

Grandstream Networks, Inc.

Synology Surveillance Station Configuration Guide Surveillance IP cameras & IP video Encoders







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SYNOLOGY CONFIGURATION GUIDE

SURVEILLANCE IP CAMERAS & IP VIDEO ENCODERS

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INTRODUCTION

The purpose of this document is to guide you to configure/monitor Grandstream IP cameras & IP Video Encoders/Decoders using Synology DSM Surveillance Station.

This guide is applicable to Synology DSM 4.0 Surveillance Station version 6.0-2353 and higher and to the following Grandstream IP cameras (GXV3651_FHD, GXV3662, GXV3615WP_HD with firmware 1.0.1.71 or higher; GXV3615, GXV3611_HD, GXV3611_LL, GXV3601, GXV3601_HD, GXV3601_LL with firmware 1.0.4.38 or higher) and IP Video Encoders/Decoders (GXV3501 with firmware 1.0.4.38, GXV3504 with firmware 1.0.4.39 or higher; GXV3500 with firmware 1.0.1.71 or higher – Decoding functionality is available on GXV3500 only)

Be aware that different firmware revisions may have different web interface formats and functionality.

PREPARING GRANDSTREAM IP CAMERAS

- 1. Connect your IP cameras/encoders to your network.
- 2. Download and open GS_Search tool from this link to locate IP of your cameras http://www.grandstream.com/products/tools/surveillance/GS_Search.zip
- 3. Click **Search** button to start locating your cameras
- 4. Your cameras and their IPs will be displayed in the reserved areas
- 5. Take a note of the IPs you want to add in Synology for future use

1 IPCAMERA GXV3662HD 1.0.1.68 192.168.50.139 80 554 00.08.82.29 2 IPCAMERA GXV3615WP_HD 1.0.1.69 192.168.50.30 80 554 00.08.82.34 3 IPCAMERA GXV3615WP_HD 1.0.4.37 192.168.50.114 80 554 00.08.82.14 4 IPCAMERA GXV3651FHD 1.0.1.68 192.168.50.1144 80 554 00.08.82.18 5 IPCAMERA GXV3651FHD 1.0.1.68 192.168.50.153 80 554 00.08.82.18	GS_Se	arch						×					
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4 IPCAMERA GX/3651FHD 1.0.1.68 192.168.50.144 80 554 00.08:82.28 5 IPCAMERA 3601 1.0.4.37 Grandstream 192.168.50.133 80 554 00.08:82.28 6 IPCAMERA 3601 1.0.4.37 Grandstream 192.168.50.31 80 554 00.08:82.28 6 IPCAMERA 3611LL 1.0.4.38 1.92.168.50.31 80 554 00.08:82.28 4 IPCAMERA 3611LL 1.0.4.38 1.92.168.50.31 80 554 00.08:82.28 4 IPCAMERA 3611LL 1.0.4.38 IPCAMERA 3611 1.0.4.37 1.0.4.38 1.0.4.38 4 IPCAMERA 3611LL 1.0.4.38 IPCAMERA 3611	3					80	554	00:0B:82:1F:C4					
5 IPCAMERA 3601 1.0.4.37 Grandsteam 192 168 50.159 80 554 00.08:82 18 6 IPCAMERA 3611LL T.0.4.38 192 168 50.31 80 554 00.08:82 24 4 TT T.0.4.38 192 168 50.31 80 554 00.08:82 18 4 TT Search Add 100 100 100 100 100 100 100 100 100 100	4	IPCAMERA GXV3651FHD	1.0.1.68		192.168.50.144	80	554	00:0B:82:2B:41					
6 IPCAMERA 3611LL 10.4.38 192.168.50.31 80 554 00.08.82.24	5			Grandstream				00:0B:82:1E:A					
Search Add Original IP 192 . 168 . 50 . 31 Use DHCP New IP 0 . 0 . 0 . 0 Sub net mask 255 . 255 . 0 Gate way 0 . 0 . 0 . 0	6							00:0B:82:24:A1					
Search Add Original IP 192 . 168 . 50 . 31 Use DHCP New IP 0 . 0 . 0 . 0 Sub net mask 255 . 255 . 0 Gate way 0 . 0 . 0 . 0													
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Original IP 192 . 168 . 50 . 31 Use DHCP													
New IP 0 0 0 Ping Sub net mask 255 255 0 Gate way 0 0 0 0	Original IP 192 . 168 . 50 . 31												
Sub net mask 255 . 255 . 0 Gate way 0 . 0 . 0 . 0				0 0 0									
Gate way 0 . 0 . 0			New IP			ng							
			Sub net mask	255 . 255 . 255	. 0								
Modify IP			Gate way	0.0.0	. 0								
				Modify IP									

- Figure 1: GS_Search Tool -



ACCESS SYNOLOGY SURVEILLANCE STATION

1. Assuming that Synology is already powered and connected to your local network, install and run "Synology Assistant" software (available in CD provided with your DSM) to locate the IP of your DSM.

