

Surveillance HA for Recording Servers – Camera Pairing

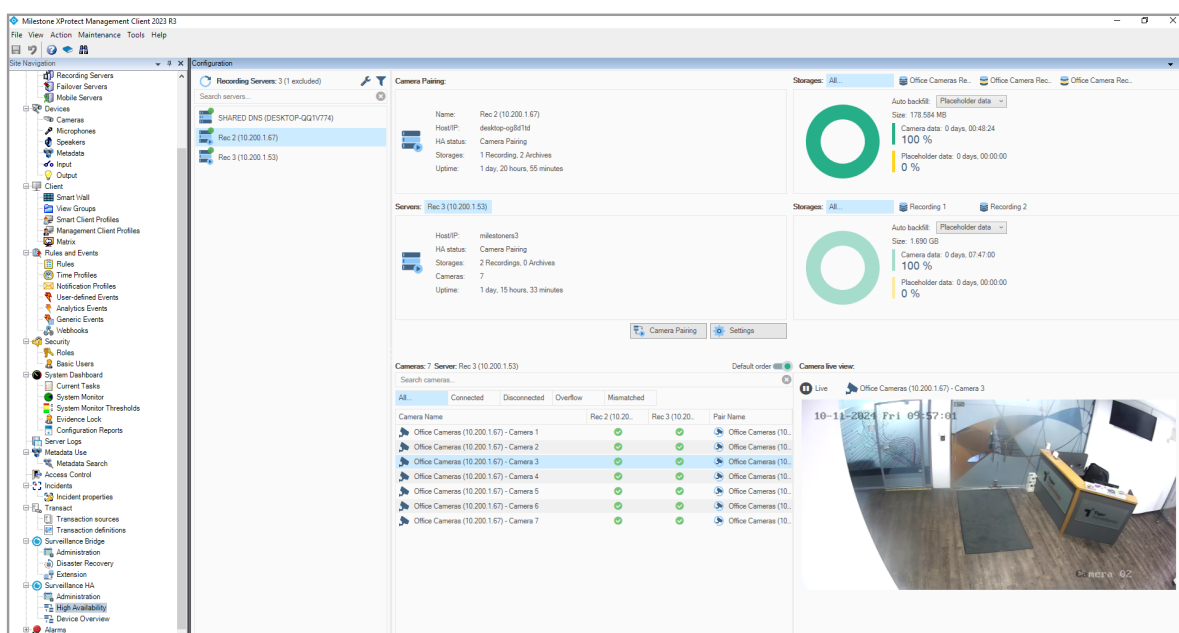
Use Case

Automated Failover for Video Surveillance

Surveillance HA for XProtect Recording Servers is a flexible clustering solution designed for High Availability, featuring zero-loss failover. This cluster operates on an active-active model. Using this software plug-in, two standard XProtect Recording Servers can be configured to form a fault-tolerant cluster, dramatically enhancing system resilience and data protection. When using Camera Pairing, Milestone's Management Server sees two (or more) recording servers.

When using this mode, the failover takes place between the cameras, and not between the servers. The Smart Client plug-in knows where to find the camera feed. If it no longer sees the feed on one server, it will look on the alternative server.

When selecting a server, all cameras attached to this server will be listed. When selecting a camera, the top section will show the details on the current server, and the bottom section will show the secondary server where this camera is also routed.



How Camera Pairing Works

Step 1: Normal Operation

Camera Pairing operates at the camera level, rather than at the server level (Figure 1). During normal operation, two standard XProtect recording servers record the same camera feed (unicast). The Camera Pairing tool (Figure 2) automates the matching process by looking up IP addresses. All servers record concurrently to enhance system reliability. This approach ensures an unbroken chain of operation and allows both servers may have completely different configurations (different frame rates, motion detection, resolutions, and retentions).

With Camera Pairing, there is no need for a 1:1 relationship between servers. For example, the most critical cameras of 5 servers can be routed to a single alternate server.

The admin must configure each camera device to be recorded on any two servers. For example, Camera 01 can be routed to Server01 and Server02, and Camera02 can be routed to Server01 and Server03.



