VECTOR DATA™

Forge *c7000* Blade Server

PRODUCT OVERVIEW

Based on a modular design, the Vector Data Forge c7000 provides the foundation for future expansion while reducing the amount of time and money that telecommunication companies spend on IT.

Forge c7000 architectures are cost-savvy, change-ready, energy-thrifty, and time-smart. With the introduction of the c7000 enclosure and BL460c server blade, the same benefits are now available for network equipment providers (NEPs) and communication service providers. Designed for the specific requirements of this industry, Forge c7000 offers DC power, long lifecycles, NEBS and ETSI certification, high reliability, enhanced support for OpenHPI, and carrier-grade Linux at a fraction of the cost of traditional systems.

A Forge c7000 enclosure holds up to 16 server and/or storage blades plus redundant network and storage switches. It includes a shared, multi-terabit high-speed mid-plane for wire-once connectivity of server blades to network and shared storage. Power is delivered through a pooled power backplane that ensures the full capacity of the redundant hot-plug power supplies is available to all blades.

Perfect for NFV

- Latest OpenStack Release-based: Based on OpenStack Kilo and Helion OpenStack 2.0 Enterprise Edition
- Multi-region support for choice of hypervisors: KVM, ESXi, or Baremetal region
- SDN: Integration with HPE Distributed Cloud Networking (DCN), enabling: policy driven network automation, DPDK-accelerated virtual switching,
- Network function chaining both Inter-region and across datacenters, support for 3rd party Load Balancer (F5), Firewall (Palo Alto Networks), IPAM (Infoblox)
- Headless topology: Easy expansion as KVM compute hosts are connected to the Helion OpenStack Carrier Grade controller over WAN in a micro-data center environment
- Increased scalability: Up to 50 KVM hosts
- Deployment flexibility: Helion OpenStack Carrier Grade 2.0 can be deployed as a VIM and NFVI solution on top of industry standard hardware as well as in the form of a hardware-software integrated solution with the NFV System product

Each c7000 enclosure is built with the following functions:

- Up to 16 half-height and/or up to 8 full-height server blades and/or storage blades per enclosure.
- Up to 4 different interconnect fabrics (Ethernet, FC) supported simultaneously within the enclosure.
- 48V DC power subsystem.
- Thermal Logic technology for lower power consumption and airflow.
- Ten (10) Active Cool 200 fans required for Telco operation
- Redundant hot-plug cooling, redundant hot-plug power supplies, redundant connections, redundant interconnect modules, optional redundant Onboard Administrator management modules.
- Lowest cost of ownership

Forge c7000 Enclosure Benefits:

- Scalable: Management and network interconnects extend scalability beyond a single enclosure, allowing resources to be pooled and shared across multiple enclosures.
- Investment protection: Accommodates multiple server and network designs in one enclosure.
- Lower costs, power consumption, airflow requirements per server, in comparison to rack-mounted servers
- Perfect for NFV and SDN: Supports VMware®, OpenStack, and other leading virtualization platforms

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Enclosure — Forge c7000 Carrier-Grade Enclosure

Dimensions	Height: 10U, 17.4 in. (442 mm) Width: 17.5 in. (445 mm) Depth: 36.7 in. (933 mm)
Enclosure Weight	Unboxed: 450 lb Shipping: 493 lb
Rack Size	40 in. (1000 mm)
Backplane Interface	(512) 10 GE 2–8 GE Fibre Channel 2–4 custom mezzanine per blade
CPU Payload Slots	16 half-height
Cooling	400+ watts per half-height bay
DC Input Module	Replaces AC input module Connects power supplies to input feeds
DC Power Supply	High-efficiency, –48 V input, 12 V/2250 W output power supply accommodates full –36 V to –72 V input range ..Rated input current per power supply: 75 A ..Rated input power per power supply: 2700 W ..Max input current per line cord: 75 A ..Max input power per line cord: 2700 W ..Operating temperature range: –5° to 55° C ..Input hold up: 0.5 ms ..RoHS compliance: 6 of 6 Replaces AC-input power supply and has same rated output voltage and power

Interconnects — Ethernet and Fibre Channel Virtual Connect

System	16x internal 1GbE links 8x external 1GbE uplinks 2x external 10GbE CX-4 uplinks 1x 10GbE internal cross-connect
Ethernet L2 Features/Protocols	Non-blocking Rapid Spanning Tree and Multiple Spanning Tree (802.1s/w) Link aggregation (802.3ad) VLANs, GVRP (802.1q) Priority, 4 queues (802.1p)
Management Features	HTTPS HTTP; supports PXE, WOL, VLAN pass-through, NIC teaming Integrated with onboard administrator
Ethernet Level 3–7 Features	Interconnect device, not a formal L2/L3 switch

Server blade — BL460c Server Blade

Processors	2 Xeon E5-2600 Sandy Bridge-EP processors
Memory	16 DDR3 DIMMs RDIMM, LVDIMM, LRDIMM
Integrated Management	Integrated Lights Out 4 (iLO 4); embedded OS install assistance; embedded firmware management; hardware-based power capping
I/O Slots	Two PCIe Gen-3 (one x8, one x16)
Embedded Network Ports	Daughtercard LOM with up to two 10Gb CNA ports
Density	16 blades in 10U c7000

Seismic Rack

Dimensions	Height: 36U, 72 in. (total) Seismic kit—1U, for each enclosure in seismic rack Width: 26.7 in (67.8 cm), including side panels Depth: 39.4 in (100.0 cm)
Weight	1200 lb (544.3 kg) payload limit 500 lb (226.8 kg) approximate dry weigh
c7000 Enclosures per Cabinet	2 maximum
Mounting Rails Relocated	3.0 in. spacing between front mounting rails and exterior skin of front door; relocated for c7000
Seismic Anchor	Secured with 8 anchor bolts, for concrete floor or seismic-rated raised floor

NEBS Certification

Requirements Met	NEBS NRTL Certified to NEBS Level-3 Criteria (GR-63-CORE, GR-1089-CORE)

For more information, please contact your Vector Data account manager.