DD Consulting & Management
The Solution Company

CCTV / Video Surveillance Solutions

Overview

The use of video surveillance is expanding globally. Heightened security concerns at schools, colleges, hospitals, government agencies and other organizations have expanded the use of video surveillance and other physical security technologies. The emergence of large-scale video surveillance deployments has resulted in a number of challenges, primarily being the impact video surveillance has on IT infrastructure, and the massive amount of content that must be stored, analyzed, and managed by security teams with limited resources. It is critical that they procure validated solutions that address the underlying system requirements. DD Consulting & Management's (DDCM) approach to addressing video surveillance system requirements provides an open and flexible architecture that allows for several server and storage strategies. Our solutions also provide video management, video backup and long-term archiving. We leverage our partners along with our experience to keep us on the cutting edge of the latest technology available for continued growth as a company and remain a trusted advisor to our customers.

Differentiators:

The diversity of our solutions and the ability to scale sets us apart from our competition. We know one solution doesn't work for all. Organizations now have the opportunity to address long-term archival requirements, while providing effective capture, analysis and storage of this information. Our experience with video surveillance enables us to deliver the best solutions and address the business and technology needs of our customers. Our strategic partnerships with industry leaders allow us to deliver the most current and cost-effective solutions available.

Tested and Proven:

Validating surveillance solutions for hardware and software performance within the customer environment can be complex and time consuming. DDCM's Surveillance Lab is outfitted with leading technology from all major surveillance vendors, allowing us to validate "best-of-breed" physical security applications with DDCM's portfolio of products and solutions. These proven lab validations with key partners accompany extensive documentation to simplify deployment and reduce risk of video loss for our customers.

Our validation process helps:
- Reduce your deployment risks
- Increase system reliability, thereby reducing overall support costs
- Gain a proven, repeatable architecture
- Get benchmarking results using a true production workload that produces a zero-data- loss system
- Test multiple independent software vendors (ISV) products simultaneously with our fault tolerance and high availability options and validate virtual and non-virtual architectures

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Let US Help You
FOCUS ON
Creating A Safer Environment

Keep your staff and visitors safe with an end-to-end security solution managed by DD Consulting & Management (DDCM) Surveillance Solutions.

It's not easy making sure your premises are safe and secure around the clock.

- **DDCM** can help. Our partners and Axis, the marketing leader in network video and intelligent products have been designed to work seamlessly together. This partnership provides a complete package to help increase safety and security in educational environments.

- Get a clear picture of dark stairwells, corridors and car park lots. Monitor and manage entrances and restricted areas remotely and communicate with staff, students, and unwanted visitors. DDCM surveillance solutions makes it easier.

Secure the premises and manage visitors

- Remotely manage the entry of visitors
- Receive alerts if cameras are being tampered with or if a door has been forced open
- Control restricted areas – secure doors, corridors, IT areas and equipment rooms

Increase your awareness

- Wide camera portfolio for high resolution video
- Use vandal-proof camera models to ensure system operation
- Get discreet designs that blend in with the environment
- Share experiences by using our broadcasting cameras for event broadcasting and e-learning
- Use analytics to detect unwanted behavior such as loitering and perimeter breaches

Enhance health and safety

- Integrate emergency buttons to trigger alerts recordings or audio messages
- Control other equipment such as turn-on lights, locking doors or open gates

Improve Communications
- Use clear live audio to communicate with students, staff, and unwanted visitors
- Trigger pre-recorded messages to inform and notify

End-To-End Security For A Smarter, Safer World

Secure and improve your business with an end-to-end DDCM / Axis solution. We provide a complete range of solutions, whether you need a smart system for basic surveillance or a more advanced system for security on a larger scale.

All of our systems are easy to install, and everything is designed with open IP standards that easily connect with your existing IT infrastructure.

Our solutions adapt to your changing needs – so, you can start out with a basic system and add new possibilities when you want them. With our smart solutions, you can secure and develop your business – both now and in the future.

Adding new dimensions

We enable a smarter and safer world by creating network solutions to improve security and to find new ways of doing business.

