

Intel® Server System D50TNP Product family

The Intel® Server System D50TNP Product family (formerly known as code-name “Tennessee Pass”) is Intel’s highest-performance density option for HPC and AI applications.

- Built on Intel’s® code-name “Ice Lake” processor architecture on Intel’s new Whitley Platform, Intel® Server System D50TNP was built with the future of HPC datacenters in mind.
- A unique half-width board form factor coupled with four different node types including up to four accelerators make this system an unprecedented combination of power, performance, size, and expandability.

The DSG Story

Intel® Server Systems are a comprehensive portfolio designed to meet the next generation of data-centric demands. Combine the latest data center innovations with Intel-backed pre-validation and a full stack of offerings.



Select a purpose-built system for any workload—from entry level, to enterprise workloads, to performance sensitive mainstream applications and HPC.



Reduce time-to-value and support lift through pre-validation, making it easier to build innovative solutions with pre-integrated Intel® Data Center Blocks, and ensuring customer satisfaction with standard warranties and robust global technical Intel support.



Draw upon Intel’s unique processor-based performance and security features like high-performance and low latency networking, hardened Intel x86 architecture, support for technologies like advanced analytics.



Scale across data center technologies with Intelx86 architecture software compatibility. Seamlessly support network solutions, breakthrough Intel® Optane™ Persistent Memory, Intel® Optane™ SSDs, and other adjacencies.

Sales Cycle

Start Conversations Now: Intel® Server System D50TNP Product Family Features a Longer Sales Cycle
While D50TNP-based systems will not be available until next year, customers require more proof points and more customization to make the switch to a new system, and sales cycles may run from 6+ months to a year.

A Focused Product
Intel® Server System D50TNP is tailored to the latest high-powered compute workloads and is best suited to the emerging and advanced HPC compute clusters.

In-Depth Lead Qualification
Intel® Server System D50TNP is a focused, high-value, and long sales cycle offering. Extensive qualification of leads needs to occur down to the workload level to ensure time and resource investment is justified.




Qualification

- **Regional trends**
 - **EMEA:** HPC datacenter decision-makers are interested in lowering costs by using heat capture to reduce power requirements and overall datacenter footprint. Firms, universities, and governments are looking for improved liquid cooling solutions to help meet these conditions.
 - **PRC:** Advances in vision, recognition, and AI inferencing applications are motivating companies and governments to transform datacenters to handle the massive volume of “back-end” AI analytics and processing required for these applications. Intel’s own investment in Intel® Movidius™ accelerators demonstrates our company-wide acknowledgment of this trend.
- **Target company characteristics:** Universities, governments, technical computing, providers of AI-based services. Intel® D50TNP systems are less ideal for traditional architecture enterprise customers who design around rear-I/O chassis.

- **Product EOL (refresh/replacement opportunity)**
 - Intel® Server System D50TNP is an opportunity to replace with a high-power, high-value offering to help our customers future-proof their datacenters.
 - Customers looking to adopt advanced workloads or transform their compute cluster architectures are the ideal target for refresh/replacement with Intel® Server System D50TNP.
- **Business challenges addressed by Intel® Server System D50TNP**
 - Existing server systems are unable to scale to meet increased demands for storage, accelerators, and connectivity.
 - Liquid Cooling vs. Air Cooling: Existing solutions cannot meet thermal requirements or targets for performance/space/wattage.
 - **Solution architects designing for customers, technical administrators:** Fit within a specific performance envelope for specific clusters.

Qualitative Differentiators

- **Satisfy customer need for a fast, dense, solution built on the Intel code-name: Whitley platform:** Intel® D50TNP Server Systems address the most important segments of the HPC and AI market space.
- **Achieve a broad set of AI and HPC functions with a single, ultra-flexible system:** Intel® D50TNP Server Systems feature one board with multiple modules, nodes, and storage options. This single half-width board design can serve compute, management, storage, and acceleration needs in a single form factor.
- **Land and expand each system with a broad set of server system adjacencies:** Intel® Server System D50TNP accelerator and storage nodes open the door for significant upsell on Intel and third-party storage, accelerator, and memory.
- **Unlock advanced AI capabilities at the datacenter level:** Intel® D50TNP Server Systems are uniquely suited for advanced AI analytics applications. The system supports 4 full-height, full-length double-width accelerators along with 4 low-profile accelerator cards, along with the latest M.2 and U.2 storage options for high-speed historical and real-time data processing, and Intel® Deep Learning boost functionality.
- **Address cooling and power needs for high-performance AI and HPC:** Intel® D50TNP Server Systems support multiple cooling options with advanced liquid-cooled and air-cooled options built around the Intel FC2000 Family (Optimus Beach) Chassis. The Chassis includes three power supplies, shared fans and an option for liquid cooling directly to each node for high efficiency cooling.
- **High performance density:** Intel® D50TNP Server Systems offer high-performance density optimized for the highest performance AI and HPC workloads.