Figure 1

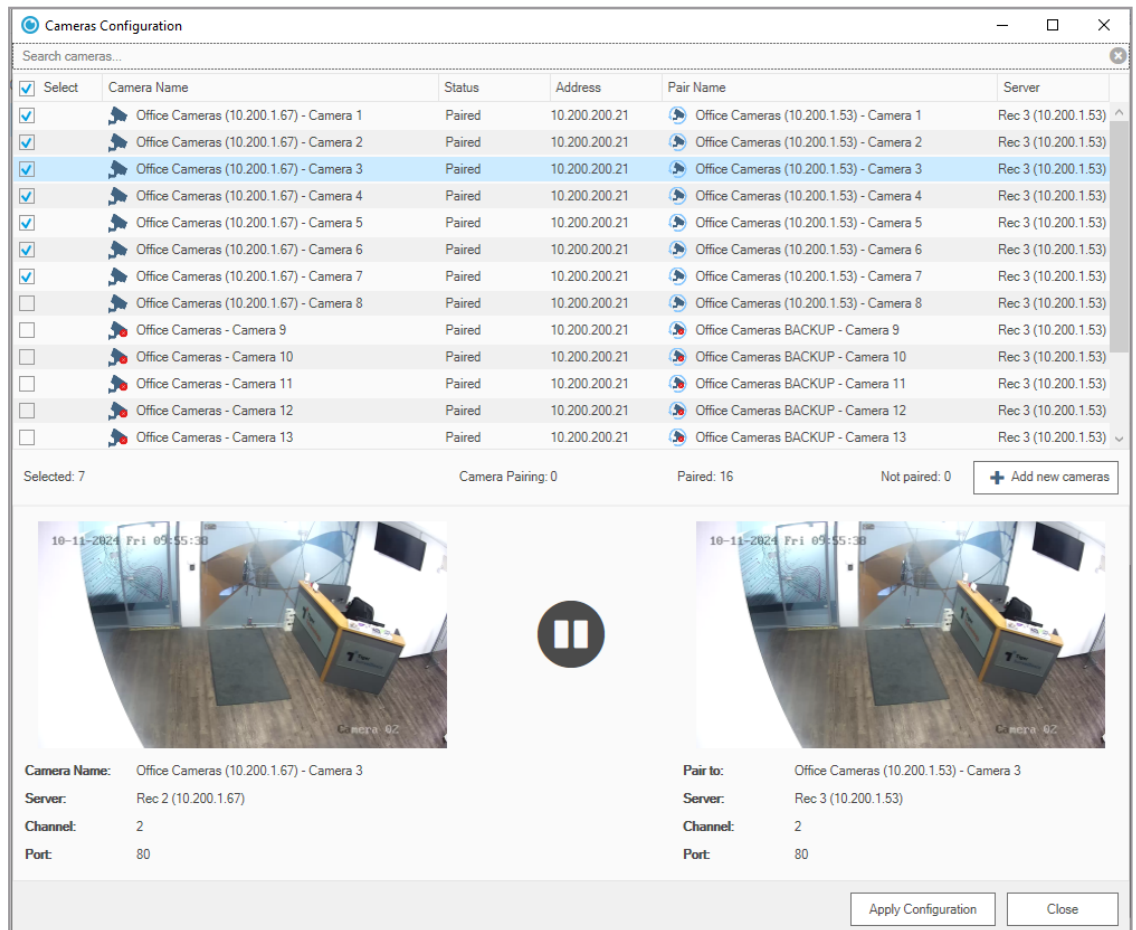

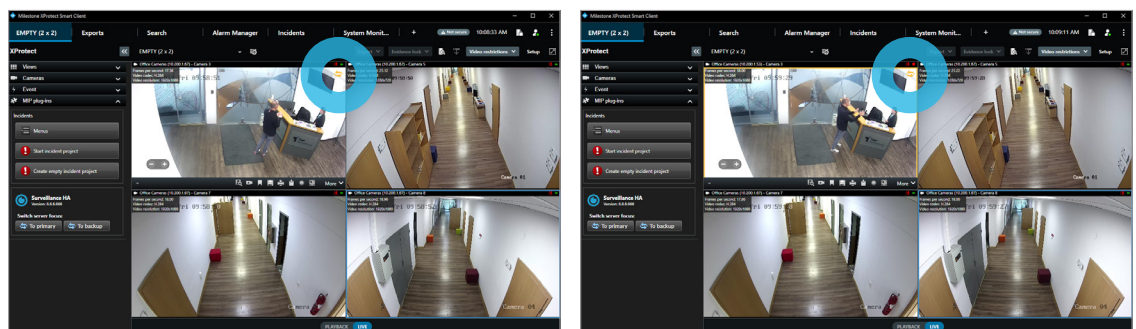


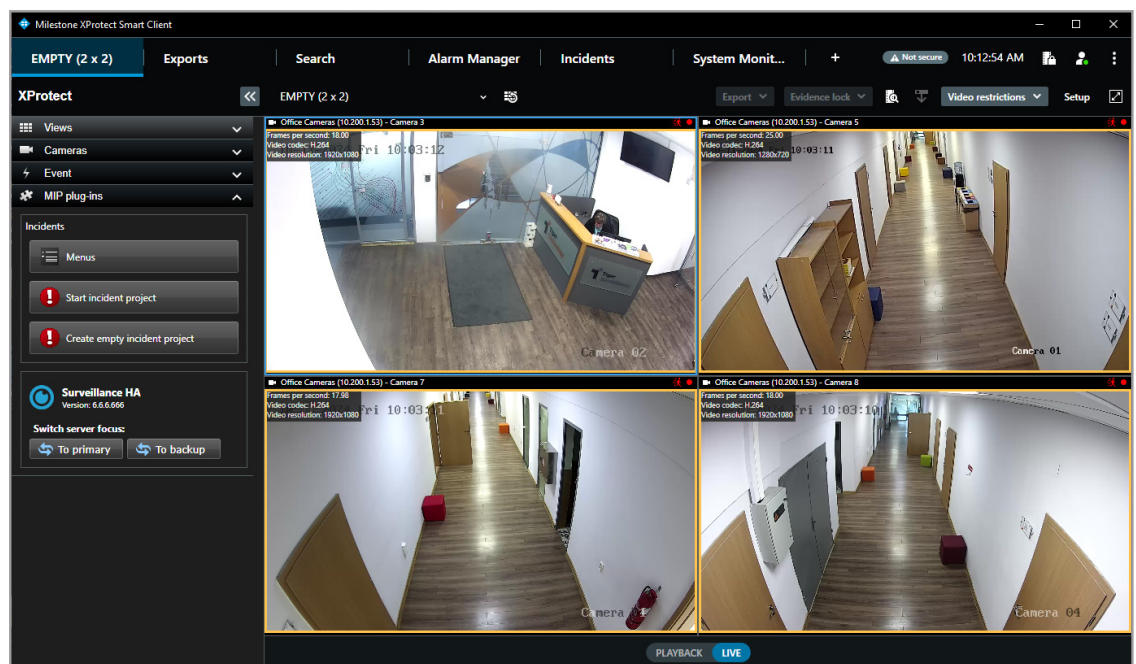
Figure 2

In the Smart Client and Management Client, the operator can switch between camera feeds from primary and alternative servers by clicking on the top right-corner  overlay