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Inspire the Next

Hitachi Video Management Platform (VMP) caters to the high-performance and throughput demands of today's video surveillance. This converged hardware and software solution addresses issues of scalability, availability and redundancy while optimizing data center space. It is perfectly designed for mid- to enterprise-level management of video surveillance infrastructure.

DATASHEET

Hitachi Video Management Platform Provides End-to-End, Turnkey Video Management

VMP Converged Appliance Hosts Digital Video Management Systems

Hitachi Video Management Platform (see Figure 1) is a key component of Hitachi Visualization Suite, a range of solution offerings that deliver on Hitachi Vantara's vision for public safety and smart cities. The VMP solution is a converged infrastructure offering of compute and storage that runs digital video management systems (DVMS or simply VMS). Today's VMS platforms need high-performing, scalable and highly available infrastructure solutions. Hitachi Vantara has packaged best-in-industry products, such as Hitachi Virtual Storage Platform G series (VSP G series), Hitachi Advanced Server DS120 and Fibre Channel storage networking into a scalable, efficient and highly available appliance.

Figure 1. Hitachi Video Management Platform

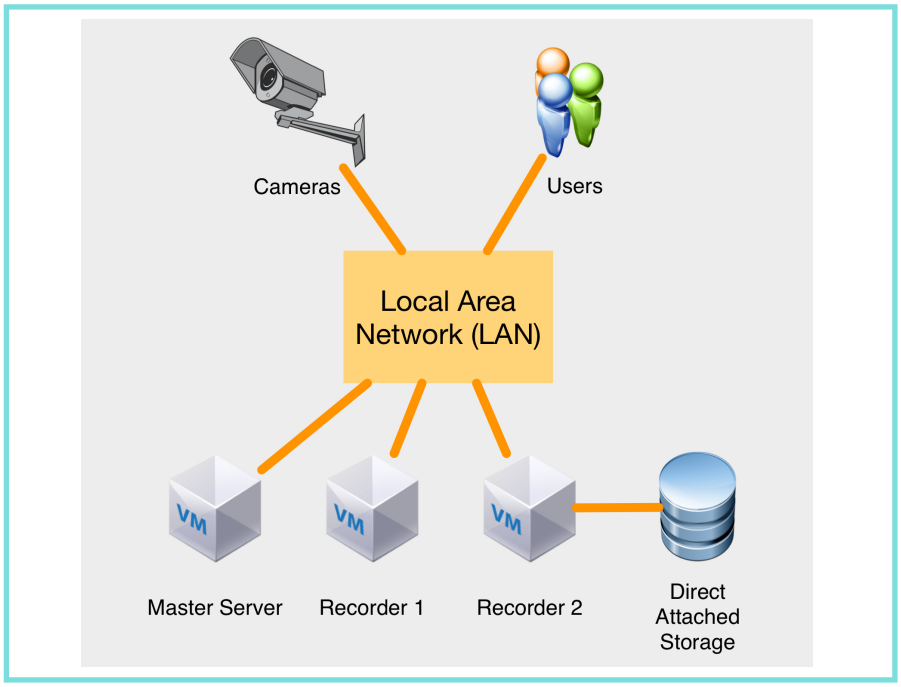

Figure 2. Typical Video Management System Architecture

History of Video Management Systems Software

Video management systems have evolved significantly from their original implementations based on video cassette recorders and coaxial cable. Modern digital video management software processes and manages data from Ethernet-connected IP cameras, capable of streaming high-quality video. Data feeds are managed by physical Microsoft Windows-based servers that store data on hard disk, typically connected as simple direct access storage (DAS, as shown in Figure 2.). Unfortunately, this kind of simplistic architecture is difficult to scale both in storage and compute capacity. The hardware deployed is never efficiently used, consuming more data center resources (power, space, cooling) than needed. The use of DAS means a server failure will result in loss of access or worse: total loss of video data.

