Supermicro
New Product Introduction

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2017

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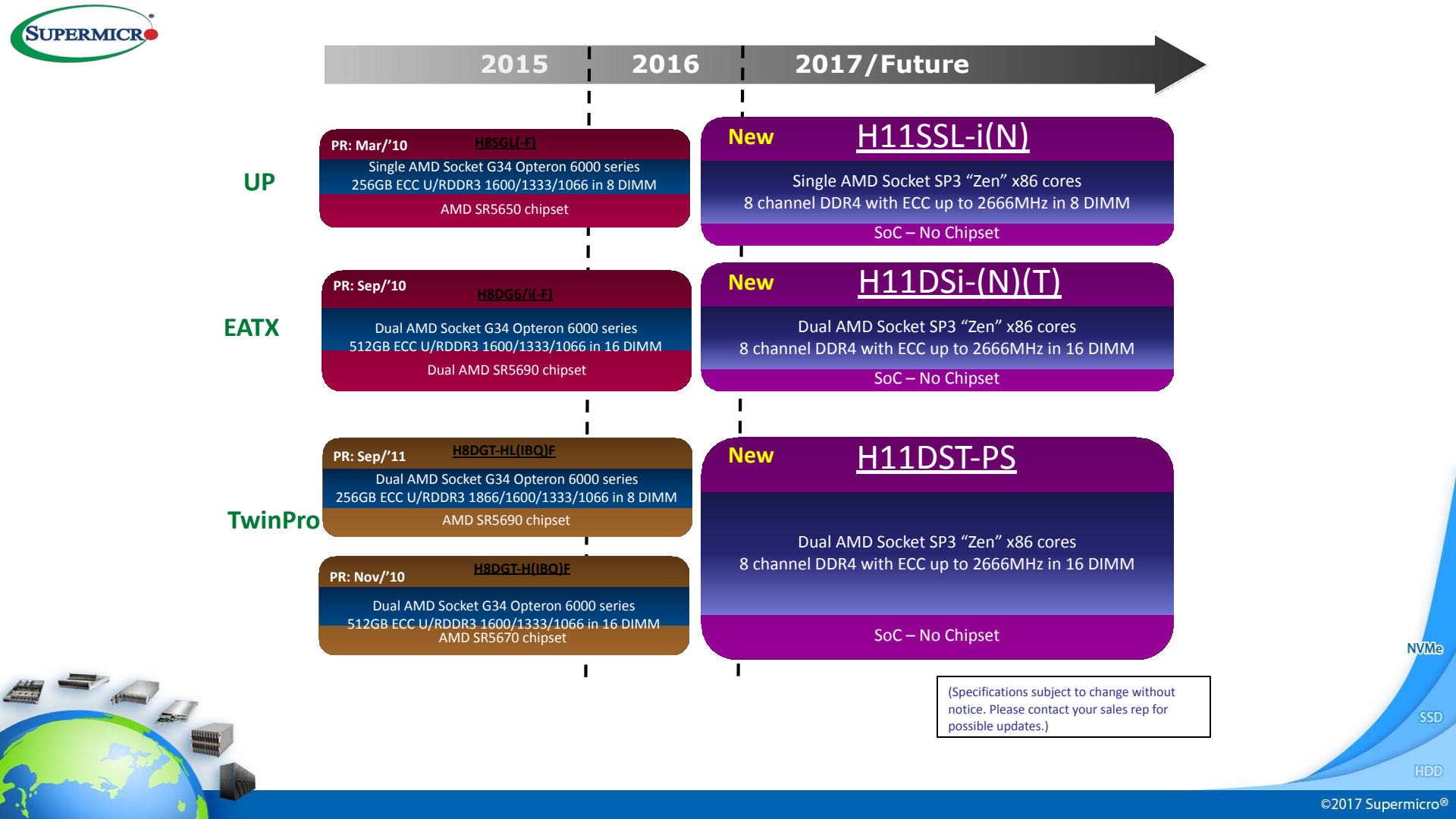
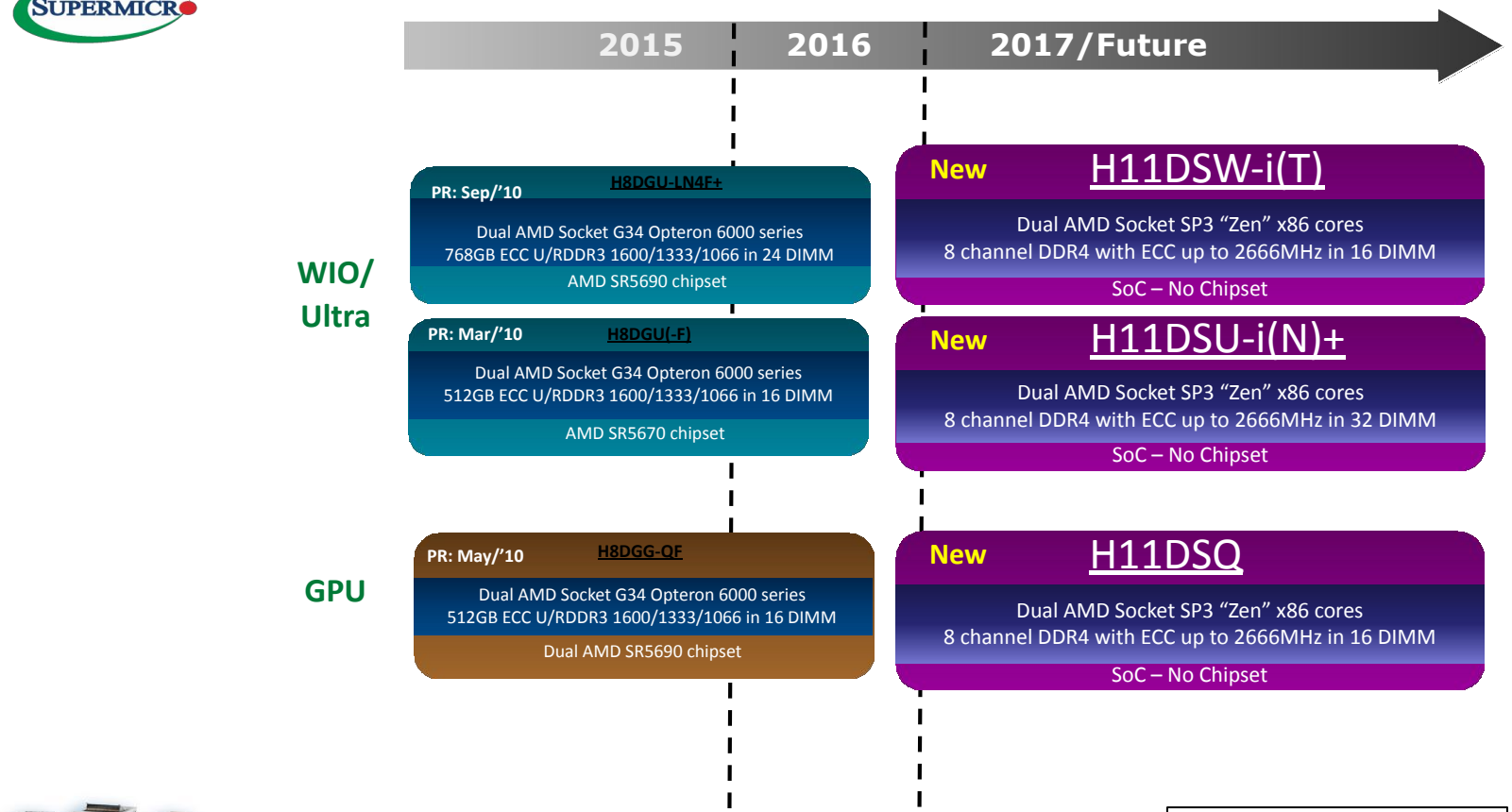
Naples Product Overview

Spec	Socket G34 Abu-Dhabi CPU	Socket SP3 Naples CPU
CPU TDP	85W, 99W, 115W, 140W	120W, 150W, 180W
Socket	Socket G34 (LGA 2011)	Socket SP3 (LGA 4094)
Scalability	1S, 2S, 4S	1S, 2S
Cores	Up to 16C	Up to 32C / 64 threads
Memory	4 channels DDR3 per socket RDIMM, LRDIMM	8 channels DDR4 per socket RDIMM, LRDIMM, NVDIMM, 3DS DIMM
	1DPC = up to 1866, 2DPC = up to 1600, 3DPC = up to 1066 Up to 384GB per socket	1DPC = up to 2666, 2DPC = up to 2400, No 3DPC support Up to 2TB per socket
Cache	L2: 1 MB per core L3: 16 MB per socket	L2: 512 KB per core (16 MB total) L3: 64 MB shared cache (8 MB per 4 cores)
PCIe	PCIe 2.0 (2.5, 5.0 GT/s)	PCIe 3.0 (2.5, 5.0, 8.0 GT/s)
	42 lanes per board	1S: 128 lanes (Yes, 128 – not a typo) 2S: 128 lanes (64 lanes per socket)
SATA	6 SATAs	1S: up to 32 SATAs 2S: up to 16 SATAs
Chipset	SR56xx / SP5100	SoC (No chipset needed)
Process	32nm	14nm

NVMe
SSD
HDD





(Specifications subject to change without notice. Please contact your sales rep for possible updates.)

NVMe
SSD
HDD

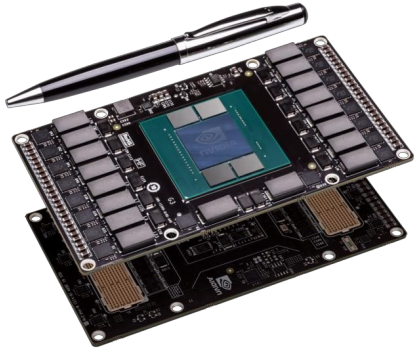
TESLA P100 ACCELERATORS

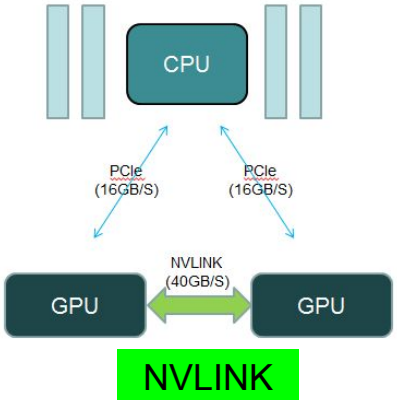
Tesla P100
for NVLink-enabled Servers

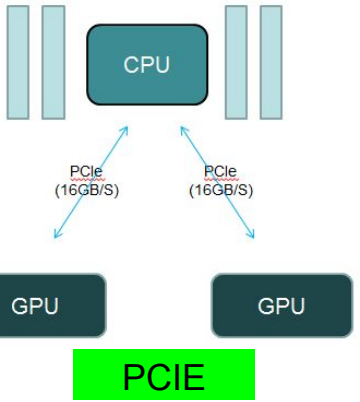
5.3 TF DP · 10.6 TF SP · 21 TF HP
720 GB/sec Memory Bandwidth, 16 GB

Tesla P100
for PCIe-Based Servers

4.7 TF DP · 9.3 TF SP · 18.7 TF HP
Config 1: 16 GB, 720 GB/sec
Config 2: 12 GB, 540 GB/sec







NVMe
SSD
HDD

The Latest GPU Solutions

10 4028GR-TR2

Flexibility

- 4U Chassis
- Dual HSW/BDW CPUs
- 24 DDR4 DIMMs
- 24 2.5” HS HDD bays
- 10 Double-Wide GPUs
- 11/1 x16/x8 PCIe 3.0 slot;
- 4 (2+2) 2000W Titanium PWS