symbol. A yellow bounding frame displays when viewing the alternative feed.



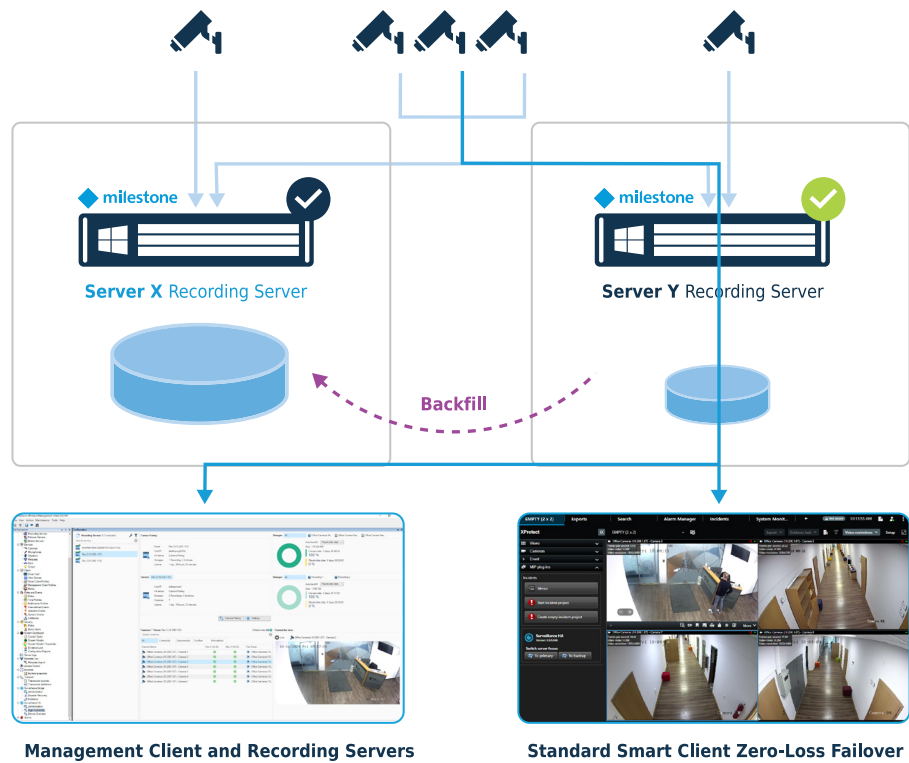
Step 2: Failover

In the event of a camera switch, or if the camera feed is no longer available from its primary server, the Smart Client plug-in automatically routes the alternative server feed.