The world is changing fast, and we make sure we stay ahead of those changes. We operate in the IT and security industries and have extended into the audio, voice over IP and building automation markets.

Video surveillance solutions

A wide range of network video surveillance solutions including cameras and encoders, VMS and recorders, analytics and applications. Our IP-based portfolio ensures scalability and simplifies integration.

- **Access control solutions**
  Open, scalable and flexible access control solutions that integrate seamlessly with other systems.

- **Audio solutions**
  Complete, high-quality audio solutions to improve security, make live or scheduled announcements, or create ambience with great- sounding background music.

- **Training, service and support**
  An extensive range of academy trainings, technical support and tools help customers to get the most out of their investment and work successfully with Axis solutions.

Video Management Software (VMS)

When you're building a Video solution, build it with DDCM VMS Solutions

DDCM partner Milestone, develops IP-based video management software (VMS) and DDCM develops network video recorders for surveillance installations of all sizes. Its award-winning VMS, XProtect®, is built on an open platform that supports over 7,000 cameras and hardware devices enabling solutions that meet customer-specific needs.

This wide variety of supported devices enables you to select the most optimal storage and network components to meet your customers' specific needs. You can further extend XProtect™ capabilities and applications by incorporating third-party applications such as video analytics, building management and access control software.

The result is a scalable, flexible and future-proof surveillance solution

When you choose DDCM, you choose a proven solution. The award-winning, IP-based video management system is the security system of choice in over 100,000 installations of all sizes and complexity.

Milestone is the global industry leader, with offices in over 20 countries. Working with DDCM and Milestone also gives you access to the company's open platform community, a network of over 8,000 hardware providers, camera manufacturers and software developers who have chosen to integrate their products and applications with Milestone's VMS.

Choosing DDCM also means offering our customers the freedom of choice. Given our extensive partner network and wide range of supported technology, our customers are free to keep their existing hardware and work with their preferred vendors. They are free to select best-of-breed solutions in order to create a surveillance solution that meets their needs.

Everything you need for 24/7 mission-critical operations

Product Highlights

Reliable high-performance surveillance software

Supports an unrestricted number of cameras, users and servers for **complete system scalability**

Centralized single management interface provides efficient system administration of all connected cameras and devices

Achieve **industry's best system performance** and lower system costs with hardware accelerated video motion detection that shifts video decoding from the CPU to the GPU

Powerful, high performing software built on a native 64-bit Windows service supporting minimum **3.1 Gbit/s recording rate**

Supreme situational awareness

A comprehensive overview of camera locations and layouts of the entire surveillance installation **allows for quick detection of trouble areas**

The sophisticated Alarm Manager provides a consolidated overview of security and system alarms for **immediate visual verification**

Advanced **video wall solution** included that enables control room operators to share a wide range of information, including live and recorded video, images, maps, alarms, bookmarks and text messages, to better coordinate response activities

A secure solution you can trust

The system architecture provides a series of **video integrity mechanisms** that enables users to maintain full end- to-end security and integrity of recorded video data

To add **an additional security layer when using** XProtect® Web Client and Milestone Mobile via untrusted networks, like the Internet,

administrators can configure user authentication to use a two-step verification process

All recorded data can be encrypted with the latest cyber security standard AES 256 and signed with SHA-2 to **ensure the media database is not tampered with**