4 1028GQ-TXR

Scalability

- 1U Chassis
- Dual HSW/BDW CPUs
- 16 DDR4 DIMMs
- 2 2.5” HS HDD bays
- 4 Pascal w/ 40GB/s NVLink
- 3/1 x16/x8 PCIe 3.0 slot
- 2 2000W Titanium PWS

8 4028GR-TXR

HyperScale

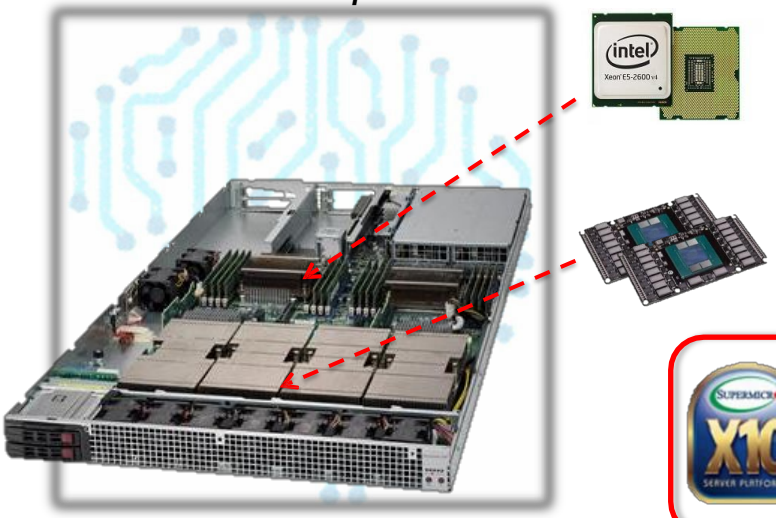
- 4U Chassis
- Dual HSW/BDW CPUs
- 24 DDR4 DIMMs
- 16 2.5” HS HDD bays
- 8 Pascal w/ 20GB/s NVLink
- 4/2 x16/x8 PCIe 3.0 slot
- 4 (2+2) 2000W Titanium PWS

NVlink Enabled GPU Solutions (x86)

NVMe
SSD
HDD

SYS-1028GQ-TXR / TXRT

Unparalleled 1U platform for the highest parallel applications. No one else can do so much in 4 1U a 1U!!!! Up to Pascals with NVLink in , supporting Optimized GPU RDMA



v4 BROADWELL READY
- 22 Cores / 44 Threads
- 2400Mhz Memory
- 40% performance over v3

PASCAL GPU READY
- Performance – 21 TFLOPs FP16
- NVLink – 5x PCIe
- 3D Memory - 2x Memory Bandwidth

X10 SUPERMICRO ADVANTAGE
- PERFORMANCE: 85TFLOPs Performance
- NVLINK: Exactly the best 80GB/s GPU Bandwidth
- GPU RDMA: Direct Internode GPU Interconnect
- EFFICIENCY: Titanium-rated Power Supply
- DESIGN: No GPU preheating

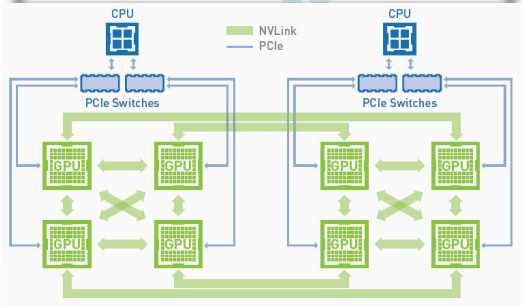
ADVANTAGES

- All GPUs capable of Peer-to-Peer direct access to all other GPUs' memory as well as direct transfer operations via NVLink at high Bandwidth
- High performance for collective communications
- PCIe bandwidth fully available for host and/or NIC communication during inter-GPU communication

NVMe
SSD
HDD

SYS-4028GR-TXR

NVLINK ARCHITECTURE: CUBE MESH



1. **Processor Support**
   Dual Xeon E5-2600 v4/v3 CPUs (Socket R3) 8 Tesla P100 (Pascal) GPUs (SXM2)
2. **Memory Capacity**
   24 DIMMs, 3TB ECC DDR4 2400MHz
3. **Expansion Slots**
   4 PCI-e 3.0 x16 (For RDMA via EDR)
   2 PCI-e 3.0 x8
4. **I/O ports**
   1x VGA, 2x 10G-BaseT LAN, 3x USB 3.0, and 1x IPMI dedicated LAN port
5. **Drive Bays**
   16 hot-swap 2.5” drives bay (Support up to 8x NVMe)
6. **System Cooling**
   8 heavy duty fans optimize to support 8 GPU cards
7. **Power Supply**
   4 x 2000W (2+2) Titanium Level efficiency redundant power supply

Key Features:

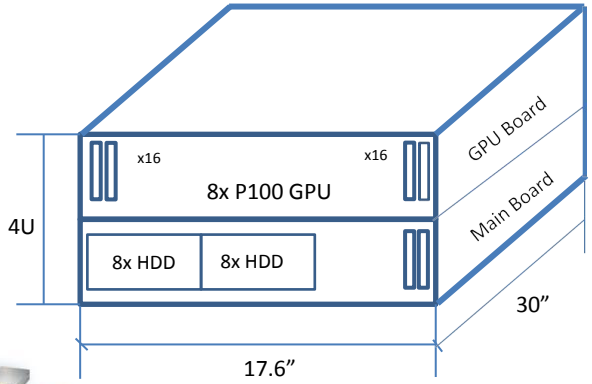
- PERFORMANCE: 170 TFlops with 8x Pascal GPUs
- HYPERSCALE: 80GB/s NVLINK with Cube mesh architecture
- RDMA FABRIC: Lowest latency of data access and transfer
- DESIGN: Independent GPU and CPU thermal zones

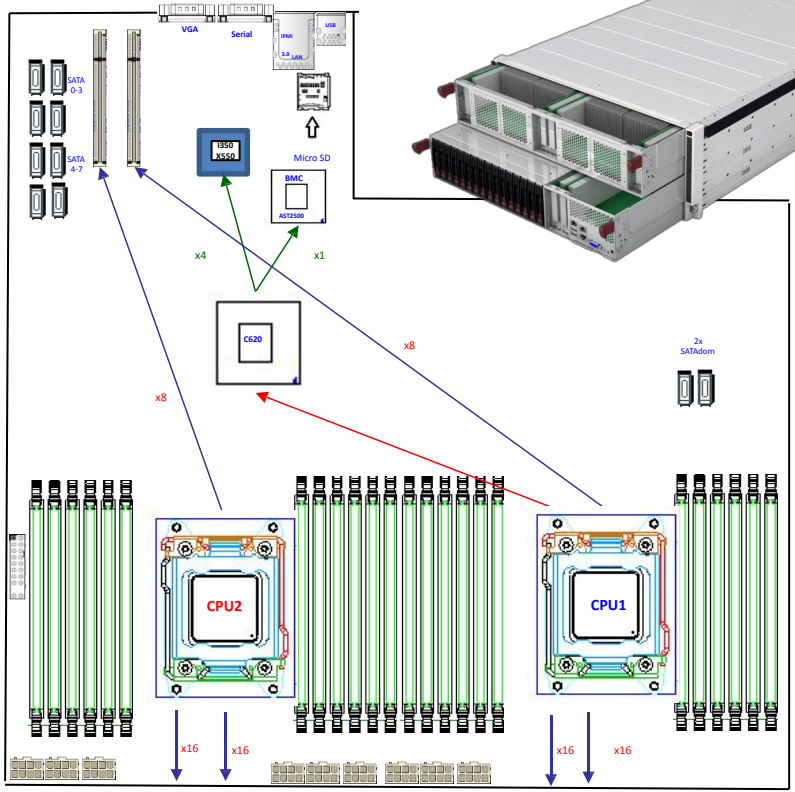
NVMe
SSD
HDD

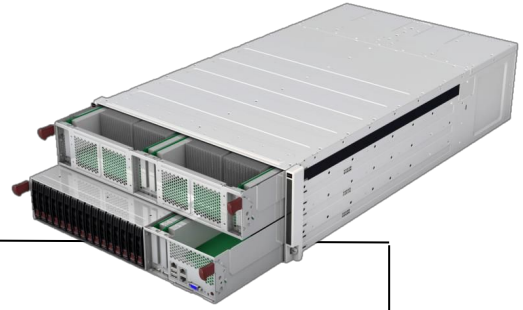
Main Board: X10DGO

Key Features:

- Dual EP E5-2600 v4 Broadwell (Socket R3 up to 160W TDP)
- Intel C612 Chipset
- 24 DIMM, 3 TB Reg. ECC DDR4 up to 2400 MT/s, Supports NVM DIMM
- 4 PCI-E 3.0 x16 to BPN for Pascal support
- 2 PCI-E 3.0 x8 for additional expansion
- Dual port i350 or Dual Port X55010Gb LAN from PCH
- 10 SATA 3 ports (includes 2 SATADOM), 3 ports USB 3.0 (2 rear + 1 Type A)
- 15.0” x 17.0” Form Factor



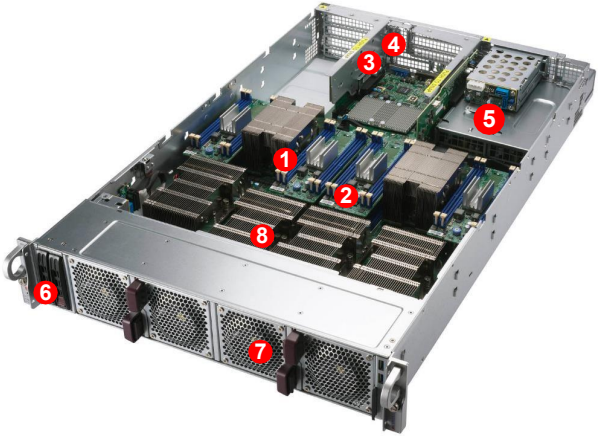


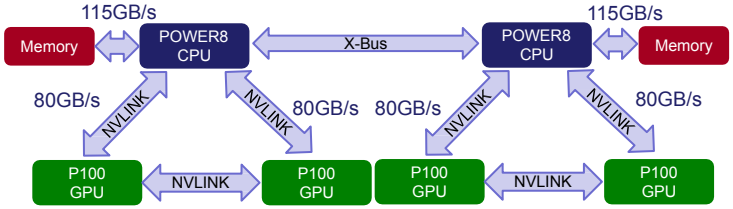


All Specifications are subject to change

NVMe
SSD
HDD

SSP-2028G-TR4T





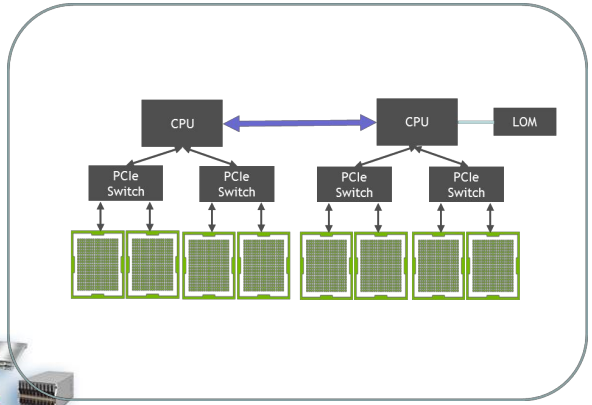
1	**Processor Support** IBM POWER8 processor with NVLink Interconnect
2	**Memory Capacity** 32 DIMMs, ECC DDR4 1600MHz
3	**Expansion Slots** 2 PCI-e 3.0 x16 full height 3 PCI-e 3.0 x8 full height
4	**I/O ports** 1x VGA, 4x 10 Gbit LAN, 2x USB 3.0, and 1x IPMI dedicated LAN port,1 x COM port
5	**Power Supply** 2 x 2000W High-efficiency **(Platinum level)** digital redundant power supply
6	**Drive Bays** 4 x hot-swap 2.5” drives bay
7	**System Cooling** 4 heavy duty fans w/ Optimal Fan Speed Control
8	**GPU** 4 x Nvidia SXM2 GPU up to 19.2GT/s