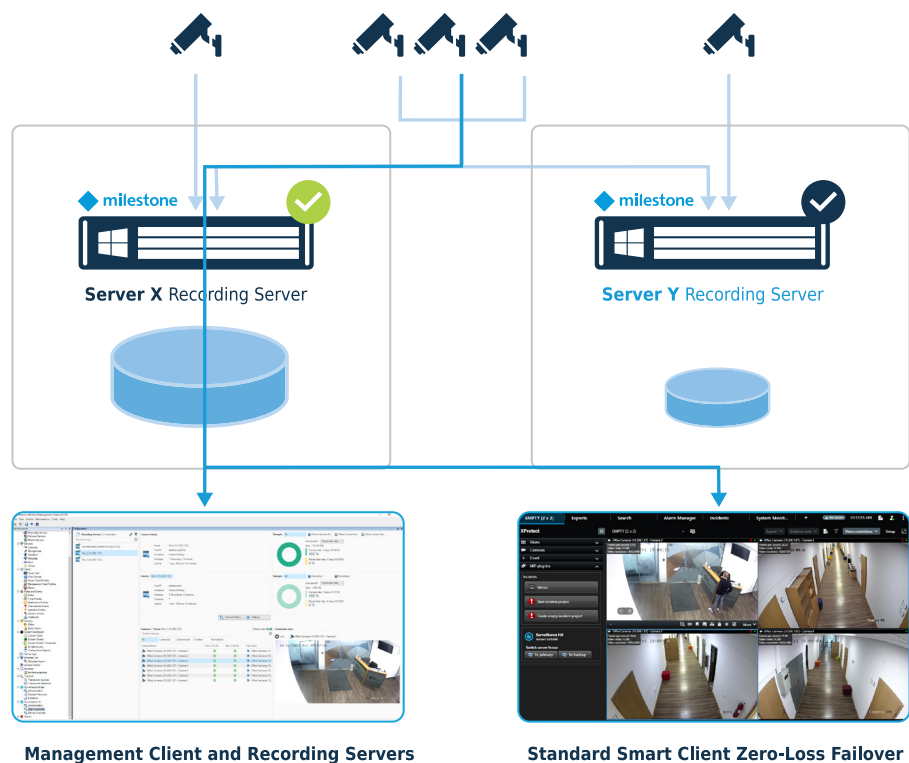
Step 3: Backfilling

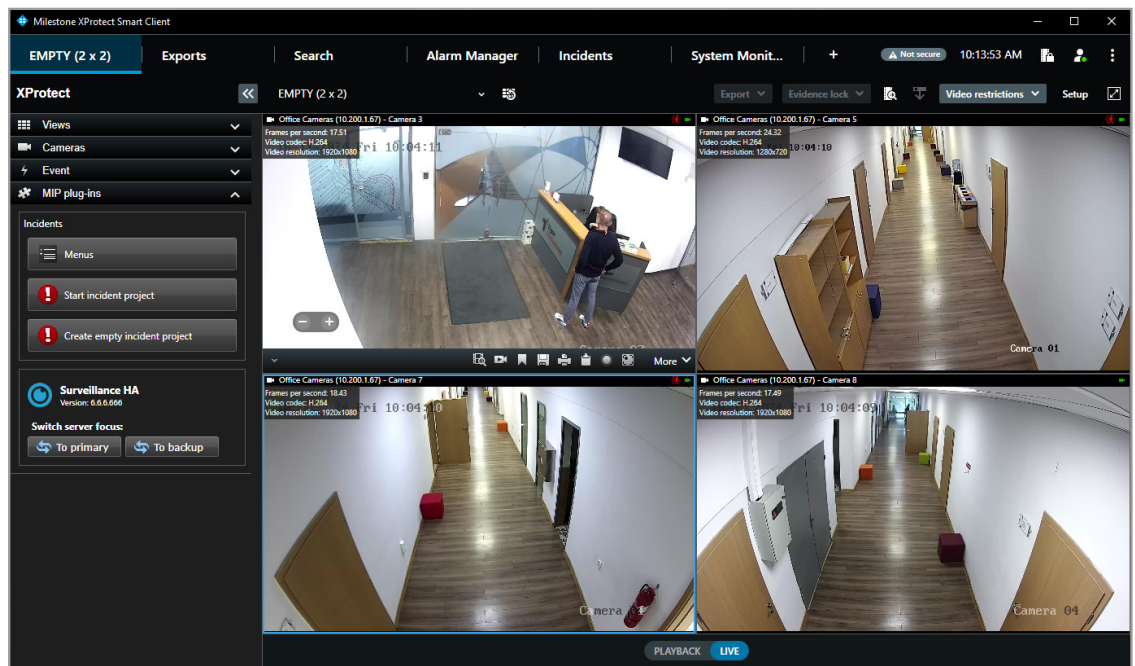
Any data that was not recorded on a server during downtime can be restored from the alternative server through a back-fill operation. This operation completes in two steps. After the computer is booted, but before the Recording Server is started, Surveillance HA will calculate the missing recordings and will quickly create placeholder files. As soon as placeholder files are in place, Surveillance HA will start the Recording Server and begin the backfill process in the background.



