Product Brief

menta
embedded Programmable Logic

Origami Designer™ & Origami Programmer™

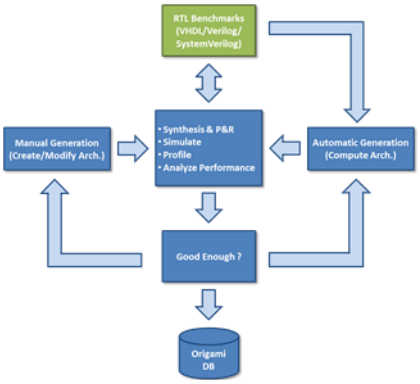
Software for Menta eFPGA Cores

Menta® Origami Designer™ is a complete design environment that allows engineers to create custom embedded FPGAs arrays. Origami Designer™ enables the perfect eFPGA architecture to be explored for end-user RTL applications. The output of Origami Designer™ is then used to build the targeted eFPGA hard IP. Menta® Origami Programmer™ allows analysis and programming of the eFPGA.

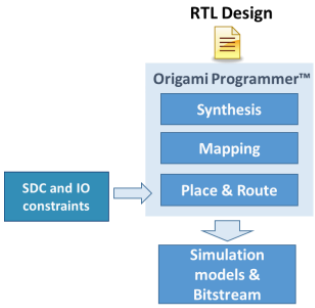
With the constant drive towards more integrated devices that perform a variety of functions and support multiple standards, flexibility and programmability is becoming critical to today's design teams.

Menta eFPGAs offer the required flexibility and post-manufacturing programmability in a SoC, ASIC or ASSP. Designers can choose a pre-defined IP core from the available IPMs families, or can use Origami Designer to customize an eFPGA with the optimal size and perfect mix of blocks (eLBs, eCBs, eMBs).

Origami Programmer™ encapsulates all the steps of a classical FPGA design flow with an intuitive graphical interface. Based on user IEEE RTL (VHDL, SystemVerilog or Verilog), chosen eFPGA architecture and SDC design constraints, Origami Programmer™ computes the programming bitstream file. It also outputs speed estimations as well as a model that can be used in standard simulation flow and for equivalence check.



Origami Designer™ drives eFPGA architecture development



Origami Programmer™ design flow

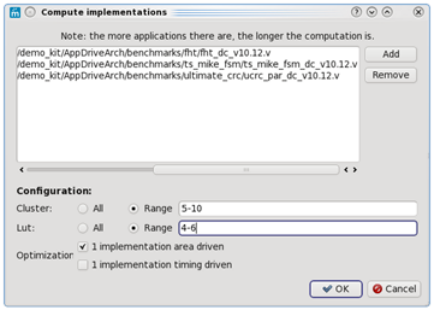
Key Benefits

- Rapid design of custom eFPGA architectures
- Easy Graphical User Interface
- IEEE VHDL, Verilog and SystemVerilog support
- Compare and modify architectures
- Area and power estimation on selected process and corners
- Versatile and easy-to-use application synthesis, mapping and place and route tools
- SDC timing constraints driven
- Verilog simulation model generation with SDF back annotation
- Bitstream generation by the designers or by end customers

Origami Designer™

Origami Designer creates the eFPGA Core IP best suited to match the targeted applications. Its Graphical User Interface assists the designer through the definition of the eFPGA parameters. Alternatively, Origami Designer can automatically fill those parameters based on the targeted applications.

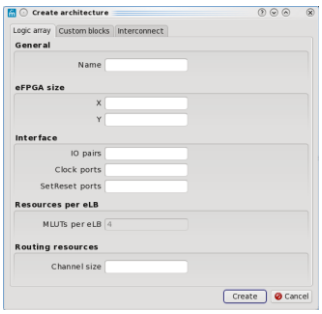
Compute



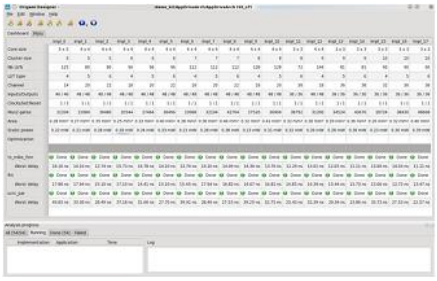
The compute tool generates several architectures based on a set of representative RTL to be mapped to the eFPGA. This is a fully automated step that runs in a very few clicks.

Create

In addition to automatically generating architectures, designers can manually input the eFPGA parameters. That allows, for example, choosing the exact form factor of the IP.



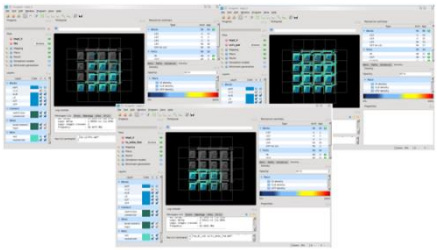
Compare



The main window of Origami Designer is a dashboard of different architectures generated by the compute tool and/or manual entries. Designers can easily compare or modify architectures in order to select the optimal performance trade-offs for the targeted applications.

Analyze

Origami Designer runs Origami Programmer to visualize and analyze the result of RTL applications mapping on the eFPGA architectures.



Generate

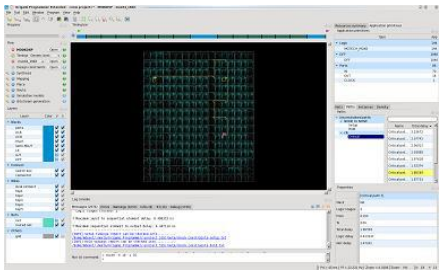
Once the best eFPGA implementation for a given set of requirements is chosen, the eFPGA IP architecture is saved within a single Menta Architecture File (MAF). This file is used by the Menta team to generate the custom eFPGA hard IP and as an input to Origami Programmer.

Origami Programmer™

Origami Programmer features a complete programmable logic design flow: synthesis, mapping, placement, routing, timing analysis, simulation model generation, and bitstream generation.

Origami Programmer uses Verific® HDL Parser to ensure robust and efficient elaboration.

At each stage of the flow, designers have access to easy-to-use analysis tools through the graphical interface.



Timing analysis view

If automation is desired, all design phases have their set of TCL scripting commands.

Availability

Menta Origami Designer and Programmer are available on Red Hat Linux X86 64-bit platform.

A Starter Kit for Origami Designer, Origami Programmer, and Menta eFPGA IP cores is available.

For more information about Menta products, visit us on the web at: www.menta-efpga.com or contact info@menta-efpga.com.

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