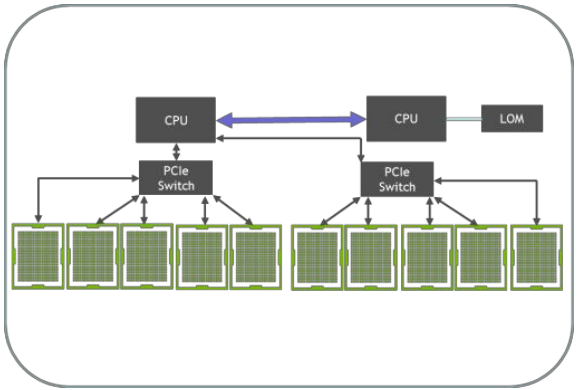
Key Features:

- **Dual Power8+ Processor, X-Bus up to 4.8GT/s, 190W TDP**
- **32 x DDR4 ECC DIMMs, up to 1600MHz**
- **4 Nvidia SXM2 GPU up to 19.2GT/s**
- **1 PCI-E 3.0 (x16/x8x8), 1 PCI-E 3.0(x8), 1 PCI-E 3.0(x16)**

NVMe
SSD
HDD

4U DP SYS-4029GR-TR(T)2





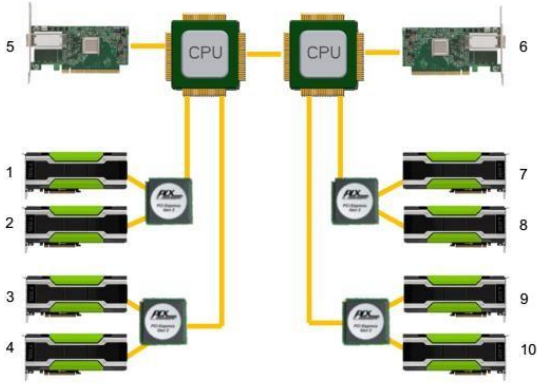
NVMe

SSD

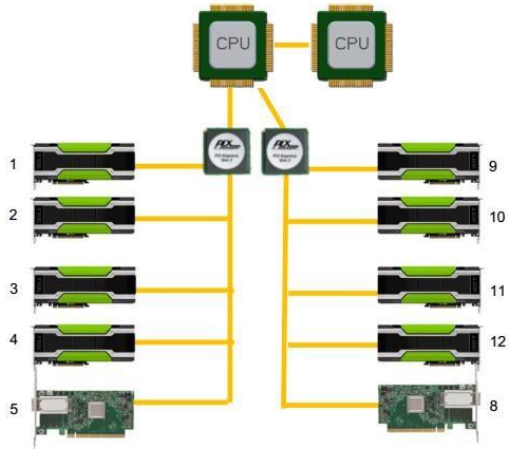
HDD

Single-Root Design

SYS-4028GR-TR(T)



SYS-4028GR-TR(T)2



FROM	TO	SYS-4028GR-TR(T)	SYS-4028GR-TR(T)2
		(uSEC)	*(uSEC)*
GPU1	GPU2	6.6	6.6
GPU2	GPU4	6.7	6.6
GPU3	GPU9	21.2	6.7

Latency winner

NVMe
SSD
HDD

X10 GPU Server Portfolio

Ratio: GPU:CPU	TOWER	RACK	DEEP LEARNING
GPU OPTIMIZED	2:4 	2:8 	2:8 
		2:4 	
		2:6 	2:4 
		2:4 	
		1:2 	2:10 

NVMe
SSD
HDD

Xeon Phi 2U Twin^2 Server

Model Name SYS-5028TK-HTR

PROCESSOR
KNL / KNL-F Up to 72 cores per CPU

CHIPSET
Intel C612 chipset

MEMORY
6x DIMM slots with up to 384 GB DDR4 at 2400 MHz

EXPANSION
2x PCIe 3.0 x16 LP slots (unavailable with KNL-F)

LAN
2x Intel i350 Gigabit Ethernet

DRIVE BAYS
3x 3.5” hot-swap SATA3 drive bays per node 2x SuperDOM support

POWER SUPPLY
2x Redundant 2000 W Titanium power supplies

CHASSIS
CSE-827HQ Chassis

Key features

- **Density:** Uses popular Twin architecture to achieve 4 hot-pluggable nodes in 2U
- **Processor support:** Full range of KNL and KNL-F SKUs supported
- **Flexible I/O support:** Integrated dual-port Omni-Path or two low profile PCIe 3.0 x16 slots

NVMe
SSD
HDD

Options for Omni-Path with KNL

Single port Omni-Path PCIe card is available today…

AOC-SHFI-i1C

+ 2nd LP PCIe 3.0 x16 card

… and there will be SKUs with integrated dual port Omni-Path!

Intel Fabric Through (IFT) Carrier Card
AOC-SKL2Q

Intel Fabric Passive (IFP) Cable

KNL-F
(with fabric)

NVMe
SSD
HDD

Supermicro Omni-Path Portfolio

Edge Switch - SSH-C48Q

Key features

- **Omni-Path:** 48 100 Gbps ports (QSFP28)
- **Bandwidth:** 9.6 Tbps fabric bandwidth
- **OOB:** via optional module (AOM-QA338152G)

x16 PCIe Card - AOC-SHFI-I1C

Key features

- **Omni-Path:** Single QSFP28 Connector
- **Power Efficiency:** 11.7 W copper; 14.9 W optical
- **Optimized for HPC:** 8K and 10K MTUs

Carrier Card - AOC-SKL2Q

Key features

- **Omni-Path:** 2 100 Gbps ports (QSFP28)
- **Support:** Integrated fabric SKUs
- **Cost:** Lower than discrete components

NVMe
SSD
HDD

Xeon Phi Development System

Model Name SYS-5038K-i

PROCESSOR
KNL (fabric SKUs not supported)

CHIPSET
Intel C612 chipset

MEMORY
6x DIMM slots with up to 384 GB DDR4 at 2400 MHz

EXPANSION
2x PCIe 3.0 x16 slots
1x PCIe 3.0 x4 (in a x8 mechanical slot)

LAN
2x Intel i350 Gigabit Ethernet

DRIVE BAYS
6x 3.5” SATA3 drive bays
4x 2.5” SATA3 drive bays
2x SuperDOM support

POWER SUPPLY
1x 750 W 80 Plus Gold power supply

CHASSIS
S5 ATX Chassis with blue bezel

Key features

- **Form Factor:** ATX Mid Tower chassis
- **Quiet Operation:** Under 31 dBA at 80% load (215 W SKUs)
- **Cooling System:** Closed loop, maintenance free liquid cooling solution

NVMe
SSD
HDD

EX 7U X10 8-Way DDR4 SYS-7088B-TR4FT

SYS-7088B-TR4FT

Key features

- Eight sockets with up to 192 processor cores, 384 threads
- 192 DDR4 Memory DIMM slots, up to 24TB
- Up to 12 x 2.5” hot swap SAS3 HDD via AOC
- Up to 15 or 23(OEM) x PCI-e Gen 3 slots support
- Up to 16 x U.2 NVMe support available
- Up to 5 x 1600W 80Plus Titanium Level Power Supply

Applications

- In- Memory database application
- ERP, CRM and Business intelligence database application
- Scientific Research
- Scale-up HPC
- Virtualization

SYS-7088B-TR4FT

- High Performance server for Mission-critical workloads
- In-memory computing and large-scale virtualization

Processor	Intel® EX Xeon E7- 8800 v3/v4 series (9.6GT/s QPI) + Jordan Creek 2 (for DDR4) Intel® Patsburg-J Chipset (2 SATA3 + 4 SATA2)
Memory	192 DDR4 DIMM Slots Up to 24TB Capacity, 128GB DDR4 3DS LRDIMM Up to 1600 MHz (Performance Mode) and 1866 MHz (Lockstep Mode)
Expansion Slot	Up to 15 x PCI-E 3.0 FH slots (default) for 8 GPUs Or up to 16 U.2 NVMe + 7 PCI-E slots (optional) Or up to 23 slots (OEM)
I/O Ports (front)	1 x VGA, 1 x COM, 2 x USB 2.0 in KVM port
I/O Ports (internal)	2 x SATA DOM (SATA3), 2 x M.2 (SATA2), 2 x HDD (SATA2), 1 x TPM
Drive Bays	12 x hot swap 2.5” SAS3 HDDs (with RAID cards) 20 x 2.5” or 6 x 3.5” internal HDDs (with RAID cards)
Network (rear)	4 x 10Gb RJ45 LAN (SIOM) (SFP+ or IB for OEM) 1 x Dedicated LAN for IPMI Remote Management
Power Supply	N+1 Redundancy, default 5 x PWS-1K62A-1R(1600W) Titanium Level Power Supply (96%)
Cooling Fan	8 x 9cm hot-swappable counter-rotating rear fans
Form Factor	7U, 17.63" W, 28.87" D

NVMe
SSD
HDD

BigTwin

SYS-2028BT-HNR+

- **4 hot-swappable nodes in 2U**
- Up to 3TB DDR4-2400 in 24 DIMM per node
- 6 NVMe per node. 2 optional M.2 NVMe/SATA
- SIOM for flexible network
- 2 PCI-e x16 expansion slots
- Redundant 2600W/2200W Power Supplies

SYS-2028BT-HTR+

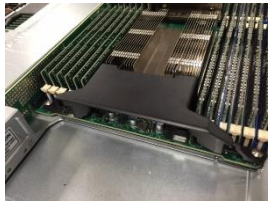
- **4 hot-swappable nodes in 2U**
- Up to 3TB DDR4-2400 in 24 DIMM per node
- 6 SAS/SATA per node. 2 optional M.2 NVMe/SATA
- SIOM for flexible network
- 2 PCI-e x16 expansion slots
- Redundant 2600W/2200W Power Supplies

Available NOW!

