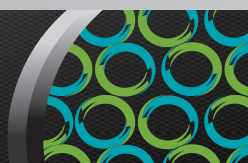# TYAN

Thunder & Tempest Solutions
4th Gen Intel® Xeon® Scalable Processors

intel.
XEON

World Class Server Platforms

Leading performance with the most built-in accelerators

4th Gen Intel® Xeon® Scalable processors are designed to accelerate performance across the fastest-growing workloads that businesses depend on today. The processor is supported by a rich set of platform enhancements that drives the adoption of industry-changing technologies like DDR5 memory, advanced I/O with PCIe Gen 5 and Compute Express Link (CXL).

Built-in accelerators improve performance across AI, analytics, networking, storage, and HPC. By making the best use of CPU core resources, built-in accelerators can result in more efficient utilization and power efficiency advantages, helping businesses achieve their sustainability goals.

New Features of 4th Gen Intel® Xeon® Scalable processors

Intel® Advanced Matrix Extensions (Intel® AMX)
Significantly accelerate AI capabilities on the CPU with Intel Advanced Matrix Extensions (Intel AMX). Intel AMX is a built-in accelerator that improves the performance of deep learning training and inference on 4th Gen Intel® Xeon® Scalable processors, ideal for workloads like natural language processing, recommendation systems, and image recognition.

Intel® QuickAssist Technology (Intel® QAT)
Help reduce system resource consumption by providing accelerated cryptography, key protection, and data compression with Intel QuickAssist Technology (Intel QAT). By offloading encryption and decryption, this built-in accelerator helps free up processor cores and helps systems serve a larger number of clients.

Intel® Data Streaming Accelerator (Intel® DSA)
Drive high performance for storage, networking, and data-intensive workloads by improving streaming data movement and transformation operations. Intel Data Streaming Accelerator (Intel® DSA) is designed to offload the most common data movement tasks that cause overhead in data center-scale deployments. Intel® DSA helps speed up data movement across the CPU, memory, and caches, as well as all attached memory, storage, and network devices.

Intel® Dynamic Load Balancer (Intel® DLB)
Improve the system performance related to handling network data on multi-core Intel® Xeon® Scalable processors. Intel® Dynamic Load Balancer (Intel® DLB) enables the efficient distribution of network processing across multiple CPU cores/threads and dynamically distributes network data across multiple CPU cores for processing as the system load varies. Intel® DLB also restores the order of networking data packets processed simultaneously on CPU cores.

Intel® In-Memory Analytics Accelerator (Intel® IAA)
Run database and analytics workloads faster, with potentially greater power efficiency. Intel In-Memory Analytics Accelerator (Intel® IAA) increases query throughput and decreases the memory footprint for in-memory database and big data analytics workloads. Intel® IAA is ideal for in-memory databases, open source databases and data stores like RocksDB, Redis, Cassandra, and MySQL.

Compute Express Link (CXL)
Reduce compute latency in the data center and lower TCO with Compute Express Link (CXL) 1.1 for next-generation workloads. CXL is an alternate protocol that runs across the standard PCIe physical layer and can support both standard PCIe devices as well as CXL devices on the same link. CXL provides a critical capability to create a unified, coherent memory space between CPUs and accelerators and will revolutionize how data center server architectures will be built for years to come.

TYAN Brand Lines

Tyan is pleased to announce a new line of server barebones and motherboards designed to suit the needs of the channel and our system integration partners.

Thyan and Tempest products spanning four product segments:
SX – Storage
HX – HPC
CX – Cloud
EX – Embedded

Tyan continually develops a roadmap full of innovative new products. Check our website at www.tyan.com to stay up to date with our latest product offerings.

Thunder

The Tyan **Thunder** series is a line of server barebones based on Intel's latest technology including the Intel® Xeon® Scalable Processors. These barebones are designed to offer best-in-class server technology to our customers. Tyan Thunder server barebones are built to inventory and are warehoused locally in the USA.

Tempest

Tyan's **Tempest** line of motherboards are designed to pack the latest Intel's world-class server technology into off-the-shelf commodity chassis, providing an outstanding server building block for the widest possible range of applications. Like Tyan's Thunder server barebones, these motherboards are warehoused in the USA and are readily available in the channel.

