Embedded Processing Application Notes

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In this section, we'll break out excerpts from Xilinx® application notes and provide information on accessing the complete articles.

XAPP730 – Getting Started with µClinux on the MicroBlaze Processor

By Raj Nagarajan and Vasanth Asokan

This application note is an introduction to µClinux on the MicroBlaze™ processor using Xilinx Platform Studio and µClinux tools. It is a detailed tutorial for building MicroBlaze hardware to run µClinux, for executing the kernel, and for using advanced features such as application debugging. The target board for this application note is the Xilinx ML403 development board.

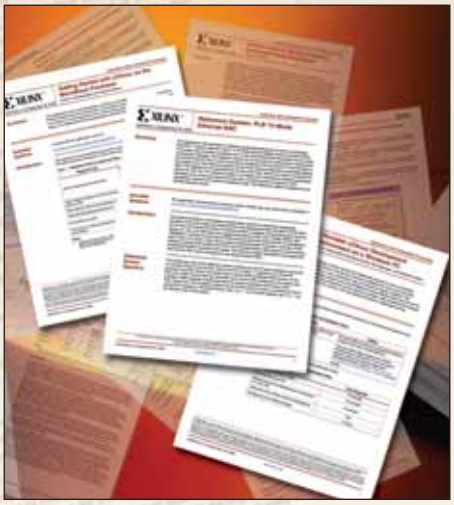
On the Web at ***www.xilinx.com/bvdocs/appnotes/xapp730.pdf***

XAPP934 – A Portable µClinux Development Environment on a Windows PC

By Navaneethan Sundaramoorthy, Raj Nagarajan, and Vasanth Asokan

Configuring and building a µClinux kernel has traditionally required a Linux workstation because the tools that work on the kernel sources are designed for Linux and Linux-like environments. However, a Linux workstation may not always be readily available.

This application note describes a Linux Virtual Machine (using VMware tools) that



runs on a Windows XP PC. The virtual machine serves as a portable, self-contained, compact development environment for µClinux, and can easily be shared or distributed among developers.

On the Web at ***www.xilinx.com/bvdocs/appnotes/xapp934.pdf***

XAPP963 – Using and Creating Flash Files for the MicroBlaze Development Kit – Spartan-3E Edition

By Casey Cain

The SP3E1600E board supports the configuration of the FPGA from an image stored in the Intel StrataFlash PROM using the byte-wide peripheral interface (BPI) Up or Down configuration modes. Two reference systems are preloaded into the StrataFlash PROM of the SP3E1600E board shipped with the MicroBlaze Development Kit, Spartan™-3E 1600E Edition. A µClinux reference system is programmed to run in the BPI Up configuration mode, while a Web server reference system is programmed to run in the BPI Down configuration mode. The SP3E1600E Development Kit website provides all of the files required to run the demonstrations in the StrataFlash memory.

This application note describes how to use the included files and how to create new files to run reference systems from the StrataFlash PROM. Although the process documented in this application note is specifically targeted for the development kit, you can apply the process to other applications.

On the Web at ***www.xilinx.com/bvdocs/appnotes/xapp963.pdf***

XAPP941 – Reference System: PLB Tri-Mode Ethernet MAC

By Robert McGee and Norbert Melnikov

This application note describes a reference system that illustrates how you can build an embedded PowerPC™ system using the Virtex™-4 PLB Tri-Mode Ethernet Media Access Controller (PLB_TEMAC). The reference system configures the PLB_TEMAC to use scatter/gather direct memory access (DMA) and support a gigabit media-independent interface (GMII) PHY. Furthermore, it enables such performance-enhancing features as hardware data realignment and checksum offloading. The reference system includes two software test suites that provide examples of how to measure performance and verify functionality of the PLB_TEMAC IP core. These applications are a simple stand-alone echo server application that loops back received data and a Wind River Systems VxWorks board support package that includes functionality to test the throughput performance of the system. The target reference system for this application note is the ML405 evaluation platform.

On the Web at ***www.xilinx.com/bvdocs/appnotes/xapp941.pdf***