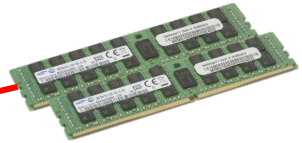
NVMe
SSD
HDD

2U BigTwin^2 node

High efficient
Air shroud

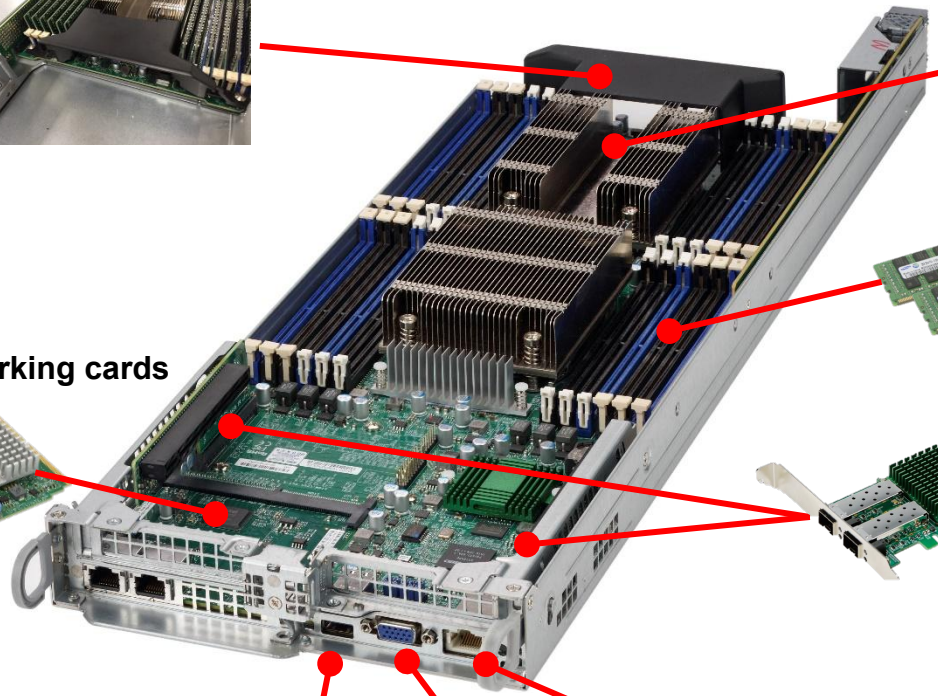


Dual E5-2600 v4 CPU
Up to TDP 205W



24 DDR4 memory
Up to 3TB; 2400MHz

SIOM flexible networking cards



2 low profile PCI-e x16
expansion slots

2 USB

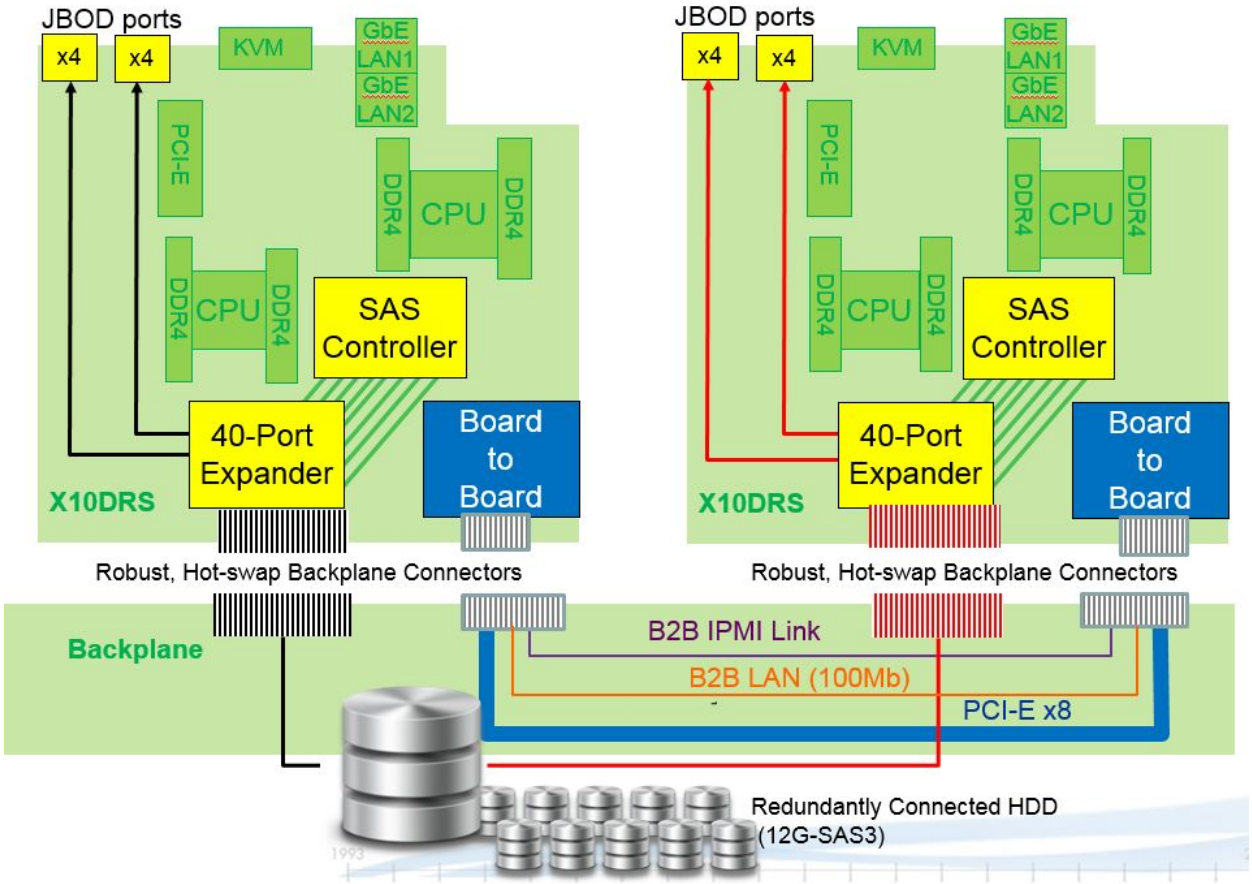
VGA

IPMI dedicated LAN

NVMe
SSD
HDD

x10 Block Diagram - SAS Connectivity

(Haswell/Broadwell)



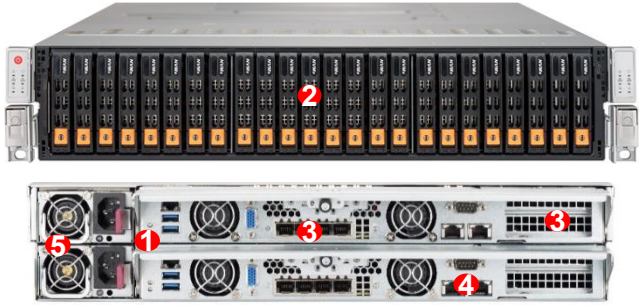
NVMe

SSD

HDD

2U SBB Dual Port NVMe

SSG-2028R-DN2R20L



KEY FEATURES

- Redundant High Availability Design
- 20 Dual Port Hot-swap NVMe bays
- Redundant Hot-swap Dual Processor Servers
- 16x DIMM sockets per node (DDR4 up to 2400MHz)
- Dedicated B2B connection using Intel XL710 10G private LAN
- Omni-Path SIOM Support
- 2 PCI-E 3.0 (x8 , x16) expansion slots per node
- LAN - 2x 10GBase-T
- 2x SuperDOM Ports,
- IPMI 2.0 (dedicated B2B) with Virtual Media/KVM over LAN
- Node Manager Support
- Dimensions: 25.6”(650mm) x 17.2”(437mm) x 3.5”(89mm)

1 REDUNDANT SERVER MODULES
Intel® Xeon® processor E5-2600 V3 Intel® Xeon® processor E5-2600 V4 with QPI up to 9.6GT
CHIPSET Intel C612
MEMORY 16 x DIMM DDR4 up to 2400MHz

2 DRIVE BAYS
20x Hot-Swap 2.5” NVMe bays
Dual internal SATA port for OS load on SLC SATA DOM

3 EXPANSION
2x PCI-E 3.0 (x8, x16) slots per node, can be used for host connectivity or storage expansion
1x SIOM

4 EXTERNAL I/O SUPPORT
Dual 10GBase-T RJ45 LAN per node

POWER SUPPLY
2000W Titanium level

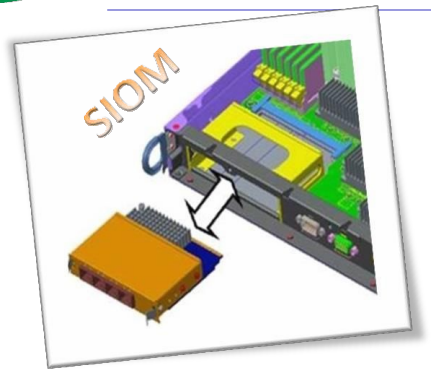
5 ADDITIONAL
Dedicated Internal Board to Board connection using Intel x710 10G private LAN
Board to Board IPMI 2.0 w/ Fan Speed control; Thermal and voltage monitoring,
1x Internal USB 3.0 Type A connector, TPM 2.0,
2 x USB 3.0 and Dedicated LAN connector, VGA header, COM port header

Applications:

- All Flash Array Platform (OEM)
- HPC Storage (Lustre)
- Database Applications (MySQL, Cassandra)

NVMe
SSD
HDD

Super I/O Module (SIOM)



SIOM Modular Networking

- Highly flexible, Future proof, Cold swappable, Zero footprint design
- x16 PCI-E 3.0 interface, NC-SI, direct-to-LAN PCH interface (*X11 and beyond*)
- ***1G/10GBase-T, 10G/25G/40G/50G/100G, Infiniband EDR, OPA, SFP+, QSFP,*** and much more to come!

AOC-M25G-b2S
Dual port 25G (SFP28)
Broadcom controller

AOC-MHIBF-1QG
Single port FDR IB (QSFP) +
Single port 1GbE
Mellanox ConnectX-3 controller

AOC-MHIBF-2QG
Dual port FDR IB (QSFP) +
Single port 1GbE
Mellanox ConnectX-3 controller

AOC-MTP-i4T
Quad port 10G (RJ45)
Intel X550 controller

AOC-MTP-i2T
Dual port 10G (RJ45)
Intel X550 controller

AOC-MTGN-i2S
Dual port 10G (SFP+)
Intel 82599ES controller

AOC-MTG-i4S
Quad port 10G (SFP+)
Intel XL710-AM1 controller

AOC-MGP-i4
Quad port 1G (RJ45)
Intel i350-AM4 controller

AOC-MGP-i2
Dual port 1G (RJ45)
Intel i350-AM2 controller

2U TwinPro²

NVMe
SSD
HDD

✔ **Wide Range of Choices, Flexible Configurations, Space Saving for Regular Add-on Cards,**

