

Niagara/Supermicro Innovation Technologies

NEC-2015, Budva, Montenegro

LHC and GRID

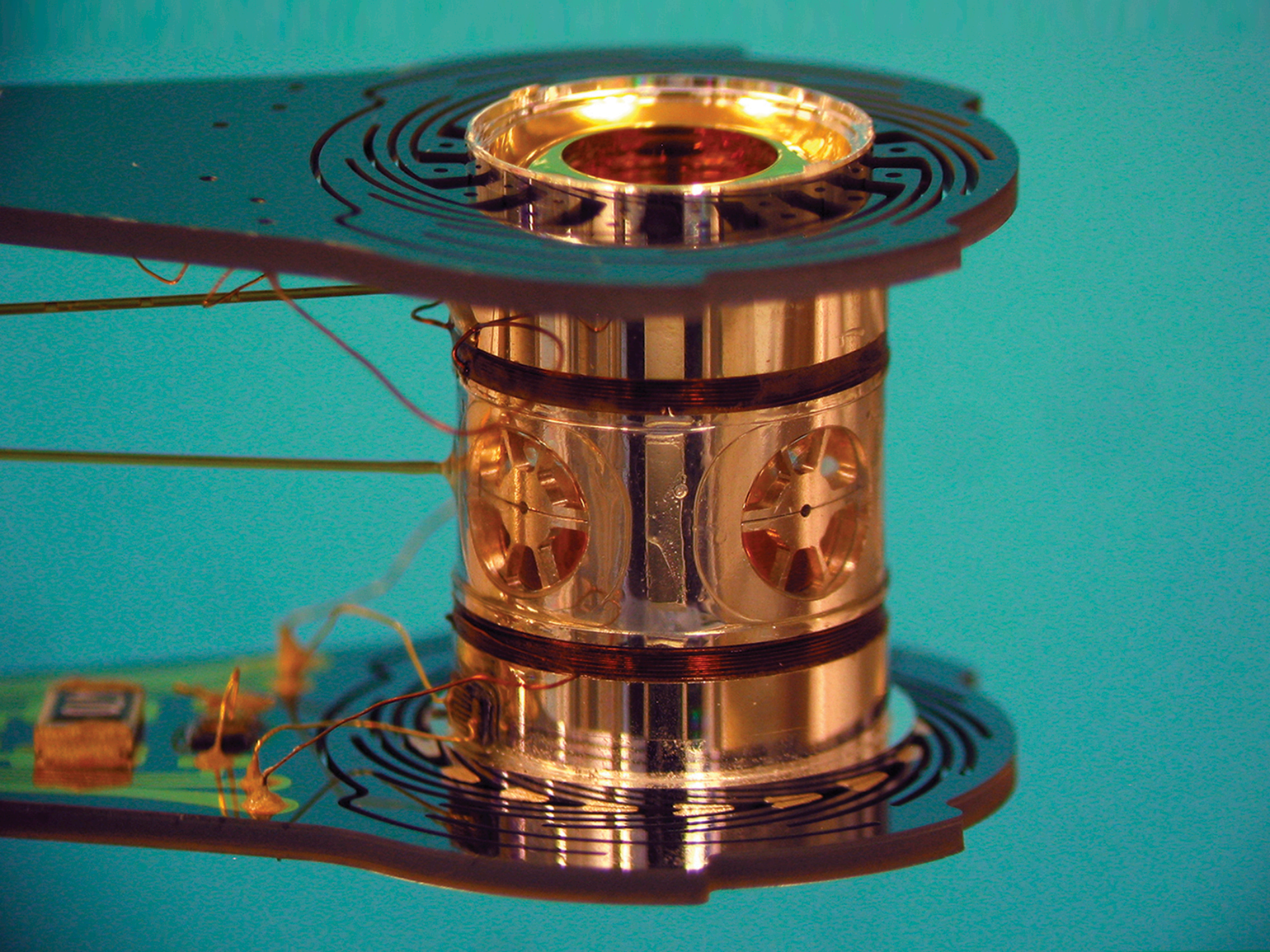


GRID technologies are one of the three main parts of Higgs boson CERN success - along with the LHC accelerator and detectors.

