

## Success Story

# Real-time Casino Management



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– Tom Soukup, Senior Director of R&D,  
Konami Gaming Inc.

## SGI® Altix® Servers and Oracle® 9i Database Take Casino Gaming to New Levels

There was a time when a slot machine was just a slot machine—the familiar electromechanical icon of casino gaming. The experience has long since gone electronic, and slot machines now brim with possibilities, challenges, and feedback. Insert your ID card, and the system not only tracks your bets but prompts you about incentives, and promotions. The same system tracks your play at other gambling venues—tables, Keno, sports book, bingo—so that the random I/O traffic through the 2,000 slot casino’s player tracking system is at least the equal of your neighborhood bank. Running 24/7 without a break, it is tracking every carded and uncarded game play, processing millions of transactions, and constantly updating every gamer’s data trail. Only the Konami Casino Management System (KCMS) can do this in real time. And the heartbeat of the Konami system is SGI compute and storage technology running an embedded Oracle database.

### Delivering A More Satisfying Gaming Experience

Konami Gaming isn’t the only company making player tracking software for the banks of slot machines that greet you in America’s casinos. But it’s the only company whose systems provide personalized real time responses during every game. Gamers are almost always impatient; when they make a play, they want a response now. Waiting for results takes the edge off the experience. For example, if a player wants to cash in their free play incentive, Konami can register the action, query its SGI Oracle database server, and come back to players in real time.

“A lot of times, you’ll see your points updated before the end of the spin,” says Tom Soukup, Senior Director of R&D, Konami Gaming Inc. That is a serious achievement in the casino environment, but routine for Konami, whose solutions include PIN-protected TCP/IP connec-



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tions over a 100MB-per-second Ethernet network to the pc-based Network Accessed Mother Board (NAMB) on every slot. “Real time” is a buzzword at Konami.

“One of the big reasons why Konami continues to use SGI systems is that we may do millions of transactions a day at a casino,” says Soukup. “It’s a multitude of small transactions and random I/O—much like a small bank.” An example is Albuquerque’s Sandia casino, where 1,800 slot machines generate more than 14 million database inserts and updates every 24 hours on a Konami system. Most gaming management solutions can’t track the progress of individual games, because they’re using server technology that lacks the necessary memory and I/O bandwidth. Konami uses SGI Altix servers to track the progress of every game within a multi-game slot machine and give players the

satisfaction of real time feedback. Moreover, the casino knows the exact theoretical win by game instead of an average by slot device.

## **SGI Compute and Storage Technology: The Clear Choice**

Of course, there’s more than gaming and real time OLTP transactions to casino IT environments. KCMS reports, analysis, and data mining add to the I/O demands on the database server.

“Not only do you have to maintain real time to the floor,” says Soukup, “but you’ve also got to mine the data for marketing and accounting purposes. We summarize a gaming day into multiple Oracle summary tables so our customers can use Oracle Discover for marketing analysis and slot analysis. The result is a mixed environment with online transaction



processing and online analytical processing. However, the challenge is to do both and maintain real time to the slot floor. Our competitors need multiple servers to do this. We can do it all with the bandwidth of a single SGI Altix 350 server, and avoid the hassle of trying to keep several systems in sync.”

Konami singled out the Altix platform as its server of choice after evaluating competing platforms. Recent evaluations have cemented this choice. “We recently benchmarked a system from another vendor that was preferred by a customer,” says Soukup. “Real time performance and I/O were terrible.

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Typically, the Altix servers installed by Konami have 4-8 processors, which is suitable for casinos with 500 to 1,000 slot machines. But Konami is also selling into larger casinos with 1,000 to 4,000 slots that require 8-16 processors, and this is another reason why Konami favors the scalable SGI NUMAflex architecture. They know they can serve the entire range of customers in the casino marketplace with a single scalable SGI technology.

#### **The Other Essential: Availability**

Most casinos don't have a large IT staff, and the last thing they want to do is hire people to manage a player tracking system. Konami differentiates itself by linking the customer's Altix systems by T-1 line to its Las Vegas headquarters, where

## The Intangible Benefit: SGI Service Support

SGI has one more significant benefit for Konami: it never outsources its service and is famous for the quality of its support.

“With SGI, you always get an SGI person,” says Soukup. “That is a strength of Silicon Graphics. There's nothing more frustrating than placing a call and getting someone on site who's clueless. With SGI, whoever comes, knows—or can find out quickly.

“We were benchmarking another vendor's equipment and they sent out a third-party person and a sales rep. After six hours I told them they had two hours to fix it or take it away. They were finally able to call someone in Australia who helped them solve it. SGI sends you someone who's familiar with the product, who's trained on it, and who has access to the right people. That's getting rarer and rarer in the industry.”

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administrators remotely maintain the server and the database.

Konami has now installed 17 casino management systems across the United States, all with embedded Oracle Database and all 300+ slot machine sites running on SGI hardware, and has plans to install at least seven more in the near future. All but three of the SGI hardware sites are running on SGI Altix 350 servers. The other three are running on SGI Origin 3200 systems, but will soon be migrated to the Altix platform. Both platforms have given Konami another critical performance attribute: uptime.

Availability is of supreme importance to casinos, which have to deliver gaming experiences 24/7 every day of the year to keep customers happy and revenue flowing. Two or three hours’ downtime at any hour of the day can mean a significant loss of income. SGI’s renowned reliability is critical here.

“We installed a solution on an SGI Origin 3200 three and a half years ago, and it has never been down,” says Soukup.

“Now we have an SGI Altix 350 that has been running a full year with zero downtime. On the other hand, we had a competitor’s dual-core box in here for evalua-

tion and had CPU problems right off the bat. It took them almost two months to get the system stable.”

The performance and availability of the SGI Altix platform, and a close working partnership between Oracle and SGI, have helped Konami to bring a more satisfying player experience—and a more powerful, cost-effective management tool—to its customers in the gaming industry.



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