Step 4: Failback

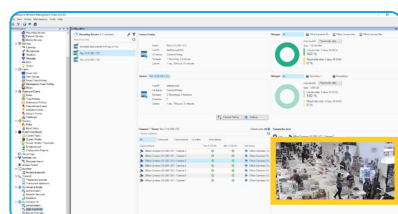
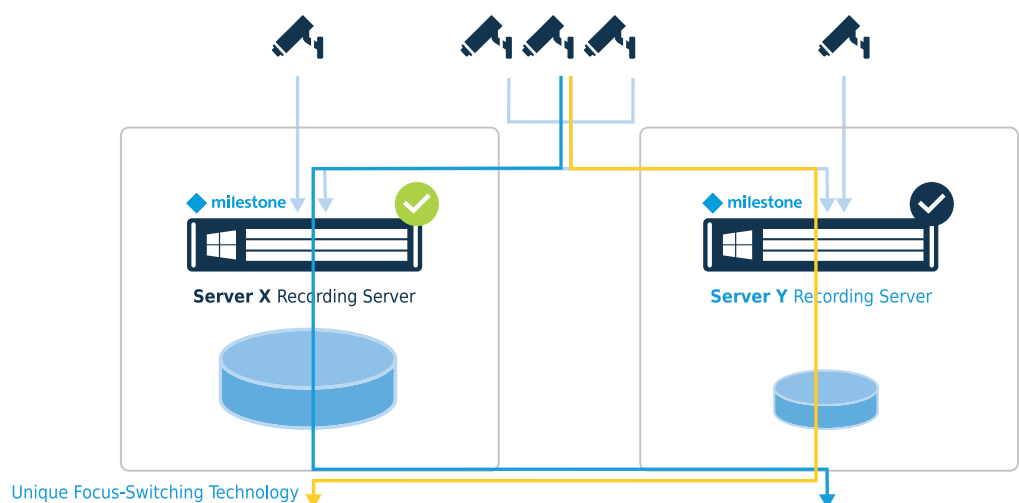
Once backfill operation completes, both servers have access to all recordings and the system has achieved equilibrium again (it is ready for a new failover). The operator can “switch” between primary and alternative server.



