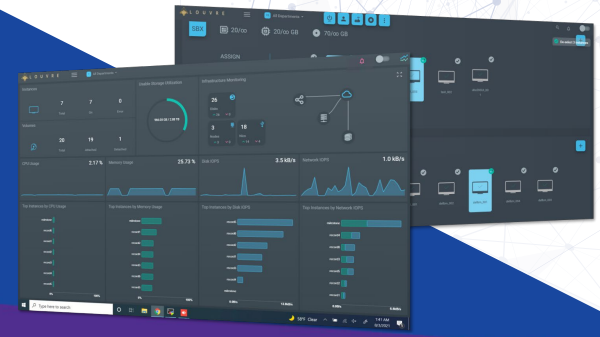


UNIFIED SURVEILLANCE PLATFORM (USP)

Resilient, High-Performance Video Surveillance Server and Storage Platform



DATASHEET

FEATURES & BENEFITS

Ingest Performance

Built for the high ingest requirements of video surveillance to eliminate the risk of degraded or lost video. Ensures optimum viewing and instant playback from intelligent global cache prioritized for recent and frequently accessed VMS data.

Resilience for 24x7 Operations

Always-on, always available video delivers nonstop recording uptime, and protects recorded video, allowing for immediate video access, even during catastrophic server and drive failures.

Non-Disruptive, Non-Destructive Scalability

Grow as your requirements change without forklift upgrades, recording downtime, or data loss.

Cost-Saving Efficiency

Consolidate multiple applications and operating systems together on a single hardware platform to reduce footprint and associated costs.

Deployment Versatility

USP can be intelligently deployed in various ways to solve different challenges: combined compute + storage, performance-centric or ingest-only compute, or high-performance iSCSI SAN.

Acquisition Flexibility

USP is hardware and software-agnostic to run any application or OS on new or existing standard x86 servers. Appliance-based or software-only options, with your choice of perpetual or subscription-based licensing.

Quantum Hypervisor (QHV)

USP solutions are built on Quantum's proven hypervisor, eliminating the need for complex, expensive, and unpredictable third-party hypervisor software. QHV is built for simple deployment, management, and expansion, and is highly optimized for the challenges of surveillance.

Modernize Physical Security with a Simple, Resilient, and Flexible Server & Storage Infrastructure

Video surveillance is more important than ever before, with video data used for not only physical security, but also for other applications like regulatory compliance, trend analysis, and business optimization. Outdated infrastructure can't keep pace with the need for zero downtime, 24x7 video access, and simple scalability, and leads to hardware sprawl and a higher total cost of ownership (TCO).

Quantum's Unified Surveillance Platform™ (USP™) simplifies your security environment with lower costs, reduced security risks, and flexibility for future growth. USP delivers a data center-centric unified server and storage solution that is built for video surveillance, reduces risk, uses your choice of hardware, and lowers TCO. And it's easy to use. No advanced IT skills required.

A more resilient, flexible, and secure platform for capturing and storing mission-critical video.

Built specifically for the demanding requirements of video surveillance, USP flawlessly captures every frame from every camera, all the time. Designed for mission-critical environments with no tolerance for downtime, data loss, or lost access to recorded video, USP delivers protection against catastrophic drive and server failure with technology that fits modern data center standards.

THE FOCUS ON VIDEO SURVEILLANCE

Video surveillance infrastructure must fulfill three key criteria:

HIGH WRITE THROUGHPUT: Video data is a nonstop, massive data ingest workload. Your compute and storage infrastructure must keep pace to ensure flawless video capture. You have one chance to record critical video, and USP is built to capture every frame, even in the busiest environments.

NO DOWNTIME, NO LOST VIDEO: Video recording never stops. Quantum USP delivers resilience against multiple hard drive and even server failures with automatic application failover, protection of recorded video, and immediate access to recorded video.

SCALABLE: Surveillance environments never stop expanding, requiring flexible growth in camera count, technology, retention time, and applications. Quantum delivers on-demand, hardware-agnostic scalability with no downtime or video loss.

