

Bosch Video Management System

Scheduled Recording Settings as of Bosch VMS 3.0



BOSCH

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1 Overview

As of Bosch VMS 3.0 an improved and user-friendly recording configuration is introduced. The basic settings (non-scheduled) have been separated from recording settings (scheduled). Basic settings are for the initial configuration of streams. Recording settings are for assigning these streams to different use-cases, such as continuous recording, pre-alarm recording, or alarm recording. The recording settings are arranged in a new dialog called **Scheduled Recording Settings** accessible via the **Cameras and Recording** page. For more details, see *Section 4.2 Changing qualities in schedules, page 8*.

2 Basic stream settings (schedule-independent)

You can configure different codec profiles in the **Camera and Recording** page of the Configuration Client.

Stream 1		Stream 2		Live Video	Recording
Codec	Quality	Codec	Quality	Stream	Setting
H.264 MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Alarm Recording
H.264 MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Continuous, Alarm Recording
H.264 MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Recording
H.264 MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Recording
H.264 MP 720p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
H.264 MP 720p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
H.264 MP 1080p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
H.264 MP 1080p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
MPEG-4 SH++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Weekend
MPEG-4 SH++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Weekend
MPEG-4 SH++	Normal	MPEG-4 SH++	Good	Stream 2	Continuous, Alarm Recording
MPEG-4 SH++	Normal	MPEG-4 SH++	Good	Stream 2	No Recording

2.1 Codecs and HD resolution

Codecs are part of the basic stream settings. The Bosch VMS gives you default settings for all codecs and qualities. You can change these settings to your own configuration.

It depends on the camera device family which codec you can select.

See the list below for detailed information per device family.

Camera Model	Description
VIP X	The MPEG-4 SH++ codec profile is available. H.264 Baseline Profile (BP) is not supported in Bosch VMS for VIP X platform devices.
VIP X 1600 XFM4	It is possible to configure H.264 BP+ (Baseline Profile+) and H.264 MP (Main Profile). As per default H.264 MP is set for both streams 1 and 2. We recommend not changing these settings. Note: The H.264 BP+ codec for XFM4 is limited to 2500 kbps. For VIP X 1600 XFM4 devices specific H.264 codec functions are available in the Stream Quality Settings dialog box. You can enable or disable H.264 deblocking filter and CABAC (Context-based Adaptive Binary Arithmetic Coding) individually for each stream quality. If a large amount of Image panes are required to display in Operator Client, resolve performance issues by disabling CABAC and H.264 deblocking filter.

Camera Model	Description
ARM SD (Standard Definition)	<p>An ARM SD device has a special pre-defined H.264 codec profile which you can select, i.e. H.264 MP Low Latency. You can configure H.264 MP Low Latency and H.264 BP+. As per default H.264 MP Low Latency is configured for both streams 1 and 2. We recommend these settings.</p> <p>Note: The H.264 BP+ codec for ARM SD devices is limited to 1200 kbps.</p> <p>Note: If live video shall be displayed on a VIPX Decoder, select H.264 BP+ due to hardware limitations of the decoder. It is only possible to use H.264 BP+ on one stream. If H.264 MP is selected, live video on a decoder is not possible.</p>
ARM HD (High Definition)	<p>As the codec for HD is always H.264 the HD resolutions 720p and 1080p are fixed with the codec configuration.</p> <p>Stream 1 is the main HD stream. You can copy stream 1 and generate a second HD stream with the same settings. All Bosch HD models are able to generate an independent second stream in SD resolution with different settings to stream 1. You may limit the performance of stream 1 to do that (see device data sheet). The stream quality levels can be configured in the stream quality dialog.</p>

3 Stream assignment for Live Video

You can assign either stream 1 or stream 2 for Live Video. The quality and codec of the basic stream settings are used.

