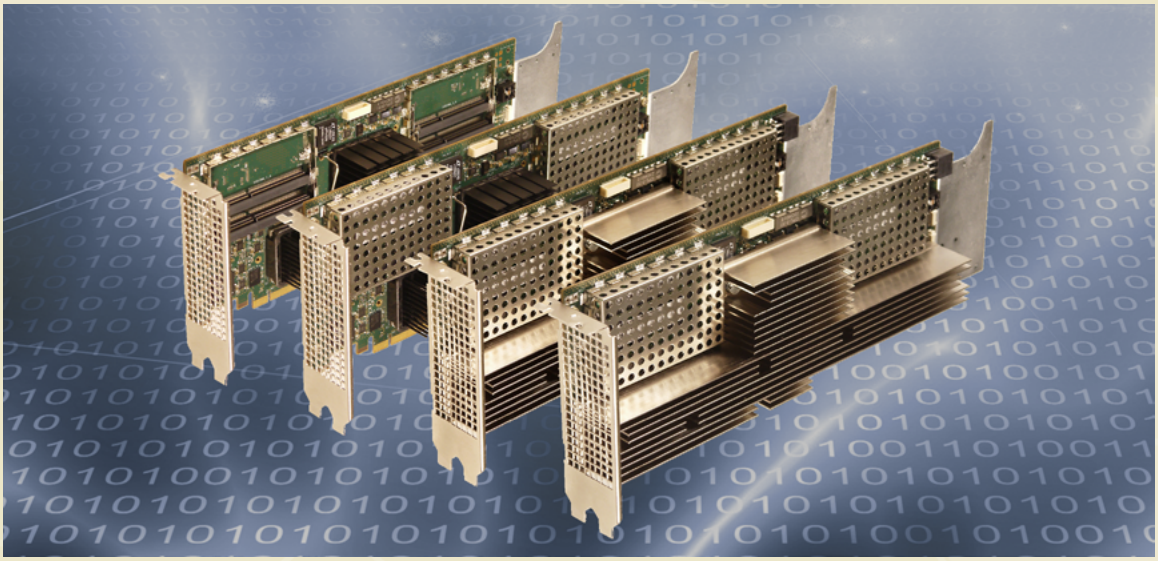
Convey Wolverine® Application Accelerator

CONVEY COMPUTER™



The Convey Wolverine Application Accelerator is a PCIe Express form factor coprocessor that provides application specific hardware acceleration of key algorithms. Based on Convey's hybrid-core technology, the Convey Wolverine coprocessor is perfect for accelerating applications in life sciences, big data, security, and other HPC-related areas.

The coprocessor incorporates the latest high density Xilinx® FPGAs and is ideal for applications requiring very high compute capability and large, high bandwidth memory. FPGAs are known for providing substantially better performance per watt than conventional servers, and can accelerate applications many tens of times over traditional off-the-shelf processors.

The Convey Wolverine Application Accelerator marries the performance and power savings of FPGAs with the programmability and standardization of an off-the-shelf server. A Wolverine card occupies a full-length double width PCIe slot, and will fit in most servers that support high performance accelerator cards. Logically it shares the virtual address space of the host through Convey's unique Globally Shared Virtual Memory (GSVM). GSVM reduces development efforts by removing the "abstractness" and programming complexities of treating the PCIe card as an I/O device.

The World's First Hybrid-core Computer

The coprocessor is available in multiple variants, with a choice of FPGA densities, on-board memory, and power/cooling options to meet specific application requirements.

