

## PLAYERS CLUB - HIGH AVAILABILITY OR WALL OF INFORMATION

### 2003 COMPUTERWORLD HONORS CASE STUDY

#### MEDIA, ARTS & ENTERTAINMENT

A VIRTUAL "WALL OF INFORMATION" PROVIDES INTEGRATED MANAGEMENT INFORMATION ACROSS EIGHT CASINOS, 100 RESTAURANTS, 10 SHOWS, SEVEN SPAS AND THREE GOLF COURSES ENHANCING THE CUSTOMER EXPERIENCE 24 HOURS A DAY, 365 DAYS A YEAR. [20034678]

*A Search for New Horizons*



#### SUMMARY

We set out in 2002 with a strategy to implement a "Wall of Information" that would manage, protect and share the organization's most vital asset, information. In addition to enabling consolidation and management efficiencies, the "Wall of Information" included a design to provide high availability and disaster recovery for Players Club, MGM MIRAGE's reward card.

#### APPLICATION

In the late 1990's, MGM MIRAGE visualized a "Wall of Information" – a strategy that would allow data to be shared across the enterprise regardless of platform. As this vision grew, key design features were incorporated, such as ease of management, and protection of information from loss or outages. The "Wall of Information" was also seen as an enabler for consolidation of physical resources. In 2002, MGM MIRAGE saw this vision become reality as it implemented architecture to support its most critical application – Players Club. MGM MIRAGE implemented the "Wall of Information" to consolidate data centers, manage and protect data, and provide the highest availability for the Players Club. In 2000, mergers and acquisitions occurred that resulted in MGM MIRAGE owning seven gaming resort properties in Las Vegas, NV. Through the implementation of two EMC 8830 storage arrays, MGM MIRAGE is able to consolidate eight individual data centers to three corporate data centers. This consolidation enables MGM MIRAGE to streamline IT support and use shared resources to leverage investments.

Data consolidation provided immediate financial and management benefits, but protecting data could not be sacrificed for the sake of consolidation. The MGM MIRAGE information technology environment is designed with redundancy from the servers to the EMC Symmetrix storage arrays. MGM MIRAGE also utilizes Timefinder Copies for backups, reporting, and instant restore, as well as SRDF for remote data replication. This environment allows MGM MIRAGE to manage, protect, and share its most critical asset, information.

The Player's Club card is the most mission critical application at MGM MIRAGE and is designed into their "Wall of Information" architecture. Players Club is MGM MIRAGE's player tracking card, enabling guests to use one card when playing slot machines and table games in order to qualify for benefits at eight MGM MIRAGE resorts and casinos. With the Players Club card, patrons have access to:

- Eight resorts and casinos
- 100 restaurants
- 10 shows
- Seven spas and salons
- Three golf courses

Patrick J. McGovern,  
Chairman of the Chairmen's Committee

Daniel Morrow,  
Executive Director

Martin Taylor,  
Publisher Computerworld

- Luxurious accommodations
- Exiting promotions and special events

This card allows MGM MIRAGE to cross market their properties, micro market to their customers, and reward their customers while providing customer retention. Considering that Las Vegas and Gaming in general is a 24-hour operation, the Players Club environment must be available 100% of the time. To ensure this application is up 100% of the time, MGM MIRAGE designed an environment that includes:

- Two EMC Symmetrix Enterprise Storage Arrays
- Powerpath Software for load balancing and failover
- ECC OE for centralized management
- ESN Manager for zoning and masking storage
- Timefinder Software which creates instant copies of production data for backups, reporting, and testing
- SRDF Software for synchronous remote replication
- Geospan Software for distance clustering

This design allows the Players Club environment to be available in case of a server outage, network outage, storage array outage, and geographical disaster.

## **BENEFITS**

The "Wall of Information" was designed to assist the following people:

- Personnel at MGM MIRAGE properties by enabling high availability for critical applications – the system is always on and available, eliminating downtime for guest critical applications due to hardware, network, or data center unavailability.
- Information Systems personnel at MGM MIRAGE by streamlining the management of information through the reduction of data centers.
- MGM MIRAGE business by reducing costs through system and data center consolidation, as well as investment protection since the disk resources can be re-used for other applications and platforms.

The "Wall of Information" has been successful in helping all these groups. It has raised the bar at MGM MIRAGE for data availability, especially on Intel-based architecture. With the rich configuration offerings, it has also enabled a granular means to provide business continuity and disaster recovery planning. Guest critical applications and data can be configured to utilize disk at two separate data centers, with the application available from both locations. Should a disaster occur at one of the facilities, then the application and data are immediately available from a secondary data center. This has enabled MGM MIRAGE to utilize the configuration for enterprise systems that serve eight properties. For less-critical applications, the data can be stored at two data centers, but the application is available from only one data center. This reduces costs and provides data protection. For non-critical applications, the data and application are available from only one data center.

