

## **SoftJin Offers 20X Compression With GDSIIZIP**

**SANTA CLARA, CA and BANGALORE, INDIA - 09/22/2005** -- SoftJin Technologies, an EDA (Electronic Design Automation) software development services company, today announced a new software product, GDSIIZIP, that compresses large IC layout files in GDSII format by up to 20X, thereby significantly reducing file size as well as transfer time for large electronic designs.

GDSIIZIP allows EDA tool users, EDA companies and in-house CAD groups at semiconductor companies to address the challenge of handling increasingly large GDSII file sizes common in today's nanometer designs. The use of GDSIIZIP results in direct cost and time savings for its users. With it, design teams need to spend less time in managing disk space and archives for storage of huge GDSII file, since its compressed can fit in a much smaller space. Also, it reduces the time it takes to transfer these files across design groups, mask makers and foundries. For example, instead of requiring a T3 line for transfer of 200 GB of GDSII data from a design team to a remote manufacturing team in about 1.5 hours, using the compressed layout data generated by GDSIIZIP, the same file can be transferred using a much less expensive T1 line in the same time.

"We understand the challenges involved in improving post-layout EDA tools that need to handle huge amounts of layout data," remarked Nachiket Urdhwareshe, CEO at SoftJin. "Our understanding of layout and mask data formats makes it possible for us to develop proprietary compression technology targeted specifically at saving time and cost when using the popular GDSII format. We were able to achieve higher level of compression compared to existing solutions by applying our insights into the inherent inefficiencies in the GDSII format."

### **Why GDSZIP Is Needed**

Four factors have contributed significantly over the last decade in increasing GDSII file sizes. These include design content (as process nodes shrink, more data can fit into the same chip area), metal fill for Chemical Mechanical Polishing (CMP), the need to add Reticule Enhancement Technology (RET) at 90 nm and below and yield improvement

guidelines provided by the Foundries. For example, a 20-25 layer mask set at 90 nm is expected to be of the order of 200 GB. Compression of the data prior to transmission, such as that provided by GDSIIZIP will alleviate the otherwise linear growth of transmission time as file size grow.

### **Who Uses GDSIIZIP**

- Design groups in semiconductor companies, ASIC vendors, and Design Services companies.
- Data preparation groups in Mask Shops and Semiconductor foundries.
- EDA companies for bundling with their commercial GDSII format generating and/consuming tools.

### **New Features**

1. Two metrics commonly used to evaluate compression technologies are compression ratios, the ratio of the size of original file to the compressed design file, and the time required to perform the compression itself. On average, use of GDSIIZIP produces 20X compression ratios. For comparison purposes, this is about 4-5 times better than freely available utilities such as GZIP. In addition, the time taken by GDSIIZIP to perform the compression is in the same order as that of GZIP, far less in most cases.
2. EDA Tools that generate or consume GDSII layout data can seamlessly integrate this technology into their tools through an API that is available with GDSIIZIP. The integration enables the existing GDSII generating tools to generate compressed layout data at the source. Likewise with these interfaces, existing GDSII consuming tools can directly accept compressed layout data.
3. The compressed layout data can be selectively de-compressed. Unlike other techniques commonly used in this space, one need not decompress the entire file prior to using the data. This means only selected layers, selected cells, structures or only a selected sub-tree of the compressed layout data can be decompressed, as needed. This on-demand, selective read capability results in significant improvement in the throughput of EDA tool operation.

4. Built-in APIs make it possible to apply various types of filters while compressing as well as decompressing the data. Functions range from simple operations such as filtering certain layers, to complex operations such as filtering out geometries with distinct characteristics such as self intersecting polygons or paths. Any geometric shape-based operation can be codified as a filter and applied during the compression or the decompression step.
5. GDSIIZIP includes a built-in verifier that offers on-the-spot verification to check correctness of compressed file.

### **Price and Availability**

GDSIIZIP is available now. Annual per user license is \$2,000. GDSIIZIP is sold directly in US, Europe and India and through channel partners in Japan and Asia Pacific. Evaluation version of GDSIIZIP can be requested for free trial, upon registration at the SoftJin website. GDSIIZIP de-compressor shall be available for free download from the SoftJin website.

GDSIIZIP is also available in object code form for integration through C++ API functions with in-house or commercial EDA post-layout tools.

### **Other Post-Layout EDA Offerings from SoftJin**

In May 2005, SoftJin announced Nirmaan, a development toolkit for post-layout EDA tools, including DFM/DFY tools. SoftJin also offers software that deals with the interchange of various layout and post-layout formats. In November 2004, SoftJin released Anuvad, a tool suite that includes GDSII, OASIS reader/writer libraries along with a GDSII to OASIS converter. Anuvad source code is available for free download from the SoftJin website (<http://www.softjin.com>).

### **About SoftJin**

SoftJin Technologies Pvt. Ltd. is an EDA software development services company that develops software for the specific requirements of semiconductor and EDA companies.

SoftJin offers 20X Compression with GDSII/ZIP

SoftJin's customized EDA software development and enhancement services offer the advantages of enhanced EDA software capability, flexible capacity and cost savings. More information about SoftJin is available at [www.softjin.com](http://www.softjin.com).

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Notes to editors:

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