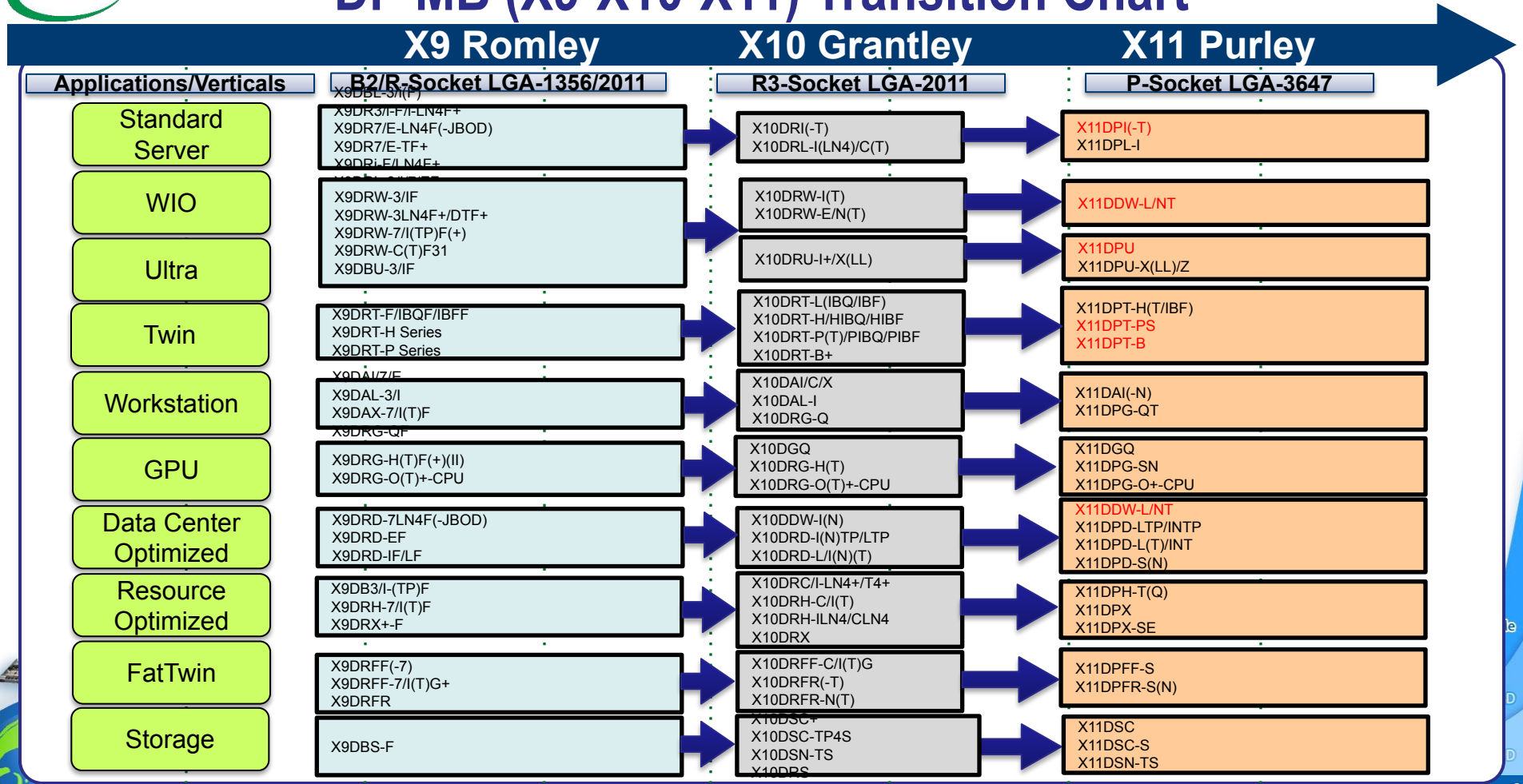
✔ **Future Expandable, Better Cost Control and Inventory Management**

Grantley and Purley Platform Comparisons

Spec	Grantley with Broadwell-EP CPU	Purley with Skylake CPU
CPU TDP (with IVR)	55-145W, 160W WS only	45-205W
Socket	Socket R3	Socket P
Scalability	2S	2S, 4S, 8S
Cores	Up to 22C with Intel® HT Technology	Up to 28C with Intel® HT Technology
Memory	4 channels DDR4 per CPU RDIMM, LRDIMM	6 channels DDR4 per CPU RDIMM, LRDIMM
	1DPC=up to 2400, 2DPC= up to 2400, 3DPC=up to 1866	2133, 2400, 2666 2DPC No 3 DPC support
Intel® UPI	Intel® QPI: 2 v1.1 channels per CPU 9.6 GT/s max	UPI: 2-3 channels per CPU (9.6, 10.4 GT/s)
PCIe*	PCIe* 3.0 (2.5, 5.0, 8.0 GT/s)	PCIe* 3.0 (2.5, 5.0, 8.0 GT/s)
	40 lanes per CPU	48 lanes per CPU Bifurcation support: x16, x8, x4
PCH	Wellsburg: DMI2 – 4 lanes; Up to 6xUSB3, 8x USB2 ports, 10xSATA3 ports; GbE MAC (+ External PHY)	Lewisburg: DMI3 – 4 lanes; 14xUSB2 ports Up to: 10xUSB3; 14xSATA3, 20xPCIe*3 New: Innovation Engine, Integrated Intel® Ethernet 4x10GbE ports, Intel® QuickAssist Technology

NVMe
SSD
HDD

DP MB (X9-X10-X11) Transition Chart



X11 BigTwin Early Ship SKUs

BigTwin²

2600W/2200W Titanium level power stick module 45X40X480mm

SYS-2029BT-HNR

- **4 hot-swappable nodes in 2U**
- Up to 3TB DDR4-2666 in 24 DIMM per node
- 6 NVMe per node. 2 optional M.2 NVMe/SATA
- SIOM for flexible network
- 2 PCI-e x16 expansion slots
- Redundant 2600W/2200W Power Supplies

Sampling: 5th Week of Dec. 2016
Volume Production: 1st Week of Feb. 2017

SYS-2029BT-HTR

- **4 hot-swappable nodes in 2U**
- Up to 3TB DDR4-2666 in 24 DIMM per node
- 6 SAS/SATA per node. 2 optional M.2 NVMe/SATA
- SIOM for flexible network
- 2 PCI-e x16 expansion slots
- Redundant 2600W/2200W Power Supplies

Sampling: 5th Week of Dec. 2016
Volume Production: 1st Week of Feb. 2017

NVMe
SSD
HDD

X11 TwinPro^2 Early Ship SKUs

TwinPro^2

SYS-2029TP-HTR/HC1R/HC0R

- 6x 2.5” Hot-Swap Drive Bays (per node)
- Up to 2TB DDR4-2666 in 16 DIMM Slots
- 2x PCI-E 3.0 x16 Slots + 1x SIOM. 2 optional M.2 NVMe
- HTR: Intel C620 for 6x 2.5" SATA3 (6 Gbps) ports
- HC1R: Broadcom 3108 controller for 6x 2.5" SAS3(12 Gbps) ports
- HC0R: Broadcom 3008 controller for 6x 2.5" SAS3(12 Gbps) ports
- 2200W Titanium level redundant power supplies

Sampling: 5th Week of Dec. 2016
Volume Production: 2nd Week of Feb. 2017

SYS-6029TP-HTR/HC1R/HC0R

- 3x 3.5” Hot-Swap Drive Bays (per node)
- Up to 2TB DDR4-2666 in 16 DIMM Slots
- 2x PCI-E 3.0 x16 Slots + 1x SIOM. 2 optional M.2 NVMe
- HTR: Intel C620 for 3x 3.5" SATA3 (6 Gbps) ports
- HC1R: Broadcom 3108 controller for 3x 3.5" SAS3(12 Gbps) ports
- HC0R: Broadcom 3008 controller for 3x 3.5" SAS3(12 Gbps) ports
- 2200W Titanium level redundant power supplies

Sampling: 5th Week of Dec. 2016
Volume Production: 2nd Week of Feb. 2017

NVMe
SSD
HDD

X11 WIO Early Ship SKUs

WIO

SYS-1029P-WTR

- **8 2.5” Hot-Swap Drive Bays in 1U**
- Optional LSI 3108 AOM
- Up to 1.5TB DDR4-2666 in 12 DIMM Slots
- 3 PCI-E 3.0 Slots
- 2 GbE LAN Ports
- Redundant 700W Platinum Power Supplies

Sampling: 3rd Week of Jan. 2017
Volume Production: 4th Week of Feb. 2017

SYS-6019P-WT

- **4 3.5” Hot-Swap Drive Bays in 1U**
- Cost effective
- Up to 1.5TB DDR4-2666 in 12 DIMM Slots
- 3 PCI-E 3.0 Slots
- 2 GbE LAN Ports
- 600W Platinum Power Supplies

Sampling: 3rd Week of Jan. 2017
Volume Production: 4th Week of Feb. 2017

SYS-6019P-WTR

- **4 3.5” Hot-Swap Drive Bays in 1U**
- Optional LSI 3108 AOM
- Up to 1.5TB DDR4-2666 in 12 DIMM Slots
- 3 PCI-E 3.0 Slots
- 2 GbE LAN Ports
- Redundant 700W PlatinumPower Supplies

Sampling: 3rd Week of Jan. 2017
Volume Production: 4th Week of Feb. 2017

X11 Mainstream Early Ship SKUs

Mainstream

SYS-6029P-TRT

- **8 3.5” Hot-Swap SATA3 Drive Bays in 2U**
- Cost effective
- Up to 2TB DDR4-2666 in 16 DIMM Slots
- 6 Low profile PCI-E 3.0, 4x16 and 2x8
- 1 M.2 NVMe (PCH)
- 2 10G based-T LAN Ports
- Redundant 800W Titanium Power Supplies

Sampling: NOW
Volume Production: 4th Week of December

SYS-6029P-TR

- **8 3.5” Hot-Swap SATA3 Drive Bays in 2U**
- Cost effective
- Up to 2TB DDR4-2666 in 16 DIMM Slots
- 6 Low profile PCI-E 3.0, 4x16 and 2x8
- 1 M.2 NVMe (PCH)
- 2 GbE LAN Ports
- Redundant 800W Titanium Power Supplies

Sampling: NOW
Volume Production: 4th Week of December

NVMe
SSD
HDD

X11 Ultra Early Ship SKUs

Ultra

SYS-1029U-TR4+

- **10 2.5” Hot-Swap Drive Bays in 1U**
- Optional 8 SAS3 (12Gb/s) + 2 NVMe/SATA3
- Up to 3TB DDR4-2666 in 24 DIMM Slots
- 4 PCI-E 3.0 Slots
- 4 GbE LAN Ports
- Redundant 750W Platinum Power Supplies

Sampling: NOW
Volume Production: 4th Week of December

SYS-6019U-TR4+

- **4 3.5” Hot-Swap Drive Bays in 1U**
- Up to 3TB DDR4-2666 in 24 DIMM Slots
- 4 PCI-E 3.0 Slots
- 4 GbE LAN Ports
- Redundant 750W Platinum Power Supplies

Sampling: NOW
Volume Production: 4th Week of December

SYS-6029U-TR4+

- **12 3.5” Hot-Swap Drive Bays in 2U**
- Optional 8 SAS3 + 4 NVMe/SAS3
- Up to 3TB DDR4-2666 in 24 DIMM Slots
- 8 PCI-E 3.0 Slots
- 4 GbE LAN Ports
- Redundant 1000W Titanium Power Supplies

Sampling: NOW
Volume Production: 4th Week of December

NVMe
SSD
HDD

X11 SuperBlade Early Ship SKUs

SuperBlade

SBI-4129P-C2N/T3N

- **20 hot-swappable 2-socket (205W CPU) nodes in 8U**
- Up to 2TB DDR4-2666 in 16 DIMM per node
- 2 NVMe/SAS3 or 3 SATA3 (2 can be NVMe) per node
- 4 M.2 NVMe per node
- 2x 10GbE+ 100G InfiniBand/Omnipath
- 8x 2200W Tittanium Power Supplies (N+N or N+1 Redundancy)

Sampling: 1st Week of Jan. 2017
Volume Production: 2nd Week of Feb. 2017

SBI-8149P-T8N/C4N

- **10 hot-swappable 4-socket (205W CPU) nodes in 8U**
- Up to 6TB DDR4-2666 in 48 DIMM per node
- 8 NVMe/SATA3 or 4 NVMe/SAS3 per node
- 2 M.2 NVMe per node
- 4x 10GbE or 2x 10GbE+100G InfiniBand/Omnipath
- 8x 2200W Titanium Power Supplies (N+N or N+1 Redundancy)

Sampling: 1st Week of Apr. 2017
Volume Production: 1st Week of May. 2017

NVMe
SSD
HDD

UP E5 (X9-X10-X11)

