Smart Retention

Introduction

Smart Retention simplifies how Meraki MV cameras record and store footage, giving users confidence in how many days of retention they will receive. This feature ensures that key events, such as people and vehicles in motion, are captured in high fidelity, while also dedicating storage to meet users' storage requirements. This document covers how Smart Retention works, what customization options are available to the user, and how to choose the right camera model for different deployment types.

Benefits of Smart Retention

Smart Retention provides the following benefits to Meraki MV smart camera users:

- Longer and more predictable video retention duration

- Simplified video quality settings

- Reduced bandwidth requirements for local and cloud streaming

Predictable retention days

Smart Retention helps Meraki MV smart cameras maintain predictable retention periods. This feature allows users to choose camera models based on their retention needs. It also makes it easier to estimate how long footage will be stored and when older footage will be replaced with new recordings. The table below shows the expected retention days for various camera models and quality settings.

	Model	Standard *1080p / 24fps*	DEFAULT **Enhanced** *4MP / 24fps*	Ultra *4K / 15fps*
20 day Cameras *256GB SSD*	**MV 13**	30 days	**20 days**	15 days
	MV 33	30 days	**20 days**	15 days
	MV 63	30 days	**20 days**	15 days
	MV 93	30 days	**20 days**	15 days
45 day Cameras *512GB SSD*	**MV 13M**	60 days	**45 days**	30 days
	MV 23M	60 days	**45 days**	30 days
	MV 33M	60 days	**45 days**	30 days
	MV 63M	60 days	**45 days**	30 days
	MV 73M	60 days	**45 days**	30 days
	MV 93M	60 days	**45 days**	30 days
90 day Cameras *1TB SSD*	**MV 23X**	120 days	**90 days**	60 days
	MV 63X	120 days	**90 days**	60 days
	NEW **MV 53X**	120 days	**90 days**	60 days
	MV 73X	120 days	**90 days**	60 days
	NEW **MV 84X**	120 days	**90 days****	60 days
	MV 93X	120 days	**90 days**	60 days

* As of April 2025
** Enhanced resolution for MV84X is 5MP / 24fps

How Smart Retention works: two recording streams

To provide the retention day durations listed above, Meraki MV cameras simultaneously record two video streams: the event stream and the continuous stream.
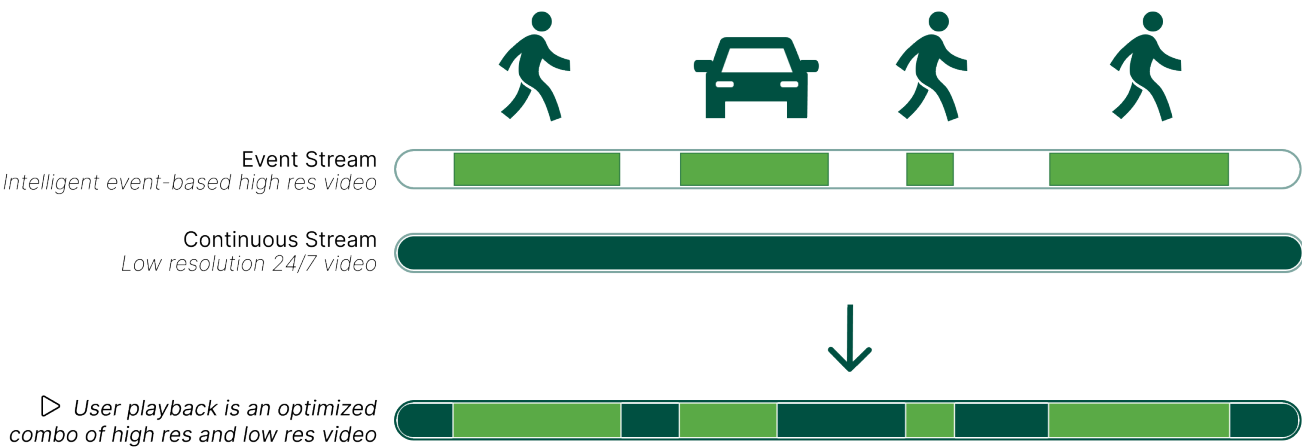
Event stream

The event stream continuously records footage at either Standard (1080p/24fps), Enhanced (4MP/24fps), or Ultra (4K/15fps) quality and continues to use Smart Codec. Live footage from the event stream is always available for live streaming. Once footage is recorded in the event stream, the camera retains the footage if any motion is detected. Otherwise, the footage may be discarded after 30 minutes to make room for other motion events.

