Lattice Propel 2.1

Release Notes

FPGA-AN-02044-1.0

November 2021

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About Lattice Propel™ 2.1

Welcome to the Lattice Propel 2.1 design environment for Lattice FPGA system design. Lattice Propel is a complete set of graphical and command-line tools to create, analyze, compile, and debug both FPGA-based hardware and software processor systems.

What's New in Lattice Propel 2.1

New Device Family Support

- Lattice LFCPNX (CertusPro™-NX)

Tools and Enhancements

- Supports RV32IMC by RISC-V MC processor.
- Supports RHEL 7.7 & RHEL 8.4 Operating System.
- Supports Lattice Radiant foundation IP in Propel Builder.
- Supports device information modification in Propel Builder project.
- Integrates picolibc as the default standard C library to support three levels of printf.
- Supports CertusPro-NX template design, the *HelloWorld Project*.

Key Features

Device Family Support

- Lattice LFCPNX (CertusPro™-NX)
- Lattice MachXO2™
- Lattice MachXO3L™
- Lattice MachXO3LF®
- Lattice MachXO3D™
- Lattice LIFCL (CrossLink™-NX)
- Lattice LFD2NX (Certus™-NX)
- Lattice LFMNX (Mach™-NX)

Processor Support

- RISC-V Micro Controller (MC)
- RISC-V State Machine (SM)

Operating System Support

- Microsoft Windows 10 (64-bit)
- Red Hat Enterprise Linux 7.7 (64-bit)
- Red Hat Enterprise Linux 8.4 (64-bit)

Lattice Propel SDK

- Integrate picolibc as the default standard C library to support three levels of printf.
- Built-in industry standard components and tools for embedded software development and debugging.
- Optimized project management flow for Lattice FPGA platform.
- Supports creating both C and C++ software projects based on Lattice SoC platform.
- Supports Lattice Diamond®, Lattice Radiant™, and Propel Builder bridges.
- Integrates GDB and Open On-Chip-Debugging (OCD) with chained JTAG.
- Supports peripherals view with register description during debug session.
- Supports syntax highlighting for various development languages.

Lattice Propel Builder

- Supports Lattice Radiant foundation IP.
- Supports device modification.
- Supports board information display.
- Supports IP management.
- Supports schematic design.
- Supports creating SoC Project and SoC Verification in project wizard GUI.
- Supports Lattice Diamond, Lattice Radiant, ModelSim/QuestaSim, and Propel SDK bridges.
- Supports generating simulation environment, testbench, and script.
- Integrates ModelSim OEM.
- Supports gluelogic.
- Supports IP Packager flow control.

Template Design and System Simulation

- Supports simulation for Linux.
- Provides CertusPro-NX template design, the *HelloWorld Project*. Enhance to support multiple clock domain.
- Provides MachXO3D template design, the *HelloWorld Project*.
- Provides CrossLink-NX template design, the *HelloWorld Project*.
- Provides MachXO2 template design, the *HelloWorld Project*.
- Supports functional verification using system-level simulation environment for templates.

Release Contents

- Propel_2.1.exe (Windows 10 64-bit Operating System)
- Propel_2.1_lin.run (Red Hat Enterprise Linux 64-bit Operating System)

Validation Platforms

- CertusPro-NX Evaluation Board (REV A P/N: LFCPNX-EVN)
- MachXO3D Breakout Board (REV A P/N: LCMXO3D-9400HC-B-EVN)
- CrossLink-NX Evaluation Board (REV B P/N: LIFCL-40-EVN)
- MachXO2 Breakout Board (REV B P/N: LCMXO2-7000HE-B-EVN)

System Requirements

The basic system requirements for Propel 2.1 on Microsoft Windows and Linux platforms:

- Intel Pentium or Pentium-compatible PC, or AMD Opteron system support
- Windows 10 64-bit Operating System
- Red Hat Enterprise Linux 64-bit Operating System
- Free Disk Space: approximately 7 GB
- Network adapter and network connectivity for IP server access

Release Limitations

This release of Propel 2.1 has the following limitations:

- Verification engine does not support mixed-language SoC project.
- Propel 2.1 does not support HW-USBN-2A cable.

Technical Support

For assistance, submit a technical support case at www.latticesemi.com/techsupport.

www.latticesemi.com