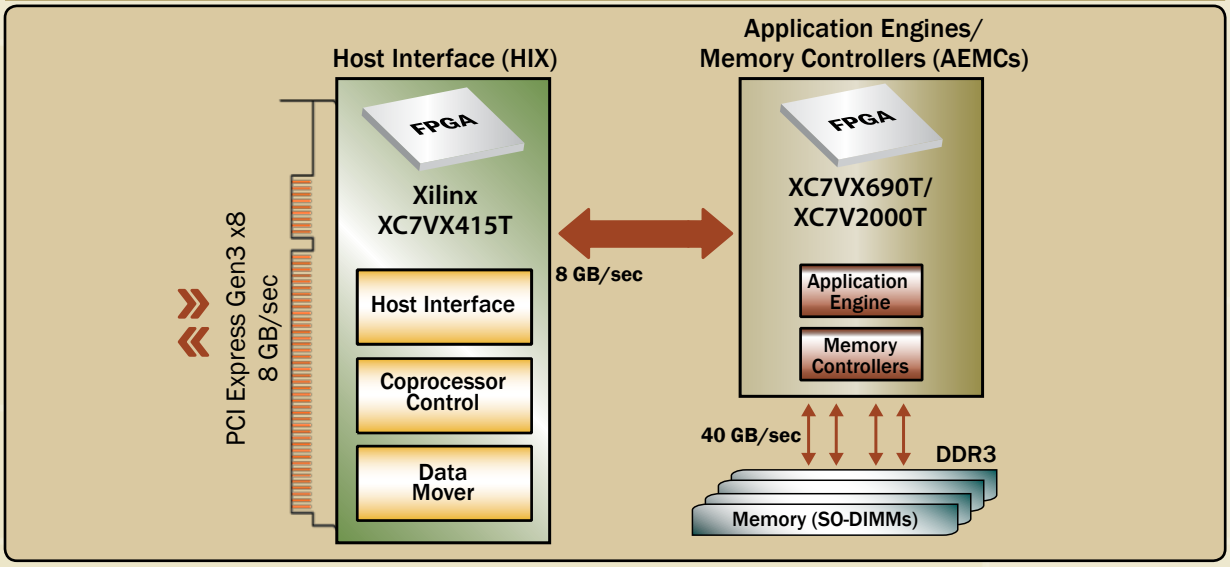
FEATURES

- Ease of integration—Standard PCIe interface for compatibility and high-bandwidth data transfers.
- Globally Shared Virtual Memory—Commodity host x86 processors and the on-board FPGAs share the same virtual address space, simplifying software and hardware development efforts.
- Powerful, state-of-the art FPGA—The Wolverine card supports a Xilinx Virtex-7 Application Engine FPGA, with up to 2M logic cells and 46Mbit of block RAM.
- High capacity, high-bandwidth memory subsystem—Four 1333MHz SO-DIMMs (with ECC support) providing up to 64GB of memory[1] and 40 GB/sec of bandwidth.
- Convey Personality Development Toolset—a suite of tools to facilitate development of applications that leverage the ease of programming industry-standard processors with the performance of FPGAs.

Convey Wolverine Application Accelerators

The Convey Wolverine Application Accelerator implements the Convey hybrid-core architecture in a compact, high-performance, industry-standard package

Convey Wolverine Architecture



Characteristics

Physical	Full height, dual width PCIe card PCIe Gen3 x16 physically, x8 electrically
Memory Slots and Type	(4) PC3-10600 ECC SO-DIMM slots
Management	ECC protection for on-board memory Thermal monitoring and overtemp protection Application reload without rebooting
Application Development	Convey Personality Development Toolset compatible with Xilinx® design flows

Specifications

Model	FPGAs	Memory		Power (Maximum)
		On-board	Bandwidth	
WX690NM	Xilinx Virtex-7 XC7VX690T	0 GB	40 GB/s	75W
WX690	Xilinx Virtex-7 XC7VX690T	16/32/64 GB[1]	40 GB/s	75W
WX690SP	Xilinx Virtex-7 XC7VX690T	16/32/64 GB[1]	40 GB/s	150W[2]
WX2000	Xilinx Virtex-7 XC7V2000T	16/32/64 GB[1]	40 GB/s	150W[2]

[1] Requires 16GB SO-DIMMs, available 2Q 2015
[2] Requires 6-pin auxiliary power

The World's First Hybrid-core Computer

CONVEY COMPUTER CORPORATION • 1302 E. COLLINS BOULEVARD, RICHARDSON, TEXAS 75081
PHONE: 214.666.6024 • TOLL FREE: 866.338.1768 • WWW.CONVEYCOMPUTER.COM