Redundancy Management Framework

Cybersecure Redundancy for Milestone XProtect

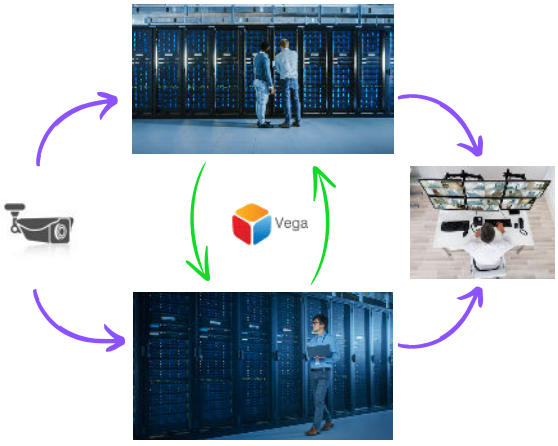
Introduction

The Vega Redundancy Management Framework (RMF) is software designed to enhance Milestone XProtect Video Management Software (VMS) by providing recording server redundancy in all architectures, as well as management server and SQL redundancy in specific architectures, all within a single software package.

Key components facilitate data synchronization between data centers, ensure rapid video failover at each client, and enable high-availability alarms.

With its support for cyber-secure redundancy architectures, RMF ensures that cybersecurity is central to the design of a redundant system.





RMF Overview

Pricing Model

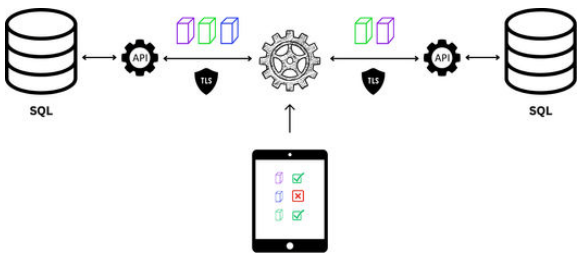
- Single perpetual license per device.
- One device is one MAC Address.
- An encoder consumes a single license, as does a multi-lens camera.

Key Features

A Cybersecurity-first Approach

Unlike traditional high-availability architectures that replicate everything—including mistakes and malware—RMF provides cybersecurity by design, in specific redundancy architectures.

It combines **selective object-level synchronization**, which prevents malicious or unintended changes from spreading, with fully isolated data centers that eliminate shared attack surfaces and block lateral threats. Together, these two layers provide a resilient and secure foundation for mission-critical video infrastructure.



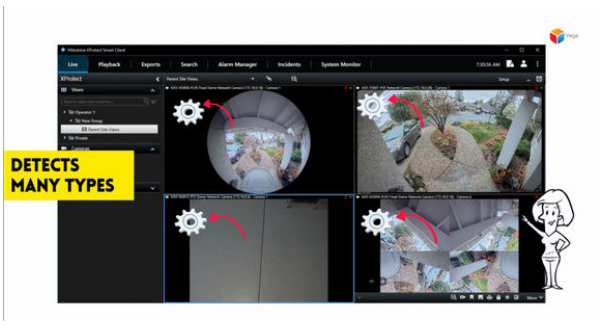
Selective Object Synchronization

Active-Active Redundancy

We exclusively support redundant active-active architectures, ensuring that both data centers are fully operational and accessible to deliver services around the clock. All video resides in each data center.

Client Side Intelligence

Detect failure events in each client window. Independently. Democratically. Align with the end-user's perception of failure. Catch a broad spectrum of failure events that impact end users, big and small.



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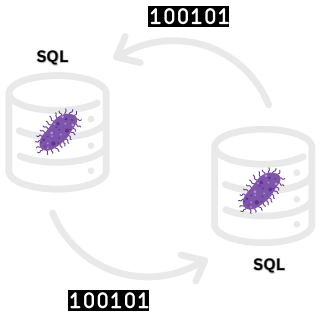
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Key Cybersecurity Features

SQL Redundancy

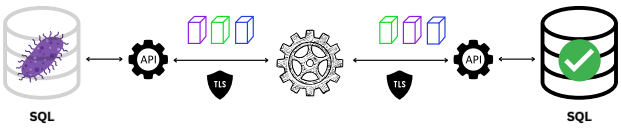
The cyber-risk in 'copy-everything' replication

Traditional replication engines, such as SQL Failover, stream every byte, healthy or hostile, from a primary database to its standby in near real-time. This blind fidelity guarantees that a single corrupt row, ransomware-encrypted page, or rogue admin account is instantly mirrored across your entire estate. In today's threat environment, that "always identical" philosophy is less a safeguard than a high-speed propagation channel for attacks.



