



EDSFF Servers: Breakthrough Form Factors Enabling Solutions Innovations

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9/11/2019

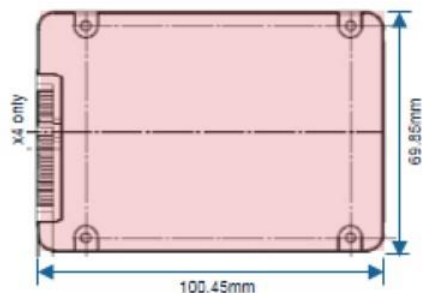


We Keep IT Green™

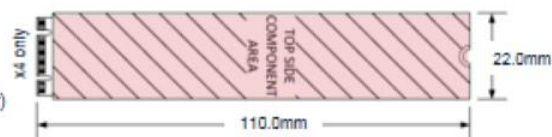
NVMe Form Factor Comparison



U.2
(7.5mm/15.0mm)



M.2
(without carrier)



EDSFF
Short
(without carrier)



NF1
(without carrier)



EDSFF
Long
(includes carrier)



Why do we need new SSD form factors?



- ✓ Higher storage density - more TB per rack unit
- ✓ Higher efficiency - thermal and power performance
- ✓ Higher capacity – vendor technology competition
- ✓ Better cost per GB – vendor price competition
- ✓ Storage disaggregation
 - ✓ Improved resource management
 - ✓ Heavy compute applications (HPC)
 - ✓ GPU based applications



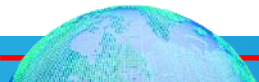
What is EDSFF*?

1 A group of **15** companies working together¹

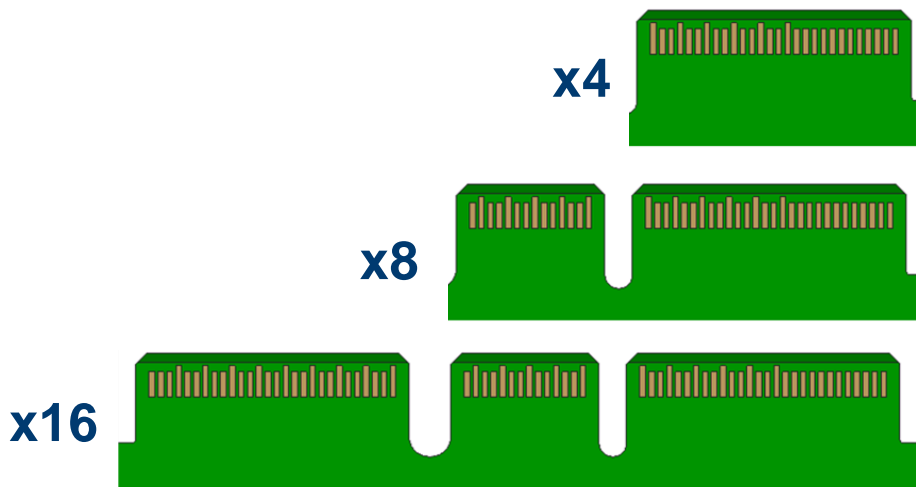
2 Industry standard connector and form factor **optimized** for NVMe*

3 Built for increased operational efficiency and dense storage

Intel® SSDs with EDSFF* “ruler”



ALL EDSFF* SSDs support the same:



PCIe* 4.0 and 5.0 ready⁷

1

Connector

Drives high volumes

2

Pinout

Allows interoperability, simplifies backplane design

3

Base Features

But differentiated by segment and use case

Systems Designed with Flexibility for Storage and Beyond

*Other names and brands may be claimed as the property of others.