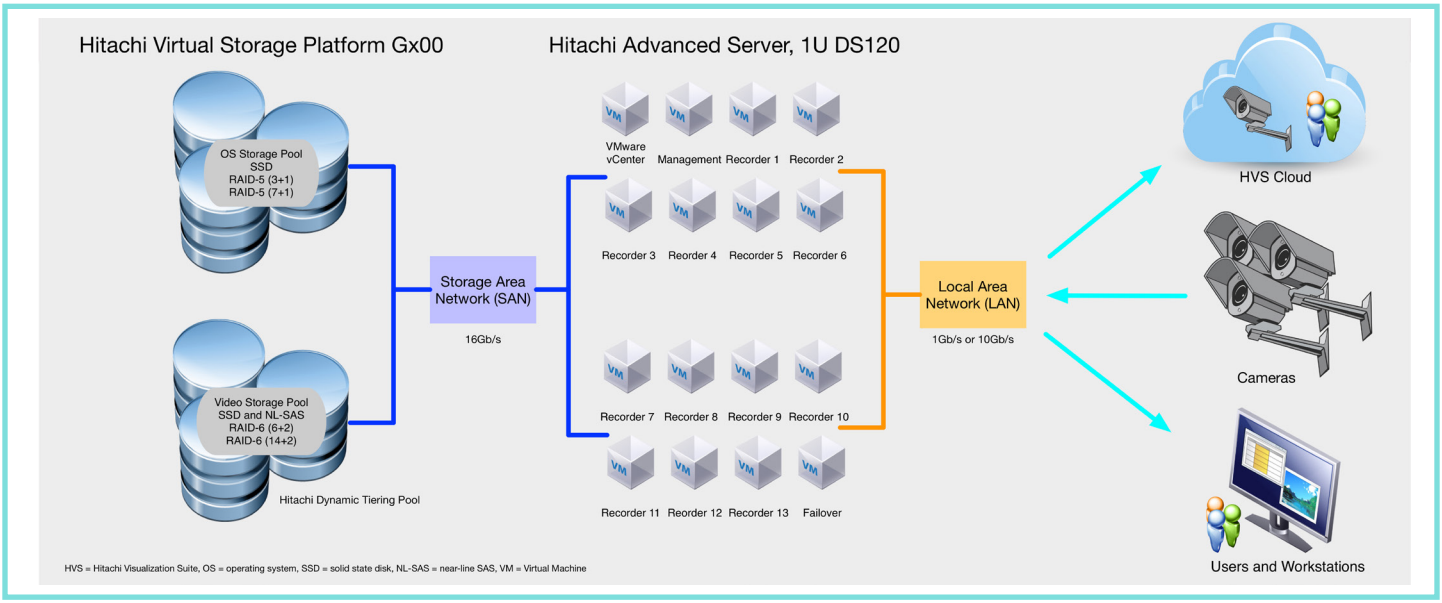

Figure 3. VMP supports industry recommendations for RAID-6, going one step further with spare disk options that provide even higher protection.

Video Storage Evolution

The issue of availability and resiliency in legacy video surveillance systems architectures is solved by introducing shared storage and server virtualization (see Figure 3). VMP uses Hitachi VSP G series storage, a highly scalable and resilient enterprise-class solution. VSP is capable of dealing with the specific I/O profile of video surveillance data: specifically, heavy random, large block size and write-intensive (95%) data. Read activity typically occurs when video data is reviewed after some incident or event and so can be sporadic and unpredictable. VSP is capable of managing both requirements without loss of throughput. Video data is stored on solid-state disk (SSD) or nearline serial-attached SCSI (near-line-SAS), with features such as RAID-6 for high availability and Hitachi Dynamic Tiering to optimize the placement of video data as it ages over time.

Fibre Channel storage networking (running at either 16Gb/s or 32Gb/s, depending on the vendor hardware chosen) provides high-performance throughput to Hitachi servers and standard VMware vSphere virtualization software. vSphere provides both availability and resiliency [through features such as high availability (HA) and fault tolerance (FT)] to ensure that no single infrastructure issue can impact system uptime.

Server virtualization has the added benefits that hardware utilization is highly efficient and scalable. Additional capacity can be provided through extra virtual machines running VMS software and through adding more physical servers. VMS supports all of the major VMS software suppliers, including Milestone, OnSSI, Genetec, Qognify and Verint.

Video Management Platform Components

The components of a VMP vary based on the customer's camera environment and retention policy. However, at a minimum (for redundancy) there will be two physical hosts, two Fibre Channel switches, and a VSP G series storage array. Each VMP has the option to include Hitachi supplied racks and either single or three-phase power distribution units (PDUs).

Conclusion

Hitachi Video Management Platform stands above the competition by combining compute and storage into a turnkey appliance that is fully supported by engineers who understand video surveillance technology.

By utilizing VMware vSphere products, VMP supports high-availability and fault-tolerance solutions, making it extremely reliable in any data center.

VMP can scale from hundreds to thousands of cameras. Designed with a set-it-and-forget-it approach, VMP provides an end-to-end video management system, a hardware solution that is both scalable and redundant.

Hitachi Vantara

Corporate Headquarters
2535 Augustine Drive
Santa Clara, CA 95054 USA
HitachiVantara.com | community.HitachiVantara.com

Contact Information
USA: 1-800-446-0744
Global: 1-858-547-4526
HitachiVantara.com/contact

DS-388-G BTD May 2019