Stream 1		Stream 2		Live Video	Recording
Codec	Quality	Codec	Quality	Stream	Setting
MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Alarm Recording
MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Continuous, Alarm Recording
MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Recording
MP (Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Recording
MP 720p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
MP 720p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
MP 1080p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
MP 1080p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
3-4 SH++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Week
3-4 SH++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Week
3-4 SH++	Normal	MPEG-4 SH++	Good	Stream 2	Continuous, Alarm Recording
3-4 SH++	Normal	MPEG-4 SH++	Good	Stream 2	No Recording

4 Scheduled Recording Settings

4.1 Background

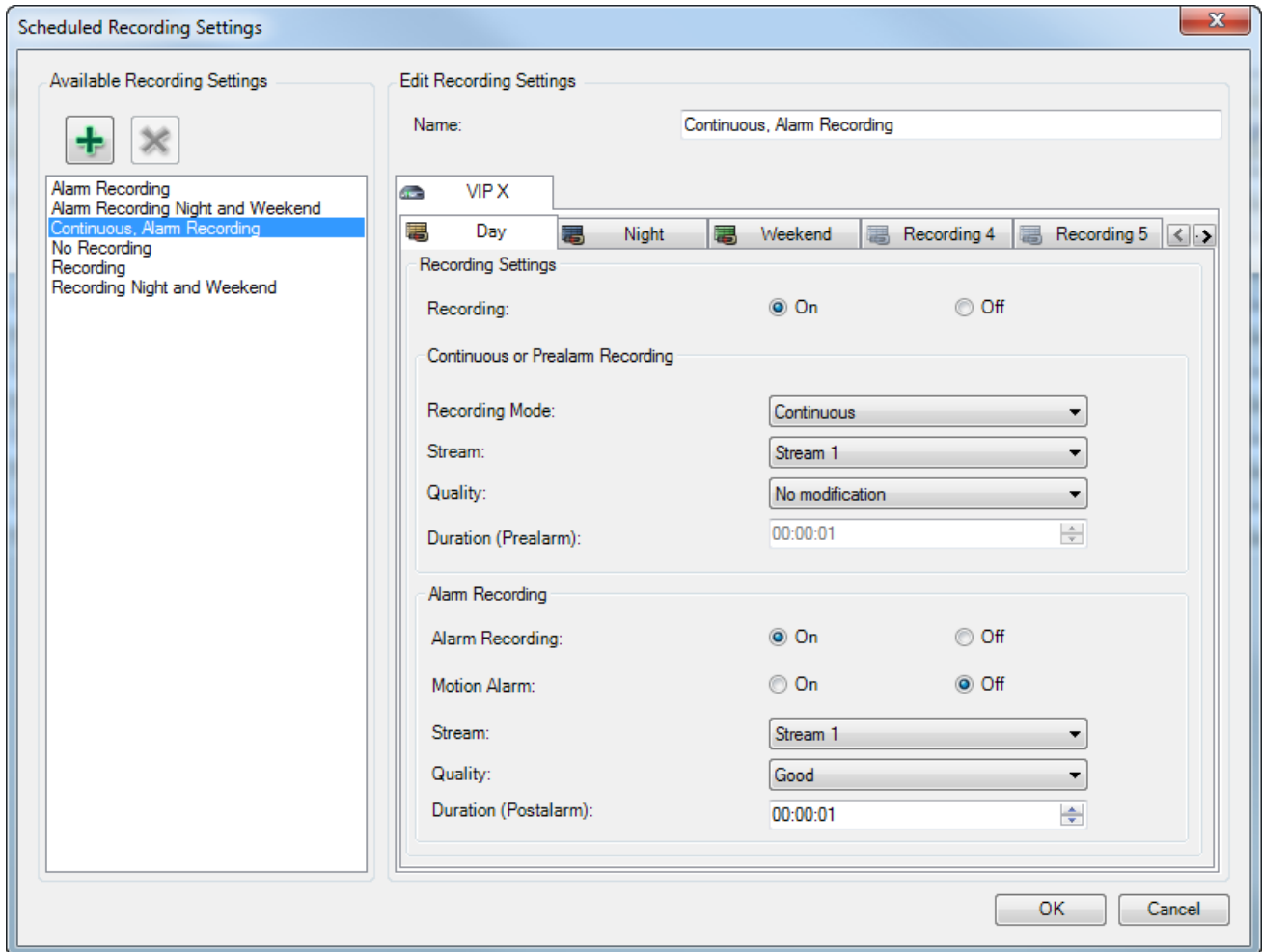
Increasing camera capacity over time has led to a change in the configuration of recording settings in Bosch VMS version 3.0.

In CCTV installations, cameras are typically grouped by location and/or time-schedule (e.g. Alarm Recording Night and Weekend), and not by technical differences between camera models.