Source – Amphenol ICC*. <https://www.amphenol-icc.com/connect/cool-edge-high-speed-high-power-card-edge.html>. Additional detail: <https://EDSFFspec.org/introduction-to-EDSFF/>

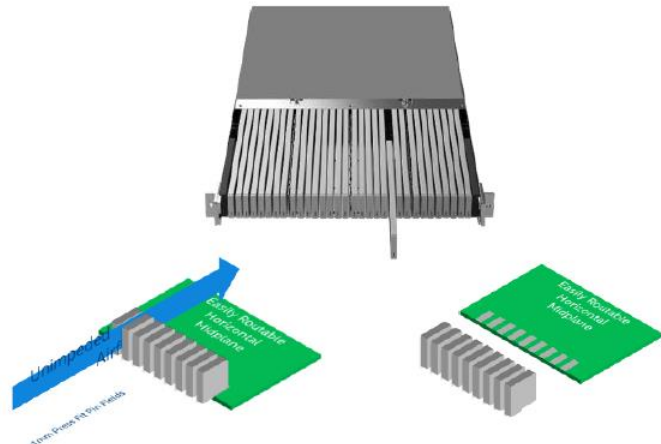


2.5" FORM FACTOR



- Backplane requires cut outs to optimize thermals
- Cables add cost and complicate installation, thermals
- LED controller adds failure point
- Drive cages add cost, failure points

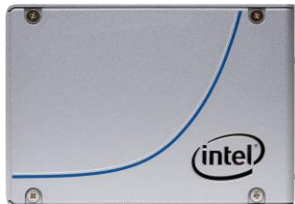
RULER FORM FACTOR



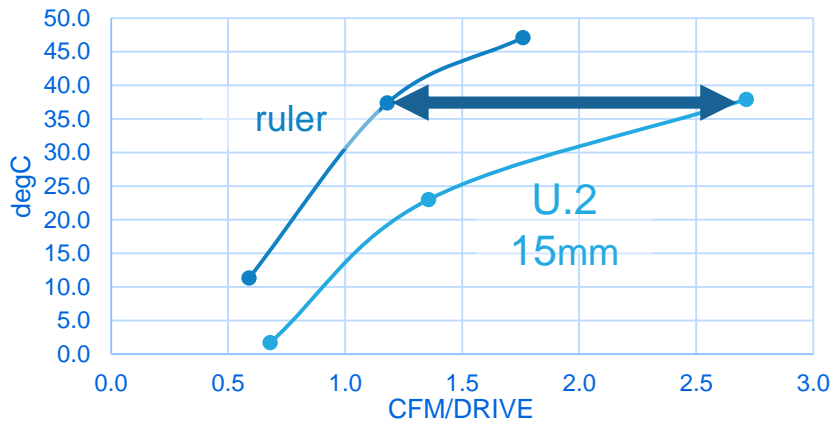
- Eliminate the backplane
- Simplified thermal implementation
- No add in cards required
- No cables to SSDs
- Geographic drive mapping for simplified drive management

Less complicated chassis
Reduced component cost per SSD
Simple hot swap with high density capabilities





Thermal efficiency
Up to **55%** less airflow⁴ vs
U.2 15mm



1U 32-bay NVMe* EDSFF* Server



SSG-1029P-NEL32R



KEY FEATURES

- 1U Extremely high density/high capacity NVMe* storage server
- Supports 32 NVMe hot-swappable SSDs
- BMC for remote system power on/off and system monitoring
- Dual socket Intel® Xeon® Scalable processor server (SKL & CLX)
- Individual SSD power cycling
- Intel® QuickAssist Technology for HW 100Gb encryption/compression

*Other names and brands may be claimed as the property of others.

CHASSIS DIMENSIONS:

H 1.71" x W 17.26" x D 35.95" (43.6 x 438.4 x 913.1mm)

DRIVE BAYS:

32 x EDSFF long NVMe Hot-swap SSDs
(2 sleds with 16 drives per sled)

SERVER CAPABILITY:

Dual Socket Intel® Xeon® Scalable processor (SKL and CLX)
24 DIMMs for up to 6TB memory
2 M.2 boot drives

I/O:

2x X16 PCIe* slots, 2x 10GbE ports, 1x IPMI ports, 2x USB ports, 1x UID button, 1x Reset button

POWER SUPPLIES:

2x 1600W (N+1) 96% efficient Digital Platinum Level Redundant Power Supplies

COOLING:

8 x 40mm high speed Hot-swappable Fans

APPLICATIONS

- High Throughput Ingest
- High Density Hot Storage
- HPC / Data Analytics
- Media/Video Streaming
- Content Delivery Network (CDN)
- Big Data Top of Rack Storage