Russian segment of LHC GRID



- Server systems based on Twin, Twin2 и SuperBlade Supermicroplatforms
- Storage system with best price/performance value in the industry



FatTwin™ Product Line

FatTwin Rear I/O



*8x 3.5" hot swap HDD per
1U – Best IO bandwidth
4U with 4/8-node
SAS3 & NVMe*

FatTwin Front I/O



*16% less power
consumption
4U with 4/8-node
Front I/O cabling*

GPU/Phi Optimized Front I/O



*12x Double-Width
GPU/ Xeon Phi Cards
4U with 2/4-node
GPU solution*

Hadoop Front I/O



*12x 3.5" HDD per 1U
4U with 4-node
Lower cost storage
for Big Data*

MicroBlade and SuperBlade®

3U MicroBlade Enclosure

- **14 Xeon E5-2600 v3 DP nodes (0.2U)**
- **28/14 Xeon E3-1200 v5 UP nodes (0.1U/0.2U)**
- **28/14 Xeon D-1541 UP nodes (0.1/0.2U)**



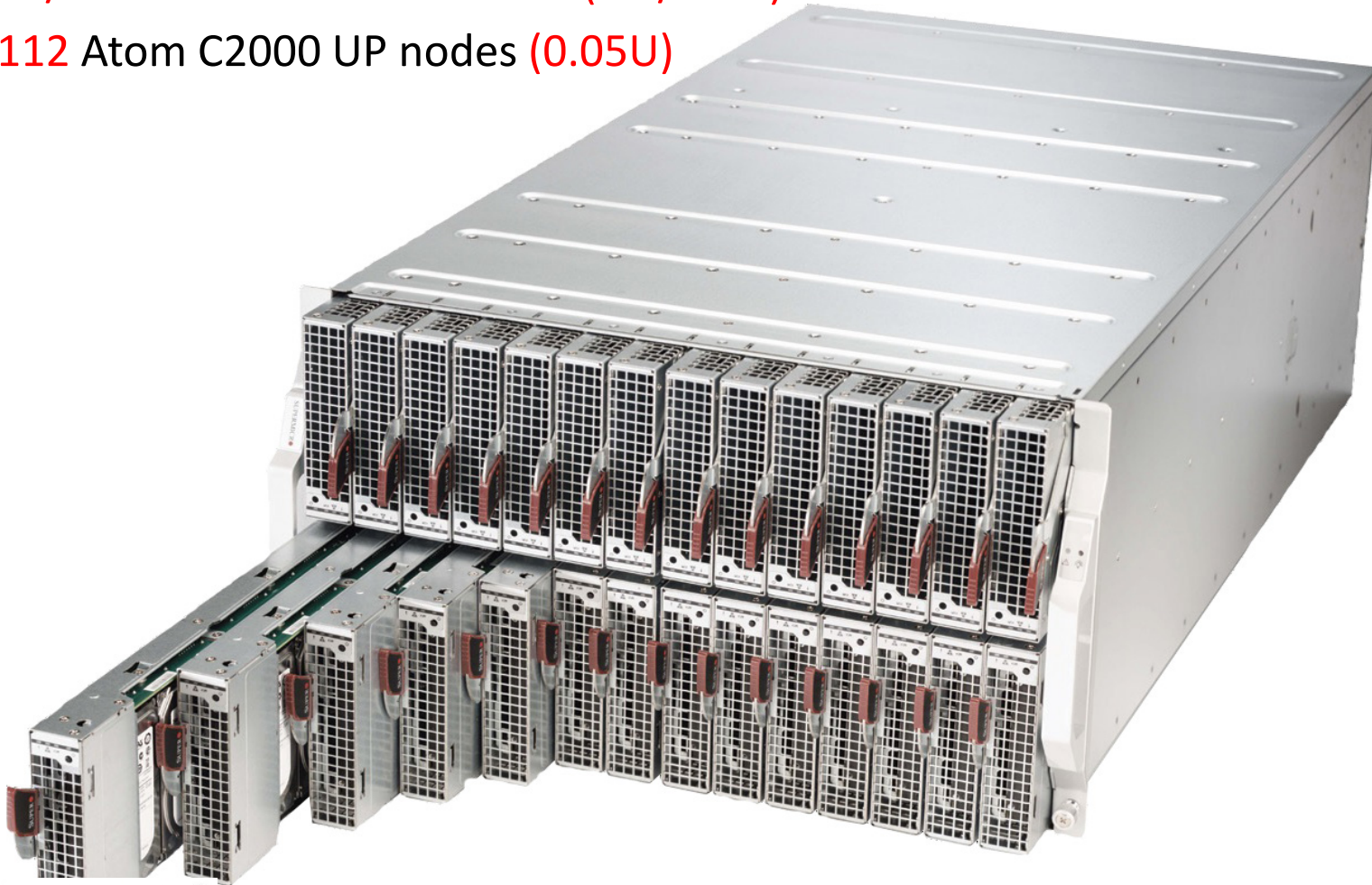
3U MicroBlade Enclosure

- Redundant 10G/1G switches