These groups can now be mapped as templates in the **Scheduled Recording Settings** dialog. All recording configurations are now centralized in this dialog.

With this template concept Bosch VMS provides faster configuration combined with the best overview of recording configuration ever.

Enter the **Scheduled Recording Settings** dialog by pressing **Edit scheduled recording settings** in the Toolbar of the **Cameras and Recording** page.



In the **Scheduled Recording Settings** dialog you can configure the recording behavior of the devices. The Bosch VMS gives you a set of pre-defined recording settings (templates) per default. You can modify these templates to your needs or you can add new templates. The recording settings per device family can be configured independently per schedule. Possible Recording settings are:

	VIP x	ARM SD	ARM HD
Recording Settings			
Recording	On Off	On Off	on Off
Normal Recording			
Recording Mode	Continuous Prealarm	Continuous Prealarm	Continuous Prealarm

	VIP x	ARM SD	ARM HD
Stream	Stream 1	Stream 1 Stream 2	Stream 1 Stream 2 I-Frame only (from stream 1)
Quality	No Modification Pre-defined Qualities User-defined Qualities	No Modification Pre-defined Qualities User-defined Qualities	No Modification Pre-defined Qualities User-defined Qualities
Duration (pre-alarm)	15s - 3h	15s - 3h	15s - 3h
Alarm Recording			
Alarm Recording	On Off	On Off	On Off
Motion recording	On Off	On Off	On Off
Stream	Stream 1	Stream 1 Stream 2	Stream 1 Stream 2 I-Frame only (from stream 1)
Quality	No Modification Pre-defined Qualities User-defined Qualities	No Modification Pre-defined Qualities User-defined Qualities	No Modification Pre-defined Qualities User-defined Qualities
Duration (post-alarm)	5s - 3h	5s - 3h	5s - 3h

You should give your configuration a descriptive name which is then listed in the **Available Recording Settings** list.

You can select all configured Recording Settings in the cameras list. Assign now one Recording Setting per camera. You can copy and paste one setting to all cameras for quick configuration.

Stream 1		Stream 2		Live Video	Recording
Codec	Quality	Codec	Quality	Stream	Setting
Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Alarm Recording
Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Continuous, Alarm Recording
Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 2	Recording
Low Latency, SD)	Normal	H.264 MP (Low Latency, SD)	Good	Stream 1	Recording
10p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
10p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
180p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 1	Continuous, Alarm Recording
180p25/30 fixed	Normal	Copy from Stream 1	Quality of Stream 1	Stream 2	Continuous, Alarm Recording
++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Weekend
++	Normal	MPEG-4 SH++	Good	Stream 1	Alarm Recording Night and Weekend
++	Normal	MPEG-4 SH++	Good	Stream 2	Continuous, Alarm Recording
++	Normal	MPEG-4 SH++	Good	Stream 2	No Recording

4.2 Changing qualities in schedules

It is possible to configure other stream qualities per recording schedule. It depends on the encoder/camera models which quality properties can be modified.

VIP X	ARM SD & ARM HD
Streams	
It is possible to switch recording qualities (incl. resolution change) i.e. for alarm recording.	You can modify the existing stream with the settings of another stream quality. But only Image encoding interval and Target bit rate are modified. Other settings like the resolution are not modified.
Notes	
For the XFM4 platform possible recording gaps can be up to 4 frames, 133/160ms (NTSC/PAL) on alarm recording and schedule change if active recording quality differs.	Possible recording gaps can be up to 12 frames, with 1 IPS up to 12 seconds on schedule change if active recording quality differs from old to new schedule.
Examples	
	Stream 2 is selected for alarm recording and configured with Normal quality. For an alarm the Excellent quality is selected. When an alarm occurs, all settings of the Normal quality are used except Image encoding interval and Target bit rate which are modified with the values of Excellent .

5 Resolutions

In the following table the resolutions of Bosch cameras are listed:

Camera model	Resolution
XF4	4CIF, 2CIF, 1/2D1, 2/3D1, CIF, QCIF
VIP-X1XF (IPBE3)	4CIF, CIF
VGA cameras (Taiwan, IPBE3)	VGA, QVGA
SD cameras (IPBE3)	4CIF, CIF
HD cameras (IPBE3, IPBE4)	1080p, 720p

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