1U 32-bay NVMe* EDSFF* JBOF (coming soon)



SSG136R-NEL32JBF

KEY FEATURES



- 1U Extremely High Density High Capacity NVMe Storage Enclosure
- Supports 32 NVMe Hot-swappable SSDs
- BMC for Remote System Power on/off and system monitoring
- Tool-less SSD tray
- Flexible to configure up to 8 Hosts
- Individual SSD power cycling
- PCIe* External Cable Spec 0.7 compliant
- Slide Rail included

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CHASSIS DIMENSIONS:

H 1.71" x W 17.26" x D 31.95" (43.6 x 438.4 x 811.7mm)

DRIVE BAYS:

32 x EDSFF NVMe* Hot-swap SSDs
(2 sleds with 16 drives per sled)

HOST SCALEABILITY:

Supports up to 8 host systems with X16 AOCs

I/O:

4x X16 Mini-SAS HD ports , 2x X16 PCIe Slots, 2x IPMI ports, 1x UID button, 1x Reset button

POWER SUPPLIES:

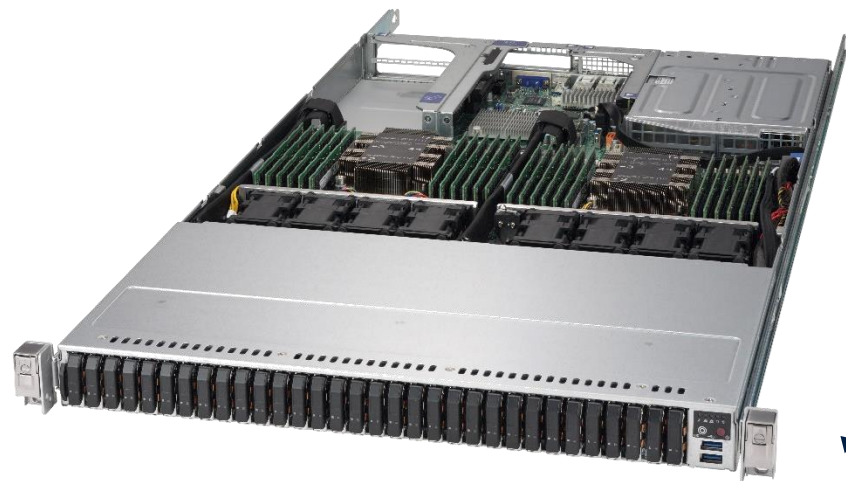
2x 1000W (N+1) 96% efficient Digital Titanium Level Redundant Power Supplies

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Hot-swap EDSFF module

SSG-1029P-NES32R

KEY FEATURES

- Up to 32 EDSFF short devices (128TB)
- Up to 6TB Memory (24 DIMM)
- RDMA optimized Configuration for low latency
- Redundant Power Supplies

System Specification

PROCESSOR SUPPORT
Dual Intel Xeon Scalable processors (Socket P) 3 UPI Support
CHIPSET
Intel® C627 chipset
MEMORY
24 DIMM, Up to 6TB ECC 3DS LRDIMM, 768GB ECC RDIMM
Available for EXPANSION
2x PCI-E 3.0 x16 & 1x PCI-E 3.0 x4
EXTERNAL I/O SUPPORT
Dual 10Gbase-T and Dedicated IPMI port
DRIVE BAYS
32 EDSFF-S NVME bays

POWER SUPPLY
Redundant 1600W Power Supplies, 80PLUS Titanium

**Due to the complexity of integration, this product is sold as a completely assembled system only.



BigTwin™ E1.S SuperServer



Front View

BigTwin E1.S

- 4 nodes in 2U multi-node server
- 10 E1.S EDSFF drives per node
- Plus 2 M.2 drives per node
- Dual 2nd Gen Intel® Xeon® Scalable processors per node
- Up to 6TB memory in 24 DIMMs per node
- Intel® Optane™ DC persistent memory support
- Performance optimized CPU:drive ratio



Rear

Performance Optimized



Thank You

For more information, visit www.supermicro.com or contact
marketing@supermicro.com



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