With the "Wall of Information" architecture, the customers are afforded the opportunity to utilize the Players Club card and its benefits 24 hours a day, 365 days a year. MGM MIRAGE prides itself on customer service, being the premier gaming destination in Las Vegas. The "Wall of Information" is an essential architecture to meet the ever demanding requirements of this number one priority.

With MGM MIRAGE employing 45,000 people, MGM MIRAGE Information Systems staff is able to run a lean department of 235 people. Architectures like the "Wall of Information" enable this to occur through streamlining operations and maintenance activities. MGM MIRAGE

Information Systems is a centrally managed environment. Fewer data centers equate to less travel for system implementation and problem resolution. This equates to greater efficiencies in the area of storage management.

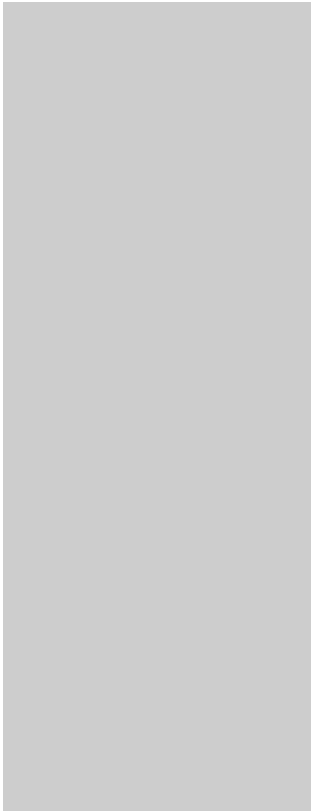
There are several new opportunities afforded through the "Wall of Information". One includes the ability to provide high availability across geographical locations for applications running on Intel-based architecture. The cost of Intel-based architecture is substantially less than their mid-range sisters. For example, MGM MIRAGE spent \$7,500 to refresh the Intel-based hardware running the Bellagio Hotel system. This cost would have been \$450,000 for a mid-range system. Obviously, for reduced costs, Intel-based architecture is preferred. However, application availability of the Intel-based architecture was afforded only to a single location. With the implementation of the "Wall of Information" architecture, MGM MIRAGE was able to span the Players Club application to two separate data centers, providing, for the first time, high availability at the application level for an Intel-based architecture. With Players Club serving eight properties, this high-availability design was critical to ensure up-time for the application.

Another new advantage of the "Wall of Information" architecture was the ability to instantaneously replicate the production data for other uses. Reports can be generated from the replicated copy, thereby not impacting the performance of the production system. Backups can also be performed against the replicated copy, thereby reducing the backup window of a production system. Previous to the implementation of the "Wall of Information", these replication activities would require enough time to be non-useful. With the "Wall of Information" architecture, replicated copies are made instantaneously. This has provided fundamental changes to the way MGM MIRAGE uses the data, such as offloading reporting tasks to non-production servers. It has also enabled MGM MIRAGE to quickly produce a usable environment for testing application and configuration changes prior to implementing them into the production environment.

With the implementation of the "Wall of Information", MGM MIRAGE will see further changes to how systems are architected for disaster recovery planning. All data will be categorized and ranked, then configured on the "Wall of Information" appropriately with disaster recovery objectives being met. We will see existing computer rooms collapse to networking closets as systems are moved to the three core enterprise data centers and data is migrated to the "Wall of Information". We will also see diverse platforms utilize the "Wall of Information", such as AS/400 and RS/6000 mid-range systems. This will enable us to more easily and quickly share the data between the mid-range systems and the Intel-based systems. The "Wall of Information" architecture enables the use of Intel-based systems on a scale competitive to the mid-range and mainframe systems, including geographical business continuity. This will be a new challenge for the Technology Industry, as these two factions will merge into the same market space.

To summarize, the "Wall of Information" has provided the following benefits:

- Streamlined the sharing of data between applications and uses, thereby increasing agility for the business processes.
- Eliminated impact to customer service due to equipment or facility failure.
- Created Information Systems personnel efficiencies in regards to data management as well as storage configuration and maintenance.
- Reduced costs by enabling data center consolidation.
- Improved testing timelines by reducing time to replicate data. This ultimately improves customer service, since it allows MGM MIRAGE to



improve and enhance applications quicker.

- Provided ability to manage applications to different levels of disaster preparedness with a singular architecture.

**IMPORTANCE**

**ORIGINALITY**

**SUCCESS**

**DIFFICULTY**