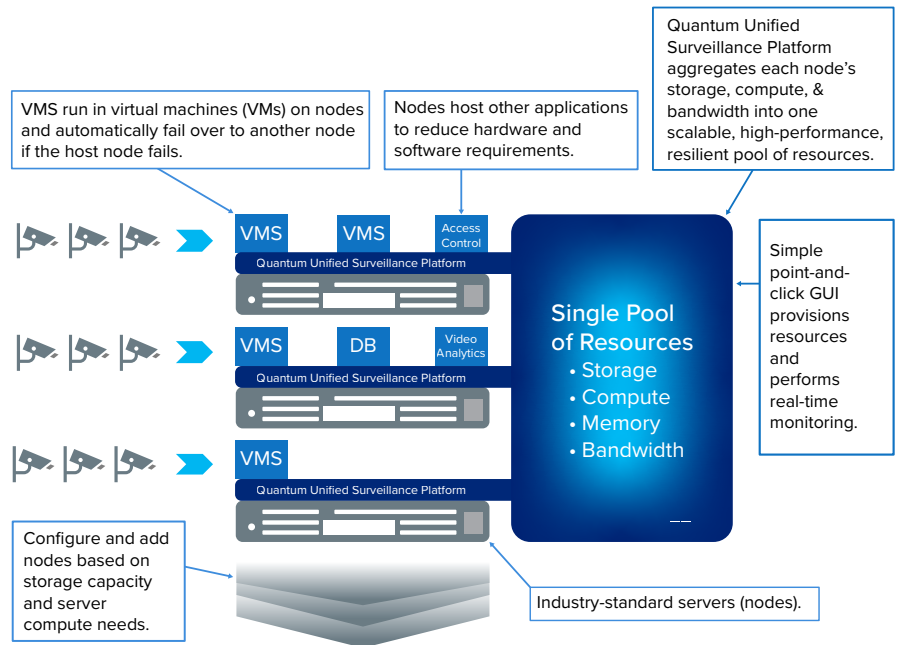
LEARN MORE:

www.quantum.com/video-surveillance

LOWER COSTS – CONSOLIDATE APPLICATIONS AND OPERATING SYSTEMS ON A SINGLE PLATFORM

Quantum's USP software transforms a group of servers into a unified server and storage platform. Leveraging Quantum's purpose-built hypervisor, USP provides the necessary compute, storage, and networking requirements to host not just the Video Management Software (VMS), but also other related applications like access control, license plate recognition, video analytics, etc. USP also supports various operating systems, so you can run Windows and Linux applications together, further reducing required hardware and associated costs.

Expansion is on-demand, non-disruptive, non-destructive, and very granular with compute plus storage nodes, storage only nodes, or support as an iSCSI external storage system.



QUANTUM-DEVELOPED HYPERVISOR

Quantum USP leverages the Quantum Hypervisor (QHV), an internally developed and controlled hypervisor optimized and proven for the demanding requirements of video surveillance. Hypervisor technology is used for efficiency and server consolidation in data centers around the world, and QHV significantly reduces costs and server sprawl in physical security environments. QHV is built with simplicity in mind to ensure that every user can easily deploy, manage, and maintain their infrastructure.

USE NEW OR EXISTING SERVERS IN YOUR SYSTEM

True to its hardware agnostic architecture, Quantum USP software supports a wide range of standard x86 server vendors. The same cluster can also use servers from different vendors as long as systems meet our minimum requirements. These servers can be new or from your existing inventory.

LOWER RISK WITH HIGH AVAILABILITY AND AUTOMATED VMS & APPLICATION FAILOVER

USP is designed with resilience and redundancy at every level, able to withstand failures across racks, servers, disks, NICs, switches and other components. Even the management services running within the software are designed to be highly available.

Your video is protected with patented erasure coding technology, which provides higher levels of resilience than traditional RAID technology. Quantum USP can withstand the simultaneous failure of multiple drives and even the failure of entire servers without data loss.

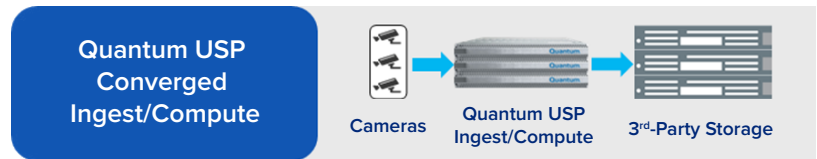
VMS recorders and other applications running on USP automatically fail over from one server to another in the event of a complete server failure, ensuring maximum uptime for your critical security applications.