2012 2013 2014 2015 2016 2017 2019

High Performance Xeon Enterprise Server MB

Applications, Selling Points

- HPC, Virtualization
- Low-cost, I/O Intensive
- WIO, 1U/3AOC
- Storage with SAS/10G/SFP+
- GPU, 1U/5AOC
- SFF, HPC, Storage, 12V DC
- Lowest-cost, mATX, VROC

2012 2013	2014	2015 2016 2017 2019
X9SR[illegible] EOL Sandy Bridge/Ivy Bridge C602, 256GB	X10SRi-F HSW/BDW, R3-Skt, C612, 1TB DDR4	**X11SPi-TF** Skylake/Cannonlake (C622) 1TB DDR4 LRDIMM 3DS, 10G
X9SRL /-F EOL Sandy Bridge/Ivy Bridge C602, 256GB	X10SRL-F HSW/BDW, R3-Skt, C612, 1TB DDR4	**X11SPL-F** Skylake/Cannonlake (C621) 1TB DDR4 LRDIMM 3DS, 1G, 7x PCIe Slots
X9SRW-F EOL Sandy Bridge/Ivy Bridge C602, 256GB	X10SRW-F HSW/BDW, R3-Skt, C612, 1TB DDR4	**X11SPW-CTF/-TF** Skylake/Cannonlake (C622) 768GB DDR4 LRDIMM 3DS, 10G
X9SRH-7F/-7TF EOL Sandy Bridge/Ivy Bridge C602j, 256GB	X10SRH-CF/-CLN4F HSW/BDW, R3-Skt, C612, 1TB DDR4	**X11SPH-nCTF/-nCTPF** Skylake/Cannonlake (C622) 1TB DDR4 LRDIMM 3DS, 10G, SAS
X9SRG-F EOL Sandy Bridge/Ivy Bridge C602, 256GB	X10SRG-F HSW/BDW, R3-Skt, C612, 1TB DDR4	**X11SPG-TF** Skylake/Cannonlake (C622) 1TB DDR4 LRDIMM 3DS, 10G
New	X10SRM-F/-TF HSW/BDW, R3-Skt, C612, 512GB DDR4	**X11SPM-TF/-TPF/-F** Skylake/Cannonlake (C622) 768GB DDR4 LRDIMM 3DS, 10G, mATX
New		**X11SPM-LF/LVF (TBD)** Skylake/Cannonlake (C621) 512GB DDR4 LRDIMM 3DS, 1G, mATX
New		**X11SPS-TF (SBB)** Skylake/Cannonlake (LBG-2) 1TB DDR4 LRDIMM 3DS, 10G

R-Socket, LGA-2011 R3-Sock

LGA-3647

MB for System Solution. Not allow to sell MB alone.

SBB Storage

NVMe SSD HDD

QSV & VHD Системы

SYS-5019S-M-G1585L

Intel® HD Graphics/Iris Pro Optimizations

X11SSH-GF-1585L, 813MFTQC-350CB

Intel® E3-1585L v5 on board 45W/3GHz, C236 Express chipset

Up to 4x ECC SODIMM slots, up to **64GB DDR4-2133MHz**

1x PCI-E 3.0 x8(in x16) add-on card slot

2x GbE I350-BT2 port, 1x dedicated IPMI port M.2 support 2242/2280/22110
Intel® Iris™ Pro Graphics P580 (GT4e)

2x USB 3.0 (front/rear), USB 2.0, VGA, Serial

4x 3.5" Hot-swap SATA3 bays w/ RAID

350W High-Efficiency Power Supply

1.7" x 17.2" x 19.8"
Less than 20" depth

Optional 2.5" drive adapter
Optional slim DVD drive
SATA DOM support
Additional FAN option

SYS-5019S-MR-G1585L

Intel® HD Graphics/Iris Pro Optimizations

X11SSH-GF-1585L, 813MFTQC-R407CB

Intel® E3-1585L v5 on board 45W/3GHz, , C236 Express chipset

Up to 4x ECC SODIMM slots, up to **64GB DDR4-2133MHz**
M.2 support 2242/2280/1100
Intel® Iris™ Pro Graphics P580 (GT4e)

1x PCI-E 3.0 x8(in x16) add-on card slot

2x GbE I350-BT2 port, 1x dedicated IPMI port

2x USB 3.0 (front/rear), USB 2.0, VGA, Serial

4x 3.5" Hot-swap SATA3 bays w/ RAID

Redundant 400W 1+1 power w/ BBP® option

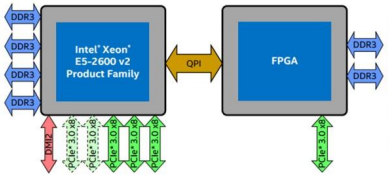
1.7" x 17.2" x 19.8"
Less than 20" depth

Optional 2.5" drive adapter
Optional slim DVD drive SATA DOM support Additional FAN option

NVMe
SSD
HDD

Xeon + FPGA

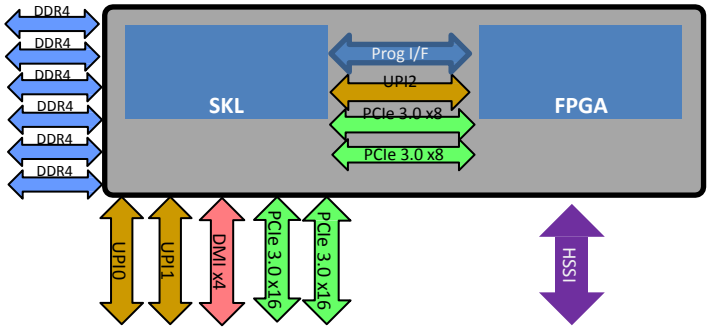
2015	2016	2017 2018		2019	2020
	Broadwell + Arria10 FPGA MCP		Skylake + Arria10 FPGA MCP 100GbE support TDP+ 235W	Ice Lake + FPGA MCP Arria10 / Stratix10 100GbE support TDP+ 235W	Sapphire Rapids + FPGA 200GbE support



Processor	Intel® Xeon® E5-26xx v2 Processor
FPGA Module	Altera Stratix V
QPI Speed	6.4 GT/s full width (target 8.0 GT/s at full width)
Memory to FPGA Module	2 channels of DDR3 (up to 64 GB)
Expansion connector to FPGA Module	PCIe 3.0 x8 lanes - maybe used for direct I/O e.g. Ethernet
Features	Configuration Agent, Caching Agent, (optional) Memory Controller
Software	Accelerator Abstraction Layer (AAL) runtime, drivers, sample applications

Pilot board: X11DPZ+ (Skylake+FPGA)

Ice Lake + FPGA Integrated on Purley

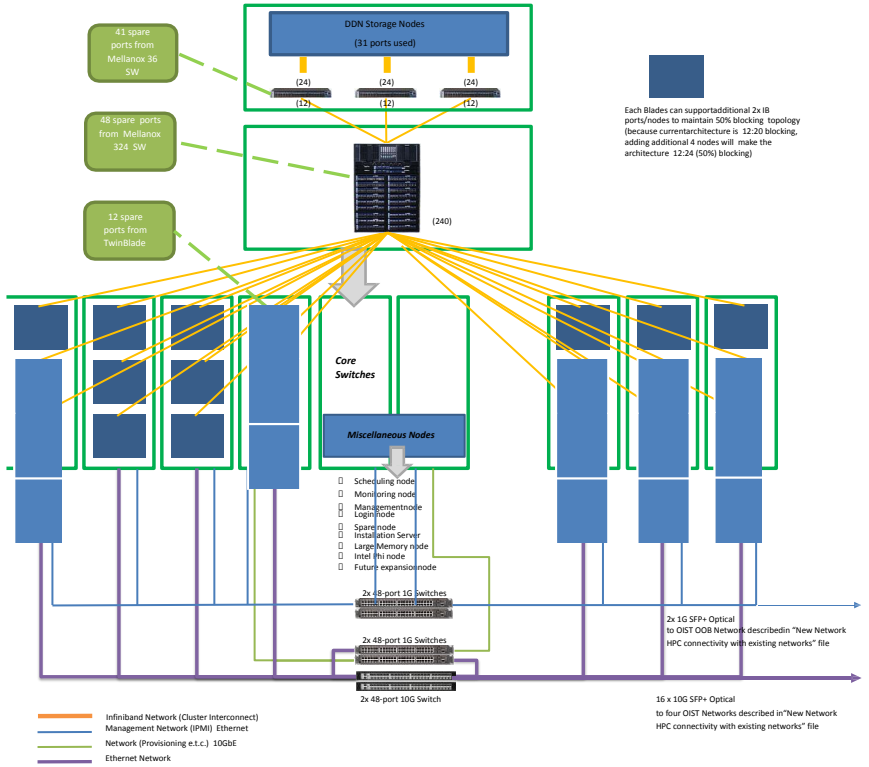


NVMe
SSD
HDD

OIST (Okinawa Institute of Science and Technology)

- Complete installation – March., 2015
- ~438 compute nodes, including SuperBlades (TwinBlade) , GPU/Xeon Phi nodes and FatTwin nodes
- Performance = >275 TFLOPS
- Storage : 17 nodes (including 12 OSS nodes) = ~3PB
- Infiniband FDR connectivity for compute
- 1G/10G Ethernet connectivity for management and storage

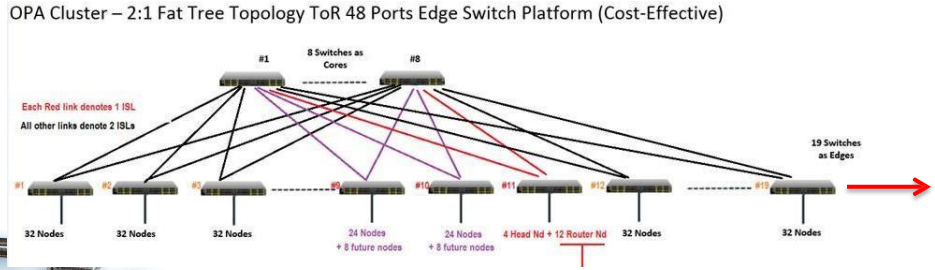
Compute nodes: TwinBlade



NVMe
SSD
HDD

Rutgers U. – FatTwin™ + OPA Cluster

- Supermicro RACK solution group built a 570 node FatTwin™ - 4U 8-node (Broadwell,E5-2695 v4, 560 compute nodes, 20,160 physical cores) with liquid chilled rack rear doors
- The platform uses Intel 100Gbps Omni-path, Supermicro NVMe Drives with FatTwin solution.
- The performance measured : *602.983TFLOPS* --- Top500 ranked 166 (June, 2016)
- Cooling solution: Active water rear door design

