SUCCESS STORY

ENTERPRISE RESOURCE PLANNING

Lowering OPEX and Raising Company-Wide Productivity

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– Diane Gibson, CIO, SGI

Consolidation and centralization enabled by the power and simplicity of SGI® Altix® Servers

Like its customers, SGI must continually evolve its IT infrastructure to adapt to changing business requirements and the dynamics of the global economy. The company recently chose an SGI solution for its enterprise resource planning (ERP) database, gaining better performance and cost savings in the short term and a foundation that lets SGI improve its agility and long-term flexibility for business processes.

Moving Targets

Rapid growth and international expansion have required the SGI IT team to constantly adapt infrastructure to take advantage of the latest network and data center models for its global operations. Several years ago, the company reduced costs by adopting an outsourced platform for its central ERP database and Oracle® business applications. The SGI ERP system impacts every employee, with the human resources applications and data tied into the system. For strictly ERP functions, there are more than 100 power users that rely on the system literally every minute of the day. All manufacturing and finance employees have access to the system, adding up to several hundred active users at any point in time. All revenue-generating and business-planning functions are dependent on the availability and optimal operation of the Oracle database and applications.

Over time, the outsourced ERP platform had reached its capacity limits. The out-of-date servers were imposing skyrocketing support costs on the IT budget, and could not support the newest

Benefits of Migrating ERP to SGI Altix

- Cost reduction – Significant savings in the cost of the annual support and maintenance migrating from the legacy system in the reduced CPU count alone – having moved from 90 to 40 CPUs. Additionally SGI greatly reduced the footprint and power consumption with the new installation for the equivalent horsepower. The Linux® platform is easy to support, with many system administrators already familiar with the environment. The existing IT staff is able to support the new platform, without adding any headcount.
- Increased performance – SGI moved from four 20-CPU RISC-based servers plus three 5-CPU servers, down to five 8-CPU servers, with significantly increased performance based on the Intel® Itanium® processor.
- Increased reliability – The load-balanced solution and proven reliability of the SGI Altix platforms eliminate the single point of failure that characterized the previous monolithic server platform.
- Flexibility and upgradeability – "With the Altix platform, we can add horsepower and introduce new modules as we require," said Gouldon. "We can increase capacity more easily than we could on the previous monolithic server. We can even split the servers themselves—we have total flexibility for adjusting the platform to our changing business requirements."
- Ability to complement Oracle RAC – By upgrading to Oracle 10g, SGI is now ready to take advantage of Oracle RAC. In the future, the database can even be deployed as memory-resident data, boosting performance further.
- Expanded life expectancy for ERP platform – A lifespan of three years is the norm within the IT industry. By moving to the SGI Altix blade-based architecture, the team projects a lifespan of at least five years for the new system with the potential to stretch it to seven. In addition, they can incorporate many upgrades and enhancements during that time, due to the ability to easily introduce new hardware transparently.

"With the move of our ERP database, we were essentially betting our business on the capabilities of the SGI Altix platform. The previous database consolidation project gave us the confidence we needed to make this move. We also felt much more comfortable with our business based on Linux, rather than a proprietary UNIX system. The move would give us the ability to leverage more industry solutions and more easily hire IT professionals familiar with the platform."

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application solutions. The company began evaluating an update for the ERP platform. In addition to cost savings, the incentives were improved performance, increased reliability, and the ability to employ the latest Oracle software releases.

The Solution—A Proven Platform

Prior to the ERP upgrade initiative, SGI had carried out major changes to some other in-house corporate databases. One consolidation project involved database servers. IT was able to replace more than 20 distributed, departmental servers with a centralized server farm of only eight SGI® Altix® 350 systems. The benefits gained by this project—improved backup and recovery, increased resource sharing, and more efficient updates—prompted the company to select an ERP solution based on migrating databases back in house and onto an SGI® Alti® platform. Several factors had to be taken into consideration:

- Change of location – the outsourced ERP server was located more than 100 miles away from the corporate data center.
- Multi-node platform – Instead of a single monolithic server: IT wanted a multi-node configuration to gain the performance advantages of load balancing and to introduce disaster recovery capabilities. It was decided to use five SGI Altix systems to host the 12 Oracle ERP databases.
- Host operating system – SGI as a company had committed to the Linux platform. The migration would require moving from Oracle on a proprietary version of UNIX to an open Linux system.
- Oracle release level – Upgrading to Oracle® 10g (the current release at the time of the migration) was also a goal for the project, enabling the adoption of real application cluster (Oracle® RAC) and other new Oracle capabilities.

The migration of any mission-critical application involves risk mitigation. Migrating the foundation for the main business applications—the ERP system—made it essential that the IT team carefully map out every part of the migration plan. The single ERP system runs all of manufacturing, order administration, and financial systems. If the system goes down, the company is unable to ship product, invoice customers, or access financial data.

The project team was given the additional challenge of managing the migration without increasing staff.

Getting There With Minimal Risk

"With the move of our ERP database, we were essentially betting our business on the capabilities of the SGI Altix platform," said Grant Gouldon, senior IT manager at SGI. "The previous database consolidation project gave us the confidence we needed to make this move. We also felt much more comfortable with our business based on Linux, rather than a proprietary UNIX system. The move would give us the ability to leverage more industry solutions and more easily hire IT professionals familiar with the platform."

From the perspective of the company's finance team, the move made perfect sense. "At the time we originally implemented our Oracle ERP system, our Altix product wasn't available," explains Kathy Lanterman, senior vice president and CFO at SGI. "Today, based on the reliability of our Altix systems and the market success, it was an easy business decision to move ahead on the migration."