Continuous stream

The continuous stream provides coverage for spans of time when no motion is detected. The continuous stream continuously records footage at 540p/24 fps for MV13, MV13M, MV23, MV23X, MV63, MV63X, MV73, and MV73X. It records at 720p/24 fps for MV33, MV33M, MV93, MV93M, and MV93X. Footage is only discarded after it becomes older than the expected days of retention in the table above.

Historical playback

With Smart Retention, historical playback is always played from the best available source.

Event Stream
Intelligent event-based high res video

Continuous Stream
Low resolution 24/7 video

▷ *User playback is an optimized combo of high res and low res video*

Determining retention duration for motion events

Smart Retention assumes that most cameras see 8 hours of motion per day or less. If a camera sees 8 hours or less of motion per day, all motion events are retained in high resolution for the expected days in the table above. If a camera sees more than 8 hours of motion per day, all footage is still retained for the expected days but older events are retained in low resolution.

Here are some general guidelines for typical amounts of observed motion that can be expected for various deployment types.

Deployment type	Typical motion (hours per day)
Busy retail locations	16-24
Busy roads, intersections	16-24

Building entrances, lobby areas	8-16
Office spaces and hallways	8-16
Elementary school, high school, and college/university spaces	0-8
Parking lots	0-8
Warehouses, manufacturing spaces	0-8
IT closets, storage closets	0-8

The tables below display the expected days of retention for cameras that see more than 8 hours of motion per day.

Standard quality retention

Camera models	Storage size	Continuous stream retention	Event stream retention based on motion		
			Low (0-8 hrs/day)	Medium (8-16 hrs/day)	High (16-24 hrs/day)
MV13, MV33, MV63, MV93	256GB	30 days	30 days	15 days	10 days
MV13M, MV23M, MV33M, MV63M, MV73M, MV93M	512GB	60 days	60 days	30 days	20 days
MV23X, MV53X, MV63X, MV73X, MV93X	1TB	120 days	120 days	60 days	40 days

Enhanced quality retention

Camera models	Storage size	Continuous stream retention	Event stream retention based on motion		
			Low (0-8 hrs/day)	Medium (8-16 hrs/day)	High (16-24 hrs/day)
MV13, MV33, MV63, MV93	256GB	20 days	20 days	10 days	6 days
MV13M, MV23M, MV33M, MV63M, MV73M, MV93M	512GB	45 days	45 days	22.5 days	15 days

			Event stream retention based on motion		
Camera models	Storage size	Continuous stream retention	Low (0-8 hrs/day)	Medium (8-16 hrs/day)	High (16-24 hrs/day)
MV23X, MV53X MV63X, MV73X, MV93X	1TB	90 days	90 days	45 days	30 days

Ultra quality retention

			Event stream retention based on motion		
Camera models	Storage size	Continuous stream retention	Low (0-8 hrs/day)	Medium (8-16 hrs/day)	High (16-24 hrs/day)
MV13, MV33, MV63, MV93	256GB	15 days	15 days	7.5 days	5 days
MV13M, MV23M, MV33M, MV63M, MV73M, MV93M	512GB	30 days	30 days	15 days	10 days
MV23X, MV53X, MV63X, MV73X, MV93X	1TB	60 days	60 days	30 days	20 days

Requirements to use Smart Retention

MV 6.0.2 is the minimum supported firmware version for Smart Retention. Smart Retention is available for the following camera models: MV13, MV13M, MV23M, MV23X, MV33, MV33M, MV53X, MV63, MV63M, MV63X, MV73M, MV73X, MV93, MV93M, MV93X, MV84X.

> ⓘ MV84X only supports Smart Retention operation.

Enabling Smart Retention

Assuming a camera meets the above minimum requirements, Smart Retention can be enabled either manually or using profile assignment.

To enable it manually, navigate to a single camera > Settings > Quality and retention > Retention policy. Select "Smart." Note that Motion Based Retention and traditional retention cannot be used when Smart Retention is enabled. Set the desired video quality and observe the expected retention days on the right side.