FLEXIBLE DEPLOYMENT OPTIONS

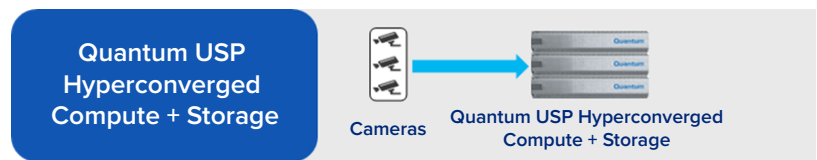
The solution is flexible and can be deployed in different scenarios, each delivering full failover and extended data protection based upon customer requirements and preferences:

Converged Ingest and Compute: In this deployment example applications and OS are converged as a Failover Server Cluster.

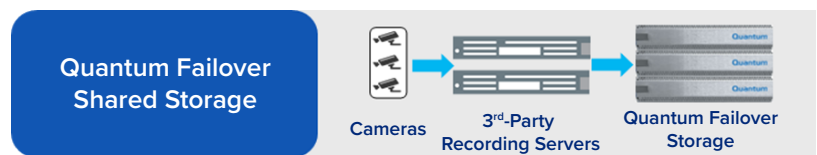
- **Video Ingest:** Delivers the compute, ingest, and application failover capabilities required for large surveillance environments, including automatic application failover, and sends video to external storage.
- **Compute:** Provides a failover compute environment for database and other compute-heavy workloads, along with local erasure-coded storage.



Hyperconverged Compute + Storage: In this deployment example all compute and storage is delivered from a single, shared set of servers, consolidated into a single pool of compute, storage, write cache, and bandwidth.



Failover Shared Storage: This deployment example delivers a high-performance, fault-tolerant iSCSI SAN storage array with erasure-encoded data protection, simple scalability, and is protected from catastrophic drive and server failure.



MAINTAIN OPTIMUM WRITE AND PLAYBACK PERFORMANCE

USP is designed for high write performance to support the heavy, unrelenting, ingest of surveillance video. All incoming camera streams are written to a fast storage layer and then distributed to an erasure coded pool of cost-effective hard disk drives. This design helps eliminate frame loss by capturing video in even the busiest environments.

Video surveillance often requires an instant playback of incidents that occurred previously. Quantum USP has been designed with multiple storage tiers satisfying varying performance characteristics supported by an intelligent global cache in each tier. Critical applications have immediate access to recent video recordings stored in any access layer sized to the desired performance requirement.

AUTOMATICALLY ENSURE PERFORMANCE FOR WHAT MATTERS MOST

The physical security environment has a variety of applications, each with different requirements. USP ensures applications receive the resources they need based on their profile and priority. A virtual machine can be run on a different storage tier to match the performance needed for your application. This ensures critical applications perform as needed if there is a resource crunch.

SIMPLE, INTUITIVE MANAGEMENT WITH SYSTEM-WIDE MONITORING

USP is managed through an intuitive web-based management dashboard. It adopts a simple point and click approach similar to most modern-day consumer applications. Everything is graphical in nature and functions are self-explanatory.

The management is complemented with an in-depth view of all resources that make up the system. Proactive health monitoring is available at the cluster, physical server, and virtual machine level, as well as inside virtual machine levels. Historical and real-time resource utilization graphs help in identifying and resolving potential issues even before they manifest.

MAXIMUM VALUE PER DOLLAR INVESTED

USP delivers the highest value across other infrastructure approaches. Savings come from several areas:

Less Hardware: USP hosts multiple applications and operating systems on fewer servers

