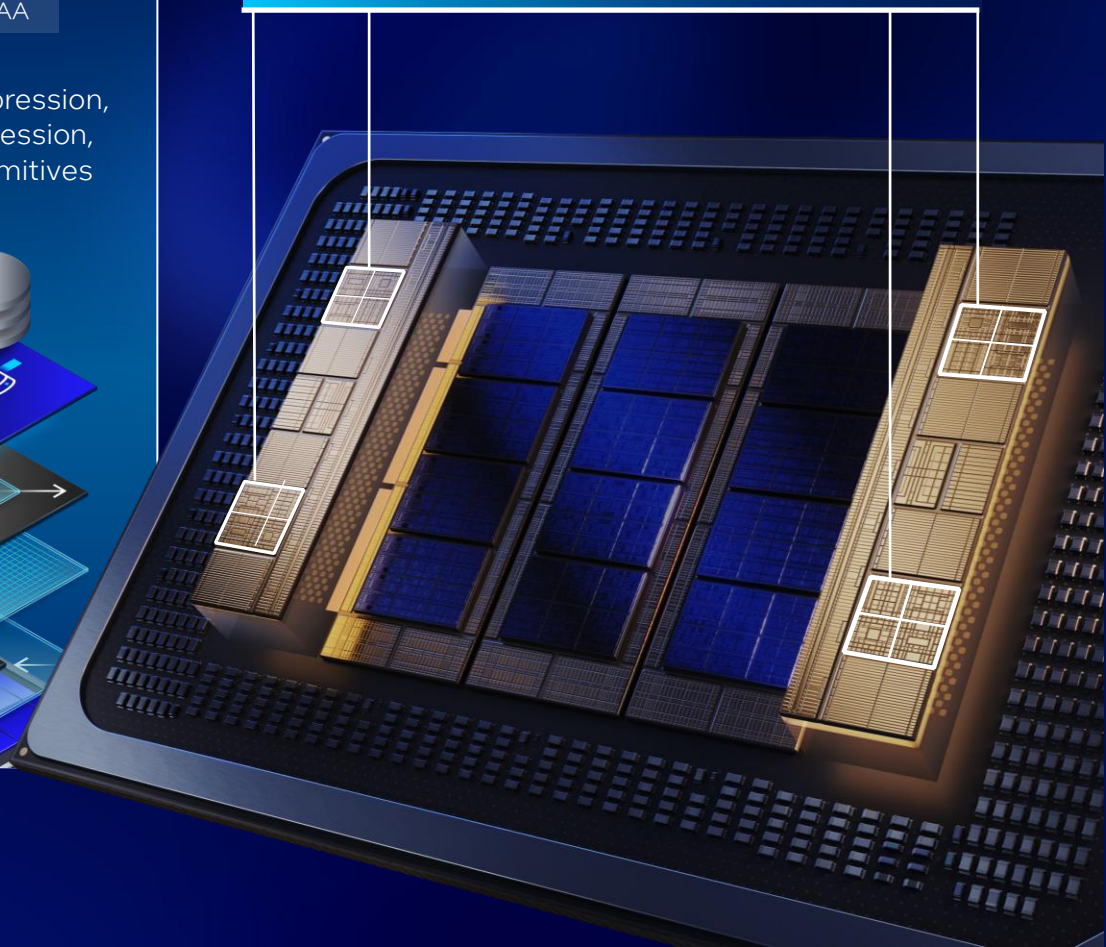
Intel® In-Memory Analytics Accelerator

Intel® IAA

data compression, decompression, query primitives

up to

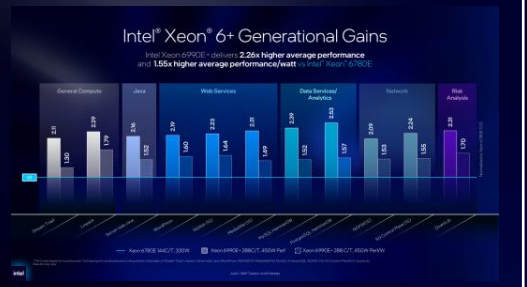
16 accelerators



Configurations

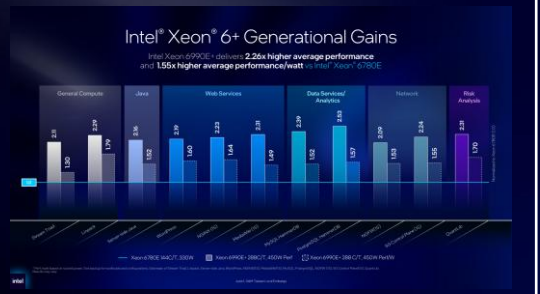
Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

