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Falconwitch-
New Era of Composable Infrastructure (RSD)

In today dynamic business environment, composable IT infrastructure helps you create a business agility that is critical to your success. Falconwitch allows you to allocate the PCIe devices to dynamically configure your systems to create your own composable IT infrastructure which meet your diverse application needs. Falconwitch plays the key role in a rack–scale disaggregation to achieve hardware composability.

Composable Systems Meet Varied, Evolving Customer Needs

Composable systems make a large collection of IO and acceleration devices available to multiple compute hosts. Individual systems are dynamically configured to users' specifications. These systems may provide high–performance, big data volume or high throughput configuration. Users receive isolated, precisely tailored and cost effective systems which can evolve for changing workload or business needs.

Dynamic Resources Allocation To Boost Datacenter Utilization Rate

Falconwitch provides the ability to move a PCIe resource from server to server in a rack quickly, seamlessly and easily. The ability to rapidly deploy the PCIe resources means that an enterprise doesn't need to acquire equipment specifically for peak utilization requirements, but rather flex the environment during times when the peak need is present. With the right provisioning of resources, capital expenses can be reduced with the initial purchase, as well as ongoing hardware purchases. Studies have shown this can drive 100–300 percent greater utilization for virtualized workloads and 200–600 percent greater utilization for configured IT resources.
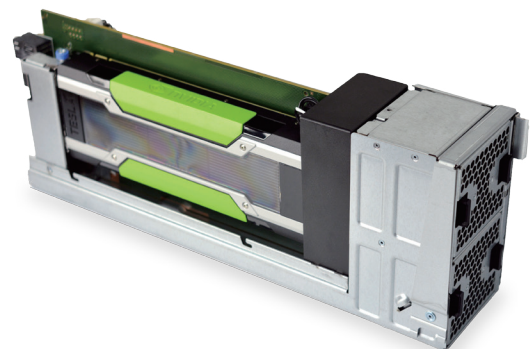
Optimize The Gpu Peer-To-Peer Memory Copies

Falconwitch integrates up to 16x GPGPU as one powerful HPC solution. In order to get the most of GPU horse power, the peer–to–peer has been

Highlights -

Performance

- Create ratio-optimized combination of subsystems tuned for the application

- Dynamically re-configure the resource pools for purpose-built systems
- Reduce total cost of ownership (TCO) by improving PCIe resource utilization

- Delivers sub-microsecond response time to accelerate critical applications and achieve competitive advantages

- Optimize and design for GPU peer-to-peer communication and scales up to 16 GPUs for a single instance

- Provide significant MR-IOV performance and boost the utilization rate and bandwidth

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implemented across different GPUs. Applications can avoid unnecessary system memory copies and transfer the data among GPGPU and NVMe to eliminate CPU bandwidth and latency bottleneck.

Ultra San Storage Up To 30M Iops And 120Gb/S

Want sub-microsecond response time and 30M IOPS data service for your dynamic data? Falconwitch integrates 128 NVMe SSD and hundreds of HDs in one powerful storage solution to address the need of hot, warm, and cold data, and of placement on the most suitable storage layer.

Mr-Iov Resources Sharing Among Hosts To Fully Utilize The Bandwidth, Deploy The Vf As Required And Reduce The Latency

Falconwitch can make SR-IOV-ready PCIe card work as MR-IOV card to even boost the utilization and lower latency. With direct access I/O, SR-IOV capable adapters running in shared mode among all connected host allow the operating system to directly access the slice of the adapter that has been assigned to its partition, so there is no control or data flow through the hypervisor. From the partition perspective, the adapter appears to be physical I/O.

Software Feature	
Features	Host-device port configuration MRIOV device sharing Non-SROIV device connection RAID controller configuration
Management Interface	CLI • Restful API • Web GUI
Supported Host OS	Linux 3.17 or above
Supported Browser	Google Chrome Microsoft IE
Web-Administration	Smart fan control Email notification upon events Temperature and fan monitor Firmware live update(Need to be reboot) Comprehensive logs (Events & Connection)
Optics and Cables	10G-DWDM, 10G Active Twinax, 100 TX 1G SX/LX/TX

Hardware Specification	
Model	Falconwitch (3 year warranty)
mCPU	Intel x86 SOC
PCIe Lane Configuration	Total 288 PCIe Gen3 Lane **Default configuration:** • Front: 8 x16 lanes for NVMe SSD, GPGPU, FPGA • Back: 8 x8 lanes and 6 x16 lanes for hosts, NIC, RAID, NVMe, and HBA **Flexibility configuration (only available in the back side):** • Back: 1 x16 can be split to 2 x8; 2 x8 can be combined to 1 x16
Front Super Module	GPU module: two KNL per module or two 3"X5" GPGPU each module
	NVMe module: 14 NMVe SSD in each module
Back Host/ Device mixed	Front: eight x16 FHFL, double width Back: six x16 FHHL, single width; eight x8 HFHL, single width
Host Connection	x16 host: CDFP x8 host: 2x miniSAS HD
Power	3 + 3 High efficiency redundant hot-plug 4800W/6600W
Fans	(8) hot-plug system fans
Dimensions	H x W x D (inch) 7 x 19" x 36" H x W x D (mm) 174.5 x 446 x 928
LED Indicators	System Status, Fan, Device tray, host tray
Weight	80 kgw

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ABOUT INVENTEC
Inventec Enterprise Business Group (EBG) was established in 1998 and has been focusing on the design and manufacturing of server systems. Inventec EBG is the key server system supplier of the global branding clients.

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