SKY-9240

2U4N Rackmount Server, Designed for Hyper-converged and HPC Application

Features

- Up to 4 Hot-Swappable CPU Node boards with dual Intel® Xeon® Scalable Processors
- Up to 16 DIMM slots DDR4 2666MHz RDIMM/LRDIMM 3DS (per Node)
- Flexible I/O configurations with up to 2x PCIe Gen3 x16 slots (half length, low profile) (per Node)
- Support one PCIe Gen3 x8 OCP mezzanine (per Node)
- Optional redundant M.2 storage devices & one 2.5" SSD/HDD slot (per Node)
- up to 12x 3.5" SAS/SATA storage on the system
- Hot swappable and redundant AC PSU options
- Carrier Grade BMC (IPMI v2.0 compliant) with fail safe updates, Web Interface, KVM, Redfish

Introduction

The SKY-9240 is a 2U 4-node rackmount server designed for hyper-converged infrastructure and high performance compute in markets demanding enhanced solutions for applications such as hyper-converged secondary storage, object recognition and deep-learning, virtual desktop infrastructure and compute intensive cloud.

The system delivers the highest performance and efficiency in a 2U 4-node design, creating the flexibility to deploy independent workloads with all the economies of a shared chassis infrastructure, including cooling and power. This significantly lowers the total cost of ownership (TCO) to less than the cost of four regular 1U or 2U servers.

The hot-swappable compute nodes are designed with dual Intel® Xeon® Scalable processors and the latest DDR4 memory technology. Each node supports up to two 28-core CPUs with an increased UPI bandwidth of 10.4GT/s, nearly 10% improvement from the previous generation, lowering latency and accelerating inter-processor communications. In addition, a 6-channel memory design increases memory bandwidth by up to 50% and supports up to 512GB RAM per node.

The compute nodes employ an innovative and modular design concept for maximum configuration flexibility in a space-efficient form-factor. One OCP mezzanine slot and up to two PCIe slots per node enable a broader choice of I/O, offload and acceleration than similar designs.

Each compute node provides 2.5" data storage capabilities with a further twelve 3.5" SAS/SATA drive bays available at chassis level for optional cold data storage. Redundant, hot-swappable 1+1 power and fans enhance product stability and serviceability, maximizing availability and increasing uptime.

The system offers enhanced platforms management capabilities and supports the latest major Linux distributions including CentOS, Red Hat Enterprise Linux, Ubuntu, and VMware.

Specifications

System (Model name: SKY-9240)

Physical Characteristics	Form Factor	2U Rackmount
	Dimension (W x H x D)	438 x 88 x 774 mm
	Motherboard	4 x Hot-Swappable MIC-8312 CPU Nodes
	Net weight	30kg
Front Panel	Buttons	Power On/Off button UID button
	LED	Power status LED (integrated in Power button) HDD activity/status LED Network activity LEDs UID LED (integrated in UID button) Information LED
Front External Drive Bay	Type/Quantity	12 x Hot-Swappable 3.5" HDD trays (3 x HDD trays per Node)
	Interface	SAS 12Gb/s or SATA 6Gb/s
System Cooling	Fan	4 x 8cm (8076) hot-swappable PWM fans with fan speed control or 4 x 8cm (8038) non hot-swappable PWM fans with fan speed control
Power Supply*	Type/Quantity	2 x Redundant (1+1) PSU with PMBus (Redundant power limitation for 100-127V_{AC} is up to 1000W)
	Input Range	2000W: 1000W@100-127V_{AC}/12-9.5A, 1800W@200-220V_{AC}/10-9.5A, 1980W@220-230V_{AC}/10-9.8A, 2000W@230-240V_{AC}/10-9.8A 2200W: 1200W@100-127V_{AC}/14-11A, 1800W@200-220V_{AC}/10-9.5A, 1980W@220-230V_{AC}/10-9.8A, 2090W@230-240V_{AC}/10-9.8A, 2200W@220-240V_{AC}/12-11A
	Efficiency	80 Plus Titanium
	Output Watts	Up to 2200W (sku dependent)
Environment	Operating Temperature / Humanity	0 ~ 35° C (32 ~ 95° F) / 5% to 95% @ 35° C (non-condensing)
	Non-operating Temperature/ Humanity	- 40 ~ 60° C (-40 ~ 140° F) / 5% to 95% @ 60° C (non-condensing)
Certification	EMC/Safety	CE/FCC/UL/cUL/CB/VCCI/RCM/CCC
RoHS	RoHS 6/6 Complaint	Yes
SW Support	Operating System	VMware (Certification), Redhat 7.x (Certification), CentOS 7.x, Ubuntu Server 16.x, Windows Server 2016

Last updated: 28-Dec-2018

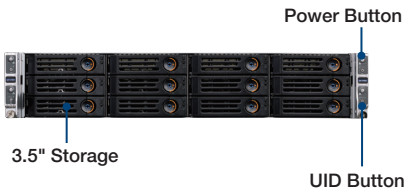
CPU Node (Model name: MIC-8312)