Slide details	Claim details
  	**STREAM Triad** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: STREAM: App Version 5.10, Triad, oneAPI 2026.0

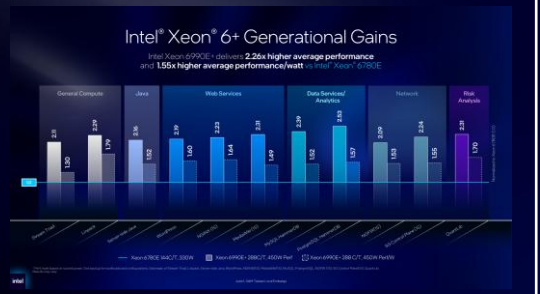
Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

Slide details	Claim details
  	**Linpack** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: HPL: App Version: oneMKL 2026.0 **Server-side Java** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, CentOS Stream 9, 5.14.0-687.el9.x86_64. Test by Intel as of March 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 2x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, CentOS Stream 9, 5.14.0-687.el9.x86_64. Test by Intel as of March 2026. Software: Server Side Java, Open JDK v.25.0.2

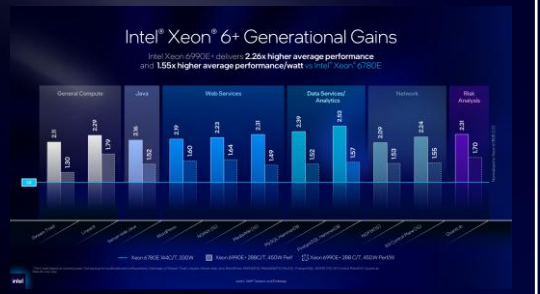
Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

Slide details	Claim details
  	**MediaWiki** 6990E+: 1-node, Supermicro SYS-222HA-TN, 1x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 1152GB (12x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 1x RTL8153 Gigabit Ethernet Adapter, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 22.04.5 LTS, 6.8.0-94-generic. Test by Intel as of April 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 1x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 512GB (8x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 22.04.5 LTS, 6.8.0-94-generic. Test by Intel as of April 2026. Software: DCPerf Mediawiki v.1.0 **MySQL HammerDB** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 2x Ethernet Controller E835-CC for QSFP, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCMYXRUG1T92, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 2x Ethernet Controller E830-CC for QSFP, 8x 1.7T KIOXIA KCMYXRUG1T92, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 1x 3.6T Lightbits LightOS, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: TPROC-C on MySQL 8033, HammerDB 4.7, MultiVMs, 8vCPUs per VM, 16GB memory per VM

Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

Slide details	Claim details
  	**PostgreSQL HammerDB** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 2x Ethernet Controller E835-CC for QSFP, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCMYXRUG1T92, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 2x Ethernet Controller E830-CC for QSFP, 8x 1.7T KIOXIA KCMYXRUG1T92, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 1x 3.6T Lightbits LightOS, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: PostgreSQL 18.1, HammerDB 4.7, MultiVMs, 8vCPUs per VM, 16GB memory per VM **5G Control Plane** 6990E+: 1-node, Intel Corporation Software Development Platform, 1x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 1152GB (12x96GB DDR5 8000MT/s [8000MT/s]), BIOS BHSDCRB1.IPC.3545.P40.2603170757, microcode 0x1000110, 2x Ethernet Controller E810-2CQDA2 for QSFP, 1x 894.3G SAMSUNG MZ1L2960HCJR-00A07, Ubuntu 24.04.3 LTS, 5.14.0-284.100.1.el9_2.x86_64. Test by Intel as of April 2026. 6780E: 1-node, Dell Inc. PowerEdge R770, 1x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 512GB (8x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.3.2, microcode 0x3000362, 2x Ethernet Controller E810-2CQDA2 for QSFP, 1x 1.8T INTEL SSDPE2KX020T8, Ubuntu 24.04.3 LTS, 5.14.0-284.100.1.el9_2.x86_64. Test by Intel as of April 2026. Software: Lansdslide v.24.1.0 & TAS 24.10.0.8, 5G packet core / Traffic generator, KDDI_FINAL_OCP-F02-758K-v2-boost-fix2, Flexcore 23.07, Kubernetes 10 node cluster with RH OCP.

Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

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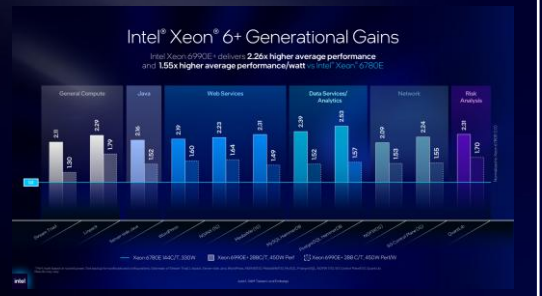
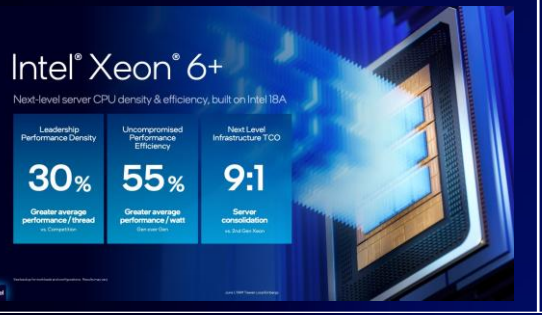
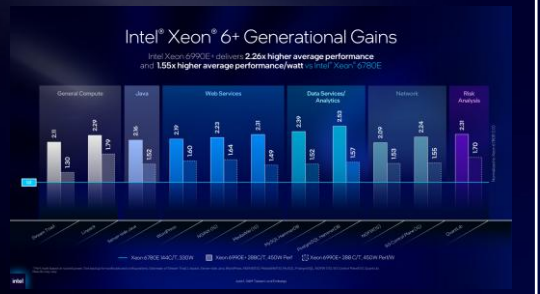
	**NGFW (Next Generation Firewall)** 6990E+: 1-node, Intel Corporation Software Development Platform, 1x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 192GB (12x16GB DDR5 6400MT/s [6400MT/s]), BIOS BHSDCRB1.IPC.3545.P44.2603252346, microcode 0x11000120, 10x Ethernet Controller E835-CC for QSFP, 1x 223.6G KINGSTON SA400S37240G, 1x 238.5G Vi3000 Internal PCIe NVMe M.2 SSD 256GB, Ubuntu 22.04.5 LTS, 5.15.0-27-generic. Test by Intel as of April 2026. 6780E: 1-node, Intel Corporation Software Development Platform, 1x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 256GB (8x32GB DDR5 6400MT/s [6400MT/s]), BIOS BHSDCRB1.IPC.3545.O44.2604122329, microcode 0x30003b2, 8x Ethernet Controller E835-CC for QSFP, 1x 238.5G WDC PC SN730 SDBPNTY-256G,Ubuntu 22.04.5 LTS, 5.15.0-27-generic. Test by Intel as of April 2026. Software: ngfw-intel-cleartext, GCC 9.4, snort v.3.1.36.0, hyperscan v5.6.1, MCNAT v25.12, ice v.2.5.2 **Quantlib** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 1x 931.5G INTEL SSDPE2KX010T8, Ubuntu 24.04 LTS, 6.8.0-84-generic. Test by Intel as February 2026. Software: QuantLib v.1.42, oneAPI 2025.3, Spack v.1.2.0.dev0, Boost Library v.1.88
	
	

Generational Performance

Intel® Xeon® 6900E+ series vs. Intel® Xeon® 6780E

Slide details	Claim details
  	**WordPress** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, Intel® Ethernet Network Adapter E830-CQDA2 Dual Port, 1x 931.5G INTEL SSDPE2KX010T8, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of February 2026. Software: WordPress v.6.5.4-php8.1-fpm, https connections, OpenSSL v.3.1.4, NGINX v.1.22.0, MariaDB v.11.4.2, Siege v4.1.5. MultiVMs, 1 VM per NUMA node, 1GB memory per vCPU, 1 WordPress server per VM **NGINX (QATsw)** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 4x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of April 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 4x Ethernet Controller E830-CC for QSFP, 2x Ethernet Controller X710 for 10GBASE-T, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of April 2026. Software: NGINX TLS v.1.3 Handshake-only, NGINX async v.1.0.0, OpenSSL v.3.6.1, Intel IPP Crypto Library v.1.3.0, Intel IPsec Multi-Buffer Crypto Library v.2.0, QAT Engine v.2.0.0. Cipher: AES128-GCM-SHA256 with ECDHE-X25519-RSA2K. Running on 1S.

