NUUO TECHNICAL QUARTERLY
Modular Nonstop Recording

NUUO is dedicated to engineer the best video management software using open platform. We want to build a platform that would empower open integration and business enterprise. With solutions designed for every vertical industry, we have crafted an exciting array of products suitable for any surveillance needs. Feature-rich, customizable, excellent camera compatibility and seamless 3rd party integration comes with every NUUO engineered product. As we move forward towards building a better solution platform for you, let’s explore in depth on the design of a stable VMS system in this issue of NUUO Technical Quarterly.

The Danger of a Single-system Design

Recording on VMS goes beyond pressing a button. As the recording process gets initiated, the operating system gathers driver information, creates related processes and handlers, and then allocates memory and hard drive spaces for the task. Most recording servers are created not only to handle recording function but also in addition to live view and playback all in one monolithic product. Certainly there are these products that perform, but a monolithic design makes these systems vulnerable to crashes. As the process comes to a halt due to whatever reason and quits unexpectedly, so does the whole recording server cease to work. There are simply too many possible causes of software hang ups and process errors. When designing stable solutions, we spent hours and hours refactoring our codes, and in addition to optimizing the system, we also spent efforts to minimize the impact a process crash has on the entire server. We took the time to set our eggs apart so they aren’t all in one basket.

Shift to Multi-process Design

NUUO Crystal™ represents a new direction in our software design: No longer constricted into one giant process, NUUO Crystal™ separates each VMS function into individual modules, and then further breaks down each task inside those modules into individual processes.

Multi-processing system design not only guarantees process independence, but also enables the use of a central memory management and paging file system.
As the chart demonstrates above, all processes involved with recording are now independent of each other. Separating the tasks also allows for smarter resource management to allocate drive space and memory to each process. Under NUUO Crystal’s modular layout, when one process freezes the rest of the system would not be affected. In real-life scenario this translates to guaranteed uninterrupted recording capabilities even if one or two cameras or the viewing client protocol themselves fail.

NUUO Crystal™ goes beyond the programming level and is truly a modular system in every sense. In addition to aforementioned multi-process design, NUUO Crystal™ also splits the entire architecture into a modular system structure. Management server, recording server, and metadata server are separated into independent server modules.

This modular structure allows for unprecedented freedom in system design. NUUO Crystal™ is highly scalable and customizable due to this design philosophy. This allows user to balance server loading easily by sharing out the cameras and I/O devices across several recording servers. A dedicated management server module also means the whole system can be centrally configured and managed. Separation between management and recording servers also meant that in the event either module stops due to system fault the other modules will continue to operate without fail.

NUUO Crystal™ is an extremely robust and redundant VMS system. With support for unlimited cameras, 3rd party access control systems, POS, and I/O devices, the potential is limitless. Coupled with the intuitive NUUO NuClient software, management on NUUO Crystal™ is never a daunting task.

NUUO Crystal™ provides a solid platform built on open platform software to empower you with an array of exciting VMS options. For more information please refer to NUUO’s website at http://www.nuuo.com/crystal