

360 TB, 500 Camera NVR Installed Flawlessly, Operational in Days *Using FlashDisk® with RAID 6*

The North Star Mohican Casino, Bowler, Wisconsin, recently opened the first phase of its \$100 million expansion featuring 1,225 slot machines and 14 game tables. Reliable Security, Everett, Washington, was faced with the daunting task of installing the entire system and going live with a compressed schedule and an unfinished datacenter infrastructure. “The pressure was on because we got the purchase order only 11 weeks before the casino was scheduled to open,” said Bill Miller, President of Reliable Security.

The surveillance system was required to meet state regulations so the casino could not open without it. The casino and Reliable Security faced serious financial implications if the casino start was delayed even just a few days. If Reliable Security was held up on site completing this project, not only would it incur additional expenses, but subsequent projects would also be delayed. Getting the job done came down to getting 15 servers and 15 RAID systems operational in just two days prior to the opening.

Moving to new generation IP video surveillance system

Known as the “Midwest’s Friendliest Casino”, North Star Mohican Casino is operated by the Stockbridge-Munsee Band of Mohican Indians. The Mohican Gaming Commission decided to install the new video surveillance system to replace an existing analog system to meet stricter regulations that require

more cameras, higher resolution video and longer retention periods. Reliable Security demonstrated several different software packages to the Mohican Gaming Commission.



“The Mohican Gaming Commission selected IndigoVision software because it is an IP-based system that runs completely on network servers, eliminating the need for additional servers to provide capabilities such as access control,” Miller said. “Fewer servers means lower cost and fewer points of failure.” IP video provides significant benefits compared with traditional analog CCTV systems, such as scalability, real-time camera-based analytics and fault tolerant configurations.

Each camera is connected to the network via a transmitter/receiver unit that compresses the analog video into DVD quality MPEG-4 digital video for transmission over the network. The network video recorders (NVRs) can be located anywhere on the network and their location is transparent to the operators who call up the recorded video stream. Whenever possible, NVRs are located

near camera clusters to minimize network traffic. The video stored on any NVR can be independently viewed by multiple authorized users regardless of their location on the network. The integration of the surveillance and access control systems provides important advantages. For example, a security alarm can provide an input to the IP video system, which automatically moves a camera to cover the incident.

Supporting 500 video streams 24X7

The NVRs are required to support 500 video streams on a 24X7 basis and deal with the dynamic sequential and random I/O demands. “The storage system starts out as a sequential IO application but over time the disks become fragmented and the application changes to less efficient random I/O,” Miller said. “We needed a storage supplier that could deliver the high levels of write performance needed to provide day-in and day-out continuous video capture.”

Storage system selection

“We picked Winchester Systems because of their prior experience with IndigoVision and because we were confident in their ability to address the chal-

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lenging performance requirements of continuous security surveillance recording,” Miller said. “They provided us pre-configured “hardened” servers and disk arrays to IndigoVision’s requirements built for 7X24 operations with low power draw and low heat loads. Winchester Systems has a business model that is not solely dependent on the security-surveillance sector so we are confident they will be around to support us in the future.”

“Based on our experience with other video surveillance systems we know that the system would slow down as it became more fragmented,” said Joel Leider, President of Winchester Systems. “So we configured a storage system that is fast enough to keep up with the cameras even at the maximum level of fragmentation.”

Winchester Systems provided 15 Intel 64-bit Xeon network servers and 15 FlashDisk SX2302S 24-Terabyte (TB) RAID arrays. The disk arrays have a large hardware cache and application specific integrated circuits (ASICs), designed for the parity calculations involved in RAID 6. The use of ASICs for parity calculations helps deliver the raw write performance required in security-surveillance applications.

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***Bill Miller, President
Reliable Security***

This architecture also cost-effectively scales to both large and small systems. Winchester Systems provided the servers preconfigured with the Windows Server 64-bit operating system, security patches and updates. The servers were also set up with the Gigabit Ethernet ports configured to failover to each other to maintain compatibility with IndigoVision software.

The 64-bit architecture used in the storage arrays supports very large partition sizes, up to 64 TBs, to meet the

requirements of security surveillance software. The use of Enterprise RAID 6 helps meet the critical data protection requirements of this application. RAID 6 is a dual distributed parity mechanism that permits two disk drives to fail in an array and still be able to recover and rebuild data from the remaining disk drives. RAID 6 increases the mean time to data loss (MTDL) by two to four orders of magnitude relative to RAID 5, providing MTDL measured in thousands of months or hundreds of years instead of a fraction of a single year.

“As we got down to the home stretch, the pressure was on because the casino could not open until the surveillance system was working,” Miller concluded. “Just a couple of days before the go-live date, we wheeled the pre-configured systems in, turned them on, loaded the software and everything worked. The Mohican Gaming Commission was delighted that we were able to meet their tight deadline and loves the way the system performs. They especially like the review capability which gives them instant access to 15 to 30 days of video archives.”

About Reliable Security

Reliable Security Services can incorporate video surveillance (CCTV), access control, alarm management and audio solutions to fit your needs. Our solutions are engineered to allow ongoing customization and growth as your needs change. Flexibility and functionality at the lowest possible cost - that's an offer any business can appreciate.

About Indigo Vision

IndigoVision is a leading manufacturer of complete end-to-end IP video security solutions for CCTV surveillance applications. IndigoVision serves markets world-wide with projects in airports, city centers, ports, mines, road and rail systems, education, banking, casinos, prisons, government and the military. These enterprise-class systems improve organizations' operational efficiency, enhance public safety and enable timely emergency response.