- Redundant power supplies
- Redundant chassis management modules
- **95% less cables than 1U solution**



6U MicroBlade Enclosure

- **28 Xeon E5-2600 v3 DP nodes (0.2U)**
- **56/28 Xeon D-1541 UP nodes (0.1/0.2U)**
- **112 Atom C2000 UP nodes (0.05U)**



6U MicroBlade Enclosure

- Redundant 10G/1G switches
- Redundant power supplies
- Redundant chassis management modules
- **99% less cables than 1U solution**



MicroBlade Servers

Atom C2000



X10 Xeon UP
E3-1200 v5/v4/v3, Xeon D



X10 Xeon DP
E5-2600 v3



14W

Compute Intensive

120W

SuperBlade®

10-Blade



SBI-7128R-C6N
SBI-7128RG-X/F/F2

14-Blade



SBI-7428R-C3N
SBI-7428R-T3N

20 Blades in 7U
SBE-720F/E/D



0.35U

10 Blades in 7U
SBE-710Q/E



14 Blades in 7U
SBE-714Q/E/D



0.5U

TwinBlade



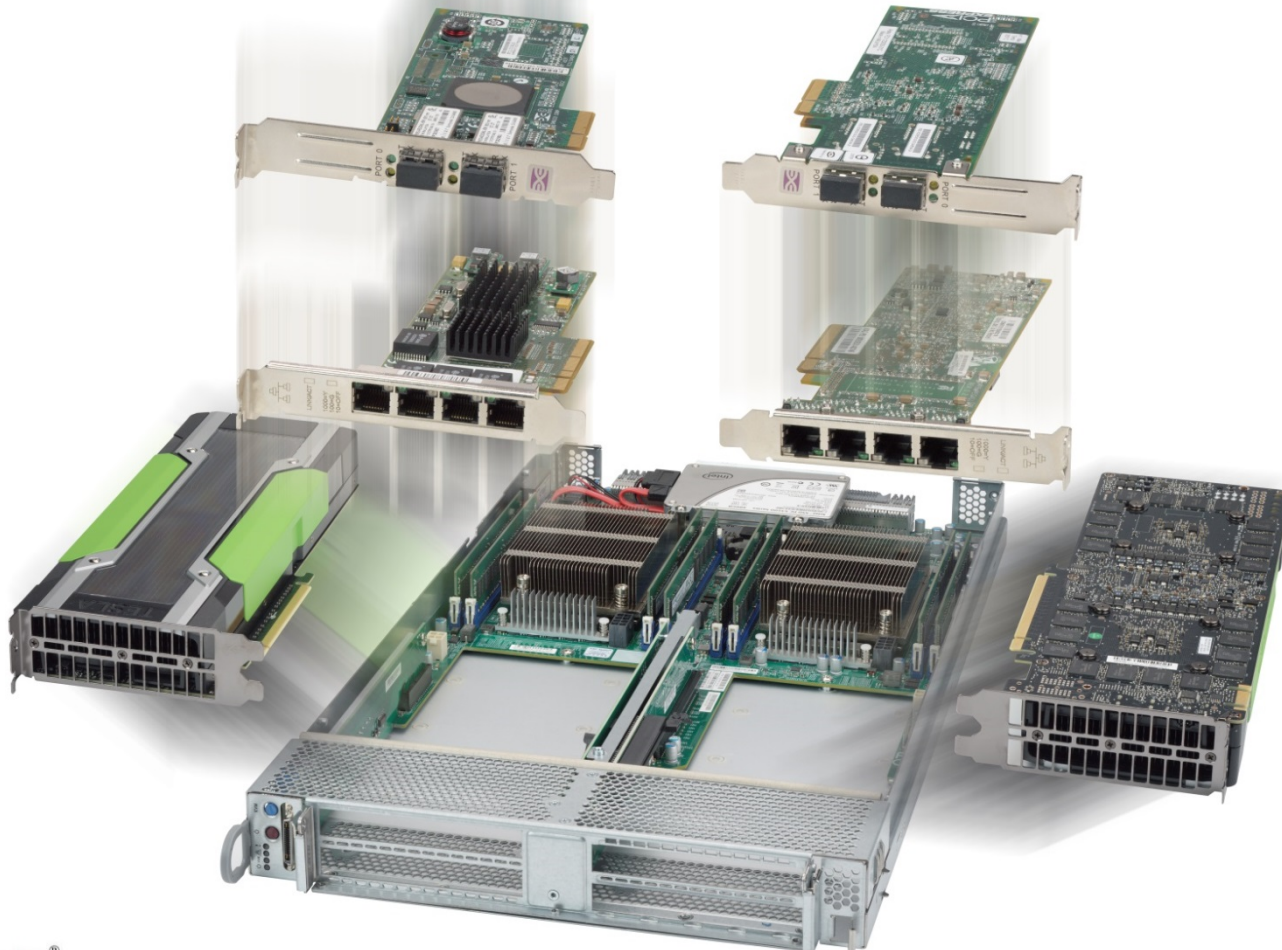
SBI-7228R-T2F
SBI-7228R-T2F2
SBI-7228R-T2X

