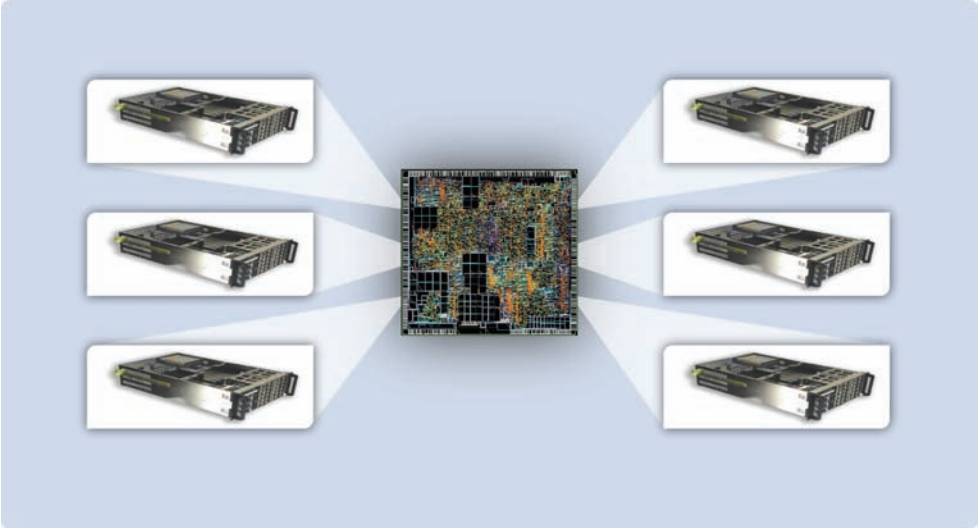
MAGMA DESIGN AUTOMATION

Talus® Vortex FX

- Significantly improves engineering productivity, enabling a throughput of over two million cells per day.
- High capacity allows designers to handle larger blocks – up to 10 million cells.
- Performs rapid "what-if" analysis of placement, timing and area during early design stages to improve overall quality of results.
- Fully distributed implementation solution executes across existing computing grids using standard distributed resource managers.
- Provides Talus Vortex users the flexibility to easily scale capacity and throughput for larger designs.
- A consistent use model with Talus Vortex and reference flows delivered through Talus® Flow Manager™ enables quick adoption.

Talus Vortex FX, with Magma's new Distributed Smart Sync™ technology, delivers unmatched throughput for physical design implementation. The Distributed Smart Sync technology intelligently manages the process of distribution and synchronization throughout each of the design steps in the Talus Vortex physical implementation flow. Talus Vortex FX is ideally suited for all technologies and addresses multi-mode, multi-corner design, low-power design, on-chip variation, advanced on-chip variation, and crosstalk effects. Talus Vortex FX enables designers to implement multimillion-cell designs flat with throughput of over two million cells per day.



There are numerous challenges when working at the advanced technology nodes today, including low-power design, process variability, crosstalk effects and a dramatic increase in the number of operating modes and corners. The increasing size and complexity of designs at these advanced nodes also raise concerns with regard to engineering resources (improving productivity without increasing the size of the team), hardware resources (using existing machines and compute grids to process larger designs without increasing physical memory, or purchasing completely new machines), and meeting ever more aggressive development schedules. To address these issues, the capacity and performance capabilities of Talus Vortex can be dramatically boosted with Magma's new Talus Vortex FX with Distributed Smart Sync technology.

MAGMA®

Talus® Vortex FX

Distributed Smart Sync Technology

Magma's new Distributed Smart Sync technology automatically – and intelligently – breaks up the physical design and distributes it across multiple machines, each with multiple processor cores. Each machine, running multi-threaded Talus Vortex performs a portion of the design implementation. These portions are then automatically re-synchronized by Talus Vortex FX at the end of major flow stages. Modeling of the timing and physical constraints of the design partitions is also managed by the Distributed Smart Sync technology. In essence, Talus Vortex FX is creating a new dimension in place and route technology by allowing a designer to tackle a much larger design while achieving a 2X to 3X speedup over what is achievable with today's best multithreaded flat flow.

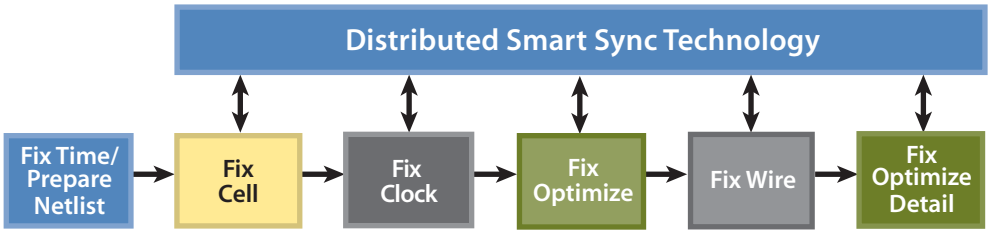
Productivity

The productivity of a physical implementation engineer is typically measured in terms of cells per day, and using the very best conventional flows, the maximum productivity is typically around one million cells per day. By comparison, Talus Vortex FX with Distributed Smart Sync technology increases this to over two million cells per day for the full flow implementation.

In terms of practical capacity, the majority of place-and-route solutions today are limited to working with only a few million cells. This limited capacity often forces physical design teams to use a hierarchical approach which artificially breaks up the design. This also reduces the productivity of the engineers. The result is a capacity-driven productivity gap. Unlike traditional solutions, Talus Vortex FX provides the capacity needed for today's technology nodes. It enables designers to handle designs containing up to 10 million cells flat.

Rapid "What-if" Analysis

Talus Vortex FX enables the physical implementation team to perform rapid "what-if" analysis early in the design cycle using detailed placement data. This allows them to make optimal tradeoffs in terms of placement quality, timing and area. During the initial design stages engineers can run many placement iterations to explore various floorplan utilizations and timing scenarios. They can also run several final quality placement iterations a day on multimillion-cell designs.



Distributed Smart Sync Technology intelligently manages the process of distribution and synchronization throughout the Talus Vortex FX flow.

TECHNOLOGY FEATURES:

Please see the Talus Vortex datasheet for a complete list of features available with Talus Vortex FX

Ease of Use
- Integrated datamodel
- Common analysis engines
- Query DB, GUI, Tcl reporting functions
- Cross-probing between layout, netlist, schematic, timing GUI and RTL
- Built-in reference flow (Talus Flow Manager) and visualization (Talus® Visual Volcano™)
- Uses existing Talus Vortex licenses

Inputs
- Verilog (netlist), DEF (floorplan), .lib, SDC, SPEF, LEF, GDSII, UPF, CPF, Volcano™ (Magma format)

Outputs
- Verilog (netlist), DEF (floorplan), SPEF/DSPF, GDSII, Volcano (Magma format), HTML

Distributed Resource Managers
- LSF, Sun Grid

Platforms
- Linux, Solaris

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