The first phase for the deployment centered on a proof of concept (POC) exercise. Using the already-in-place SGI Altix database-hosting systems, the IT team set up a test environment and deployed the target Oracle 10g database engine over a six-week period.

After the POC phase, the team was able to accurately prepare the source systems and the entire SGI user base for the migration process. By realistically setting expectations for down time and the changes in features, the IT team was able to minimize the pain of the migration. All global process owners for each of the revenue models were included in planning efforts and kept apprised of status.

During test phases, the IT team also carried out three rehearsals for the follow-on cutover and go-live for the new target system. These rehearsals allowed teams to fine-tune the plan and to rehearse resolutions of potential problem scenarios.

Successful Go-Live

The new production environment was successfully deployed during a time that minimized risk to the company—the middle of a month in mid-quarter. Once it was up and running, but before it was made the production platform, the team invited a broad base of users and analysts to exercise the system. This validation cycle allowed the final adjustments to be made to the new design.

"From the first time our users logged into the system, they were blown away by the performance improvement," says Lanterman. "My team of business users was not thrilled initially with having to work through user testing, as their expectations were low that there would be a big benefit in it for them at the end. They were really surprised and happy with the result."

The go-live of the new environment—making it the production environment for the company—was carried out over four and a half days of downtime.

Company-Wide Productivity Improvements

Today, the new database engine is giving users a significant boost in performance (see Figure 1). The resulting productivity improvements impact all of the major business processes throughout SGI.

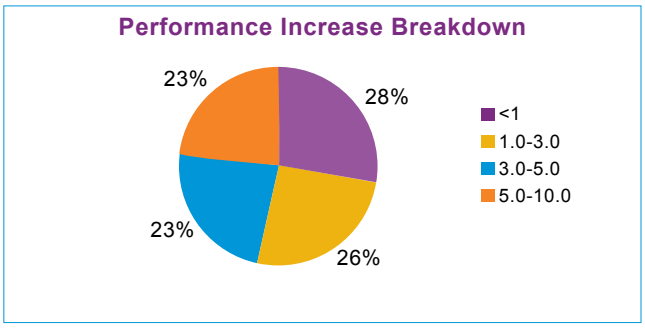

Figure 1. Moving the ERP data to an Altix platform has yielded performance gains that impact every system user. More than 20% of the ERP programs have gained a 5X to 10X improvement.

"Precise measurements—and extensive positive feedback from our users—shows that we've made huge strides in performance for our company-wide ERP solutions," states Diane Gibson, CIO at SGI. "By moving from a proprietary RISC system to Altix, we're saving $2-million a year, and we've achieved stable performance from the start. On top of that, programs are showing an average 3X improvement in run times. Almost half are achieving 3X to 10X improvements. In IT circles, a 3X performance improvement is the usual goal for any extensive upgrade or replacement. The IT team made the right decision to make this move and we'll benefit from the improved productivity and cost savings over a several-year payback period."

"The SGI ERP system impacts every employee—particularly human resources, manufacturing and finance. All revenue-generating and business-planning functions are dependent on the availability and optimal operation of the Oracle database and applications. We are constantly striving to get cost out of our administrative functions, while increasing productivity. This migration allowed us to do that in a big way."

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At the time of the go-live, the user base was so impressed with the performance that IT received some calls expressing disbelief. For example, some jobs that used to take three hours were running in only 20 minutes—employees thought that the program must not be executing and had to be reassured that everything was working.

"From my perspective, this change was initially all about saving costs," says Lanterman. "It was a side benefit to get the productivity improvement that we have realized."

The performance improvements have also translated to drastically reduced calls to the help desk. "We used to routinely get reports of problems with slow-downs, especially during critical peak periods," states Gibson. "Now, IT is no longer in the critical path for solving performance problems. This is really impressive when you consider that we moved to a system with a smaller footprint, lower TCO, and overall improved operation.

"By moving to Altix, the team projects a lifespan of at least five years for the new system with the potential to stretch it to seven," continues Gibson. "In addition, they can readily scale the system to fit future jobs. This factor alone validated the investment. When we consider the cost savings, performance improvements, increased reliability, and the ability to employ the latest Oracle software releases, we are more than pleased."

With a relatively small staff, the SGI IT group was able to carry out this migration process without experiencing any setbacks or pitfalls.

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Achieving Real-Time Application Performance

When developing real-time applications, organizations need to consider how responsive each business process must be to satisfy a specific business goal. From a business perspective, it's more useful to think in terms of "right time" rather than "real time." Depending on business needs, the action time requirements may vary from a few seconds to several hours. A practical definition, according to Lanterman, for the meaning of real time is "the ability for an organization to react to business needs and changing business circumstances within a single day. Many organizations we spoke to agreed with the intra-day definition of real time because this threshold is important from both a business and a technology perspective."

For the business, the ability to take intra-day action can have a significant positive impact on both business finances and marketplace perception because this capability enables an organization to use business information to drive its daily business operations efficiently. Although the ROI realized by reducing action time to a specific level is the main factor in justifying real-time projects, this ROI must be balanced against the incremental IT costs of achieving the reduction.

Real-time processing involves more than just technology. It must be recognized that the business ROI achieved by reducing business reaction times will also depend on the ability of the organization to modify its business practices to take advantage of the improved responsiveness in the IT system.

"Simple things like report requests now run so much faster on Altix," explains Lanterman. "Since my team spends much less time waiting around for the system to do it's job, now they can spend that time on analysis and other value-add activities."

For More Information

The IT deployment processes are available in the white paper, "Migrating An Oracle ERP Database to an SGI Altix Platform."www.sgi.com/pdfs/3935.pdf

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