GPU Blade: SBI-7128RG-**X/F/F2**

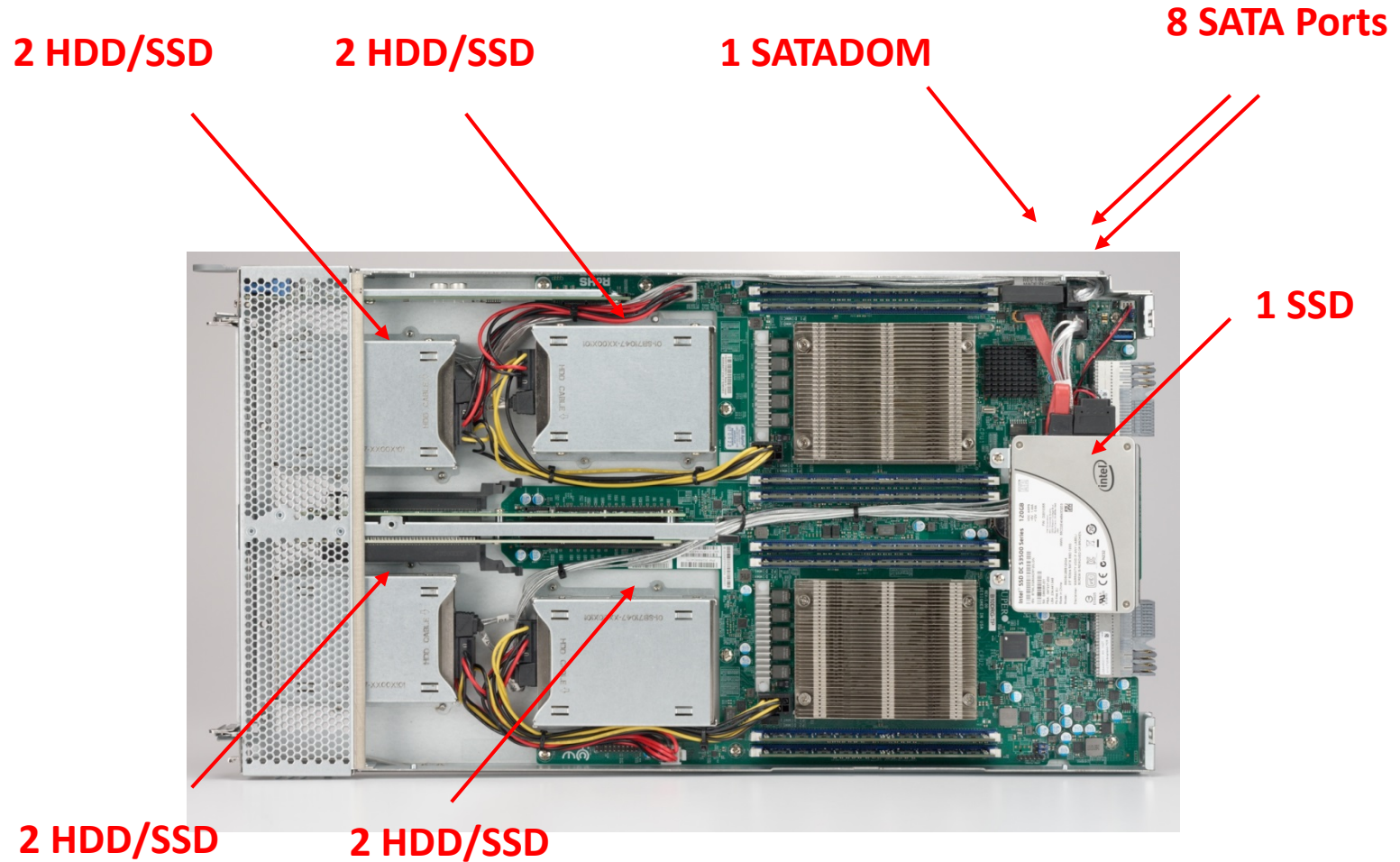


- 2 x Intel Xeon E5-2600 v3
- 2 x Nvidia K80/40/20/10 or Intel Xeon Phi
- 2-port 10G (-X), 1-port 56G IB (-F), 2-port 56G IB (-F2)
- Option to support up to 4x PCIe 3.0 x8 cards
- Option to support up to 8x 2.5" SATA3 SSD/HDD

4 PCIe Cards or 2 GPU/Xeon Phi



9 Drives + 1 SATADOM



TwinBlade: SBI-7228R-T2F/T2F2/T2X



Two Independent DP Nodes per Blade
(20 nodes/7U) - Each Node features:

- **2 x Intel E5-2600 v3**
- **Single-port 56Gb/s FDR IB HCA (T2F)**
