The Mitrion Accelerated Computing Platform

mitrionics

The Mitrion Accelerated Computing Platform unleashes the massive performance benefits of hardware application acceleration. With Mitrion, the parts of your application that require most performance are executed in Field Programmable Gate Array (FPGA) hardware by a tailor-made processor that has been adapted perfectly to the code it is running. The result is typically 10-100 times faster execution, compared to today's fastest CPUs and a reduction of about 90% in power consumption.

Bundled Solutions

Mitrionics can supply a number of bundled solutions that combine state-of-the-art hardware from our partners with the Mitrion SDK and licenses for the Mitrion Virtual Processor.

CONVEY computer™

Convey HC-1

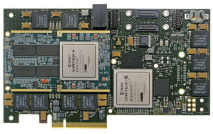
Hybrid-core computing, Convey's revolutionary server architecture, combines the familiar world of x86 computing with hardware-based, application-specific instructions to accelerate HPC applications.

GiDEL

GiDEL PROCStar III 260E-4A
GiDEL PROCe III 340-B

These boards feature some of the largest FPGAs available, and the PCIe interfaces make them easy to add to the server of your choice.

Nallatech
a subsidiary of Interconnect Systems Inc.



Nallatech PCIe-DATA (MVP210)

This board features a Xilinx Virtex-4 LX160-11 user FPGA directly coupled to multiple independent banks of SDRAM and SRAM memory providing a versatile, high performance compute node tightly integrated to the host computer via an 8-lane PCI Express connection.

XtremeData, Inc.™

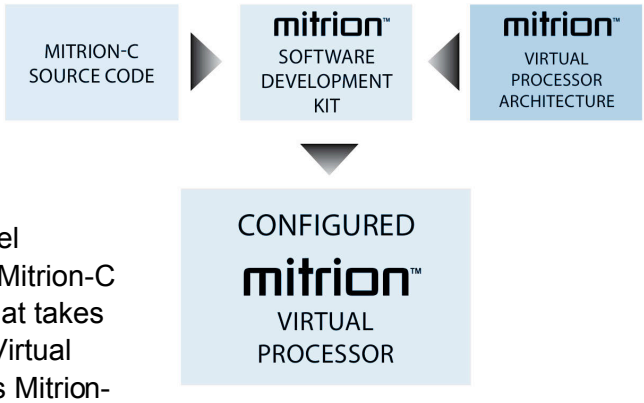
XtremeData XD2000i (MVP622)

The XD2000i in-socket accelerator uses the motherboard's existing CPU infrastructure to create a full-featured environment for FPGA coprocessor functions. The high-bandwidth, low-latency FSB link between the XD2000i and the CPU enables tightly-coupled FPGA acceleration of x86 applications..

In addition to the systems and boards above, the Mitrion Accelerated Computing Platform supports Nallatech H101 boards, Rosta RSP-517 and RSP-523 and Scan Engineering Telecom SAMC-707.

The Mitrion Accelerated Computing Platform

The core of the Mitrion Platform is the Mitrion Virtual Processor, a fine-grained, massively parallel, configurable soft-core processor. Software written in the Mitrion-C programming language is compiled into a configuration of the processor. The configured processor is then downloaded and run in the target FPGA. The Mitrion Virtual Processor completely separates the software from the FPGA hardware it is running on. This allows a true high-level software approach to implementing computational algorithms on FPGAs. Compared to VHDL or C-based Electronic System Level (ESL) design tools, this means development and implementation at a fraction of the cost and time.



The exceptional application processing acceleration is achieved through massively parallel execution at the most fine grained level of the algorithm. This is made possible by the unique features of the Mitrion Virtual Processor architecture.

The Mitrion-C programming language is an implicitly parallel programming language with syntax very similar to C. With Mitrion-C it is easy for programmers to learn how to write software that takes advantage of all the parallelism available from the Mitrion Virtual Processor. The Mitrion Software Development Kit compiles Mitrion-C programs and configures a Mitrion Virtual Processor that is optimized to the chosen FPGA platform, allowing processing resources to be allocated where they are most beneficial for the specific algorithm. It also provides a graphical simulator that helps the programmer find performance bottlenecks in the algorithm.

Let Mitrionics do the Work!
Mitrionics team of software acceleration experts are ready to support you in ever step of making your software run faster with:

- Pre-studies
- Proof-of-concept development
- Application development
- Integration with partner platforms
- Complete hybrid computing systems sales and support
- On-site and on-line training

Find out more at www.mitrionics.com

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