System Diagram
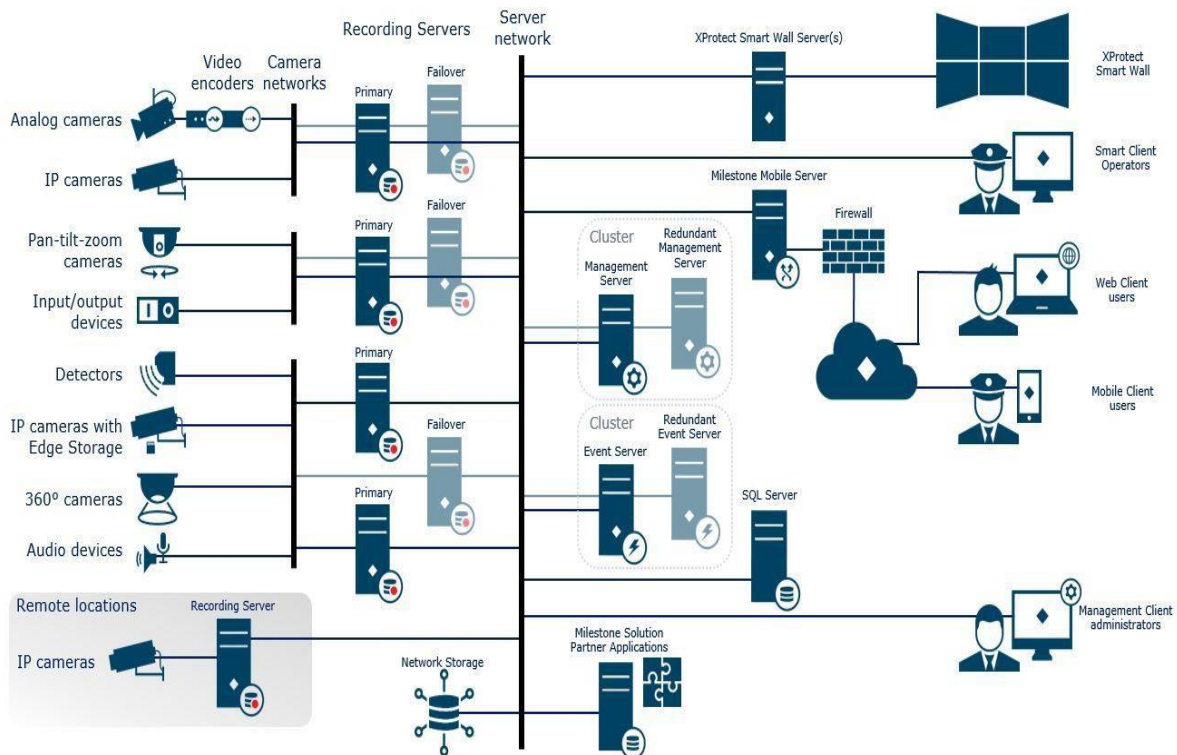
RECORDING SERVER / FAILOVER RECORDING SERVER

- Powerful, high performing software built on a native 64-bit Windows service supporting minimum 3.1 Gbit/s recording rate.
- Records and stores video, audio and metadata, and provides operators and other users access to live and recorded data.
- Enables fast discovery of more than 6,000 IP cameras, IP video encoders and digital video recorder.
- Complete system scalability because an unrestricted number of recording servers can be added to one system. High-availability function where failover recording servers act as a backup to primary recording servers.

MANAGEMENT SERVER

- The management server is the central component of the VMS and is responsible for handling the system configuration, distributing configuration to other system components, such as recording servers, and for facilitating user authentication.
- User authentication and user rights management with support for basic users, local Widows users or via Windows® Active Directory. Maintains an array of system and audit logs. May be clustered for high-availability deployments.

MANAGEMENT CLIENT

- Single-point system administration interface for centralized management of all system configuration aspects

