



## Virtual Instruments Keeps Austrian Lotteries Up and Running 24x7

### Higher performance and quicker troubleshooting for two datacenters

#### Company overview

The Austrian Lottery Association and its main production datacenter is based close to the city center of Vienna. A parallel datacenter is set up in a branch facility which is also located in the Austrian capitol. With 500 employees, the lottery organization achieved a total revenue of EUR2,642 million in 2010. Founded in 1983, the offerings for its customers have been continuously extended over the years.

#### IT environment

The two datacenters within the Austrian Lottery rely primarily on HP enterprise storage systems. In total, the IT staff supports approximately 110 Terabyte of online data with their multiple servers. The Austrian Lottery maintains approximately 600 SAN ports comprised of Brocade and some older McData switches which must be actively monitored by the IT staff. Performance of the applications and the infrastructure are both monitored on a continuous basis as uptime is essential for customer satisfaction and revenue generation. Most applications run on Microsoft operating systems, with extensive use of VMware virtualization as well.

All relevant IT transactions are aggregated in both datacenters in Vienna. Therefore, a reliable storage infrastructure which ensures the uninterrupted flow of all IT operations is essential.

#### Challenges:

- Increase reliability of IT
- Detailed performance analyses
- Acceleration of failure diagnostics and failure elimination
- Compiling and analyzing usable data to optimize SAN

#### Solution:

- VirtualWisdom Server
- SANInsight ProbeFCX
- VirtualWisdom ProbeV

#### Customer Benefits:

- Granular storage management
- Faster failure elimination and identification
- Higher reliability of SAN
- More productive IT resources that can now be utilized for other IT projects



## CASE STUDY

This goal is achieved through proactive monitoring for possible failures which are not noticed within the operating system and a detailed analysis in case of an alert. An important area to monitor is the response times of single LUNs to ensure maximum transaction performance. If the latency is too long, it is essential to find the reason quickly so the issue can be resolved and a possible outage can be avoided.

### **Reliability, high performance and quick response times needed**

Operating both datacenters and the storage network can be a challenge for the IT team of the Austrian Lottery Association. It was most important for the team to guarantee no outages, to keep performance at a high level, and to utilize all workloads efficiently. Given their requirements, they were looking for a solution to quickly analyze a vast amount of data, especially in the event of a failure of a storage system. Such an analysis would improve the response time of the IT team which must identify and eliminate the malfunction source. This leads to a higher reliability of the datacenter and guarantees all users uninterrupted access to the IT infrastructure on a non-intrusive level.

In the lottery and online gaming business, a vast quantity of digital data is produced, which has to be processed and stored quickly. To have access to this data constantly, it is crucial to have a stable infrastructure and also to discover and eliminate failures before they affect the system.

### **VirtualWisdom delivers optimized storage management**

Ultimately, the IT staff decided for the VirtualWisdom solution from Virtual Instruments. "We have chosen a combination of various components from Virtual Instruments so we are able to use the most suitable solution for our environment", says Erich Eckel, Manager IT, Austrian Lottery Association. "This solution includes VirtualWisdom software, including ProbeV, and SANInsight ProbeFCX performance monitoring devices. These products were integrated into our storage area network. It was our goal to guarantee uninterruptable IT operations. Proactive monitoring, rapid localization of the error source and detailed performance tracing were very much in the foreground".

Before deciding on Virtual Instruments, a detailed evaluation took place through the IT team in which they examined carefully all functions and advantages of the Virtual Instruments products. The VirtualWisdom software works with SANInsight ProbeFCX hardware and checks each data packet which goes through a Fibre-Channel-SAN. This is why the solution can deeply analyze storage I/O performance. For Austrian Lotteries it was important to have the opportunity to detect performance degradations of applications and to check latencies continuously. This hardware/software combination is also able to identify failures of connected devices and can warn the administrators accordingly. The option to identify overloaded ports or unauthorized traffic is also important for the performance. To do so, SANInsight ProbeFCX monitors storage data from the server to the storage volume and is able to deliver a non-intrusive end-to-end analysis. In addition to the Fibre Channel failures, SCSI failures and reservation conflicts can also be displayed.

