**Overview**

*PCell Xtreme™* enables OpenAccess tools from multiple vendors to utilize PCells written in proprietary languages like SKILL. *PCell Xtreme* creates a disk cache of the PCell layout in OpenAccess database format.

**Introduction**

PCells deliver many advantages in analog and custom design flows. Until now, PCells have only worked within tools from a single vendor. This has greatly reduced the designer’s choice of tools, and greatly increased the burden of developing a multi-vendor design flow in the true spirit of OpenAccess. As a result, users have resorted to GDSII streaming and database translation for many steps in a multi-vendor flow, even with OpenAccess-based tools.

In addition, the geometry created by a PCell submaster resides only in memory, and is lost when the layout editor closes the database. All the PCells in a design must be re-evaluated each time the design is read from disk, so the submaster geometry can be regenerated. This reevaluation can cause long delays when opening a database which contains many PCells.

PCell users have often wished for “persistent PCells”, that is, some way to preserve PCell layout on disk so that any tool could read the database in its native format. *PCell Xtreme* enables you to smoothly migrate your PCell-based flow into a multi-vendor OpenAccess flow and enables OpenAccess tools from multiple vendors to utilize PCells written in proprietary languages like SKILL. *PCell Xtreme* creates a disk cache (either static or with dynamic parameterization) of the PCell layout in OpenAccess database format.

**Benefits**

- Enables any OpenAccess tools to read SKILL PCells directly
  - Enable co-existence of SKILL PCell and other PCells
- No code translation necessary. Minimum risk
  - Smooth and controlled transition into OA
  - Preserve your SKILL investment into OA flows
- A database with cached PCells opens 10X faster, or more
- SKILL PCells can be opened and parameterized by OpenAccess tools from many vendors
How PCell Xtreme Creates Persistent PCells

When a user instantiates a PCell in his layout editor, PCell Xtreme works behind the scenes to create a cache of the PCell geometry. PCell Xtreme stores this cache to disk in OpenAccess database format (See Figure 1). The next time this database is opened, PCell Xtreme presents the cached geometry for each PCell subMaster. This cached geometry opens 10 times faster or more, because the PCell code does not need to be reevaluated. In addition, this cached geometry can be read by OpenAccess tools from many vendors.

PCell Xtreme also provides utilities to help manage the cache. These utilities enable the user to choose where the cache is stored, how long it is maintained, and when it must be purged.

This approach to persistent PCells means the PCell geometry is cached directly from the editor which created it so that the PCell code is always evaluated by the same software application. PCell Xtreme does not interpret or translate the PCell code, so the exact same cached geometry appears in every OpenAccess application.

Two modes of operation

PCell Xtreme has two modes of operation: Caching mode and Server mode.

In Caching mode SKILL PCells are cached using a stored static version of SKILL PCell for fast database opening, especially large databases. Caching mode enables any OpenAccess tool to read SKILL PCells directly.

Server mode enables full usage of SKILL PCells in any layout editor. PCells may be instantiated with dynamic parameterization using our patented technology.
**Parameterizing Legacy PCells in Other OpenAccess Tools**

PCell Xtreme provides one more benefit: the ability to instantiate and parameterize legacy PCells in OpenAccess layout editors. For example, when a user attempts to parameterize a SKILL PCell using Synopsys Custom Designer, PCell Xtreme sends that request to Cadence’s Virtuoso tool to be interpreted. PCell Xtreme then takes the resulting geometry, caches it as an OpenAccess database element, and presents it to Custom Designer for display. This means that your IP is no longer locked into the tools of a single vendor.

**Platform Support**

- Linux (32-bit, 64-bit)
- Microsoft Windows XP and higher

For more information about Synopsys products, support services or training, visit us on the web at: www.synopsys.com, contact your local sales representative or call 650.584.5000.