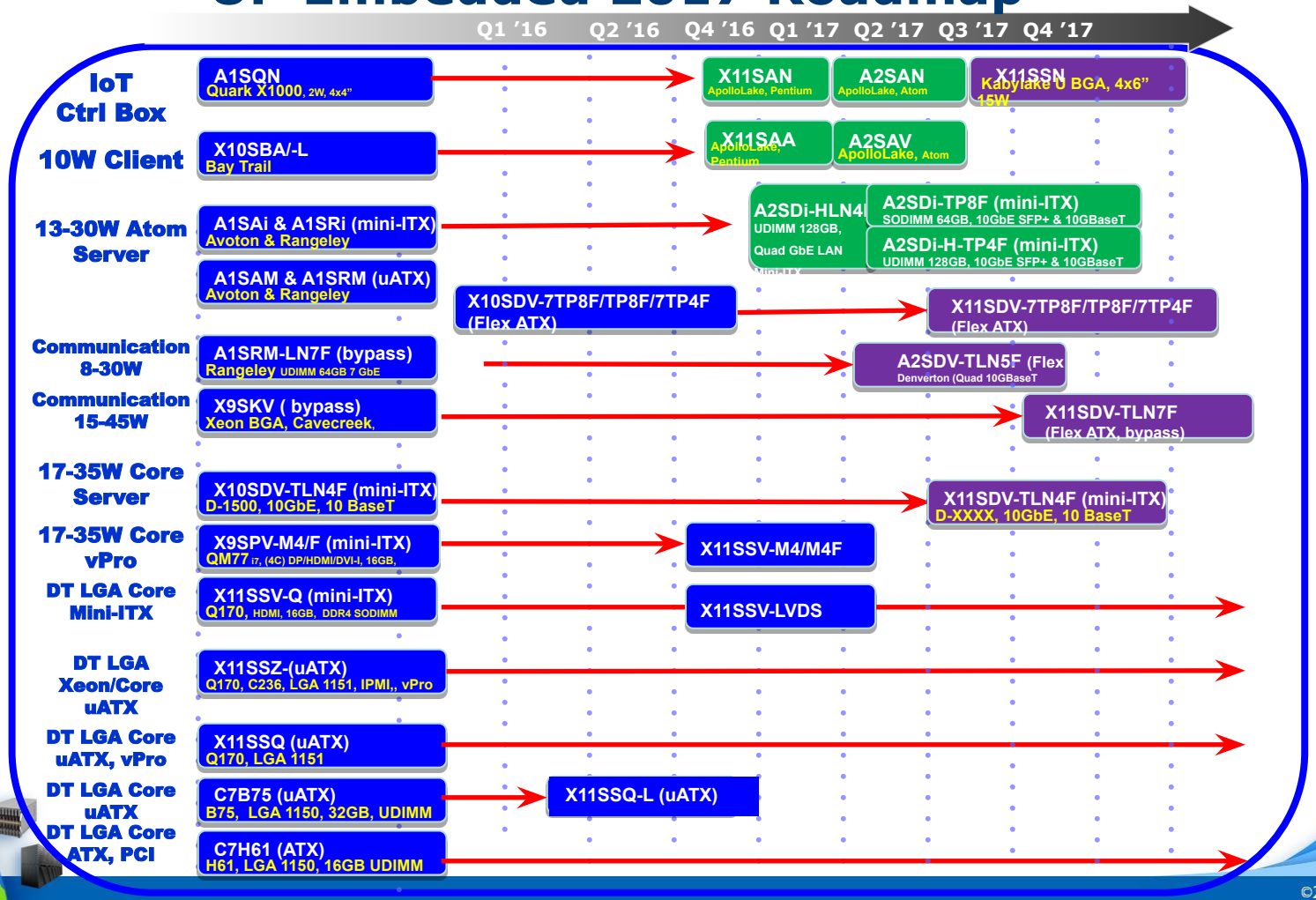


NVMe

SSD

HDD

UP Embedded 2017 Roadmap



Apollo Lake Solutions

- ✔ Building block design
- ✔ Off-the-shelf with reliable product life cycle
- ✔ VESA mount for easy deployment

Compact Box Sys.

SYS-E200-9AP
Atom SoC, QC, 9W

Mini Tower

SYS-5029AP-TN2
Atom SoC, QC, 9W

- ✔ 4 x hot-swap 3.5” HDD with 2 internal 2.5” HDD
- ✔ Low profile expansion slot for diversified application

Fanless Embedded Sys.

SYS-E100-9AP
Atom SoC, QC, 9W

- ✔ Low power consumption
- ✔ Wide operating temp -20-60C for harsh environment
- ✔ VESA/Wall mount for easy deployment

NVMe
SSD
HDD

SYS-E100-9AP

Antenna

Dual GbE LAN

Dual USB3.0

VGA

HDMI

DC-IN 12V

DIO

4x USB2.0

4x COM

NVMe

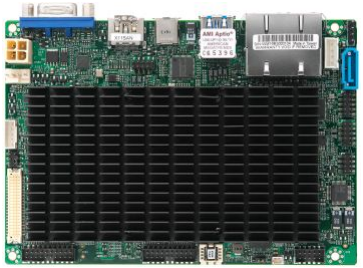
SSD

HDD

A2SAN-H/L/E

Apollo Lake 4-Core, 3.5” SBC, Wide Temp. USB 3.1, M.2 & Mini-PCIe

- **Selling Points:**
  - Atom Apollo Lake-I SoC, up to 4 Core, 9.5W, HD Graphics 500
  - 3.5” SBC small form factor (4”x5.75”)
  - USB 3.1 type C, Dual channel 48-bit LVDS
  - 2 LAN Ports, 1 SATA3 Ports, Wide Operating temperature Support (-E/-L: -30 to 75C, -H: 0-60C)
  - 4-Pin 12V DC
  - 7 Years Product Life
- **Key Features:**
  - Up to 8 GB DDR3L 1867MHz Non ECC SODIMM
  - HDMI, LVDS and VGA,
  - 1x SATA3.0, 1x M.2 slot (B-key 2280 for SATA/PCIe SSD or WWAN/GNSS card), 2x USB3.0, 4x USB 2.0, 4x COM ports(2 with RS-232/422/485), 1x mini PCIe, audio, 8-bit GPIO, SMBus. TPM on board
- **Applications:**
  - Industrial Automation, Transportation
  - Control Board



- **Optimized Server:**
  - SYS-E100-9AP

Note: -E with quad core and without Audio/USB3.1/TPM, -L with dual Core and without Audio/USB3.1/TPM

NDA Sample in Jan’17
MP in March ’17

NVMe
SSD
HDD

A2SDi-2C/4C/8C+/12C-HLN4F

Denverton 2-12-Core, Quad GbE

- **Selling Points:**
  - Atom C3000 SoC, 2-12 Core, 8.5-25W
  - Denverton 64-bit 14nm System on Chip, VT-d/x, TXT, AES-NI, built-in Quad GbE
  - Best Performance per Watt
  - Mini-ITX 6.7”x6.7” small form factor
  - IPMI 2.0 with KVM and dedicated port
  - 4 GbE LAN Ports with RJ45
  - 4-Pin 12V DC and ATX power source
  - 7 Years Product Life
- **Key Features:**
  - 128 GB up to 2133MHz DDR4 RDIMM or 64GB UDIMM
  - 12x SATA3.0, 1x M.2 slot (M key for SSD, 2242/80, PCIe3.0 x2 or SATA3), 1x USB3.0 type A, 4x USB 2.0, 1x PCIe 3.0 x4, Quad GbE LAN ports
- **Applications:**
  - Network Security Appliance
  - Storage Server/Appliance

- **SuperServer:**
  - SYS-5019A-2TN4(2C, SC721)
- **Optimized Chassis:**
  - SC504/505 : 1U 9.8”
  - SCE300, 1U 10.0”x8.9”x1.7”
  - SC101F, 1U 7.68” x8.9”x1.7”

Sample in Jan’17
MP in Feb’17

Note: Some SKU may de-pop M.2 or SATA ports for limited SoC I/O support

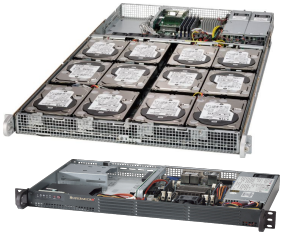
NVMe
SSD
HDD

A2SDi-H-TP4F

Denverton 16-Core, Quad 10GbE (SFP+ & 10GBaseT), 12x SATA3

- **Selling Points:**
  - Atom C3000 SoC, up to 16 Core, 35W
  - Denverton 64-bit 14nm System on Chip, VT-d/x, TXT, AES-NI, built-in 10GbE
  - Best Performance per Watt
  - Mini-ITX 6.7”x6.7” small form factor
  - IPMI 2.0 with KVM and dedicated port
  - 4 LAN Ports with Dual 10GbE SFP+ and Dual 10GBaseT
  - 4-Pin 12V DC and ATX power source
  - 7 Years Product Life
- **Key Features:**
  - 128 GB up to 2133MHz DDR4 RDIMM or 64GB UDIMM
  - 12x SATA3.0, 1x M.2 slot (M key for SSD, 2242/80, PCIe3.0 x2 or SATA3), 1x USB3.0, 4x USB 2.0, 1x PCIe 3.0 x4, Quad 10GbE LAN ports with 2x SFP+ and 2x 10GBase-T (SoC)
- **Applications:**
  - Network Security Appliance
  - Storage Server/Appliance

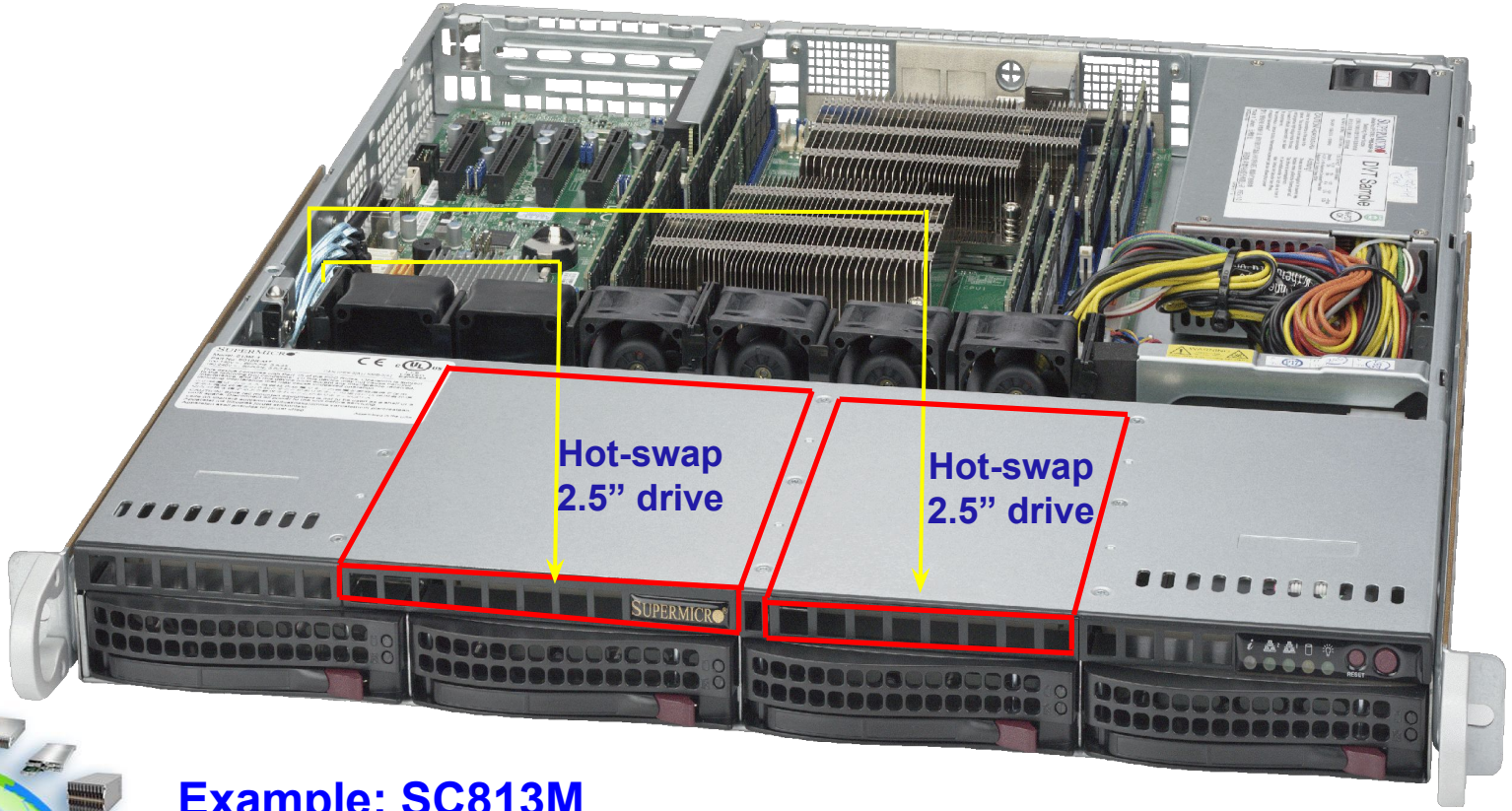
- **Optimized Chassis:**
  - SC801 : 1U 12x 3.5 HDD
  - SC504/505 : 1U 9.8”
  - SCE300, 1U 10.0”x8.9”x1.7”
  - SC101F, 1U 7.68” x8.9”x1.7”
  - SC721, 11”x8.2”x9.45”