- **Dual-port 56Gb/s FDR IB HCA (T2F2)**
- **Dual-port 10GbE NIC (T2X)**

Mix and Match in Same Enclosure



SBI-7228R-T2F (TwinBlade)



SBA-7222G-T2 (TwinBlade)



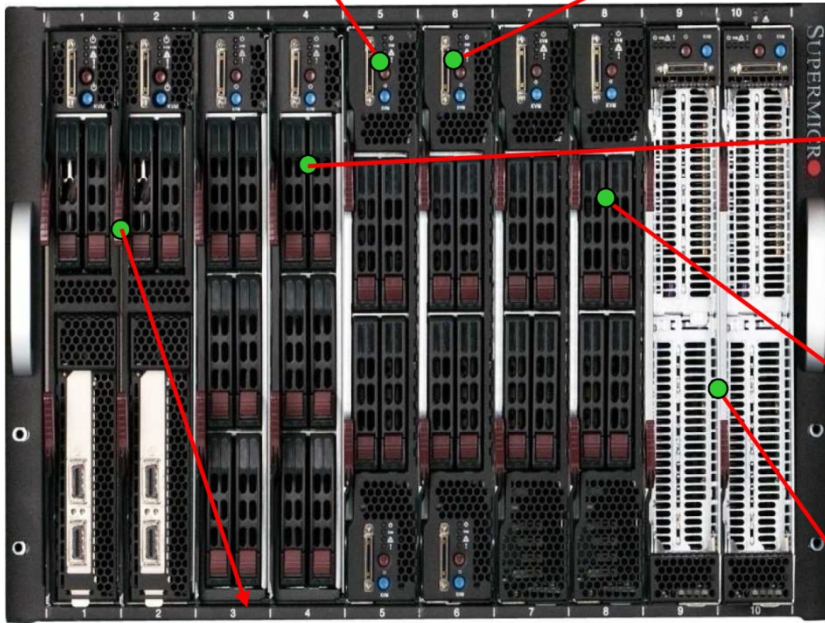
Storage Blade
SBI-7128R-C6



4-way Blade
SBI-7147R-S4F



GPU Blade
SBI-7127RG



PCIe Blade
SBI-7127R-SH

Summary

- Most flexible – 3U, 6U, 7U enclosures
- Highest density – 0.05U, 0.1U, 0.2U
- Highest performance – 160W CPU, NVMe, SAS3, ...
- Most energy efficient – Titanium PSU, optimized cooling
- Best TCO



Questions and Answers