

## WARP Mechanics® AP-3245 Series Versatile Application Platform

### Features & Benefits

- Up to four dual-CPU compute modules per 2U chassis
- Up to 1TB DDR4 RAM per module
- Up to 165W TDP for high-perf workloads
- Embedded dual 10GBase-T or 10G SFP+
- Additional network options via x16 PCIe slot
- 4x/12x 3.5" or 24x 2.5" SATA/SAS3 drive slots
- Up to 2 NVMe SSDs per node
- Hot-swap compute, storage, and power FRUs

The **WARP Mechanics AP-3245** series of application platforms deliver power and performance at peak efficiency in a multi-node 2U server form factor that features the energy-efficient dual Intel® Xeon® processor Scalable family. Ideal for use in hyper-converged, data analytics, storage, cloud, and high-performance computing applications, the AP-3245 family maximizes memory and processor bandwidth to meet demanding compute use requirements.

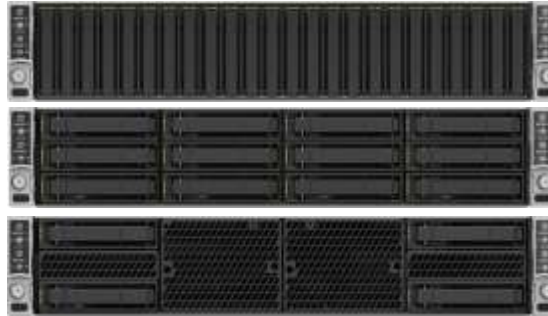
Each AP-3245 can hold up to four full-featured application-processing platform canisters sourced through authorized suppliers to show traceability of supply chain with the Intel® Transparent Supply Chain to establish accountability of manufacturing and fight counterfeit components and malware.



Built with the latest Intel Xeon processor Scalable family, the AP-3245 unit may contain up to 48 processor cores and 1 TB of RAM per canister, or 192 cores and 4TB memory per 2U chassis. This system architecture is designed for performance with high scalability and resiliency with no I/O compromise, and supports a wide range of existing and emerging workloads. Depending on requirements, customers can take advantage of a number of key processor advancements such as integrated Intel QAT, AVX-512, Omni-Path Architecture, and 10G Ethernet with RDMA, backed by Intel's design excellence to deliver processing power with high levels of flexibility, manageability, and reliability

Customers may choose platform models with four (PA04) or twelve (PS12) 3.5" hot-swap drive bays, or twenty-four (PS24) 2.5" slots on the front of the chassis. Also available is the PS24N8 model that supports either 24x SAS drives or 24x SAS plus 8x NVMe SSD drives (2x NVMe per module). For larger configurations, combine the AP-3245 with any WARP Mechanics storage platforms such as the ultra-dense WDS-9460 JBODs, which can scale to over six petabytes (6PB) per rack.

Once more, WARP Mechanics raises the bar in storage systems with the latest technology in a fast, reliable, and cost-efficient platform superior to any other products in their class.



### Ordering Part Number and Product Description

AP-3245-PA04	WARP AP-3245-PA04	4x SATA3 3.5" Drive Bays
AP-3245-PS12	WARP AP-3245-PS12	12x SATA3/SAS3 3.5" Drives
AP-3245-PS24	WARP AP-3245-PS24	24x SATA3/SAS3 2.5" Drives
AP-3245-PS24N8	WARP AP-3245-PS24N8	24x SAS3+8x NVMe 2.5" Drives

### Major Features

- Multi-node high-capacity application processing platform
- Up to 48 cores and 1TB RAM per canister using 64GB LRDIMM
- High-efficiency power supply
- Out of band management, remote power control & UID function
- Intel® Transparent Supply Chain

### Processor Support

Dual Intel® Xeon® Scalable Processor Silver-Platinum (Skylake) up to 165W TDP

### Memory

Up to 1.5TB for Gold/Platinum CPUs. 768GB for Silver/Bronze CPUs  
16x 288-pin DDR4 DIMM slots per module, 8x per CPU  
ECC DDR4 1.2V up to 2666 MT/s (Processor SKU Dependent)

### PCIe Architecture

Ethernet:

- Dual 10Gbase-T or Dual 10GbE SFP+ Network Connectors
- Single RJ45, Dedicated 1GbE server management port

Riser Card 1 (PCIe 3.0):

- One x16 Electrical, x16 (Mechanical)

Riser Card 2 (PCIe 3.0):

- One x24 Electrical, x16 (Mechanical)
- Must remove VGA connector for Riser 2 add-in cards

### Redundant Hot-Swap Components

- 4x AP-3245 compute modules
- 2x Power supply / fan FRUs
- 4x, 12x or 24x disk drive modules

### Rackmount Enclosure

2U chassis designed for standard 19" racks. Sliding rail kit for serviceability.

Chassis: 17.24" (438mm) W x 30.4" (711mm) L x 3.46" (87.9mm) H

Packaging: 22.7" (577mm) W x 38.7" (983mm) L x 10.2" (260mm) H

Max Net Weight: 65 Lbs (29.5 Kg)

Max Gross Weight: 82.55 lbs (37.5 kg)

Power: 2130W 80 PLUS Titanium

Up to 2, supporting 1+0, 1+1 Redundant Power and 2+0 Combined

Fans: Three managed hot-swap system fans plus integrated PSU fans

### Compute Module Specifications

Form Factor: 1U Module

Module Weight: ~ 7.94lb. (3.6kg)

Packaging: 28.19" (716mm) L x 10.59" (269mm) W x 6.22" (158mm) H

Packaging Weight: ~ 3.97 (4.8kg)

### Firmware/Software

WARP Mechanics controller firmware supports SES 3.0 for in-band and IPMI 2.0 for out-of-band management. WARPware hosts include tools for managing firmware and advanced features.

### Disk Drive Modules

Up to 12x Hot-swap 3.5" or 24x Hot-swap 2.5" SAS3/SATA HDDs and/or SSDs per chassis. Model PS24N8 supports up to 24x SAS3 + 8x NVMe (2x per compute module).

Scalable to 1000s of drives when combined with WARP mechanics external storage enclosures.

### I/O and Network Controller Options

Depending on the applications requirements, any given module may be configured with a selection of the following options:

- 12Gbps SAS HBA
- 10GBase-T and 10Gbps SFP+ Ethernet
- 40Gbps Ethernet
- 56Gbps FDR or 100Gb EDR
- 58Gbps or 100Gb Omni-Path

### System Management

BMC Management:

- Integrated Baseboard Management Controller, IPMI 2.0 compliant
- Dedicated RJ45 management port
- Remote KVM Management and device mapping

BIOS Type: UEFI BIOS

Intel® Transparent Supply Chain (TPM Version 2.0):

- Digitally signed statement of conformance & Platform Certificates
- Firmware load verification
- Server component data tracked and saved for 20 years

### Environmental Information

Temperature: 10°C - 35°C (50°F-90°F) max. change rate <10°C per hour.

- Short-term excursions of 40°C (900hr/yr) up to 45°C (90hr/yr)

Acoustic noise, Sound power: 7.0BA with HDD stress at ambient (23 +/-2°C)

Shock: Half sine, 2g peak, 11 mSec

ESD: +/-12 KV except I/O port +/- 8 KV

System Cooling: 2130 Watt Max – 7272 BTU/hour

### Standards Compliance and Certifications

IEC/EN/UL/CSA 60950-1, 2nd Edition

RoHS and WEEE compliant

EN55022 :2006 + A1 :2007

EN55024-IT product family standard for Immunity

Meet the requirements of IECs-003

Manufactured under an ISO 9002 registered quality system