Thunder HX
FT65T-B7130

intel XEON | **7nm** | **60 Core** | **DDR5** | **PCIe 5.0**

80 PLUS PLATINUM | **80 PLUS GOLD**

Pedestal/4U 2S HPC server platform supports multiple high performance GPU cards

4 GPU

Model Number	FT65T-B7130
Enclosure Form Factor	Pedestal / 4U (25.59" in depth)
Supported CPU	(2) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	16 / 8+8
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T ports (Intel® x710-AT2) + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(3) PCIe 5.0 x16 + (2) PCIe 5.0 x8 slots + (1) PCIe 4.0 x4 NVMe M.2 slot
Power Supply	(1) 2,000W (@220V_AC) ATX PSU

Standard Model	# Storage Bay	# FAN	Networking
B7130F65TV10H-2T-N	(8) 3.5" hot-swap SATA + (2) 2.5" hot-swap SATA	(3) hot-swap 12038 + (2) cold-swap 8038	(2) 10GBase-T + (1) 1000Base-T (IPMI)
B7130F65TV10H-2T-G	(8) 3.5" hot-swap SATA + (2) 2.5" hot-swap SATA	(3) hot-swap 12038	(2) 10GBase-T + (1) 1000Base-T (IPMI)

Server Board

Tempest HX
S7130

intel XEON | **7nm** | **60 Core** | **DDR5** | **PCIe 5.0**

Dual-socket mainstream server board in EEB form factor

Processor	• (2) 4th Gen. Intel® Xeon® Scalable Processor
Memory	• (8+8) DDR5 DIMM slots
Expansion	• (3) PCIe 5.0 x16 slots • (2) PCIe 5.0 x8 slots
Storage	• (10) SATA 6Gb/s
Network	• (2) 10GBase-T ports (Intel® x710-AT2) (-2T SKU) • (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
Video	• ASPEED AST2600 Integrated Graphics
Management	• ASPEED AST2600 iBMC w/ iKVM
Form Factor	• EEB 12" x 13"

Standard Model	SATA	NVMe	10GbE	BMC
S7130GM2NRE-2T	10	(1) M.2	2	Yes
S7130GMRE	10	(1) M.2	-	Yes

Thunder HX
FT65T-B5652

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0

80 PLUS PLATINUM

**Pedestal/4U1S server platform designed for deskside HPC/GPGPU applications supporting up to 4 double-wide GPU cards**

4 GPU

Model Number	FT65T-B5652
Enclosure Form Factor	Pedestal / 4U (25.59" in depth)
Supported CPU	(1) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	8
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T (Intel® x550-AT2) (-2T SKU only) + (1) 1000Base-T (Intel® i210-AT) + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(4) PCIe 5.0 x16 + (1) PCIe 5.0 x4 slots + (1) PCIe 3.0 x2 NVMe M.2 slot
Power Supply	(1) 2,000W (@220VAC) ATX PSU

Standard Model	# Storage Bay	# FAN	Networking
B5652F65TV6E2H-2T-N	(6) 3.5" hot-swap SATA + (2) 2.5" hot-swap U.2	(3) hot-swap 12038 + (2) cold-swap 8038	(2) 10GBase-T + (1) 1000Base-T (1) 1000Base-T (IPMI)
B5652F65TV6E2H-G	(6) 3.5" hot-swap SATA + (2) 2.5" hot-swap U.2	(3) hot-swap 12038	(1) 1000Base-T + (1) 1000Base-T (IPMI)

Thunder HX
TS75A-B7132

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0

80 PLUS PLATINUM
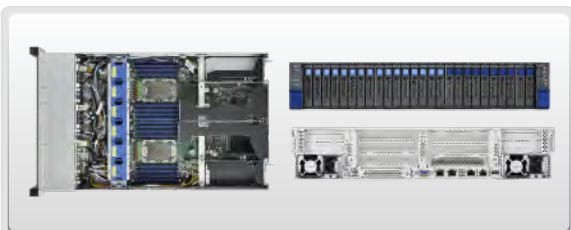
2U2S server platform with maximum memory capacity for in-memory computing and virtualization