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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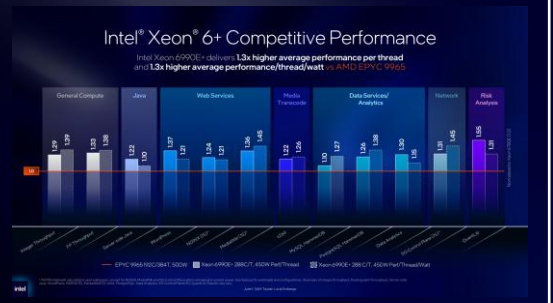  	**General Compute: Integer and Floating-point throughput** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x I350 Gigabit Network Connection, 2x Ethernet Controller E810-C for QSFP, 2x 3.5T INTEL SSDPF2KX038TZ, 1x 1.7T Dell Ent NVMe AGN RI U.2 1.92TB, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: Intel: SPECcpu2017 (est), GCC 15.2 | AMD: SPECcpu2017 (est), GCC 15.2 (running on physical cores for FP throughput) **Server-side Java** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, CentOS Stream 9, 5.14.0-687.el9.x86_64. Test by Intel as of March 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x BCM57416 NetXtreme-E Dual-Media 10G RDMA Ethernet Controller, 1x 1.7T SAMSUNG MZQL21T9HCJR-00A07, 1x 29.9G Flash Drive, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: Server Side Java, Open JDK v.25.0.2

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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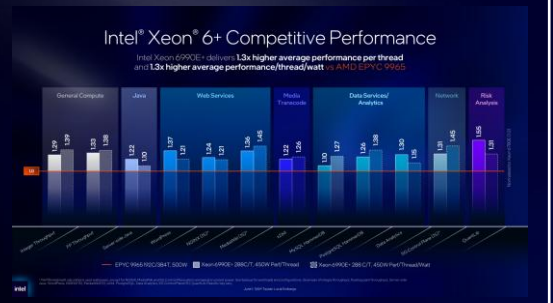  	**WordPress** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, NVIDIA® ConnectX®-7 100GbE Dual-Port, 1x 3.5T INTEL SSDPF2KX038TZ, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026. Software: WordPress v.6.5.4-php8.1-fpm, https connections, OpenSSL v.3.1.4, NGINX v.1.22.0, MariaDB v.11.4.2, Siege v4.1.5. MultiVMs, 1 VM per NUMA node, 1GB memory per vCPU, 1 WordPress server per VM **NGINX** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 4x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller 10-Gigabit X540-AT2, 2x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 4x Ethernet Controller E810-C for QSFP, 1x AX88179 Gigabit Ethernet, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of April 2026. Software: Intel: NGINX TLS v.1.3 Handshake-only, NGINX async v.1.0.0, OpenSSL v.3.6.1, Intel IPP Crypto Library v.1.3.0, Intel IPsec Multi-Buffer Crypto Library v.2.0, QAT Engine v.2.0.0, QAT Driver QAT20.L.1.2.30-00109. Cipher: AES128-GCM-SHA256 with ECDHE-X25519-RSA2K. Running on 1S. AMD: NGINX TLS v.1.3 Handshake-only, NGINX async v.1.0.0, OpenSSL v.3.6.1. Cipher: AES128-GCM-SHA256 with ECDHE-X25519-RSA2K. Running on 1S.

