

QUANT HYPERRACK XR61440



THE QUANT HYPERRACK XR61440 IS A HIGH-DENSITY 6U ENTERPRISE STORAGE PLATFORM ENGINEERED FOR PETABYTE-SCALE WORKLOADS.

Powered by dual Intel® Xeon® Scalable processors and the Intel® C621 chipset, it delivers a blend of compute and storage performance in a modular 60-bay chassis optimized for data centers, HPC clusters, and virtualization infrastructures.

With up to 1.44 PB of raw capacity, redundant 1 + 1 PSUs, and hot-swap fan modules, the XR61440 ensures always-on reliability and simplified maintenance.

KEY FEATURES

- Extreme Density — Supports 60 × 3.5"/2.5" front bays + 2 rear SSD bays (1.44 PB max raw capacity)
- High Compute Headroom — Dual Intel® Xeon® Scalable CPUs (up to 205 W TDP each, 40 cores total)
- Memory Scalability — 16 DIMM slots support up to 4 TB DDR4 ECC RDIMM/LRDIMM or Intel® Optane™ PMem
- Versatile Expansion — 6 × PCIe 3.0 slots (3 × x16 + 3 × x8) + 2 × M.2 for RAID, NIC, or GPU cards
- Enterprise Resilience — 1 + 1 redundant 1600 W Platinum PSU + hot-swappable PWM fans
- Integrated Management — ASPEED AST2500 BMC with IPMI 2.0 and remote KVM
- Certified Ecosystem Support — Windows Server 2019 / Linux / VMware ESXi

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ARCHITECTURE AND PERFORMANCE

- The XR61440 leverages the Intel® C621 server chipset to ensure balanced I/O bandwidth between CPU, memory, and storage.
- Two UPI links (10.4 GT/s) connect the processors for high-speed data exchange, while the dual-expander backplane delivers sustained multi-lane throughput for HPC and AI data pipelines.
- In a typical deployment:
 - Sequential read throughput exceeds 10 GB/s, random I/O > 800 K IOPS
 - < 2ms latency under RAID-6 SAS configuration
 - BMC predictive monitoring reduces downtime by up to 30 %

TECHNICAL SPECIFICATIONS

FEATURE	DESCRIPTION
Model	Quant HyperRack XR61440
Form Factor	6U Rackmount High-Density Storage Server
Chipset	Intel® C621 Dual-way Chipset + ASPEED AST2500 BMC
Processor Support	Dual Intel® Xeon® Scalable (2nd Gen Cascade Lake) LGA-3647, ≤ 205 W TDP
Memory Capacity	Up to 64 GB DDR4-2933 ECC RDIMM/LRDIMM (16 DIMM slots) up to 4 TB Expandable
Storage Bays	Front: 60 × 3.5"/2.5" hot-swap bays Rear: 2 × 2.5" SSD (OS/cache)
Maximum Raw Capacity	≈ 1.44 PB (60 × 24 TB HDD)
Drive Interface	12 Gb/s SAS / 6 Gb/s SATA via dual expander backplane
RAID Controller	Broadcom Mega RAID 9460-16i (4 GB cache), RAID 0/1/5/6/10/50/60
PCIe Expansion	3 PCIe 3.0 x8, 3 PCIe 3.0 x16, M.2 Interface: 2 * SATA PCIe 3.0 x4, M.2 Form Factor: 2280/22110, M.2 Key: M-Key

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TECHNICAL SPECIFICATIONS

FEATURE	DESCRIPTION
M.2 Interface	2 × M.2 (PCIe 3.0 x4 / SATA 6 Gb/s, 2280/22110 form factor)
Network Ports	4 × 1 GbE (Intel® i210) + 1 × Dedicated IPMI Management Port
Front I/O	2 × USB 3.0, Power SW, Reset, PWR/HDD LEDs
Rear I/O	1 × VGA, 1 × COM, 4 × USB 3.0, 2 × AC Power Inlets
Power Supply	1600 W 1 + 1 Redundant Platinum-Rated PSU
Environmental Conditions	Operating 10 °C – 35 °C / Humidity 8 % – 90 % (non-cond.)
Management	IPMI 2.0 / BMC (AST2500) with Remote KVM over LAN
Operating Systems	Windows Server 2019 / Linux (RHEL, Ubuntu, SUSE) / VMware ESXi
Chassis Dimensions (W × D × H)	650 × 437.5 × 265 mm (6U)
Weight	55 kg
Certifications	CE, UL, FCC, ISO 14001:2015
Country of Origin	Malaysia
Warranty	3 Years

APPLICATIONS

- AI Training & Inference Servers
- High-Density Virtualization & Private Cloud
- Industrial Automation and Control Systems
- Video Analytics & Surveillance Platforms
- Edge Data Processing & IoT Aggregation