Model Number	TS75A-B7132
Enclosure Form Factor	2U (29.53" in depth)
Supported CPU	(2) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	32 / 16+16
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T (Intel® x710-AT2) or (2) 1000Base-T (2x Intel® i210-AT) ports + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(4) PCIe 5.0 x16 + (1) PCIe 5.0 x4 slots (via risers) + (1) OCP v3.0 LAN mezzanine slot + (2) PCIe 4.0 x4 NVMe M.2 slots
Power Supply	(1+1) 2,000W (@220VAC) CRPS

Standard Model	# Storage Bay	# PCIe Slots	Networking
B7132T75AV10E16HR-2T	(10) 2.5" hot-swap SATA + (16) 2.5" hot-swap U.2	(4) PCIe 5.0 x16 + (1) PCIe 5.0 x4 + (1) OCP v3.0 mezz. + (2) M.2	(2) 10GBase-T + (1) 1000Base-T (IPMI)
B7132T75AV10E16HR	(10) 2.5" hot-swap SATA + (16) 2.5" hot-swap U.2	(4) PCIe 5.0 x16 + (1) PCIe 5.0 x4 + (1) OCP v3.0 mezz. + (2) M.2	(2) 1000Base-T + (1) 1000Base-T (IPMI)

Thunder SX
TS70A-B7136

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0

80 PLUS PLATINUM

2U2S server platform for high IOPs cloud storage applications
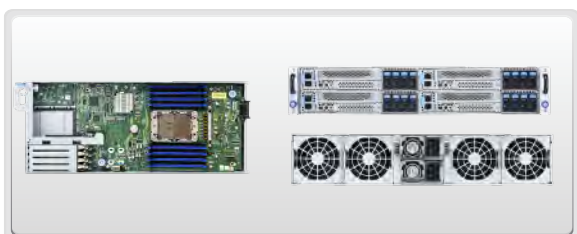
Model Number	TS70A-B7136
Enclosure Form Factor	2U (27.56" in depth)
Supported CPU	(2) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	16 / 8+8
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T (Intel® x710-AT2) ports + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(2) PCIe 5.0 x16 + (2) PCIe 5.0 x8 + (1) PCIe 5.0 x4 slots (via risers) + (1) OCP v3.0 LAN mezzanine slot + (2) PCIe 4.0 x4 NVMe M.2 slots
Power Supply	(1) 1,200W (@220$_{VAC}$) CRPS

Standard Model	# Storage Bay	# PCIe Slots	Networking
B7136T70AV12E8HR-2T	(12) 2.5" hot-swap SATA + (8) 2.5" hot-swap U.2	(2) PCIe 5.0 x16 + (2) PCIe 5.0 x8 + (1) PCIe 5.0 x4 + (1) OCP v3.0 mezz. + (2) M.2	(2) 10GBase-T + (1) 1000Base-T (IPMI)
B7136T70AV12E8HR	(12) 2.5" hot-swap SATA + (8) 2.5" hot-swap U.2	(2) PCIe 5.0 x16 + (2) PCIe 5.0 x8 + (1) PCIe 5.0 x4 + (1) OCP v3.0 mezz. + (2) M.2	(1) 1000Base-T (IPMI)

Thunder CX
TD76-B5658

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0

80 PLUS PLATINUM

2U 4-node server platform designed for high-density cloud server deployment

Model Number	TD76-B5658
Enclosure Form Factor	2U (29.92" in depth)
Supported CPU	(1) 4th Gen. Intel® Xeon® Scalable Processor (per node)
Chipset	Intel® C741 PCH
Number of DIMM Slot	16 (per node)
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(1) 1000Base-T (Intel® i210-AT) + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG) (per node)
PCI Expansion Slots	(1) PCIe 5.0 x16 slot + (1) OCP v3.0 LAN mezzanine slot + (2) PCIe 3.0 x4 NVMe M.2 slot (per node)
Power Supply	(1+1) 2,700W (@220$_{VAC}$) CRPS PSU (per system)

