WARP Mechanics® AP-3215 Series
Versatile Application Platform

Features & Benefits

- Up to 48 Cores of next-gen Intel Scalable CPUs
- Up to 1.5TB DDR4 RAM
- Up to 8x PCIe 3.0 slots
- 12x 3.5" or 24x 2.5" SATA/SAS3 hot-plug slots
- Up to 24x NVMe drives in a 2U chassis
- Connectivity options:
  12Gbps SAS3
  1/10/40Gbps Ethernet
  56/100Gbps InfiniBand
  58/100Gbps Omni-Path

The **WARP Mechanics AP-3215** series of application platforms deliver power and performance at peak efficiency in a 2U rack mount server form factor that features the energy-efficient dual Intel® Xeon® processor Scalable family. High memory capacity, networking, storage and I/O flexibility combine with innovative design to provide an exceptional and reliable server for business IT, appliance, data center, cloud and high-performance computing applications. Supporting a full range of PCIe add-on cards, an optional internal switched SAS architecture, and support for 2.5" NVMe high-throughput drives, these superior platforms are the foundation for several WARP Mechanics turnkey storage server appliances.

Each AP-3215 is a full-featured application-processing platform. High memory capacity, networking, storage, and I/O flexibility combine with innovative design to provide an exceptional and reliable server for business IT, appliance, data center, cloud and high performance computing applications. The AP-3215 series components are sourced through authorized suppliers to show traceability of supply chain with the Intel® Transparent Supply Chain. This establishes accountability of manufacturing, and helps to fight the infiltration of counterfeit components and malware.

Built with the latest Intel Xeon processor Scalable family, the AP-3215 unit may contain up to 48 processor cores and 1.5TB of RAM per chassis. In addition to the onboard 1Gb/10GbE ports, it supports a wide range of high-speed I/O interfaces including 1/10/40GbE, FDR/EDR InfiniBand, and OmniPath. For storage intensive appliances, it can be configured with up to 24x x4 12Gbps SAS connections: more than a terabit of IO bandwidth.

Customers may choose either twelve 3.5" or twenty-four 2.5" hot-swap drive bays on the front of the appliance with or without an embedded 12Gbps SAS expander. Also available is the J24N4 model that supports either 24x SAS drives or 20x SAS plus 4x NVMe SSD drives. Combine different drives types into high-speed all-flash storage pools for extreme performance in a single head. For larger configurations, the AP-3215 can be added to any of the WARP Mechanics storage platforms or appliances such as the ultra-dense WDS-9460 JBODs, which can scale to over six petabytes (6PB) per rack.

Designed for performance with high scalability and resiliency with no I/O compromise WARP platforms support a wide range of existing and emerging workloads with several key advanced features:

- Intel® QuickAssist Technology
- NVMe Enablement
- Intel® Omni-Path Architecture
- Integrated 10G Ethernet with RDMA
- Virtual RAID on CPU (Intel® VROC)

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.

WARP Mechanics® AP-3215 Series Application Platform

Technical Specifications

Ordering Part Number and Product Description		
AP-3215-PA12	WARP AP-3215-PA12	12x SATA3 3.5” Drive Bays
AP-3215-JS12	WARP AP-3215-JS12	12x SAS3 3.5” Drives + Exp
AP-3215-JS24	WARP AP-3215-JS24	24x SAS3 2.5” Drives + Exp
AP-3215-JN24	WARP AP-3215-JN24	24x NVMe/SAS3 2.5” + Exp

Major Features

- Single high-capacity application processing platform
- Up to 48 cores and 1.5TB RAM per AP 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 145W TDP

Memory

Up to 1.5TB for Gold/Platinum CPUs. 768GB for Silver/Bronze CPUs
24x 288-pin DDR4 DIMM slots, 6 channels per processor, 2 DIMMs per channel
ECC DDR4 1.2V up to 2666 MT/s (Processor SKU Dependent)

PCIe Architecture

Ethernet:
- Dual RJ45, Network Connectors supporting 10GBaseT & 1GBaseT
- Single RJ45, Dedicated 1GbE server management port

I/O Modules:
- OCP Mezzanine Modules (10GBase-T, SFP+ and1GBase-T options)
- One proprietary internal (x8 PCIe) supporting Intel® JBOD Module

Riser Card 1 & 2 options (PCIe 3.0):
- one x16 Electrical, x16 (Mech), one x8 Electrical, x8 (Mech)
- one or two x8 Electrical, x16 (Mech), one x8 Electrical, x8 (Mech)

Riser Card 3 (PCIe 3.0):
- one x4 Electrical, x8 (Mech), one x8 Electrical, x8 (Mech)
- Note: the x4 slot may hold the Intel RES3FV288 12Gb SAS expander

Redundant Hot-Swap Components

- 2x Power supply / fan FRUs
- 12x or 24x disk drive modules

Rackmount Enclosure

2U chassis designed for standard 19” racks. Sliding rail kit for serviceability.
Chassis: 17.25” (438.15mm) W x 28” (711.20mm) L x 3.44” (87.38) 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: 1300W 80 PLUS Titanium, 1100W 80 PLUS Platinum
Optional 750W DC 80 PLUS Gold
Up to 2, supporting 1+0, 1+1 Redundant Power and 2+0 Combined
Fans: Six managed 60mm hot-swap system fans plus integrated PSU fans

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 JN24 supports up to 24x SAS3/NVMe.
Scalable to 1000s of drives when combined with WARP mechanics external storage enclosures.

I/O and Network Controller Options

Depending on the applications loaded, any given module may be configured with a selection of the following options:
- Up to 18x 12Gbps SAS HBA
- Up to 2x 10GBase-T and 18x 10Gbps RJ45/SFP+ Ethernet
- Up to 12x 40Gbps Ethernet
- Up to 12x 56Gbps FDR or 1x 100Gb EDR
- Up to 6x 58Gbps or 1x 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: 1300 Watt Max – 3768 BTU/hour

AC Power

Dual Power Supply Module Bays in supported Power Configurations :
- Hot Swap capable in Redundant 1+1 power configuration

Voltage: 90 Hz to 132 V and 180 V to 264 V
Frequency: 47 Hz to 63 Hz
Source Interrupt: No loss of data for power line drop-out of 12 mSec
Surge Non-operating and operating: Unidirectional
Line to earth only:
- AC Leads 2.0 kV
- I/O Leads 1.0 kV
- DC Leads 0.5 kV

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