Sample in January ‘16
MP in March ’17
A2SDi-H-TF with Dual 10GBaseT only

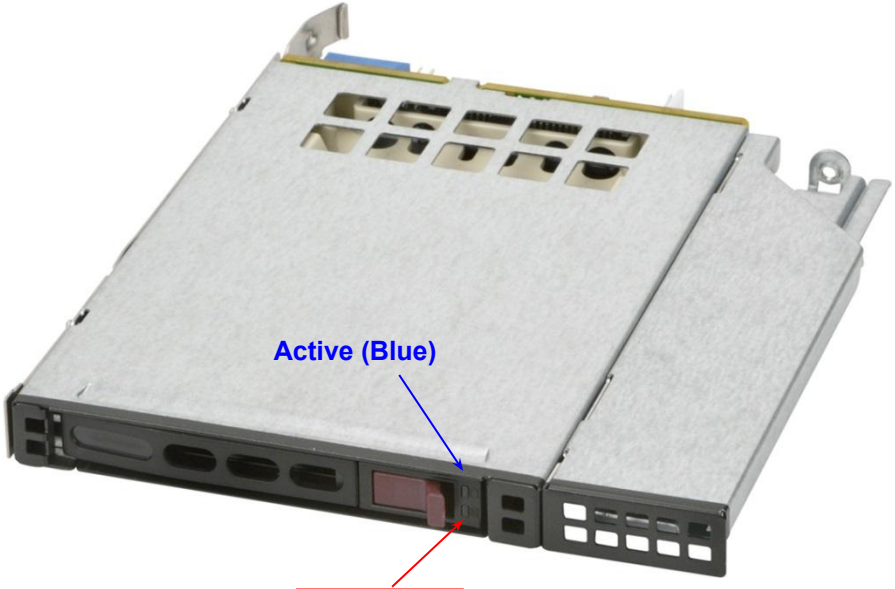
NVMe
SSD
HDD

Как насчет большего хранения?

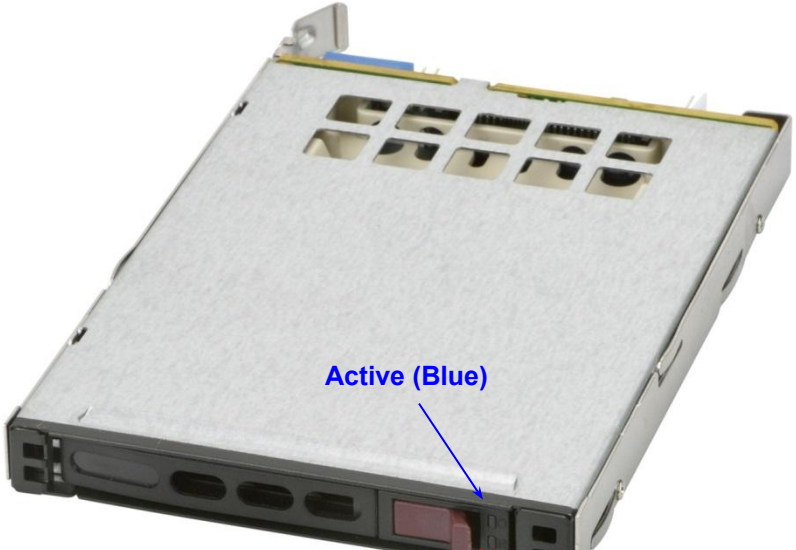


Example: SC813M

Корзины с горячей заменой



Slim DVD Size
(MCP-220-81506-0N)



Slim Floppy Size
(MCP-220-81504-0N)

NVMe становится доступнее

Rear NVMe x2 (MCP-220-82617-0N)

=Backplane Board: **BPN-NVMe3-826N-B2B**

NEW

1	**Dimensions** 3.2”x 1.6”x 6.1” (81x41x155mm)
2	**Gross Weight** 1.5 lbs (0.68 kg)
3	**Available Color** Black
4	**Occupancy** 1x Rear 2.5”x2 Drive Bay
5	**Capacity** 2x 2.5" Hot-swap NVMe Drives
6	**Configuration** Direct attached via OCuLink cables (PN TBD)
7	**System Monitoring** Support Drive Activity/Failure LED
8	**Cooling** N/A (use chassis fan)
9	**Cable** TBD

Key Features

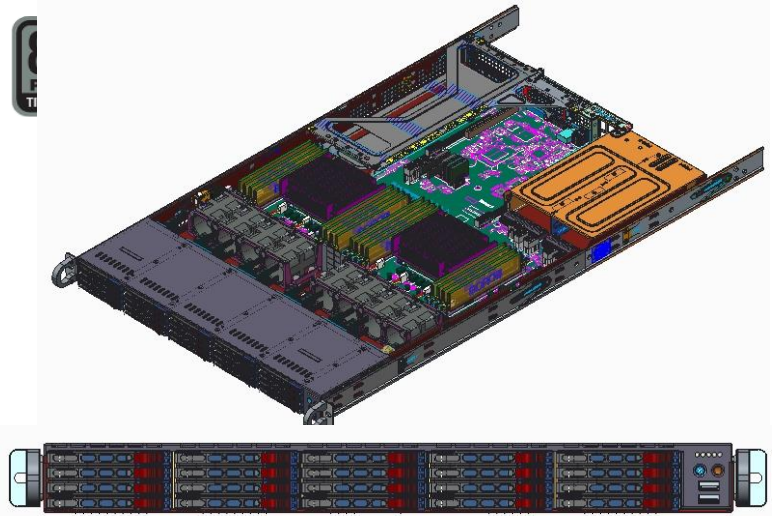
- Support 2.5” NVMe Drives x2
- Point-to-point direct attached backplane supports NVMe
- LED indicators for monitoring drive activity, rebuild or failure
- Reference MB configurations only for X10; all supported for X11.

Compatible Chassis

- SC216B, SC826B, SC826S, SC846X, SC847B, SC226S, SC417B
- SC836B, SC835B (use MCP-220-82618-0N)

NVMe
SSD
HDD

SYS-1028U-TN20R25M+



KEY FEATURES

- 20 hot-swap 2.5” NVMe drives support
- 24 DIMM, 3TB ECC 3DS LRDIMM up to 2400MHz
- Up to 2 PCI-E 3.0 Add-on cards
- Optimized cooling (145W CPUs)
- 2 25G SFP28 Ethernet ports
- Redundant Titanium level high efficiency digital power supply
- 2 SATA ports with built-in SATA DOM power Support

1. **Processor Support**
   Intel® Xeon® processor E5-2600 v4/v3 family
2. **Memory Capacity**
   24 DIMM, DDR4 up to 3TB ECC 3DS LRDIMM, 768GB ECC RDIMM up to 2400MHz
3. **Expansion Slots**
   1 PCI-E Gen 3.0 x16 (LP Internal)
   1 PCI-E Gen 3.0 x8 (LP)
4. **I/O ports**
   Two 25G SFP28 Ethernet ports
   2 VGA ports (1 rear, 1 onboard)
   1 COM/Serial port (rear)
   5 USB 3.0 ports (2 rear, 2 front, 1 Type A)
5. **System management**
   Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port
6. **Drive Bays**
   20 hot-swap 2.5” 7mm drive bays
   20 NVMe ports (From CPU2 via 2x PCI-E switches)
7. **System Cooling**
   8 heavy duty fans w/ Optimal Fan Speed Control; 1 Air Shroud
8. **Power Supply**
   Two 1200W High-efficiency **(Titanium level)** digital power supply

NVMe
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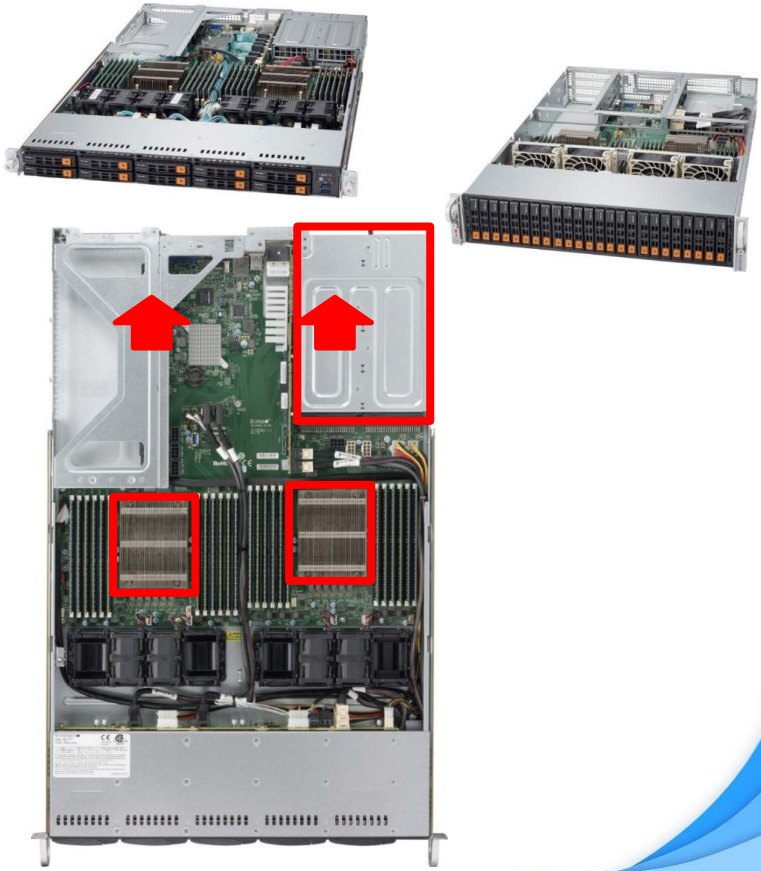
Intel 200W Processors Support

- New Intel 200W Processor
  - High Cores: 20
  - Higher Frequency: 2.5GHz (3.2 GHz OC)
  - Better Cost
  - Consider if your customer are using
    - E5-2698 v4: 20 core, 2.2GHz, 135W
    - E5-2699 v4: 22 core, 2.2GHz, 145W

- Ultra Series Supports 200W CPU!
  - Optimized Design
  - Side by Side CPUs
  - Parallel Airflow
  - Quality Components
  - Optional: 1600W PSU



NVMe

SSD

HDD

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ATTRIBUTION

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