Standard Model	# Storage Bay (per node)	# FAN (per system)	Networking (per node)
B5658T76X4-270TE4HR	(4) hot-swap E1.s	(4) hot-swap 8056	(1) 1000Base-T + (1) 1000Base-T (IPMI)

Thunder CX
GC79A-B7132

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0
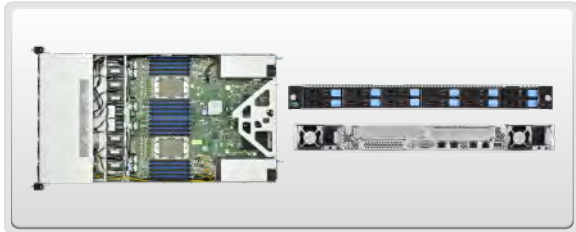
80 PLUS PLATINUM

1U2S server platform with maximum memory capacity for high-performance in-memory

Model Number	GC79A-B7132
Enclosure Form Factor	1U (31.1" in depth)
Supported CPU	(2) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	32 / 16+16
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T (Intel® x710-AT2) or (2) 1000Base-T (2x Intel® i210-AT) ports + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(2) PCIe 5.0 x16 (via risers) + (1) OCP v3.0 LAN mezzanine slot + (2) PCIe 4.0 x4 NVMe M.2 slots
Power Supply	(1+1) 1,200W (@220V_AC) CRPS

Standard Model	# Storage Bay	# PCIe Slots	Networking
B7132G79AE12HR-2T	(12) 2.5" hot-swap U.2 (up to 4x SATA)	(2) PCIe 5.0 x16 + (1) OCP v3.0 mezz. + (2) M.2	(2) 10GBase-T + (1) 1000Base-T (IPMI)
B7132G79AE12HR	(12) 2.5" hot-swap U.2 (up to 4x SATA)	(2) PCIe 5.0 x16 + (1) OCP v3.0 mezz. + (2) M.2	(2) 1000Base-T + (1) 1000Base-T (IPMI)

Thunder CX
GC68A-B7136

intel XEON | 7nm | 60 Core | nvm EXPRESS | DDR5 | PCIe 5.0

80 PLUS PLATINUM

1U2S server platform for mainstream cloud applications

Model Number	GC68A-B7136
Enclosure Form Factor	1U (26.77" in depth)
Supported CPU	(2) 4th Gen. Intel® Xeon® Scalable Processor
Chipset	Intel® C741 PCH
Number of DIMM Slot	16 / 8+8
Memory Type (max. capacity)	Follow the latest 4th Gen. Intel® Xeon® Scalable Processor Memory POR* *: Actual memory speed depends on populated CPU models
Storage Controller	Intel® C741 PCH
RAID Support	RAID 0, 1, 10, 5 (Intel® VROC 8.0)
Networking	(2) 10GBase-T (Intel® x710-AT2) ports + (1) 1000Base-T port dedicate for IPMI (Realtek® RTL8211FD-CG)
PCI Expansion Slots	(2) PCIe 5.0 x16 slots (via risers) + (1) OCP v3.0 LAN mezzanine slot + (2) PCIe 4.0 x4 NVMe M.2 slots
Power Supply	(1+1) 850W RPSU

Standard Model	# Storage Bay	# PCIe Slots	Networking
B7136G68AV4E8HR-2T	(8) 2.5" hot-swap U.2 + (4) 2.5" hot-swap SATA	(2) PCIe 5.0 x16 + (1) OCP v3.0 mezz. + (2) M.2	(2) 10GBase-T + (1) 1000Base-T (IPMI)
B7136G68AV4E8HR	(8) 2.5" hot-swap U.2 + (4) 2.5" hot-swap SATA	(2) PCIe 5.0 x16 + (1) OCP v3.0 mezz. + (2) M.2	(1) 1000Base-T (IPMI)