To enable it in a camera profile, navigate to Cameras in the left side panel > Configure > Camera profiles > Quality and retention profiles. Create a new profile or edit an existing one. Under Quality and Retention settings, enable "Smart Retention." Under "Per model configuration," set the desired quality settings for cameras that support Smart Retention. Assign the profile to the desired cameras.
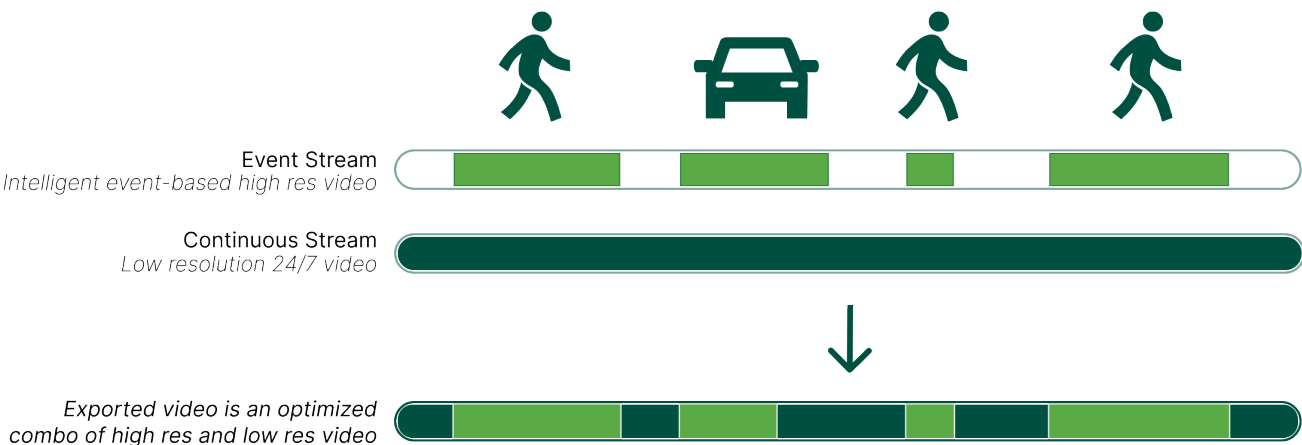
Per model configuration

Different models of cameras have different options available for video resolution and quality

Camera models	Video resolution	Standard quality	Enhanced quality	High/Ultra quality	Storage	Retention days ⓘ
MV21/71	720p	○	⦿		128 GB	Avg 15 days
MV12/22/72	1080p ⌄	○	○	⦿	256 GB	Avg 14 days
MV22X/MV72X	720p ⌄	○	⦿		512 GB	Avg 90 days
MV12WE	1080p ⌄	○	○	⦿	128 GB	Avg 7 days
MV32	1080×1080 ⌄	○	⦿		256 GB	Avg 16 days
MV2	720p ⌄	○	⦿		No storage	Live Only
MV52	1080p ⌄	○	⦿	○	1 TB	Avg 30 days
MV63		○	⦿	○	256 GB	20 days
MV63X		○	⦿	○	1 TB	90 days
MV93		○	⦿	○	256 GB	20 days
MV93X		○	⦿	○	1 TB	90 days
MV13		○	⦿	○	256 GB	20 days
MV33		○	⦿	○	256 GB	20 days

Exports with Smart Retention

With Smart Retention, exported video uses high resolution video for motion events when available. Low resolution video is combined in when high resolution is not available. Note that long exports (greater than 4 hours in length) may be split into multiple shorter exports.

Event Stream
Intelligent event-based high res video

Continuous Stream
Low resolution 24/7 video

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Exported video is an optimized combo of high res and low res video

Bandwidth requirement improvements for streaming

Smart Retention also comes with optimizations to bandwidth requirements for live streaming. The below table shows the previous bandwidth requirements for live streaming at various quality settings, the new bandwidth requirements, and the percent improvement.

	Previous bandwidth requirement	New bandwidth requirement	Improvement
Standard Quality	2800 kbps	1800 kbps	36%

Enhanced Quality	9000 kbps	3100 kbps	66%
Ultra Quality	8000 kbps	5400 kbps	33%

Additional retention with Cloud Archive, Motion Based Retention, and Scheduled Recording

Additional retention beyond the number of days provided above can be gained through the use of other Meraki MV features. Click the links below for more information.

- Cloud Archive
- Motion Based Retention
- Scheduled Recording

Prioritizing high resolution over low resolution retention using Maximum Retention Limit

Maximum Retention Limit is a feature designed to allow users to limit how much footage their cameras can retain. For example, some users may want to do this to meet local regulatory laws that restrict how long footage can be retained. Click here to learn more about Maximum Retention Limit.

Maximum Retention Limit can also be used to prioritize high resolution retention over low resolution when using Smart Retention. Consider an example in which 30 days of retention are required. In this example, consider an MV63X which is capable of 60 days of retention on Ultra. The 60 day retention figure assumes a scene where 8 hours of motion occurs. However, if the MV63X is monitoring a scene with 16 hours of motion per day, it might only retain 20 days of high resolution footage. In this example, if only 30 days of retention is needed, Maximum Retention Limit can be set to 30 days to reduce storage used by the continuous stream and increase the space available for the high resolution stream.

Maximum retention limit

Sets the maximum period of time that the camera will store video. Note that the actual retention depends on the configuration.

○ When it runs out of storage space

● When the footage is older than | 30 days ▾ |