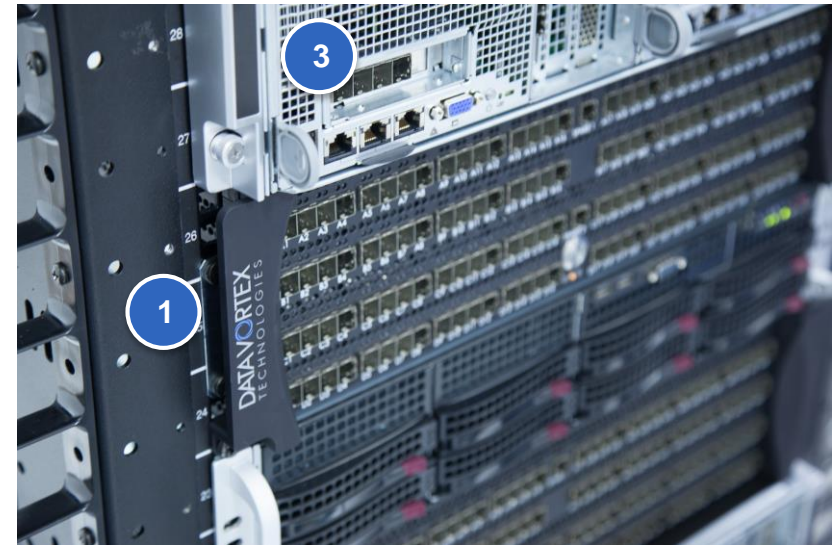# DV206

An Innovative Parallel Computing Network. A Revolutionary HPC System.

DV206 Highlighted Features

Data Vortex Network comprising:

1 2 Data Vortex Switch Boxes providing
16 Radix 64 Data Vortex Switches (8 per box)

2 64 Data Vortex Interface Cards (VICs)

3 Commodity Intel-based Servers:
64 compute servers and 1 master server

The DV206 is an advanced computing system with an integrated interconnect and software technology that actually embraces processor-to-processor communication. Each system contains the revolutionary, patent-protected Data Vortex interconnect technologies: the Data Vortex Switch Boxes and the Vortex Interface Controllers (VICs).
The Data Vortex Network is the fastest fine-grained, congestion-free gather-scatter system in the world.

Feature	DV206 Technical Specifications

Data Vortex Network	**2 Data Vortex Switch Boxes**
	    8 Altera B6 Stratix V FPGAs per switch box[1]
	64 Data Vortex Interface Cards (VICs) each connected to all 16 networks[2]
	    4 QDR SRAM chips totaling 64 MB per VIC
	    1 Altera A7 Stratix V FPGA per VIC
	256 mini SAS HD cables
	    each providing four 6.4Gb/sec bi-directional SERDES channels

Other Components	
1 Master Server	Supermicro 5028R WR 2u , 128GB ddr4, 1 1TB hard drive
64 System Servers	**8 Supermicro F618R2-RT+ FatTwin chassis with 8 servers ea** Base Configuration 64 processors with 8TB memory and 64 TB storage

Each System Server	Processors (per server)	1 Intel® Xeon® Processor E5-1630 v3 (10M Cache, 3.70 GHz)
	Memory (per server)	128GB DDR4 DRAM
	Disk Drives (per server)	1 1TB 2.5" disk drive
	I/O Slots (per server)	1 PCIe 3.0 x8 half-height, half-length, low-profile slot for VIC card
	I/O Ports (per server)	1 FDR InfiniBand port/server 1 IPMI Ethernet and 1 Gbps Ethernet

Management, I/O, and Legacy Application Interconnects	4 x 36-port Ethernet switches - 1U each (can be placed end-to-end to save space) 130 Ethernet cables
	2 x 36-port FDR InfiniBand switches - 1U each, 68 InfiniBand cables
Form Factor	1 cabinet with power strips 93" high, 40" wide, 48" deep

[1] Each of theses 16 FPGA chips is programmed to operate as a self routing radix 64 switch chip for carrying packets with 64-bit headers and 64-bit payloads.

[2] The FPGA chip is programmed to perform the functions of a standard network controller. The SRAM can be used as a global computer resource to offload data movement and organization tasks from the commodity processors.