RMF: Cybersecure Object Synchronization

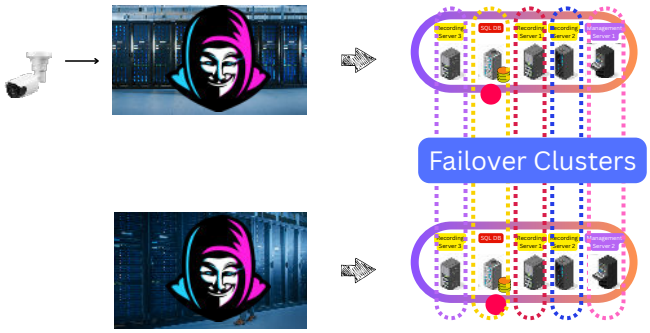
RMF's object-level synchronization inverts that risk profile by making every change pass through Milestone's API, one self-contained object at a time. Because each user, policy, or device is treated as a discrete payload, the RMF sync engine can validate, log, transform, or outright block it before it ever crosses air-gapped boundaries.



Datacenter Isolation

The traditional approach

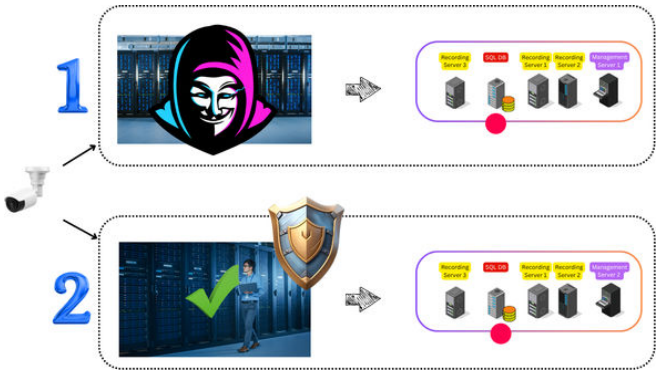
A large percentage of deployed high-availability architectures rely on cross-site service clustering, which increases cyber risk by creating shared attack surfaces.



Traditional Service Clustering: Uncontrolled Blast Radius

RMF: Enforces Narrow, Explicit Trust

RMF (when deployed in Federated or Independent architectures) replaces clustering with a service-based model that treats each data center as an independent entity. There is no requirement for shared authentication, storage, or real-time database replication. Instead, RMF operates through a lightweight service that connects the two sites over a narrow, explicitly defined communication channel with limited privileges and no direct system-level access. This design dramatically reduces the trust surface and prevents lateral movement between sites.



RMF Limits Blast Radius

Cybersecurity Whitepaper

Explore our white paper on this topic. Discover various attack vectors that can compromise traditional redundant deployments and learn how RMF helps protect against them.

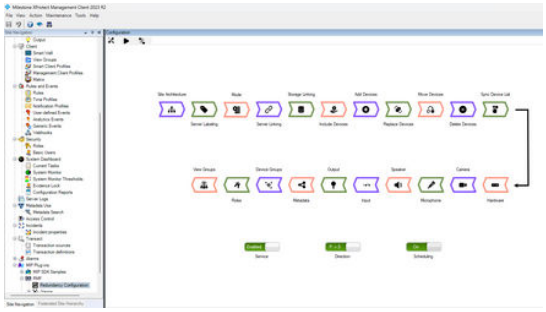
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Key Mirroring Features

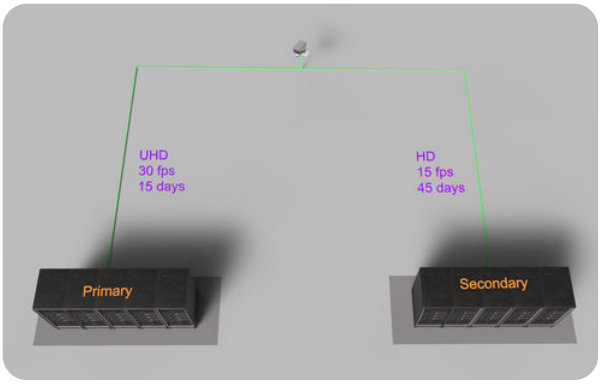
Site Mirroring

A CPU-efficient Smart Synchronization Service enables site mirroring across Federated or Independent XProtect Architectures. Enables use of the secondary site if the primary fails.