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EVENT SERVER

- Provides advanced multi-layered map giving operators interactive access and control of the complete surveillance system.
- Hosts the alarm function that provide a consolidated and clear overview of security and system-related alarms.
- Hosts possible Milestone Integration Platform Software Development Kit (MIP SDK) solution plug-ins. May be clustered for high-availability deployments.
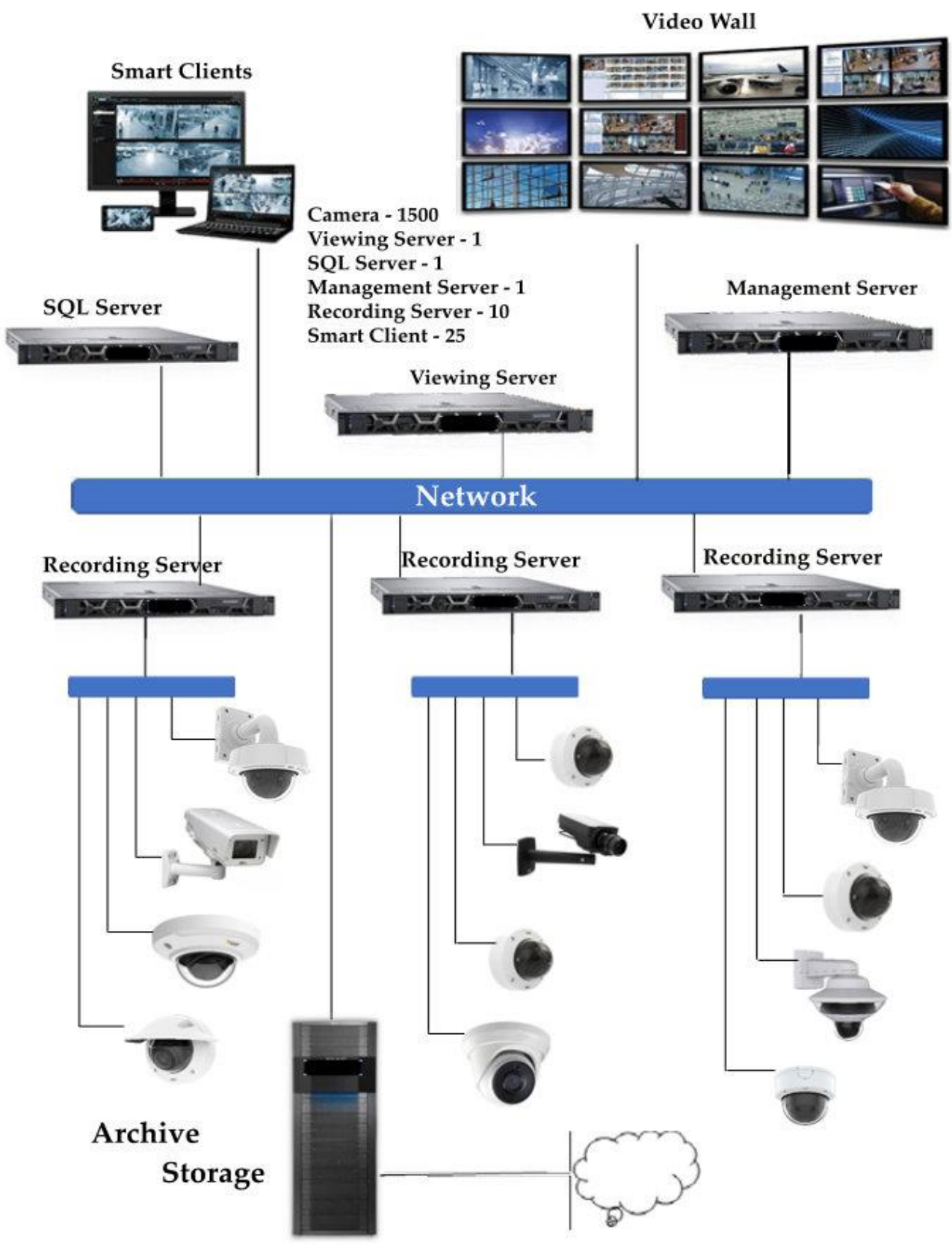
XPROTECT SMART WALL

- An integrated flexible and hardware independent video wall included in the product for supreme situational awareness.

Specifications

General	Details	Scalability	Detail
Type of deployment	Multi-site, distributed	Milestone Federated Architecture	Central/remote site
Licensing	Perpetual	Milestone Interconnect	Central/remote site
Maximum number of cameras	Unrestricted	Microsoft Active Directory	Yes
Maximum number of recording servers	Unrestricted	XProtect Smart Wall	Included
Maximum number of concurrent users	Unrestricted	Supports third-party system integration	Yes
Centralized Management	Yes	Supports XProtect Add-on products	Yes
Failover recording servers	Yes	Move hardware function	Yes
Customer Dashboard	Yes	**Cybersecurity**	**Detail**
Hardware accelerated VMD	Yes	Two-step verification	Yes
Multiple video export formats	Yes	Kerberos authentication	Yes
Supports all XProtect clients	Yes	Secure HTTPS camera connectivity	Yes
Alarm Manager	Yes	Digital signature on video exports	Yes
Map function	Yes	Disablement of re-exporting	Yes
Smart Map	Yes	Restrict user access per client	Yes
Edge Storage	Yes	Tiered management rights	Yes
Metadata	Yes	Dual authentication	Yes
Flexible event rule wizard	Yes	AES256 encryption	Yes
Pre-recording buffer in R AM	Yes	SHA-2 signing	Yes
Push notification	Yes		
Evidence Lock	Yes		
XProtect Smart Client profiles	Unrestricted		
Management Client profiles	Yes		
Time scheduled controlled user access	Yes		
Scalable Video Quality Recording™	Yes		