Processor	Supported CPU Series	Dual Intel® Xeon® Scalable Processors (Socket P, LGA 3647), up to 28 cores per processor (Thermal dependent) Dual UPI up to 10.4 GT/s
	Thermal Design Power (TDP)	Up to 85W (2U4N with redundant 8076 fan design) Up to 140W (2U4N with non-redundant 8038 fan design) Up to 165W (2U2N with non-redundant 8038 fan design)
Chipset	Supported Chipset Series	Intel® C622*
Memory	Support DIMM Quantity	16 x DIMM slots (4x Blue slots are Apache DIMM design compliant)
	DIMM Type/Speed	DDR4 ECC RDIMM/RDIMM 3DS/LRDIMM/LRDIMM 3DS Up to 2666MHz
	Capacity	Up to 2TB ECC 3DS LRDIMM, 512GB ECC RDIMM
	Memory Channel	6 Channels
	Memory Voltage	1.2V
Expansion	PCIe Slot	Sku A: 2 x PCIe Gen3 x16 slots (half height, half length) Sku B: 1 x PCIe Gen3 x16 slot (half height, half length)
	OCP Mezzanine Slot (Type1 form factor)	1 x PCIe Gen3 x8 slot, supporting KR/SFI x2
Storage	2.5" Device	Sku A: N/A Sku B: 1 x SAS 12Gb/s, SATA 6Gb/s, or PCIe Gen3 x4 SSD/HDD, up to 15mm height
	M.2 Device	2 x SATA 6Gb/s or PCIe Gen3 x4 M.2 SSD (2280) slots
I/O	Console Port	1 x microUSB connector
	Management Port	1 x 1GbE RJ45 for IPMI
	VGA	1 x DSUB connector
	USB	2 x USB 3.0 ports
TPM	TPM module	TPM 2.0 is supported by the optional module with Infineon chipset
Server Management	Solution	Onboard Aspeed AST2500 Carrier Grade BMC (IPMI v2.0 compliant) with fail safe updates, Web Interface, KVM, Redfish (Advantech IPMI Core)
BIOS	Solution	AMI Aptio v5 based UEFI BIOS with Advantech enhancements

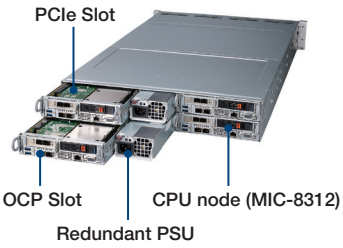
*Please contact your local Advantech sales representative for other sku demand.

SKY-9240

Front View

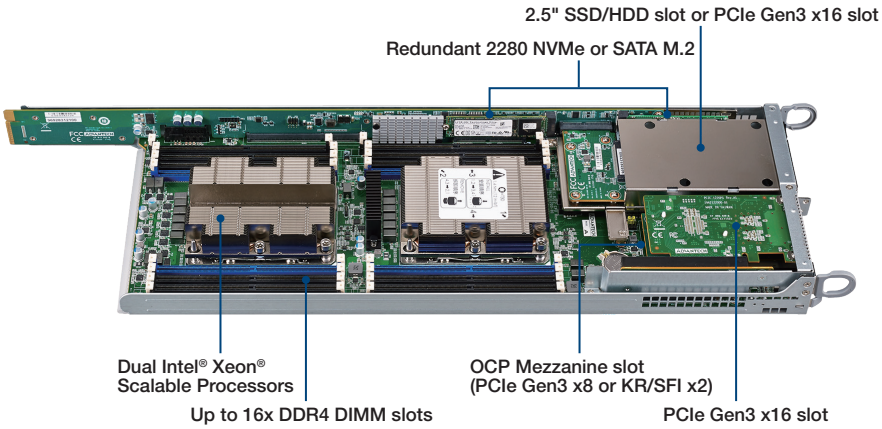


Rear View



MIC-8312

Top view



Ordering Information

System

Part Number	CPU Node	PSU	Fan	3.5" interface	Other Peripherals (CPU, memory, storage, TPM)
SKY-9240CRA00MCFC	4 x MIC-8312CFC	2 x 2000W Titanium	4 x 8076 hot-swappable redundant fan	SAS/SATA	N/A
SKY-9240CRA00MCPC	4 x MIC-8312CPC	2 x 2000W Titanium	4 x 8076 hot-swappable redundant fan	SAS/SATA	N/A
SKY-9240MSA00HCF	4 x MIC-8312CF	2 x 2200W Titanium	4 x 8038 non-redundant fan	SAS/SATA	N/A
SKY-9240MSA00MCF	4 x MIC-8312CF	2 x 2000W Titanium	4 x 8038 non-redundant fan	SAS/SATA	N/A
SKY-9240SSA10HSF	4 x MIC-8312SF	2 x 2200W Titanium	4 x 8038 non-redundant fan	SATA	N/A

