



Solution-Soft's GDSII compressor (GDZIP), MEBES compressor (MEZIP), Dynamic Link Library (DLL) and Tapeout Client Software Deliver Reduced Tapeout Cycle Time, Productivity Gain, and Cost Savings for Semiconductor Industry

ABOUT XILINX

Xilinx leads one of the fastest growing segments of the semiconductor industry – programmable logic devices (PLDs) – with 50 percent market share in calendar year 2003 according to Gartner Dataquest. The company enjoys a stellar corporate reputation, having ranked in the top ten of FORTUNE Magazine's *Best Places to Work* list for three years straight, making it the highest ranking technology company to work for in the United States.

Additional information about Xilinx is available at www.xilinx.com

THE CHALLENGE FACING XILINX AND THE IC DESIGN INDUSTRY

As IC designers and production processes push chip designs towards 90nm manufacturing process and beyond, the designs become more sophisticated and complex by the day resulting in extremely large design files. The application of more aggressive OPC (Optical Proximity Correction) additionally increases the size of design files. Since 1999, GDSII and the resulting fractured MEBES database files have increased in size by ten-fold. These files are often in the tens of Gigabyte (GB) range resulting in storage, transfer, productivity and bandwidth bottlenecks for designers, IT professionals and their vendors.

"Because our design databases are among the largest in the industry, Xilinx' need for file compression is probably as great as any other company's. The increasing size of our design files affects all areas from online disk space needs to archive media capacity needs to file transfer needs." – Dr. Wolfgang J. Leitermann, Sr. Manager of Tapeout Operations, Xilinx.

THE GDZIP, MEZIP, DLL AND TAPEOUT CLIENT SOLUTION

Solution-Soft's gdzip compresses GDSII files 3 to 10 times smaller than what gzip can do. Similarly, mezip compresses MEBES files thirty percent to 10 times smaller than gzip. The gdzip and mezip solutions do so with faster speed and reliability with block level checksums. They are fast becoming the industry standard. Leading foundries, such as TSMC, UMC, Chartered Semi, and SMIC are in production and encourage their world-wide customers to tapeout with Solution-Soft's compression formats.

Dynamic Link Library (DLL) enables EDA tools, such as viewer & Calibre to input and view our gdzip/mezip compressed file transparently and leave them compressed on disks. No modification of the EDA application is required and decompression occurs automatically on-the-fly in memory by blocks.

The tapeout client is customized for tapeout file transfer operation for the semiconductor industry. This intelligent transfer solution replaces the ftp client. It provides automatic transfer resume and retransmission upon errors or communication line drops. It automatically emails transfer status and statistics, so babysitting the tapeout transfers are no longer necessary. It also supports background processing and allows automatic post-transfer processing.

Xilinx is in production with gdzip, mezip and DLL for all of their GDSII and MEBES file processing. All GDSII and MEBES files for storage, archiving and tapeout are in gdzip and mezip compressed format. The Tapeout client is utilized to transfer files to tapeout partners Dai Nippon Printing, Toshiba and UMC.

"We use gdzip, mezip, DLL and the tapeout client everyday here at Xilinx. We are very happy with the productivity gain and cost savings they bring and appreciate the quick and responsive customer service Solution-Soft provides. The products have more than paid for by themselves in just one year of production usage!" said Dr. Wolfgang J. Leitermann.

INCREASED TAPEOUT EFFICIENCY AND REDUCE CYCLE TIME

The reduction of tapeout file size speeds up the transfer time increases the reliability and reduces the network bandwidth requirement. As a result, a T1 leased line is adequate and there is no longer a need to go for a costly T3 upgrade. The guarantee transfer and email notification eliminates the needs for costly manual retransmission and babysitting the transfer.

“Our time savings in design file transfers to our mask shops were not just proportional to the reduction in file size, but actually better than expected.” said Dr. Wolfgang J. Leitermann. “We’ve seen fewer interruptions in file transfers with the overall transfer time being reduced meaning we do not have to restart transfers. Since design file transfers are started in the evening, aborted transfers were usually not discovered until the next morning, that lost time produced an even greater impact than just the additional transfer time. It is very difficult to give actual numbers, but with our technicians being able to use their time for tasks other than to baby sit and restart file transfers, is an obvious boost in productivity for Xilinx.”

“The people in my group really like it because it’s so easy to use and the fact that we can batch off a transfer and then forget about it until we see the E-mail is really great!” said Amy Bersamin, Engineer of Tapeout Operations, Xilinx.

SAVE STORAGE COSTS AND SPEED UP ARCHIVE/RESTORE

Much smaller file size reduces both the online and offline storage costs. Online storage used to be a challenge at Xilinx, where more storage purchase is needed for each quarter and juggling disk space is impacting productivity. Now Xilinx is ahead of the storage curve as existing storage is more efficiently utilized and new storage purchase can be delayed. In addition, archive to and restore from tapes are much faster than before and use less media.

“The compressors have made it easier to juggle our available disk space by freeing up more space when temporarily compressing files and having yielded more direct cost savings when archiving our data. We definitely save on media purchases for archive tapes, but more importantly we see a huge reduction in the time it takes to either write or restore from our tape archives.” continued Dr. Wolfgang J. Leitermann.

INCREASE PRODUCTIVITY

By reducing the frequency of juggling disk space the tapeout teams’ productivity is increased. Using gzip/mezip makes this easier and faster. People spend less time waiting for creating the free space necessary and for restoring files from tapes for processing.

Xilinx utilizes the DLL so that no separate decompression step is necessary in the process flow for the viewer & DFM tool and leave the files compressed on disks, which reaps significant disk I/O and network bandwidth savings.

“DLL is transparent to our applications and users. They don’t even realize the files are compressed! DLL simplify our process flow and eliminate the extra decompression step. The disk space and I/O performance savings are the icing on the cake.” said Dr. Wolfgang J. Leitermann.

ABOUT SOLUTION-SOFT

Solution-Soft is the leading provider of Intelligent Data Optimization (IDO) solutions, which address the urgent need for automated management of data in complex networking environments. IDO solutions facilitate automated data selection, movement, and redirection that optimize high availability, storage scalability, and system performance. The company has developed robust data-management software solutions for corporate data centers and storage solution providers. Solution-Soft boasts more than 1,500 customers, including 3M, AT&T, Boeing, Citibank, Dai Nippon Printing, Ford, French Telecom, Hewlett Packard, Merck, Toppan, TSMC and UMC. Solution-Soft’s market presence is bolstered by partnerships with Citrix Systems (Nasdaq:CTXS), FalconStor (Nasdaq:FALC), Hewlett-Packard (NYSE:HWP), IBM (NYSE:IBM), Microsoft (Nasdaq:MSFT), Network Appliance (Nasdaq: NTAP), Oracle (Nasdaq:ORCL), Sun Microsystems (Nasdaq:SUNW) and Synopsys, Inc. (Nasdaq:SNPS).

Founded in 1993, Solution-Soft is privately held and based in Santa Clara, California, USA. For more product information, visit www.solution-soft.com or call +1.408.346.1424.

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