System Diagram

Video Wall

Smart Clients

Camera - 1500
Viewing Server - 1
SQL Server - 1
Management Server - 1
Recording Server - 10
Smart Client - 25

SQL Server

Management Server

Viewing Server

Network

Recording Server

Recording Server

Recording Server

Archive Storage

Video Management Server
R440

Optimized for dense, scale-out computing

The R440 delivers the perfect combination of performance and density for HPC and web-tech deployments with a feature set right-sized for scale-out infrastructure environments.

Deliver performance

Modern compute platforms that leverage key technologies to maximize application performance. The R440 is built on a scalable architecture that provides the choice and flexibility to optimize performance and density.

- Scale compute resources with Intel® Xeon® Scalable processors delivering a 27% increase in processing cores and 50% increase in bandwidth over previous generation of Xeon processors.
- Flexible storage with up to 10 x 2.5 SAS/SATA/SSD with up to 4 NVMe PCIe SSD's or 4 x 3.5.
- Free up storage with boot optimized M.2 SSDs.

Video management with intelligent automation

Delivering smart automation of day to day tasks with the power and efficiency of the embedded iDRAC with Lifecycle Controller. With its agent-free management, the R440 is simply man-aged and frees up time for work priorities.

- Simplify management of your server with OpenManage Essentials, a 1:many console that automates all phases of lifecycle management: deployment, updates, monitoring, and maintenance.
- Use Quick Sync 2, a wireless module, and the OpenManage Mobile app for at-server management, to configure or troubleshoot in the data center, and to receive alerts when you're on the go.

Built-in security

Made with a cyber-resilient architecture, building security into all parts of a server life cycle. The R440 uses these new security features so you can reliably and securely deliver the right data,no matter where they are. The system security, from design to end of life, to ensure trust and deliver worry-free secure system.

- Rely on a secure supply chain that protects your server from factory to the data center
- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

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Video Recorder & Playback
R640

Uncompromising performance and density

The R640 is the ideal dual-socket, 1U platform for dense scale-out data center computing. The R640 combines density, performance and scalability to optimize application performance and data center density.

Maximize application performance and density

The scalable business architecture of the R640 is designed to maximize application performance and provide the flexibility to optimize configurations based on the application and use case. With the R640 you can create an NVMe cache pool and use either 2.5" or 3.5" drives for data storage. Combined with up to 24 DIMM's, 12 of which can be NVDIMM's, you have the resources to maximize application performance with the optimum configuration in only a 1U chassis.

- Simplify deployments and speed deployments with ready nodes for ScaleIO and VSAN.
- Maximize storage performance with up to 8 NVMe drives or 12 2.5" drives.
- Scale compute resources with Intel$^®$ Xeon$^®$ Scalable delivering a 27% increase in processing cores and 50% increase in bandwidth over previous generation Xeon processors.

Automate maintenance with Open Manager

The OpenManage™ portfolio helps deliver peak efficiency, delivering intelligent, automated management of routine recording tasks. Combined with unique agent-free management capabilities, the R640 is simply managed, freeing up time for high profile projects.

- Simplify management with the New OpenManage Enterprise™ console, with customized reporting and automatic discovery.
- Take advantage of QuickSync 2 capabilities and gain access to your server easily through your phone or tablet.

Built in security

The server is designed as part of a cyber resilient architecture, integrating security into the full server life cycle. The R640 leverages new security features strengthening protection so you can reliably and securely deliver accurate data. By considering each aspect of system security, from design to retirement, and delivers a worry- free, secure infrastructure without compromise.