Self-Contained: No dependencies on external hypervisors, servers, or storage

Open: No lock-in of vendor-specific or proprietary hardware

Flexible: Leverage existing servers and/or storage; multiple deployment options

Software Feature	Description
Storage	
Multi-Type Disk Support	Support for all types of storage disks and form factors within the cluster – SSD, SAS HDD, SATA HDD USP supports up to 4 performance tiers of static storage (e.g., VM datastore or SQL database can be hosted on an SSD tier, while video data can live on a slower HDD tier).
Software-Defined Storage	Aggregate capacity across all servers into a single storage pool per storage performance tier to create virtual volumes as necessary
Virtual Volumes	User-defined volumes of required size and performance mapped to applications across the cluster
Solid State Caching/Tiering	Initial writing of video on high performance flash storage for no frame loss
Data Protection and High Availability	
Node Data Protection	Prevention of data loss within nodes in case of disk failures
Cluster Data Protection via Erasure Coding	Prevention of data loss within a cluster in case of a complete server failure
Application High Availability	Applications on virtual machines automatically migrated to available servers and restarted
Application Live Migration	Applications on virtual machines moved from one running server to another without downtime for maintenance
Scalability	
External SAN/NAS Support	Expand storage capacity by connecting with an external SAN or NAS based storage box
Non-disruptive Node Addition	Expand the cluster by adding a new node without any downtime
Flexibility of Compute, Storage or Mixed Node	Flexibility of scaling up compute plus storage, or storage only new nodes to add desired compute resources and storage capacity to your cluster
Virtualization	
Built-in Hypervisor	KVM-based hypervisor for running multiple applications on the same physical server
Virtualization Platform	Complete platform for managing all storage, network and other resources for applications within virtual machines
Load Balancing between Nodes	New virtual machines automatically created in appropriate host for balancing of load throughout the cluster
Networking	
Software VXLANs	Creates multiple internal subnets for hosting applications and setting network policies
Physical VLAN Integration	Virtual machines can be given an IP from an existing physical network for external communication
Multiple NIC Support	Ability for a virtual machine to be assigned multiple IPs from different physical networks for flexibility
Deployment and Installation	
Simplified Installation Template	An Excel-based input file that can be configured ahead of time by the user for a simplified installation experience
Automated Cluster Deployment	Complete cluster setup via a browser-based GUI with minimal configuration steps and automated single-click deployment
Flexible Configuration	Can set up a cluster with different CPU & RAM within individual nodes and also supports both Flat & VLAN-based networks
Management and Monitoring	
Single Management Console	Easy-to-use single pane for management and monitoring of all cluster resources
Web-Based Intuitive Dashboard	Browser-based modern dashboard design for carrying out all operations without the need for any installation
Storage Monitoring and Reporting	Unified view of total usable storage capacity available along with the capacity already utilized
Infrastructure Monitoring	Status info of the physical servers along with utilization of each individual physical disk, CPU, RAM & network ports
Live Application Server Ranking	Live ranking of all virtual machines running applications in terms of resource utilization for proactive issue resolution
Custom Monitoring Deck	Creates a custom monitoring list of select critical virtual machines for historical and current consumption analysis
Alerts and Notifications	Configuration of real-time web alerts, email notifications, or integration into other infrastructure management tools
Quantum Cloud-Based Analytics (CBA) Integration	Cloud-based monitoring and management tool that enables administrators, Quantum support personnel, and authorized service providers to monitor system health remotely
Video Management Software (VMS) Monitoring (included with CBA)	Reports information and events for VMS applications including metric count for media overflow, camera disconnects, and errors/warnings
Security	
Perimeter Protection	Separation of camera and application access traffic into different VLANs for segregation of unsecure network traffic

CONCLUSION

Using the latest, yet proven data center technologies, the Unified Surveillance Platform is the right solution to modernize your server and storage infrastructure to meet the current and future demands of your mission-critical video surveillance and physical security environment. USP's unique combination of performance, resilience, flexibility, and scalability meets the requirements of the most demanding video surveillance and physical security environments, while reducing total cost of ownership and providing an on-premises, private cloud experience. For more information, visit: www.quantum.com/video-surveillance

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Quantum delivers end-to-end data management solutions designed for the AI era. With over four decades of experience, our data platform has allowed customers to extract the maximum value from their unique, unstructured data. From high-performance ingest that powers AI applications and demanding data-intensive workloads, to massive, durable data lakes to fuel AI models, Quantum delivers the most comprehensive and cost-efficient solutions. Leading organizations in life sciences, government, media and entertainment, research, and industrial technology trust Quantum with their most valuable asset – their data. Quantum is listed on Nasdaq (QMCO). For more information visit www.quantum.com.

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