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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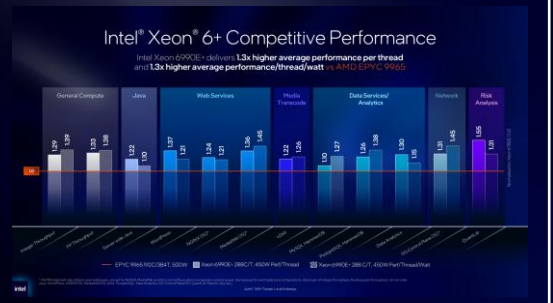  	**MediaWiki** 6990E+: 1-node, Supermicro SYS-222HA-TN, 1x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 1152GB (12x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 1x RTL8153 Gigabit Ethernet Adapter, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 22.04.5 LTS, 6.8.0-94-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 1x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 768GB (12x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 22.04.5 LTS, 6.8.0-94-generic. Test by Intel as of April 2026. Software: DCPerf Mediawiki v.1.0 **FFMPEG x264** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 24.04 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. Software: FFmpeg v.8.0.1, GCC 13.3.0, x264 v.0.165.3223, AVC-1080p-medium-avx2.

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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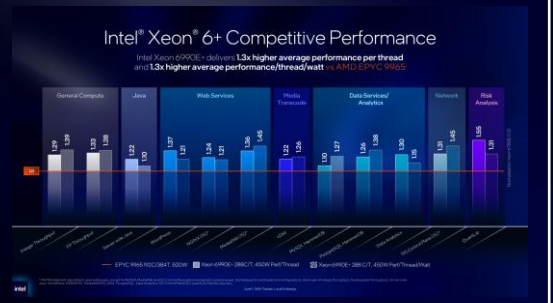  	**MySQL HammerDB** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 2x Ethernet Controller E835-CC for QSFP, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCMYXRUG1T92, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 3072GB (24x128GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x MT2910 Family [ConnectX-7], 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCD81PUG1T92, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: TPROC-C on MySQL 8033, HammerDB 4.7, MultiVMs, 8vCPUs per VM, 16GB memory per VM **PostgreSQL HammerDB** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 2x Ethernet Controller E835-CC for QSFP, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCMYXRUG1T92, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 3072GB (24x128GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x MT2910 Family [ConnectX-7], 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 8x 1.7T KIOXIA KCD81PUG1T92, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: PostgreSQL 18.1, HammerDB 4.7, MultiVMs, 8vCPUs per VM, 16GB memory per VM

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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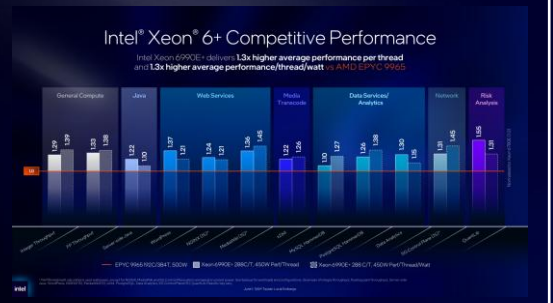  	**TPC-DS Like (Data Analytics)** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, 12x 3.6T Lightbits LightOS, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 3.5T INTEL SSDPF2KX038TZ, 8x 3.6T Lightbits LightOS, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026. Software: TPC-DS Like Workload, JDK17, Spark with Gluten, Spark v.3.5.2, Gluten v.1.3.0, 1. Docker Container per NUMA, Scaling Factor 6000 **5G Control Plane (1S)** 6990E+: 1-node, Intel Corporation Software Development Platform, 1x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 1152GB (12x96GB DDR5 8000MT/s [8000MT/s]), BIOS BHSDCRB1.IPC.3545.P40.2603170757, microcode 0x1000110, 1x 894.3G SAMSUNG MZ1L2960HCJR-00A07, Ubuntu 24.04.3 LTS, 5.14.0-284.100.1.el9_2.x86_64. Test by Intel as of April 2026. 9965: 1-node, Dell Inc. PowerEdge R7725, 1x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 768GB (12x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.5.3, microcode 0xb101054, 1x 894.3G Dell DC NVMe PM9D3a RI U.2 960GB, Ubuntu 24.04.4 LTS, 5.14.0-284.100.1.el9_2.x86_64. Test by Intel as of April 2026. Software: Lansdslide v.24.1.0 & TAS 24.10.0.8, 5G packet core / Traffic generator, KDDI_FINAL_OCP-F02-758K-v2-boost-fix2, Flexcore 23.07, Kubernetes 10 node cluster with RH OCP.

Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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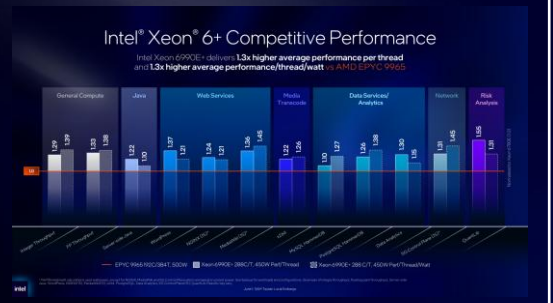  	**QuantLib** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-106-generic. Test by Intel as of March 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x BCM57416 NetXtreme-E Dual-Media 10G RDMA Ethernet Controller, 1x 1.7T SAMSUNG MZQL21T9HCJR-00A07, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. Software: Intel: QuantLib v.1.42, oneAPI 2025.3, Spack v.1.2.0.dev0, Boost Library v.1.88 | AMD: QuantLib v.1.42, AOCC v.5.1.0, Spack v.1.2.0.dev0, Boost Library v.1.88

Crypto - Generational Performance

Intel® Xeon® 6990E + series vs. Intel® Xeon® 6780E

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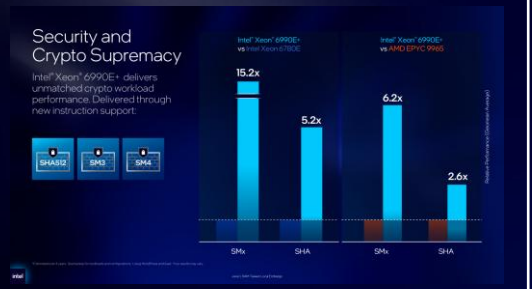 	Results may vary. Configuration: Crypto SHA and SM 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-107-generic. Test by Intel as of April 2026. 6780E: 1-node, Supermicro SYS-222H-TN, 2x Intel(R) Xeon(R) 6780E, 144 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.4, microcode 0x3000382, 2x Ethernet Controller X710 for 10GBASE-T, 1x 894.3G SAMSUNG MZ1L2960HCJR-00A07, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of April 2026. Software: OpenSSL v.3.6.1, Intel IPsec Multi-Buffer Crypto Library v. 2.0, Intel IPP Crypto Library v.1.3.0, QAT Engine v.2.0.0

Crypto - Competitive Performance

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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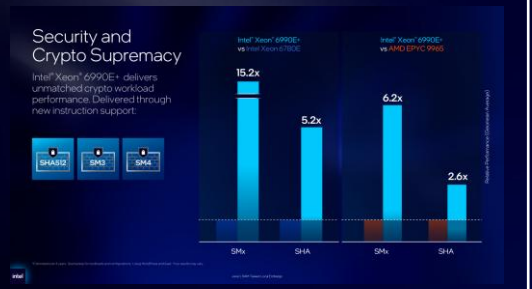 	Results may vary. Configuration: Crypto SHA and SM 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo Off, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-107-generic. Test by Intel as of April 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. Software: Intel: OpenSSL v.3.6.1, Intel IPsec Multi-Buffer Crypto Library v. 2.0, Intel IPP Crypto Library v.1.3.0, QAT Engine v.2.0.0 | AMD: OpenSSL v.3.6.1

Load Line - Competitive Performance Efficiency

Intel® Xeon® 6990E + series vs. AMD EPYC 9965

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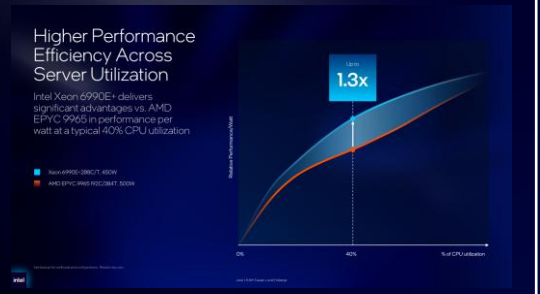 	Results may vary Configuration: Energy Efficiency 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-101-generic. Test by Intel as of March 2026. 9965: 1-node, Supermicro AS -2126HS-TN, 2x AMD EPYC 9965 192-Core Processor, 192 cores, 500W TDP, SMT On, Boost On, Total Memory 1536GB (24x64GB DDR5 6400MT/s [6400MT/s]), BIOS 1.7a, microcode 0xb101054, 2x Ethernet Controller 10-Gigabit X540-AT2, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04 LTS, 6.8.0-101-generic. Test by Intel as of April 2026. Software: Power Efficiency workload, OpenJDK v.17.0.1