Synology Assistant	and being	Salar I Ball	nt Part Co	to be and have		• X
Management	Resource Monitor	Syr	io logy			
옥 Search 猛 Co	nnect 🛛 🗮 Map D	rive ப் Set Up	WOL		*	0
Server name	IP address	IP status	Status	MAC address	Version	Model
Synology	192.168.50.243	Manual	Ready	00:11:32:11:8A:16	4.0-2228	DS112
				Total 1	Synology server(s) found.

- Figure 2: Synology Assistant -

<u>Note:</u> if you are not able to find the IP of your device, make sure that no Firewall is running on your computer, and run software again.

- 2. Double click the server name, and login page will be shown.
- 3. Enter Admin login and password (admin/admin by default)



Synology	
4	
8	+
Remember me	
1911/11/1	
Synology DS	IM 4.0

- Figure 3: Synology Login page -

4. Once successfully logged in, the main screen will be displayed as shown in figure 3.



- Figure 4: Synology main screen -

5. Access **Package Center** and make sure last Surveillance Station is installed and running. If not, please install and run it.





- Figure 5: Synology Package Center (Surveillance Station Status) -

6. Once all checked, close those 2 windows and click Menu > Surveillance Station

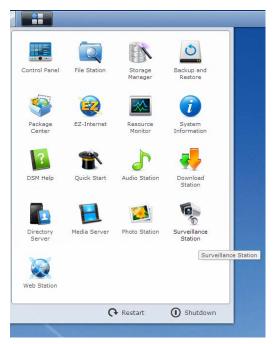


 Figure 6: Synology Menu > Surveillance Station -



192.168.50.243:5000/webman/3rdparty/S	GurveillanceStation/cgi/						
Live View	Timeline	Management				🍳 Surveilland	e Station <mark>6</mark>
Camera	Add J Delete	Edit 🖌 Enable 🖌	Refresh (Configuration 🖌 Adva			
🧕 Camera List	Preview	Name	IP address	Status	Occupied	Limit to	Rotation
log Camera Group							
Device							
🖵 VisualStation							
Event							
😫 Event List							
🗄 Export							
🚱 Mount							
System							
💡 Е-Мар							
Notification							
🗱 Advanced							
🔒 Privilege							
🔎 License							
📄 Log							
92.168.50.243:5000/webman/3rdparty/Surve	K K Page 1	u≝1 > >I C'					No da

7. Surveillance Station window will be opened as shown in Figure 7.

- Figure 7: Synology Surveillance Station Management page -



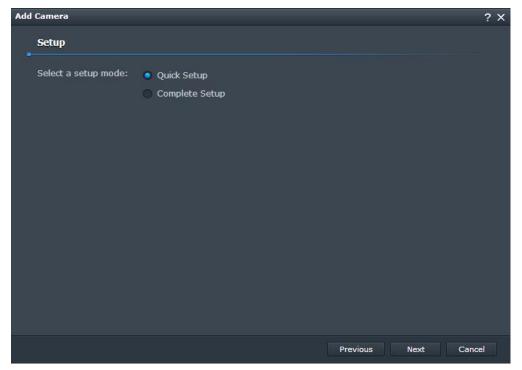
ADDING IP CAMERAS AND/OR IP VIDEO ENCODERS

1. In Surveillance Station Management tab, Press Add and select Add Camera or Add Batch (many cameras at same time). In our tutorial, we will use Add Camera, to add one camera at a time.

Add 🦼	Delete	Edit		Enable	
Add Came	ra		Name	e	
Add Batch	5				
	C				

- Figure 8: Management tab, Add Camera -

2. A wizard window appears, click Next and then select Setup mode : Quick Setup or Complete Setup



- Figure 9: Setup Mode selection



Using Quick Setup

In Device Info window, enter your camera info as below

- Name: Name of the camera
- IP address: IP address of your camera
- Port: Keep default port 80
- Brand: Select Grandstream
- Camera model: Select your camera model from drop-down list
- Video format: Select video codec to be used on Primary Stream of the camera; H.264 or MJPEG (if available)
- **Audio format:** Set G.711 to enable audio or set it to **Disabled**. If using MJPEG, audio will not be available
- Username: Enter admin
- Password: Enter admin password

Once completed, press **Test Connection** to test your settings. If all settings are correct, a snapshot from your camera will be displayed on the reserved area.

Camera				? :
Device Info				
Name: IP address: Port: Brand: Camera model: Video format: Audio format: Username: Password:	GXV3662_OutDoor 192.168.50.139 80 Grandstream GXV3662 HD H.264 ~ G711 ~ admin •••••• Test Connection	۹ × ×		
			Previous	Finish Cancel

- Figure 10: Add Camera – Device Info page (Quick Setup) -

Press Finish button to finish the setup process



Using Complete Setup

In **Device Info** window, enter your camera info as below

- Name: Name of the camera
- IP address: IP address of your camera
- Port: Keep default port 80
- Brand: Select Grandstream
- Camera model: Select your camera model from drop-down list
- Username: Enter admin
- Password: Enter admin password

Once completed, press **Test Connection** to test your settings. If all settings are correct, a snapshot from your camera will be displayed on the reserved area.