CPU Node

Part Number	Sku	OCP	PCIe	TPM	CPU	Memory	M.2 device	2.5" device
MIC-8312CFC	1 x 2.5" storage slot, 1 x PCIe slot	OCP-2010F	PCIE-1130PS-CHA1E	N/A	N/A	N/A	N/A	N/A
MIC-8312CPC	1 x 2.5" storage slot, 1 x PCIe slot	OCP-2010P	PCIE-1130PS-CHA1E	N/A	N/A	N/A	N/A	N/A
MIC-8312CC	1 x 2.5" storage slot, 1 x PCIe slot	OCP-2001C	N/A	N/A	N/A	N/A	N/A	N/A
MIC-8312CF	1 x 2.5" storage slot, 1 x PCIe slot	OCP-2010F	N/A	N/A	N/A	N/A	N/A	N/A
MIC-8312SC	2 x PCIe slots	OCP-2001C	N/A	N/A	N/A	N/A	N/A	N/A
MIC-8312SF	2 x PCIe slots	OCP-2010F	N/A	N/A	N/A	N/A	N/A	N/A

Related Products

PCIe Card

Part Number	Item	Description
PCIE-1130PS-MLA1E	4 x RJ-45 GbE	Advantech 4-ports 1G copper with Intel® I350 controller
PCIE-1130PS-CHA1E	2 x RJ-45 GbE	Advantech 2-ports 1G copper with Intel® I350 controller
PCIE-1220PS-CHA1E	2 x SFP+	Advantech 2-ports 10G fiber NIC with Intel® X710 controller
PCIE-1221PS-CHA1E	2 x Copper 10GBase-T	Advantech 2-ports 10G Base-T with Intel® X550 controller
PCIE-2320NP-00A1E	2 x 40G QSFP+	Advantech 2-ports 40G fiber NIC with Intel® XL710 controller

OCP Mezzanine Card

Part Number	Item	Description
OCP-2010F	2 x SFP+	Advantech 2-ports 10G SFI (from PCH), connector C
OCP-2010P	2 x Copper 10GBase-T	Advantech 2-ports 10GBase-T with Intel® X557 PHY (KR from PCH), connector C
OCP-2001C	2 x RJ-45 GbE	Advantech 2- ports 1G copper with Intel® I350 controller, connector A

Processor/DIMM

Part Number	Description
96MPXE-2.1-11M36	Skylake Server H-0 11MB 8c 2.1GHz 85W 768GB LCC INTEL® XEON® Silver 4110, DDR4 freq. up to 2400MHz
96MPXE-2.3-16M36	Skylake Server H-0 16.5MB 12c 2.3GHz 105W 768GB XCC INTEL® XEON® GOLD 5118, DDR4 freq. up to 2400MHz
96D4-8G2666ER-AT	ATP 8GB DDR4-2666 ECC RDIMM1.2V (A4B08QD8BNTDSE)
AQD-D4U8GR24-SE	Apacer 8GB DDR4-2400 ECC RDIMM1.2V
96D4-32G2400ER-AT	ATP 32GB DDR4-2400 ECC RDIMM1.2V (A4B32QB4BNRCSE)

Storage

Part Number	Interface	Description
2.5" HDD/SSD		
96ND600G-SS-SG10E1	SAS	SEAGATE Enterprise 2.5" 600GB 10KRPM SAS 12Gb/s 256MB
Y171110-0TS1384	SAS	HGST SS200 SAS-3.0 12Gb/s, 1.6TB, 3D1, MLC
96FD25-S240-INB3	SATA	INTEL S3520 SERIES SSDSC2BB240G7 240GB, 3D1 MLC
Y180122-0TS1307	NVMe	HGST Ultrastar SN200 NVMe (PCIe Gen3x4) 1.6TB
3.5" HDD		
96HD1TB-ST-SG7KE1	SATA	SEAGATE Enterprise 1TB 3.5" SATAIII(6Gb/s) 7KRPM
96HD1TB-SS-SG7KE	SAS	SEAGATE Enterprise 3.5" 1TB 7KRPM SAS 12Gb/s
M.2 2280 SSD		
96FD80-N128-LIS	SATA	LITEON M.2 SSD 2280 128GB SATAIII(6Gb/s) MLC
96FD80-N256-LIS	SATA	LITEON M.2 SSD 2280 256GB SATAIII(6Gb/s) MLC
96FD80-P128-PLG	NVMe	LITEON M.2 SSD 2280 128GB PCIe Gen3x4 MLC
96FD80-P256-LIS	NVMe	LITEON M.2 SSD 2280 256GB PCIe Gen3x4 MLC

NOTE: Please contact your local Advantech sales representative for more information of system configurations.

Optional Accessories

Part Number	Description
1700020095	Power Cord UL 3P 15A 125V 183cm (type B), USA
1700020096	Power Cord EU 3P 10A 250V 183cm (type F) , Europe
1700020097	Power Cord BSI 3P 10A 250V 183cm (type G), UK/Singapore
1700020100	Power Cord CCC 3P 10A 250V 183cm (type I), China
1700020099	Power Cord PSE 3P 15A 125V 183cm (type B), Japan
1700020098	Power Cord SAA 3P 10A 250V 183cm (type I), Australia