- Rely on a secure component supply chain to ensure protection from factory to the data center.
- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

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Enterprise Video Recorder & Playback

R740xd

Maximize storage performance and scalability

The R740xd delivers a perfect balance between storage scalability and performance. The 2U two-socket platform is ideal for software defined storage, service providers or as virtual desktop infrastructure.

Maximize performance and capacity

The scalable system architecture behind the R740xd with up to 24 NVMe drives creates the ideal balance between scalability and performance. The R740xd versatility is highlighted with the ability to mix any drive type to create the optimum configuration of NVMe, SSD and HDD for either performance, capacity or both. The R740xd is the platform of choice for software defined storage and is the foundation for ScaleIO, VSAN or the PowerEdge XC.

- Maximize storage performance with up to 24 NVMe drives and ensure application performance scales to meet demands.
- Free up storage space using internal M.2 SSDs optimized for boot.
- Simplify and accelerate ScaleIO or VMware vSAN™ deployments with validated, pre-bundled and tailored Ready Nodes.
- Accelerate workloads with up to three double-width 300W GPUs, or up to six single-width 150W GPUs, or up to three double-width or up to four single-width FPGAs.

Automate maintenance with Open Manager

Server with OpenManage™ technology work at peak efficiency, delivering intelligent, automated management of routine tasks. Combined with unique agent-free management capabilities, the R740xd is simply managed, freeing up time for high profile projects.

- Simplify management with the New OpenManage Enterprise™ console, with customized reporting and automatic discovery.
- Take advantage of QuickSync 2 capabilities and gain access to your servers easily through your phone or tablet.

Ensure server security from factory to you

The server is designed as part of a cyber resilient architecture, integrating security into the full server life cycle. The R740xd leverages new security features built-into every new server strengthening protection so you can reliably and securely deliver accurate data to your customers no matter where they are. By considering each aspect of system security, from design to retirement, ensures trust and delivers a worry- free, secure infrastructure without compromise.

- Rely on a secure component supply chain to ensure protection from factory to the data center.
- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

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ME4 - Video Archive Storage

Purpose-built for SAN/DAS

The affordable, simple, and fast ME4 Series SAN/DAS Storage Series is optimized to run a variety of mixed workload applications – physical and virtual – for small businesses.

Whether you need to consolidate your block storage, support the demands of data intensive applications, take advantage of intelligent data management, or optimize your virtual environments, the ME4 Series has been designed to meet your growing business needs. The flexibility of the ME4 Series lets you decide the protocol, supports a wide range of mixed drive types (including SED), scales to 4PB raw, is highly aligned with our Servers, and is delivered to you with all-inclusive software – everything you'll need to store, manage, and protect your data.

Powerful entry storage architecture

Based on the family of Intel processors, ME4 Series storage implements a block architecture with VMware virtualization integration and concurrent support for native iSCSI, Fibre Channel, and SAS protocols. Each system leverages dual storage processors (single storage processor systems are available) and a full 12Gb SAS back-end. Additional storage capacity is added via Disk Array Enclosures (DAEs) while Distributed RAID (ADAPT) delivers faster drive re-build times. And all ME4 Series arrays are managed by an integrated HTML5 web-based GUI.

	ME 4012	ME 4024	ME 4084
Max Raw Capacity	3.1PB	3.0PB	4PB
Min/Max Drives	2/264	2/276	28/336
Media	Hybrid (0-100% Flash)		
Protocols	8/16Gb FC, 1/10Gb iSCSI, 12Gb SAS		
Data Protection	Virtual Copy, Snapshots, Asynchronous Replication, SEDs		
Performance	Tiering, Read Cache		
Integration	VMware vCenter Plugin, SRM Plugin		
Management	ME Storage Manager		
Architecture	Thin provisioning, Adapt, Internal Key Manager (SED encryption)		

HIGHLIGHTS

TARGETED WORKLOADS
Video surveillance / video editing / media
Healthcare / life sciences
HPC

