

# PetaLinux 1.2 ChangeLog

2nd June 2010

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## New Features

- Dramatic improvements in network throughput using the LL\_TEMAC ethernet IP
- Support for end-to-end SPI flash boot (FPGA configuration/FS-boot/u-boot/kernel)
- Support for Xilinx PCI host bridge and USB host controller IP
- Added support for add-in packages, to add new application or library modules to PetaLinux in a standardised way
- Support for systems without flash memory
- New tool 'petalinux-jtag-logbuf' retrieves kernel boot log from boards that appear unresponsive - very useful during new board bringup

## Tool Support

- Support for Xilinx EDK 12.1

## Reference Designs / BSPs

- Standardise all reference designs to Xilinx 11.4 tools
- Performance-enhanced "Full" reference design variants
  - 32Kbyte instruction/data caches, 32byte cacheline length
  - LL\_TEMAC hardware checksum and jumbo frame support
- SP605 and ML605 BSPs built against standard Base System Builder (BSB) projects ("lite" and "full")
- New BSP for ML507 (MicroBlaze-only)
- Soft-reset enabled for all reference designs

## Linux Kernel

- Upgrade to latest stable 2.6.31.12 kernel tree
- Performance improvements
  - Added support for CONFIG\_PREEMPT kernel option (preemptible kernel for reduced interrupt and scheduling latency)
  - Performance improvements from optimised cache and data handling routines
  - Optimised LL\_TEMAC driver for significant performance/throughput improvement
- New or validated device driver support
  - Xilinx I2C controller
  - Xilinx SPI controller
  - Xilinx USB Host controller
  - Xilinx PCI Host controller

- Support for frace kernel profiler
- Support for systems lacking BRAM at address zero

## Linux Distribution

- Update to latest netperf v2.4.5
- Add PCI-utils package

## U-boot

- u-boot will automatically run the DHCP command if 'DHCP' is selected as the top-level network address assignment method

## Other

### License administration

- The new environment variable `PETALINUX_LICENSE_FILE` may be used to point to a non-standard PetaLinux license file

### Installation

- "Click-through" process for accepting PetaLinux SDK and GPL licenses upon installation
- PetaLinux installer refuses to continue if being run by the 'root' user

### System configuration

- Ability to specify primary system flash type (SPI vs parallel), and eraseblock size for correct generation of JFFS2 filesystem images
- Creation of self-relocating kernel images (image-s.bin) permitting bypass of u-boot (FS-boot booting the kernel directly).
- Correct handling of systems containing multiple flash memory instances
  - The name 'primary\_flash' is given to the flash memory instance to be used by the PetaLinux configuration tools
- Tools will check for a partition named 'jffs2', if JFFS2 is selected as the root filesystem type
- PetaLinux automated BSP generator will raise an error if building against the buggy Xilinx XPS\_TIMER IP version 1.01.b

### fs-boot

- remove SREC handling and flash programming
- add support for booting u-boot from SPI flash

## **Debugging**

- Automatic creation of GDB initialisation files to set correct paths to .so shared library files

## **Bug fixes**

- Improved support for Ubuntu and 64-bit Linux workstation distributions
- User modules now included in top-level build, allowing fully-automated builds from a single 'make' command
- Default flash partition size for kernel image increased to 10Mbyte, to allow sufficient room for 'standard' kernel + filesystem image
- All BSPs rebuilt without buggy XPS\_TIMER v1.01.b
- User applications can now be debugged inside the QEMU virtual environment
- PetaLinux tools requiring Xilinx tools will check to ensure they are installed, rather than generate error messages
- All temporary files generated by PetaLinux tools are properly cleaned up after use
- Remove assumption that workstation network interface is 'eth0', when auto-generating host IP addresses