Workload	Hypothetical Situation	How Intel® Server System D50TNP Could Deliver	Outcome
 <p>Advanced AI capability in a small form factor</p>	<p>A large financial services company is looking to transform decades of financial data into intelligent insights using AI. To reduce latency, they plan to build new AI-oriented HPC clusters near several on-premises datacenters; but they face significant challenges when it comes to space requirements at each location.</p>	<p>Intel® Server System D50TNP has the form factor and AI capabilities needed for intelligent datacenter transformation.</p> <ul style="list-style-type: none"> ▪ Meets both dense form factor and high-performance compute needs: 2U form factor allows more servers per rack, air cooling option to avoid expansive liquid cooled architectures ▪ Optimized for AI hardware: 2 CPU/4GPU for AI Accelerator ratio is ideal for AI inferencing and deep learning ▪ Remove bottlenecks: High-speed integrated storage nodes allow post-processed data storage without adding additional storage systems 	<p>Customer able to build HPC clusters near multiple sites while meeting form factor requirements.</p>
 <p>The strongest balance of density, performance, and storage</p>	<p>An HPC genomics lab requires the absolute maximum density per square inch possible for fast whole genome simulation--they want to develop an "all-in-one" architecture that reduces latency at every possible bottleneck point.</p>	<p>Intel® Server System D50TNP features high density per square inch and in-chassis storage to maximize compute.</p> <ul style="list-style-type: none"> ▪ High performance density-per-square-inch: 2U form factor allows for more servers per rack, based on the high-speed Whitley architecture for flexible high-performance workloads ▪ Reduced latency and increases data availability across the network through high-speed switchless integrated storage ▪ Built for scale to meet performance needs: Flexible cooling options based on performance and heat capture goals 	<p>Customer able to achieve high processing power in their small to medium-sized HPC cluster.</p>
 <p>Land and expand into multiple markets</p>	<p>A major HPC reseller is looking to replace Intel® Server Board 2600BP-based systems with a higher performance 2U option but is concerned about price as a barrier to sales at scale. They need a solution with a high value potential to deliver broad ROI from their 2U customer targets in the HPC space.</p>	<p>Intel® Server System D50TNP has more broad market and in-chassis adjacency opportunities than any Intel offering.</p> <ul style="list-style-type: none"> ▪ Multiple nodes for multiple markets: AI, network and storage nodes controlled by Intel's management module make Intel® Server System D50TNP relevant for a massive variety of customer workloads across HPC and AI ▪ Relevance across geos and workload requirements: Liquid cooling and air-cooling options allow sales into restricted space deployments as well as the EMEA market for heat capture ▪ High value potential for adjacencies: Large ROI by upselling with storage and GPU/AI Accelerators 	<p>Reseller able to sell a single system into multiple customer workloads and verticals and score massive ROI on storage and other adjacencies.</p>

Objection	Response
<p>Significant cost increase vs. Intel® Xeon® Platinum 8180 Processor-Based Systems.</p>	<p>Intel® D50TNP Server Systems are capable of the full HPC performance range of the Whitley platform. They also provide more functionality per system through compute, storage, and acceleration nodes.</p>
<p>Today, we use rear I/O systems, but Intel® D50TNP systems are front-I/O; why should I restructure my entire datacenter?</p>	<p>Front I/O allows Intel® D50TNP systems to achieve an unprecedented concentration of performance, cooling, and nodes within a 2U specification. This is a necessary trade-off for high-performance density and cooling requirements in one system.</p>

Sales Resources	
<p>Partner programs</p> <ul style="list-style-type: none"> – Intel® Authorized Distributor – Intel® Technology Provider for HPC 	<p>– Intel® Solutions Marketplace</p> <p>To coordinate sales opportunities: Dennis Fallis</p> <p>For product information: Brian Caslis</p>

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