Server Refresh Consolidation (9:1)

Intel® Xeon® 6990E + series to Intel® Xeon® 6258R

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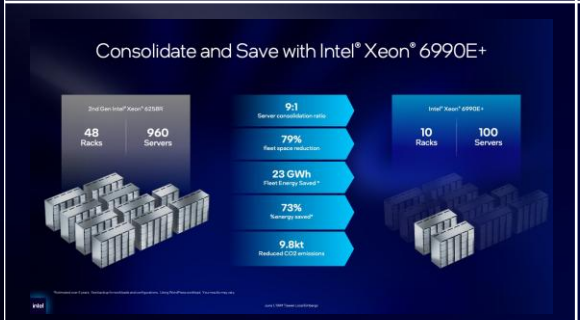  	Claim, WordPress: Use 10 racks (100 servers) of Intel® Xeon® 6990E+ based servers running WordPress, while delivering similar performance, instead of 48 racks (960 servers) of Intel® Xeon® 6258R based servers and save 23.1 GWh of energy and reduce carbon footprint by 9.8 kilotonnes CO2 over 4-years. Intel Xeon 288C 6990E+ delivers 9.5x higher performance and 3.7x higher performance/watt per server vs Intel Xeon 6258R on WordPress. **WordPress** 6990E+: 1-node, Supermicro SYS-222HA-TN, 2x Intel(R) Xeon(R) 6990E+, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 2304GB (24x96GB DDR5 8000MT/s [8000MT/s]), BIOS T20260320104526, microcode 0x1000110, 2x Ethernet Controller E835-CC for QSFP, 2x Ethernet Controller X550, 1x 1.7T SAMSUNG MZ1L21T9HCLS-00A07, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026. 6258R: 1-node, Supermicro SuperServer 6029P-WTRT, 2x Intel(R) Xeon(R) Gold 6258R CPU @ 2.70GHz, 28 cores, 205W TDP, HT On, Turbo On, Total Memory 768GB (12x64GB DDR4 3200MT/s [2933MT/s]), BIOS 3.8b, microcode 0x5003901, Intel® Ethernet Network Adapter E830-CQDA2 Dual Port, 1x 745.2G INTEL SSDSC2BB80, 1x 1.7T SAMSUNG MZQL21T9HCJR-00A07, Ubuntu 24.04.4 LTS, 6.8.0-84-generic. Test by Intel as of March 2026.. Software: WordPress v.6.5.4-php8.1-fpm, https connections, OpenSSL v.3.1.4, NGINX v.1.22.0, MariaDB v.11.4.2, Siege v4.1.5. MultiVMs, 1 VM per NUMA node, 1GB memory per vCPU, 1 WordPress server per VM Assumptions: 1x 42U, 15KW Rack, supporting up to 20x 2U rack servers, 1x TOR switch, 1.6 PUE, kWh to kg CO2 factor 0.42394. For 48 racks of Intel Xeon 6258R based servers over 4-years, estimated as of May 2026: Energy use: 31.5 GWh, CO2 emissions: 13.3 kilotonnes. For 10 rack of Intel Xeon 288C 6990E+ based servers over 4-years, estimated as of May 2026: 8.4 GWh, CO2 emissions: 3.6 kilotonnes. Results may vary.