Asymmetric Redundancy

Liberate your redundant infrastructure design from the limitations of one-to-one recording server mapping. Choose different stream definitions for primary and redundant streams. Unlock a range of cost-performance architectures. You have options.



Bi-Directional Synchonization

Synchronize Devices, Streams, Roles, Views, and more from the Primary Site to the Secondary Site or from the Secondary to the Primary Site. Restore accidentally modified configurations with ease.

Scheduling

Run Synchronization on a schedule, or run at will. You choose.

Device Add, Delete, Replace, Move

Add devices on the primary data center and see them appear on the secondary. Or, Delete, Replace or even move devices and see them mirrored.

Device Groups

Add, Delete, and Rename groups. Or move cameras between groups in the primary site. RMF mirrors these changes on licensed devices.

Roles

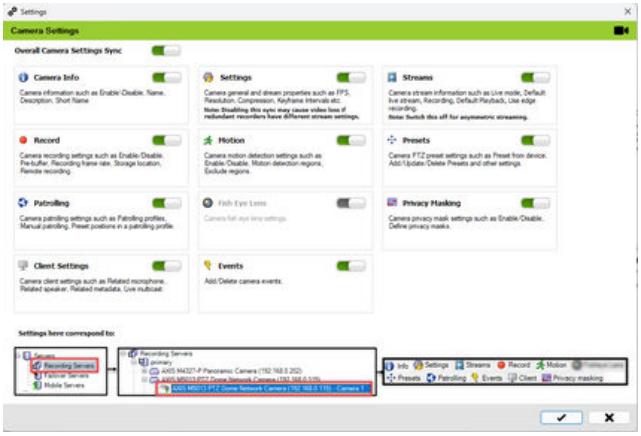
Add, Delete, or modify roles. Add, remove, or modify user permissions. We mirror these changes to the extent of MIP support.

Views

We replicate all smart client view groups to ensure a consistent user experience when logging in to secondary sites.

Precision Synchronization

Synchronize, just a chosen set of devices, Roles, Streams, or synchronize everything in either direction.



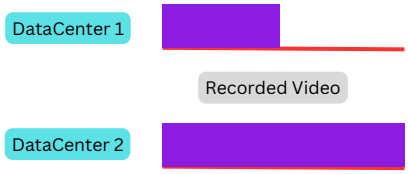
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Key Client Side Features

Dual Recording Reduces Missing Footage

With RMF, every camera streams independently to each data center. There is ZERO wait time to start servers or streams when one data center fails. So, there is no lost footage during failure episodes.



Rapid Live Video Recovery

Client-side intelligence enables near-instantaneous live video recovery in the client from alternate data centers. Operators hardly notice live video loss, allowing them to provide higher levels of security. It is the ***fastest in the industry***.



Cause Agnostic Mitigation

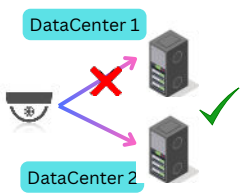
Client-side intelligence mitigates video losses due to many types of failure.



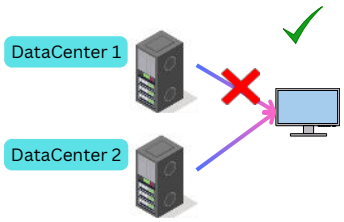
Full Rec. Server Failure



Partial Rec. Server Failure



Network Failure between Cam and Datacenter



Network Failure between Datacenter and Client

REST API

Empower other authenticated components in the deployment ecosystem, such as PSIM and Analytics, to leverage video redundancy.

Simplify Password Updates in Redundant Systems

Effortlessly update passwords across multiple cameras and data centers in a redundant architecture. Update passwords frequently and uphold high-security standards while experiencing minimal disruption.

Load Balance Recorders

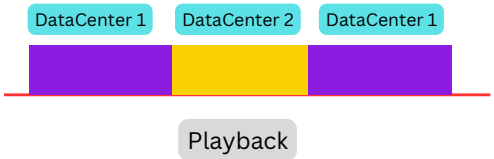
Serve some cameras from Primary Data Centers and others from Secondary Data Centers while operating in Clustered or Federated Architectures.

