

## KONAMI'S CASINO MANAGEMENT SYSTEM



# Real-Time Transaction-Tracking and Customer Relationship Management

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

There was a time when a slot machine was just a slot machine—the familiar electromechanical icon of casino gaming. The experience has long gone electronic, and slot machines now brim with possibilities, challenges, and feedback.

Konami Gaming Inc., maker of slot accounting and player-tracking casino management software for electronic slot machines, delivers real-time player feedback and a demanding variety of database applications—casino reporting, analysis, data mining and management tools—using the Konami Casino Management System (KCMS). Even a relatively small casino can have millions of transactions a day, and much like the heavy workload mix at a bank—or other enterprises requiring tracking of accounting, asset management, cash management consolidation, customer relationship management, and other essential business functions—it’s a staggering multitude of transactions and random I/O.

Running 24/7 in casinos, KCMS tracks carded and uncarded game play and constantly updates every gamer’s data trail. Regular players insert an ID card, and the system not only tracks their bets but also prompts them about incentives and promotions. The same system tracks the play at other gambling venues—tables, Keno, sports book, bingo—and records check cashing and credit transactions, creating valuable player profiles. The random I/O traffic through a typical 2,000-slot casino’s player-tracking system can easily reach many

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millions of transactions per day. Only the Konami Casino Management System (KCMS) can do this in real time. And the heartbeat of the Konami system is SGI® server and storage technology running an Oracle database.

Konami, based in Las Vegas and Osaka, Japan, has installed 30 casino management systems using Oracle 9i Database across North America. All of Konami's United States sites—those with 300+ slot machines—run on SGI® high-performance server and storage hardware. Konami plans to install at least seven more solutions based on SGI and Oracle technology in the near future.

One New Mexico casino recently upgraded from a 4 processor SGI® Origin™ system and a 1GB SGI® InfiniteStorage TP9100 to an SGI® Altix® 350 server with 6 1.6GHz Intel® Itanium® 2 64-bit processors and a 4GB SGI® InfiniteStorage 4000: they immediately realized an almost 10X performance increase. “For example,” says Tom Soukup, Senior Director of R&D, Konami Gaming Inc., “a big accounting report that used to take them 10 minutes to run now takes about a minute or less. We actually tested performance for another customer who wanted to use EMC and Sun gear. We benchmarked that configuration against the SGI Altix and InfiniteStorage combination and we saw the same magnitude of performance increases with the SGI solution versus those other vendors.”

### Analyzing Gaming Activity and Patron Trends

Another casino in Albuquerque, NM has 1,800 slot machines that log more than 14 million database inserts and updates every day. “Each registered guest leaves a data trail that is tracked and analyzed with Oracle decision support tools,” says Mark Wiedemer, director of the Sales System Division, Konami Gaming. “The data allows the casino to enhance their experience by offering personalized services.”

All the machines at this casino are linked via 100MBps Ethernet connections so they can continually upload data via middleware servers into an Oracle 9i Database hosted on SGI Altix servers with InfiniteStorage disk arrays. “A single patron might generate a thousand records from one day of gaming,” adds Soukup. “Each night we aggregate that information into a historical operational data store hosted on the same Altix system.”

KCMS customers use this business intelligence data to analyze patron activities and gaming trends, which help them roll out highly targeted marketing campaigns to reward “Advanced Incentive” free slot play to big spenders and regular customers, in addition to managing guest points redemptions (such as a free steak dinner).

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## Networking Northern Nevada Casinos

One unusual configuration has just been installed in 9 casinos in Northern Nevada with a total of 2,500 slots. Their smallest casino has 42 slot machines and the largest has 574. Konami uses one single SGI Altix 350 server and InfiniteStorage disk array shared among five northwestern Nevada properties and one SGI Altix 350 server and InfiniteStorage disk array shared by the northeastern properties.

“We run multiple Oracle instances: each casino runs its own instance of the database but it’s all housed on the same Altix server with eight processors on each and a shared InfiniteStorage disk array,” explains Soukup. “Each casino has their own database sharing a server/disk array pair. We use Oracle replication so that a player needs only one ID card for all 10 properties. A player can go from property to property with the same patron card and they’re automatically registered.”

## Tribal Casinos Choose Konami for their Class 3 Casino Management System

Konami Gaming is currently experiencing great success in Oklahoma, where the state has allowed Native American tribal casinos to switch from Class 2 slot machines to Class 3 “Vegas-style” slots. With Class 3 slots, each individual machine generates its own random numbers, determining its own wins. Perhaps without even knowing the technology behind it, serious gamers prefer Class 3 “Vegas-style” slots because they feel they can determine when a slot machine is “hot” – paying out frequently. In the Class 3 slots, which are the only type of casino slots Konami works with, a piece of equipment is inserted in every slot machine for monitoring, and that information is sent to the centralized SGI Altix server and Oracle database.

As the Oklahoma tribes began setting up Class 3 slots, Konami’s first installation with a 400 slot followed by casinos with 800 and 1,800 slots making the switchover.

“It’s a fair investment for tribes to migrate to Class 3 gaming,” notes Soukup, “They basically have to buy or convert all their slot machines to Class 3, but when they’re choosing systems to manage their investment, they’re choosing the Konami system based on SGI and Oracle technology.”

## Delivering a More Satisfying Gaming Experience

While Konami Gaming isn’t the only company that makes player-tracking software, it is the only company that can provide personalized real-time responses to carded guests while they’re playing. The combined KCMS, SGI and Oracle technology is so fast that casinos report players often see their points updated before the end of a spin, a serious achievement in the casino environment where players are almost always impatient. Moreover, the casino knows the exact theoretical win by game instead of an average by slot device. And, since most casinos don’t have a large IT staff, Konami further differentiates itself by linking the customer’s Altix systems by T-1 line to its Las Vegas headquarters, where administrators remotely maintain the servers and disk arrays, as well as the Oracle database.

“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 revenue and player dissatisfaction,” concludes Soukup. “Not only do you have to maintain real time to the floor, 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/InfiniteStorage solution, and avoid the hassle of trying to keep several systems in sync.”

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In addition to real-time gaming, Konami can now add “hurricane-proof” to its accomplishments. Weeks before Hurricane Katrina devastated the Gulf Coast, the President Casino barge in Biloxi, Miss., had just installed a Konami system for their 1,000 slots, including a 4-processor SGI Altix and a SGI InfiniteStorage 9100 system with 64 drives. Katrina’s ocean surge lifted the casino barge up over land, across a highway and left it sitting atop a two-story Holiday Inn. When the gaming company decided to open another casino on the renovated Biloxi riverfront, the equipment was salvaged from its perch and brought to what is now the Silver Slipper Casino. To everyone’s amazement, the SGI system came up, the Oracle database was intact and everything worked fine. The Silver Slipper Casino opened November 9, 2006, using the Konami system that survived Katrina.

The performance and availability of the SGI Altix and InfiniteStorage platforms, 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 system – to its customers in the gaming industry.



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