VirtualWisdom ProbeV is part of the installed solution and is a non-agent based monitoring software. It utilizes data about switch performance and link error statistics in a non-intrusive

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## CASE STUDY

manner. This happens in real-time and the IT team is able to set individual thresholds and alerts. With centralized switch event monitoring, VirtualWisdom allows the IT team of Austrian Lottery to get an overall view of fabric health. The software checks all switches in the SAN, independent of supplier. Once a highly utilized or underutilized port is detected, the administrator is able to adjust load balancing very quickly and is in the position to proactively avoid performance bottlenecks. Furthermore, the software detects failed multi-pathing links and identifies sub-optimized links. With ProbeV, the IT team now can generate accurate trend analysis for granular capacity planning. Data gathered over a certain period of time allows a historical performance trending and also to implement adequate backup scenarios.

“We use VirtualWisdom and the SANInsight ProbeFCX to get a detailed and comprehensive view of performance within our SAN in order to act proactively in the storage area”, says IT Manager Eckel. Neither the existing infrastructure nor the processes are affected. With the data provided by VirtualWisdom, the IT team is now able to make reasonable decisions about utilization, availability and performance for each level of infrastructure – network, server, storage and applications. This simplifies our storage management enormously”.

### Simple, efficient and quick

The solution itself was implemented quickly and easily into the existing IT environment using IP-address and DNS-names. There are numerous advantages which confirmed the decision in favor of VirtualWisdom. “The solution suits us perfectly. On one hand it monitors the data in real-time, on the other hand it can analyze and report on current as well as historic data”, Erich Eckel points out. “There was no real alternative solution for us. Of course, storage vendors provide tools, which mainly monitor information within the system, but they do not monitor the entire SAN. It was important for us to get vendor-neutral performance data on a LUN basis. Virtual Instruments was the only vendor to provide this data in the degree of detail we needed. “

The improvements are very clear to the IT team of the Austrian Lottery Association. They are able to react much quicker to malfunctions of storage systems and in many cases, they can localize much faster if the individual failure can be found on the server or storage area. One example was a higher read/write ratio related to a server which could be traced back to a missing index. Another advantage is the ability to identify broken disks within storage arrays easier and quicker. If dedicated LUNs show longer response times, one reason might be a bad disk which does alert the system but can be identified by the decreased performance of the LUN and can be exchanged before a major outage.

“We were able to reduce the time for root cause determination - for non-critical failures - from days to hours or even to minutes”, says Erich Eckel. “Especially, as historical data are available and it is not necessary to wait for this failure to reoccur. And in case of a critical failure, it is possible to run an analysis and to find a workaround well in advance of a field engineer arriving. As a result, potential downtime of the production system is reduced to a minimum. That puts us in the position of guaranteeing uninterrupted operation of our IT systems and ensuring complete business continuity. Our business is essentially gambling, but when talking about IT, you should never rely on luck but on rock solid solutions like VirtualWisdom“. The IT team feels so positive about their current SAN monitoring solution they are now considering deploying VirtualWisdom ProbeVM to add virtual server monitoring

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to their SAN monitoring capabilities.

### One solution for the entire SAN

To sum up, the reasons the Austrian Lottery Association chose the VirtualWisdom solution were vendor-neutral analyses, real-time reporting, and simple integration into their existing environment. The IT Manager points out that there were no major issues, neither during implementation phase nor in production. LB-Systems, a Virtual Instruments VAR, implemented the solution for the customer. The total benefit of having the entire view of the SAN is unquantifiable, but the following clear advantages include:

- Real-time analysis
- Monitoring all components in a vendor agnostic method
- Fast and seamless integration into existing SAN and existing management tools
- Existing infrastructure and processes are not affected
- Reports on current and historical data to show detailed trends



25 Metro Drive, Suite 400  
San Jose, CA 95110

Sales Information  
[sales@virtualinstruments.com](mailto:sales@virtualinstruments.com)

Customer Support  
[support@virtualinstruments.com](mailto:support@virtualinstruments.com)  
[www.virtualinstruments.com](http://www.virtualinstruments.com)

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