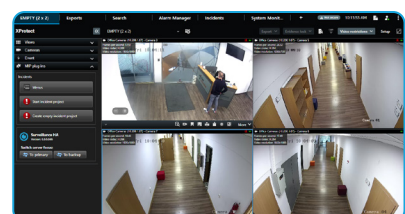


Focus switching

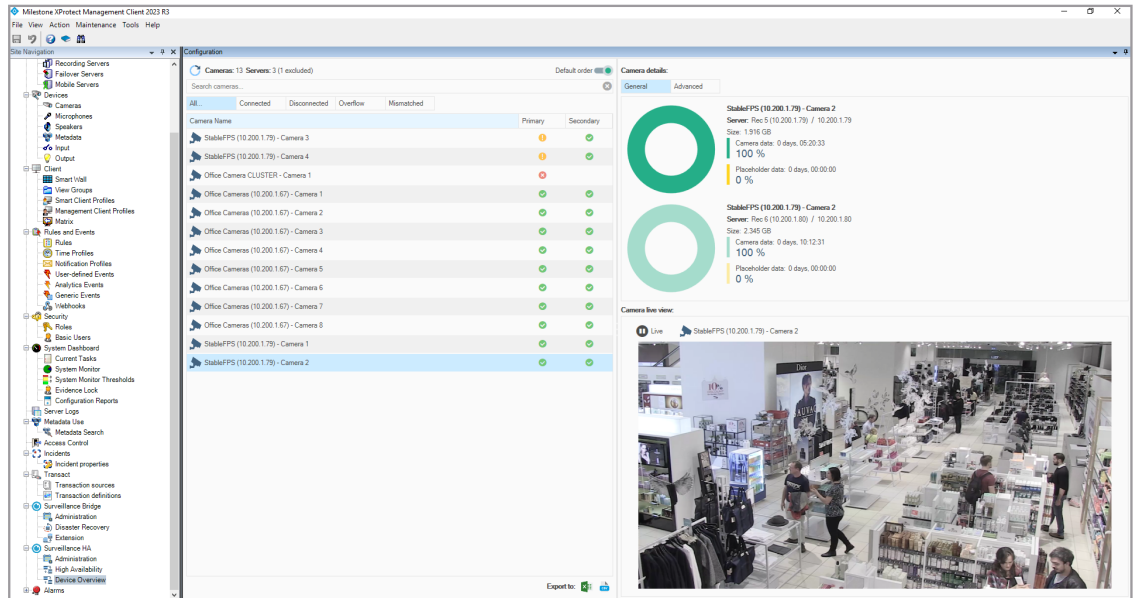
The Device Overview tab provides a list of any camera mismatch, in overflow, or disconnected. When managing hundreds or thousands of cameras, this feature greatly facilitates the troubleshooting of camera feeds (switches, cables, etc.) without disrupting normal operations.



Management Client and Recording Servers



Standard Smart Client Zero-Loss Failover




Conclusion

Operating Surveillance HA for XProtect Recording Servers in Camera Pairing mode offers the most flexibility while achieving High Availability. However, as Milestone still sees independent servers, it requires more configuration and maintenance than the Server Cloning mode. Best of all, there is no need for complex and expensive Microsoft Clustering or Hyper Converged Infrastructures.

Surveillance HA Benefits:

- 1. Continuity and Reliability:** Surveillance HA automatically switches to a secondary server during hardware failures, eliminating downtime and ensuring seamless operations. Enhances security and reliability and simplifies software upgrades.
- 2. Data Redundancy:** By maintaining parallel recording on both primary and secondary servers, it ensures data redundancy, safeguarding important surveillance data against loss.
- 3. Seamless Operations:** The transition between the primary and secondary servers is smooth and virtually unnoticed by users, maintaining operational consistency.



4. Zero Data Loss: Once the primary server is back in operation, the missing data can be restored efficiently from the secondary server, ensuring a fully restored timeline.

Note: Starting the recording server manually will prevent backfilling operation to succeed. Always let Surveillance HA start the recording server.

5. Flexible Configuration: It offers the flexibility to have different retention periods on the secondary server, potentially saving on storage costs while still retaining crucial data.

6. Focus-Switching: Enables complete management of the non-serving server during normal operations, allowing for the troubleshooting of various connectivity issues, including cameras, without interrupting service. This feature requires the ability to manipulate DNS entries.

7. Global View: Easily identify camera mismatch, connectivity issues, or recording problems across any recording servers.

8. Easy Integration: Integrates easily with existing infrastructures, including compatibility with all Milestone XProtect tiers of software license, making it a suitable choice for any setup.

9. Legal and Regulatory Compliance: Ensuring continuous recording can be vital in meeting legal and regulatory requirements for surveillance in certain industries or regions.




About Tiger Surveillance

Tiger Surveillance is a software development company specializing in data management and protection for video surveillance workflows. Founded in 2022 and headquartered in Alpharetta, Georgia, the company is powered by Tiger Technology, an established technology provider of storage, data, user, and media management solutions.

The Tiger Surveillance portfolio includes solutions designed to extend and protect storage infrastructure on premises, in any cloud tier or any remote data center. The company's flagship product Surveillance Bridge enables customers to adopt the cloud for unlimited capacity and disaster recovery thus optimizing costs & resources and extending retention times.



11877 Douglas Rd, Suite 102-326
Alpharetta, GA 30005, USA
Tel: +1 678 269 6020, +1 888 707 1230

 [Tiger Surveillance](#)
 [@TigerSurveillance.FB](#)
 [@TigerSurvTweets](#)

sales@tiger-surveillance.com
www.tiger-surveillance.com