Tempest HX
S5652

Intel XEON | 7nm | 60 Core

NVM EXPRESS | DDR5 | PCIe 5.0

Single-socket HPC server board for multiple GPU cards deployment

Processor	• (1) 4th Gen. Intel® Xeon® Scalable Processor
Memory	• (8) DDR5 DIMM slots
Expansion	• (4) PCIe 5.0 x16 slots • (1) PCIe 5.0 x8 slot (w/ x4 link) • (1) PCIe 5.0 MCIO x8 connector for U.2 • (1) NVMe M.2 slot
Storage	• (6) SATA 6Gb/s
Network	• (2) 10GBase-T ports (Intel® x550-AT2) (-2T SKU only) • (1) 1000Base-T port (Intel® i210-AT) • (1) 1000Base-T port dedicate for IPMI (Realtek®RTL8211FD-CG)
Video	• ASPEED AST2600 Integrated Graphics
Management	• ASPEED AST2600 iBMC w/ iKVM
Form Factor	• CEB 12" x 10.5"

Standard Model	SATA	NVMe	10GbE	GbE	BMC
S5652AGM3NRE-2T	6	(1) MCIO x8 + (1) M.2	2	1	Yes
S5652AGMNRE	6	(1) MCIO x8 + (1) M.2	-	1	Yes

Tempest CX
S7136

Intel XEON | 7nm | 60 Core

NVM EXPRESS | DDR5 | PCIe 5.0

Dual-socket rack-optimized server board for 1U/2U deployment

Processor	• (2) 4th Gen. Intel® Xeon® Scalable Processor
Memory	• (8+8) DDR5 DIMM slots
Expansion	• (1) PCIe 5.0 x28 riser slot • (1) PCIe 5.0 x24 riser slot • (1) OCP v3.0 mezz. slot • (8) PCIe 5.0 MCIO x4 connectors for U.2 • (2) NVMe M.2
Storage	• (14) SATA 6Gb/s
Network	• (2) 10GBase-T ports (Intel® x710-AT2) (-2T SKU) • (1) 1000Base-T port dedicate for IPMI (Realtek®RTL8211FD-CG)
Video	• ASPEED AST2600 Integrated Graphics
Management	• ASPEED AST2600 iBMC w/ iKVM
Form Factor	• 12.15" x 14.18"

Standard Model	SATA	NVMe	10GbE	BMC
S7136GM2NRE-2T	14	(8) MCIO x4 + (2) M.2	2	Yes
S7136GMRE	14	(8) MCIO x4 + (2) M.2	-	Yes

Tempest EX
S5565

Intel CORE i9 | Intel CORE i7 | Intel CORE i5 | Intel CORE i3

7nm | 8 Core | NVM EXPRESS

Embedded workstation motherboard in micro ATX form factor

Processor	• (1) Intel® 12th Gen. Core™ i3/i5/i7/i9 Processor
Memory	• (4) DDR4 DIMM slots
Expansion	• (1) PCIe 3.0 x16 slot • (2) PCIe 3.0 x8 slots (w/ x4 link) • (1) PCIe 3.0 x4 NVMe M.2 slot • (1) PCIe 3.0 x2 NVMe M.2 slot
Storage	• (6) SATA 6Gb/s
Network	• (1) 2500Base-T port (Intel® i225-LM) • (1) 1000Base-T port (Intel® i219-V)
Video	• (3) Display port
Management	• AMT Support
Form Factor	• Micro ATX 9.6" x 9.6"

Standard Model	SATA	NVMe	2.5GbE	GbE	Audio
S5565AG2NR	6	(2) M.2	1	1	7.1 Channel HD

Tempest EX
S5567

Intel CORE i9 | Intel CORE i7 | Intel CORE i5 | Intel CORE i3

7nm | 8 Core | NVM EXPRESS

Embedded motherboard in thin mini-ITX form factor

Processor	• (1) Intel® 12th Gen. Core™ i3/i5/i7/i9 Processor
Memory	• (2) DDR4 SO-DIMM slots
Expansion	• (1) PCIe 3.0 x16 slot • (1) PCIe 3.0 x4 NVMe M.2 slot
Storage	• (3) SATA 6Gb/s
Network	• (1) 2500Base-T port (Intel® i225-LM) • (1) 1000Base-T port (Intel® i219-V)
Video	• (2) Display port
Form Factor	• Thin Mini-ITX 6.69" x 6.69"

Standard Model	SATA	NVMe	2.5GbE	GbE	Audio
S5567G2NR	3	(1) M.2	1	1	-

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