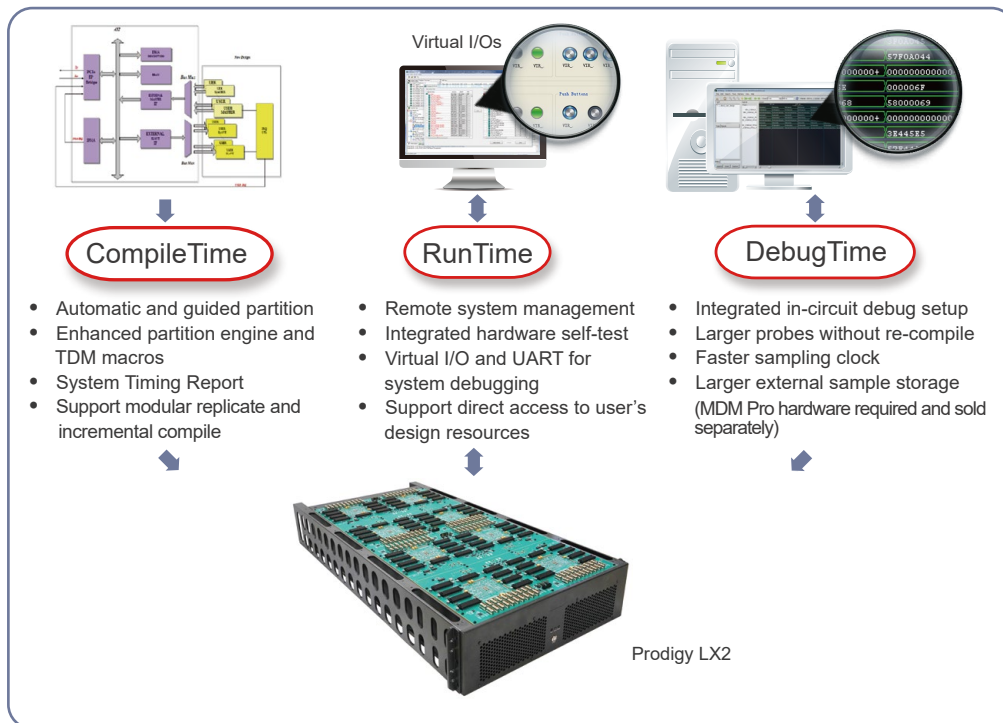


Prodigy™ Player Pro™ Cockpit for Prototype Design and Multi-Debug Set Up

Prodigy Player Pro is composed of three tools - CompileTime, RunTime, and DebugTime - designed to enhance your development process with FPGA-based prototyping platforms from S2C. CompileTime handles prototype configuration, RunTime manages remote system operations, and DebugTime facilitates multi-FPGA debugging setup.



CompileTime

An integrated GUI environment and Tcl interface make it easy to take an existing design, compile it, partition it into multi-FPGAs, and generate the individual bit files.

Automated Compile Flow

Prodigy Player Pro - CompileTime has an intuitive GUI environment to guide all compile steps. After a design is compiled once, you can perform an ECO flow automatically in Tcl mode:

- Import design
- Set up probes
- Run synthesis
- Partition design
- Assign & I/Os
- Run FPGA place and route
- Generate bit file (s)

I/O Assignment

Prodigy Player Pro - CompileTime provides a library of S2C daughter board pin-map files, and automatically matches them to I/O connectors. GUI-based clock and I/O properties assignment minimizes chance of error.

Partition

- Automatic and guided partitioning to multiple boards
 - User-guided performance optimization
 - User-configurable cable connection setup
- Black-box approach to save partitioning time
- Enhanced system performance by TDM optimization
- Pre-qualification of signals before automatic pin-multiplexing insertion
- Timing estimation to quickly understand the performance before place and route
- System timing report to guide the optimization

RunTime

For compiled designs, Prodigy Player Pro - RunTime enables you to remotely control and monitor the target prototyping platforms, through either Ethernet or USB connections.

Multiple FPGA Configurations

Prodigy Player Pro can download the design to the FPGA (s) through USB or Ethernet. It can also write the design to an SD card on the Prodigy Logic Modules/Systems/Matrix and download the design from an SD card.

Virtual I/Os

Prodigy Player Pro provides virtual switches and indicators that you can use just like real hardware.

- Virtual LEDs for quick monitoring of design status
- Virtual push buttons and switches to set design input conditions quickly
- Virtual UART for convenient firmware debugging

DebugTime

Prodigy Player Pro - DebugTime allows users to pre-select the signals to be observed before compilation and define the trigger conditions to start a data capture. During runtime, the selected signals are captured and stored in an external DDR4 memory for analysis.

Integrated In-Circuit Debug Setup

- Preserve internal FPGA probes
- Probes are distributed to multiple FPGAs automatically based on the partition results
- Set up trigger and trace signals in multiple FPGAs from a single console

Multi-FPGA Debug

Prodigy Multi-Debug Module Pro (MDM Pro) is an optional tool with multiple FPGAs debug setup ready. MDM Pro includes Player Pro for Debug Time and external MDM Pro hardware. It features:

Trigger Condition Specification

Users can easily set the trigger events and combinational events through the Prodigy Player Pro Debug panel.

- Trigger Events support: ==, !=, >=, <=, >, < and counting
- Combinational Events support: !, &, |, ^, -> and counting
- Support up to 8 event trigger blocks
- Support trigger state machine language

Specifications

Hardware Support

- CompileTime: VU+, VU, KU, S10 and A10
- RunTime: VU+, VU, KU, S10 and A10
- DebugTime: VU+ and VU

Language Support

- Synthesizable RTL (Verilog, VHDL, System Verilog)
- Synthesizable gate-level netlist
- Mixed languages

Hardware Self-Test

A step-by-step wizard enables users to check for potential broken I/O pins, interconnection nets and clock lines.

Users can also verify the global clock frequencies and I/O voltage settings.

Remote System Control

All system features can be controlled remotely through USB or Ethernet.

- Automatic detection of daughter cards when plugged in
- Easy monitoring of I/O voltages, currents and temperatures
- Support direct access to the internal registers and BRAM
- Control multiple Prodigy Logic Modules/Systems/Matrix conveniently from one console

Large Number of Probes Without Re-Compile

- Mark an unlimited number of internal FPGA probes
- Trace up to 16 K probes per FPGA in 8 groups of 2 K probes each without FPGA re-compilation

Concurrent Multiple FPGAs Debug

MDM Pro hardware is required.

- IP mode and Compile mode simplify the process and usage
- Transmit trigger and trace data from multiple FPGAs to MDM Pro through high-speed transceivers
- Write the sample data in VCD/FST format for analysis
- Store large external 64 GB of waveform

OS Support

- CompileTime: 64-bit RHEL7.7/7.8+, Ubuntu 16.04/18.04 & CentOS 7.3/7.6
- RunTime: 64-bit Windows 10, RHEL7.6, Ubuntu 16.04/18.04 & CentOS 7.4
- DebugTime: 64-bit Windows 10, RHEL7.8 & CentOS 7.3