Flex Licenses

Assign licenses to a set of devices. Later, move those licenses to other devices. Buy and use what you need.

Automatic Playback Switching

When users play back archived footage within the RMF Smart Client plugin, the content will automatically be played back from the redundant site if the primary site is missing content.



Bookmarks: Redundant Save/Retrieval

Saving bookmarks from within the RMF Smart Client plugin saves it on both the primary and secondary recorders.

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Other Features

High Availability Alarms

Leverage Redundant Events in an active-active architecture to generate High Availability Alarms. Alarms are generated even if one data center misses firing an event.

True Video Backfill

Copy missing video content between data centers. (This is under development and will be available Sept. 2025)

Application Verticals

Airports

Any loss of situational awareness at an airport poses a risk to public safety and is not acceptable. Our solutions provide cause-agnostic failure detection and rapid mitigation for various failures, making us a compelling choice.

Seaports

Essential, revenue-generating port operations heavily depend on live video feeds. A disruption in real-time video can directly result in significant revenue losses. Read more to learn how we help.

Data Centers

Data Centers require compliance with strict physical security standards. Our solutions help data centers in exceeding these standards.

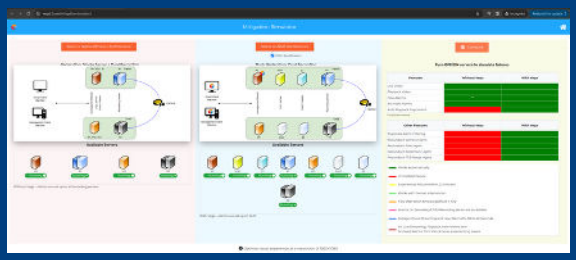
Campus

As university campuses continue to shift towards using multiple data centers for video security, choosing suitable video architectures and software is paramount for maintaining uninterrupted service delivery.

Design

Mitigation Simulator

Visualize the impact of failures of key XProtect components in a myriad of redundant deployment architectures. See how our solutions help mitigate them.



Design Assistance

The path to High Availability can be confusing, with many redundancy options available at different failure tolerances and cost points. We've navigated them all, and we're here to guide you. Share your objectives with us, and we'll help you design a redundancy architecture that meets your needs and budget.

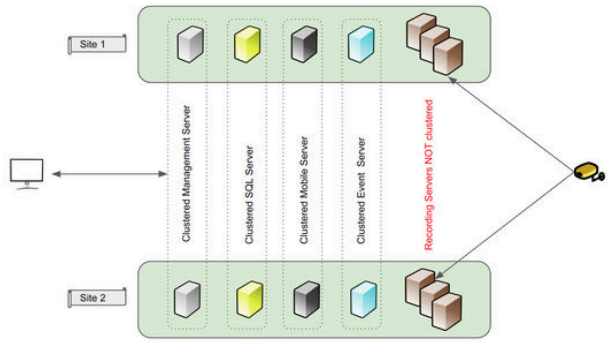
Transportation

Transportation networks, like railways, cover large areas but must be managed as a unified video security system. Our solutions are well-suited for distributed deployment and consumption needs, serving video consumers near the cameras and at remote central facilities.

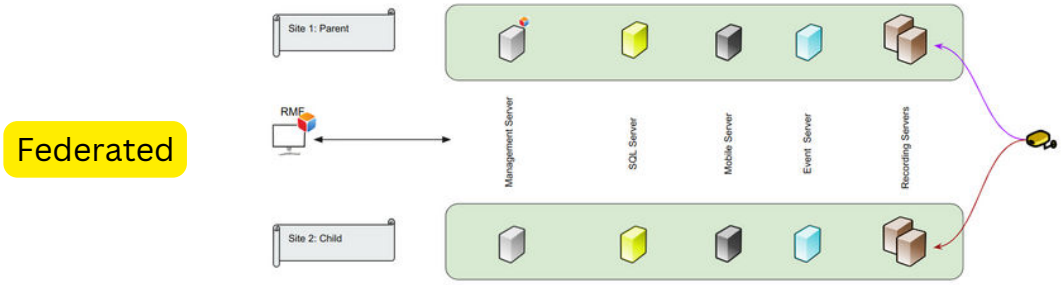
Utilities

Nuclear power utilities necessitate rapid live video recovery, low-latency event alarms, and compatibility with third-party software. We proudly provide these essential features, and are adopted in this industry.

Multi-Architecture Support



Clustered



Federated



Independent

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