

Silicon Xpresso™

Designing with the Web

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Last September, Xilinx announced a new framework for hardware development called Silicon Xpresso. As its name implies, this framework brings the World Wide Web and Java® into the hardware development system.

The Web today is already a powerful tool for the programmable logic designer. The technical nature and time to market pressure of hardware design requires immediate access to up-to-date information. All the semiconductor vendors invest significant resources in creating and maintaining these informational websites. And with this invest-

ment, their customers receive significant returns.

These websites contain application notes, solutions databases, updates to software releases, and in-depth technical descriptions of the products and their architectures. Some of these sites, such as WebLINX from Xilinx, even provide

a large array of downloadable IP in the form of parameterizable and predefined cores. The usage of pre-existing verified cores as well as the automatic generation of new cores has become an invaluable time saver for programmable logic development. Thus, today's Web has become the informational infrastructure of choice of the hardware designer.

Leveraging the existence of this infrastructure and the acceptance of the powerful Java language as a standard development environment for Web-based tools and applications, Xilinx has initiated a new paradigm where the Web is also used as an interactive component in the development and design of applications. You can now use the Web for development, debug, and deployment as well

as making the Web an integral part of your developed end-product. Furthermore, this means that your customer, the end user, can take advantage of this environment for field upgrades, deployment, and real-time usage of your products.

At this time, the first two phases of Silicon Xpresso have been announced. Phase 1, provides new technology in form of two new products: WebFitter and a Java API for Boundary Scan. Phase 2, is a significant enhancement of our existing technologies on the Web and in our existing development tools.

WebFitter

WebFitter is a design evaluation tool that allows you to quickly and efficiently evaluate your CPLD designs using the latest revision of our fitter software. You need not learn any software details or use any of your computing power to evaluate your design.

Typically, you need to go through many steps to evaluate a PLD design. Valuable time is spent loading, configuring, and learning design software before the design can be evaluated. You also need to make sure you have the latest software from the PLD vendor and then use your own computer to evaluate the design.

WebFitter makes it much easier to evaluate your design in silicon, and designs run fast over the network. WebFitter eliminates the need for licenses, and software CDs, freeing system time for other tasks. WebFitter is easy to use; you simply register, and submit your design. Then you receive a return email pointing to your data and analysis reports. You can select files that specify the pin-to-pin delays, mapping information, and the resulting pinout. A JEDEC Programming File can also be downloaded for use with the Xilinx



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JTAG Programmer Software (and download cable) to program the Xilinx device. If an error occurs, you can gather information from the log files. You can download a zipped version of all the files, and you can choose to save or delete the design once it is completed.

Java API For Boundary Scan

The proposed Sun Microsystems Java API for Boundary Scan devices allows complete support of all JTAG and JTAG-based ISP operations for all IEEE 1149.1-compliant (JTAG) devices. Because the API is Java based it also facilitates access to this functionality over the Internet. This enabling technology then provides the framework for you to develop and deploy systems based on any Boundary Scan programmable logic device.

The Java API for Boundary Scan provides you with cross-product, multi-platform support for in-system programming, test, and debug. It takes advantage of the write once/run anywhere feature of Java and provides complete support of Boundary Scan through the entire product life cycle (prototyping, manufacturing, and field upgrade).

Currently each PLD (or other Boundary Scan product) vendor writes a separate format stimulus file for each device which requires separate translators and compilers for each platform. Having more than one type of device on a board means that you must integrate all translators and compilers together in one chain, and call separate routines. Supporting all devices and platforms is an arduous task. Any changes or additions must be painstakingly "edited in" every time a device is added or a change is made.

The Java API for Boundary Scan solution is simple and easy to use across all platforms and can seamlessly incorporate PLDs from different vendors. The write once/run anywhere feature ensures that new parts can easily be integrated into the JTAG

environment, simplifying the programming flow and setting the stage for you to easily program and test multiple vendors' devices on the same board. You need not re-write code for separate translators and compilers every time a new device is introduced into the environment. In addition, because of the rich set of existing Java reference materials and development tools, systems incorporating the Java API for Boundary Scan can be quickly developed, debugged, and deployed.

The use of Java's rich set of existing class libraries enables tight integration of hardware subsystems in very powerful ways. This can facilitate the development of systems that interact with one another remotely, to re-program the system PLD's, allowing you to incorporate new functionality on-demand.

Web-Enabled Design Software

In the current release of the Foundation Series 1.5 and the upcoming release of the Alliance Series 1.5i, we have added a direct connection from the Project Manager and Design Manager to our website. This direct connection (PC only for now) means immediate access to the latest Xilinx technical information as well as CoreLINUX where valuable and updated IP can be downloaded.

The Future of Silicon Xpresso

Silicon Xpresso is designed to provide increased benefits to you and your customers. By providing enabling technologies that are Web intelligent we are providing not only the environment for design but also the environment for deployment and usage. This will enable you to provide more flexible applications in a broader spectrum of markets. ❧

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FOR MORE INFORMATION, CONTACT:

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