Ericsson Performance Improvements

Intel® Xeon® 6990E + series vs. Intel® Xeon® 6780E at equal core counts

Slide details	Claim details
	**Ericsson Packet Core** Testing by Ericsson as of February 2026. Results may vary. Intel does not control or audit third party data. You should consult other sources to determine accuracy. Intel® Xeon® 6+ system configuration: 1-node, Intel Corporation Avenue City, 1x Genuine Intel® Xeon® 6990E processor, 288 cores, 450W TDP, HT N/A, Turbo On, Total Memory 768GB (12x64GB DDR5 8000MT/s [8000MT/s]), BIOS BHSDCRB1.IPC.3545.P20.2512032153, microcode 0x810000b0, 1x I210 Gigabit Network Connection, 2x Ethernet Controller E810-XXV for SFP, 97x Unknown NIC, 1x 894.3G SAMSUNG MZ1L2960HCJR-00A07, Ubuntu 24.04.4 LTS, 6.8.0-100-generic. Intel® Xeon® 6 with E-cores system configuration: 1-node, Intel Corporation Beechnut City, 2x Intel® Xeon® 6780E processors, 288 cores, 330W TDP, HT N/A, Turbo On, Total Memory 1024GB (16x64GB DDR5 6400MT/s [6400MT/s]), BIOS BHSDREL1.IPC.0030.D85.2403122320, microcode 0x13000131, 59x Unknown NIC, 1x I210 Gigabit Network Connection, 2x Ethernet Controller E810-C for QSFP, 2x Ethernet Controller X710 for 10GbE SFP+, 1x 894.3G Micron_7450_MTFDKBG960TFR, Ubuntu 24.04.3 LTS, 6.8.0-90-generic.

Ethernet Power Efficiency

Intel® Ethernet E835-CQDA2 vs. Broadcom BCM957508-P2100G , NVIDIA ConnectX-6 DX(CX614106A)

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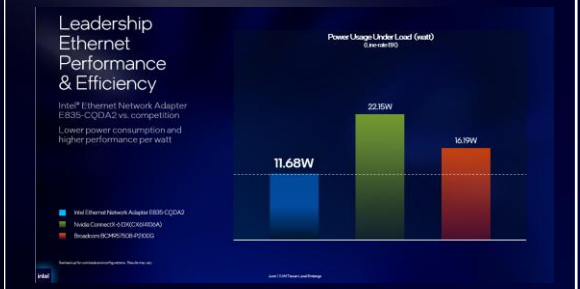	Results may vary. The system under test (SUT) was configured as a dual-socket Xeon 6 B2B platform using a Supermicro SuperServer SYS-222HA-TN with BIOS version 1.4 (July 2025). The system consisted of six nodes, each with two sockets populated by Intel® Xeon® 6960P processors (72 cores at 2.7 GHz with 432 MB cache). Hyper-threading was disabled while turbo mode remained enabled. Each node was equipped with 196 GB of memory using 12x16 GB DDR 4800 MT/s Kingston SRx8 RDIMMs. The system ran Rocky Linux 9.7 with kernel version 5.14.0-611.5.1.el9_7.x86_64. Operating system optimizations included disabling the firewall and user space IRQ balancer, while maintaining the default cpupower profile. CPU and power management settings were tuned for latency optimization, with virtual NUMA disabled, Energy Performance Bias set to extreme performance, SpeedStep enabled, turbo mode enabled, hardware P-states in native mode, and deeper C-states disabled (C6 and C1 demotion disabled). Testing was conducted using Netperf 2.7.0 with custom scripts, including n-perf_multi.sh for scaling thread counts and n-perfmon_2Port.py for command execution with statistics monitoring; these scripts were available via a git repository. Each traffic item used eight client threads, and TCP stream/MAERTS tests were run with a 64 KB message size. Power was monitored using Intel® DG Monitor PMC version 3.0.0.2 (internal), while temperature data was collected through the /sys/class/hwmon interface. For IP forwarding validation, driver and firmware configurations were verified against both Rocky Linux 9.7 inbox drivers and the latest vendor releases. The Intel® E835-CQDA2 adapter used NVM version 1.00 (0x00180E0) with the ice driver version 2.5.4 (26R0 PC). The NVIDIA ConnectX-6 DX adapter (CX614106A) used firmware version 22.48.1000 with driver version 26.01-1.0.0. The Broadcom Thor BCM957508-P2100G used firmware version 228.1.111.0 (package 236.1.153.0) with driver version 1.10.3-236.1.155.0. No driver tuning was applied, including CPU affinity adjustments, and the adapter was placed on NUMA node 3 in a PCIe Gen 5 x16 slot. Connectivity was established using QSFP56 1-meter direct attach cables in a back-to-back configuration between ports, with no switch in the data path. Performance measurements were conducted under bidirectional traffic conditions, achieving approximately 370 Gbps payload throughput per adapter at line rate using eight netperf threads in each direction. Idle power measurements were recorded after the system had been powered on for five minutes, and incremental power was calculated as the difference between loaded and idle conditions. Temperature data was collected using the system hardware monitoring interface. Test by Intel as of April 2026.


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