KEY CAPABILITIES
All-inclusive software (replication, snapshots, volume copy)
Up to 4 PB raw
12Gb SAS back-end
8GB per controller
4x10Gb iSCSI, 4x12Gb SAS, and 4x16Gb FC network connections

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Enterprise - Video Archive Storage

Benefits/Features

- End-to-end solution integrates video surveillance management system and scale-out-storage
- Open architecture enables compatibility with more cameras, encoders and DVRs than any other vendor
- Simple storage management with easy-to-use, "grow-as- you-go" scalability and policy based controls
- Highly efficient storage utilization and management simplicity to reduce total cost of ownership

Isilon

Isilon scale-out NAS is ideally suited to the storage requirements of a large and expanding video surveillance deployment - with even thousands of cameras. With Isilon, you can have massive scalability for your video data storage needs-from 18 terabytes to over 15 petabytes of capacity per cluster in a single file system. Isilon storage systems are simple t install, manage, and scale at virtually any size. And without scale-out approach, you can "grow-as-you-go" through just-in-time storage provisioning with no down time or disruption to your video surveillance activities.

Flexible and Easy to Manage

DDCM brings expertise is data storage, information handling, and information life cycle management to help you meet your video surveillance challenges. With Isilon storage, you can integrate and easily manage massive amounts of video surveillance data from a wide range of sources. Isilon is a power yet simple scale-out NAS solution for organizations that want to invest in managing their data, not their storage, and provides unmatched simplicity, scalability, performance, and flexibility.

The Isilon OneFS operating system is distributed and intelligently stripes data and metadata across all nodes in a cluster to create a single, shared pool of storage. Each node is connected via a private high-bandwidth, low-latency interconnect, so it is a distributed storage system, with a single management point and system name space. And because data is automatically balanced across all nodes in an Isilon cluster, there is no need for management of a LUNs or volumes.

Efficient, Secure and Highly Available

Isilon storage solutions provide the highest levels of reliability and availability in the industry. Isilon storage systems are built on a highly redundant and scalable architecture designed to withstand multiple simultaneous component failures while still allowing unfettered access to the entire file system and dataset. Isilon FlexProtect provides protection for up to four simultaneous failures of either full nodes or individual drives. This means that if up to 4 nodes or drives fail simultaneously, 100% of your data would still be available.

Isilon scale-out NAS is also highly efficient. With Isilon you can achieve over 80 percent utilization with a single pool of shared storage. This helps you reduce capital expenditures and overall costs. With Isilon SmartPools software, you can optimize surveillance or physical security storage resources with policy-driven automatic data tiering. Smartpools can be used to automatically move older camera surveillance data to lower-cost storage disk drives and further optimize your storage resources.

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FOR LARGE-SCALE SURVEILLANCE SOLUTIONS

- Proven history of managing-critical video
- Seven generations of innovation and counting
- Deep understanding of video surveillance industries
- Features set aligns perfectly to requirements of the "Core"
- Rich portfolio of Partner and validated VMS applications

	All-Flash	Hybrid-Flash	Hybrid-Flash	Hybrid-Flash	Hybrid-Flash	Archival	Archival
Memory per node	256GB	64GB	128GB	256GB	256GB	16GB	16GB
Max capacity/chassis	924 TB	480 TB	480 TB	800 TB	144 TB	480 TB	800 TB
Max number of chassis Max number of Nodes	F800: 63, F810: 36 F800: 252, F810: 144	63 252	63 252	63 252	63 252	63 252	63 252
Storage type	SSD	SATA	SATA	SATA	SAS	SATA	SATA
Max drives/chassis	60	60	60	80	120	60	80
Max SSD Cache/node	N/A	6.4 TB	6.4 TB	6.4 TB	6.4 TB	800 GB	800 GB
HDD capacities supported in TB	F800: 1.6, 3.2, 3.84, 7.68, 15.4 TB F810: 3.84, 7.66, 15.36 TB	2, 4 or 8 TB	2, 4 or 8 TB	10 TB	600 GB or 1.2 TB	2, 4 or 8 TB	10 TB

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If you have any questions about our services or products, give us a call or visit our website to submit a <u>contact form</u>.