hiro
MICRODATACENTERS

HIRO ZX3000

HPC Excellence Award
Data Center Innovation
ISC-17

ZX3000

MicroDataCenter
Solid State
2U, Standard 19"
Indirect Water Cooling
inlet 45°C (113°F)
outlet 55°C (131°F)
2+1 Red. Power Supply

64 SERVERS

Xeon-D 1543, ARM A72, PowerPC-64 T4240
FPGA Kintex Xilinx, GPU Xavier Nvidia

64TB SSD STORAGE

Option storage intensive ZX3000; 32 servers, 64TB SSD, 112TB NVMe

2 INTEGRATED TOP OF RACK SWITCHES

Each Switch: Uplink Switch 8x 40GE, Downlink 32x10GE.
Full Bisectional Bandwidth

EFFICIENT, HIGH DENSITY, VERSATILE HARDWARE FOR MODERN DATA CENTERS

Dense packed clusters of low power SOC's are the easy scalable and efficient server hardware for the growing parralel workloads in the modern data center. MicroDataCenter's high density not only save on Capital Costs requiring fewer Space, IT cabinets, rack power distribution units (PDUs); smaller fire detection and suppression systems; shorter fiber/copper cable lengths; and shorter electrical power feeders. Also a reduction of the Operational Costs are achieved through, hot water cooling, easy deployment, simple installation, less administration and maintenance of less and more reliable solid-state parts.

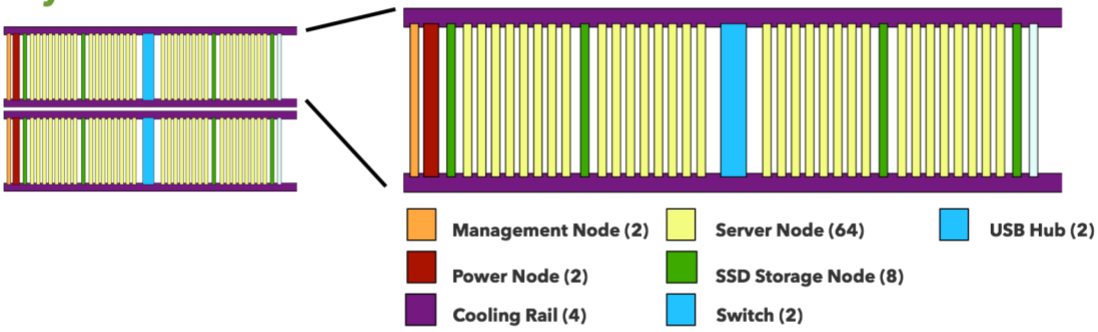
The key cost savings come from lower space occupancy, energy efficiency of the servers using low power SOC's, multiplying the workloads processed / Watt and the ability to re-use the server heat or cool with passive evaporation.

Our ZX3000 uses can be configured with Xeon-D, ARM, FPGA, GPU, low power SOC's delivering more workload/ Watt then traditional servers equipped with regular Server CPU's (Xeon E5, AMD). For example our Xeon-D processes minimum 2x more workload/ Watt then a traditional server equipped with a Xeon E3. Comparing the workload/ Watt of our Xeon-D, ARM, FPGA or GPU with the workload/ Watt of the Xeon E5, AMD, the multiple is much larger then 2.

hiro
MICRODATACENTERS

HIRO ZX3000 MicroDataCenter

Layout 2U 19" case



64 SERVERS, single platform & combinations

The ZX3000, 2U Microdatacenter carries 64 server nodes. The following server nodes are avialable:

Xeon-D 1543 (available Q2 2018): 8 Cores/ 12 Threads, 1.9GHz-2.5GHz turbo, 32 GB DDR4. Outperforms the Xeon-E3 and some of the lower end Xeon-E5's for applications using up to 4Gb/ Core. Unbeatable high performance/ Watt.

ARM A72: 8 Cores, 32GB DDR4, With the integrated DP-FPU, integrated Neon Vector Unit, large cache, high performance Cache Coherent Interconnect. For dense computing environments addressing applications that require lots of raw throughput and relatively simple code execution, the A72 could form the basis of a compelling solution.

PowerPC-64 T4240: 12 Cores/ 24 Threads, 1.667GHz, 32 GB DDR3, AltiVec® technology SIMD engine, dramatically boosting the performance of heavy math algorithms with DSP-like performance.

FPGA Kintex Xilinx: Perfectly balance of FPGA fabric clock rate performance versus power consumption, high-speed I/O, capacity, security, and reliability.

GPU Xavier Nvidia (available Q4 2018): Volta GPU Architecture with 8 Core CPU, computer vision accelarator, capable of 20 TOPS (trillion operations per second) of performance, while consuming only 20 watts of power.

Available combinations in 2U Case, accumulated 42U Rack:

	2U Case						42U Rack including inrack hot water heat exchange					
XEON-D 1543/ ARM-A-72/ PowerPC-64 T4240	64	63	32	32			1216	1197	608	608		
FPGA Kintex Xilinx		1		32	64			19		608	1216	
GPU Xavier Nvidia						32						608
Additional 4TB NVMe storage			32			32			608			608

TOR SWITCHES, case and rack architecture