Device Info Name: GXV3662_OutDoor IP address: 192.168.50.139 Port: 80 Brand: GxN3662 HD Camera model: GXV3662 HD Camera model: GXV3662 HD Sername: admin Password: Text Connection	Camera			? >
IP address: 192.168.50.139 Port: 80 Brand: Grandstream Camera model: GXV3662 HD Username: admin Password: •••••	Device Info			
	IP address: Port: Brand: Camera model: Username:	192.168.50.139 80 Grandstream GXV3662 HD admin		

- Figure 11: Add Camera – Device Info page (Complete Setup) -

Press Next button



In Video page, adjust settings following your needs

- Codec

_

- Video format: H.264 or MJPEG (if available)
- Audio format: G711 or disabled
- Recording Image Settings / Live View Image Settings
 - Image quality: Choose from 1 to 5 (5 is Highest quality)
 - **Resolution:** Choose the convenient resolution for you (Resolutions depend on camera model)

Note: If using GXV3504, you will not have the possibility to use 4*D1 resolution from Surveillance Station

• *Frame rate (FPS):* Select frame rate per second (FPS depend on the resolution previously configured)

Add Camera					? ×
Video					
Codec					
Video format:	H.264	~			
Audio format:	G711	~			
Recording Image Se	ettinas				
Image quality:	5 (Highest)	~			
Resolution:	640x480	~			
Frame rate (FPS):	10	~			
Live View Image Se	ettings				
Image quality:	5 (Highest)	~			
Resolution:	640x480	~			
Frame rate (FPS):	10	~			
			Previous	Next	Cancel

- Figure 12: Add Camera – Video page (Complete Setup) -

Press Next button



In Recording page, adjust settings following your needs

- Event Recording
 - **Save video every (minutes):** Specify when video will be recorded periodically after an event; from 5 to 60 minutes.
 - *Pre-recording time (sec.):* Specify when recording will start before an event is detected; from 5 to 30 seconds.
 - **Post-recording time (sec.):** Specify when recording will stop after an event is detected; from 5 to 120 seconds.

- Event Archives

- **Event archive folder:** Name of folder when recording will be saved in your hard drive.
- File name prefix: Prefix to be prepended for each saved file.
- *Keep the files within (days):* Check this option and specify number of days to remove saved files after this period. If not checked saved will not be removed.
- Limit the archive folder up to (GB): Check this option and specify size limit on your hard drive to save files, once reached, no more files will be saved.
- **Estimate Required Space:** Click on this button to check the estimated needed space on the hard drive for added camera (pending)

Add	Camera		? X
	Recording		
	Event Recording		
	Save video every (minutes):	30 ~	
	Pre-recording time (sec.):	5 ~	
	Post-recording time (sec.):	5 ~	
	Event Archives		
	Event archive folder:	GXV3662_OutDoor	
	File name prefix:	GXV3662_OutDoor	
	🖌 Keep the files within (days)	10	
	Limit the archive folder up to (GB)	10	
	Estimate Required Space		
		Previous Next Cance	el

- Figure 13: Add Camera – Recording page (Complete Setup) -



Press Next button

Add C	Camer	а																								? X
_	Reco	rdin	g Sa	hed	luke																					
	Continuous																									
		Mo	tion	Det	ectio	on									elet	e										
	4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	2	0 21	22	23	
	Sun																									
	Mon																									
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	Fri	-		-	-			-	-			-					-							-	-	
	Sat																									
																	F	revi	ous		N	ext		С	ancel	

In **Recording Schedule**, set the schedule if Synology will record continuously or on Motion Detection.

- Figure 14: Add Camera – Recording Schedule page (Complete Setup) -

Press Next button

In Advanced page, set the settings depending on your needs:

- Live View Source
 - *From Surveillance Station:* The stream will be displayed from Surveillance Station, this stream is sent from the camera to Surveillance Station.
 - From camera: The stream will be displayed from the camera directly



- Motion Detection Recording
 - *Motion detection by the camera:* Video stream will be analyzed to detect motion detection from the camera, and it will send a notification to Surveillance station (pending).
 - *Motion detection by Surveillance Station:* Video stream will analyzed by Surveillance station to report motion detection if any.

- Archive Rotation Settings

- **Remove old archives when space or time limit is reached:** This allows to Surveillance station to remove old archives to free space for new recordings.
- **Stop recording when space or time limit is reached:** This will stop recording when no more space is available

Add	Camera	? X
	Advanced	
	Live View Source	
	From Surveillance Station	
	From camera	
	Motion Detection Recording	
	Motion detection by Surveillance Station	
	Archive Rotation Settings	
	Remove old archives when space or time limit is reached	
	 Stop recording when space or time limit is reached 	
	Previous Finish Cance	:1

- Figure 15: Add Camera – Advanced page (Complete Setup) -

Press **Finish** button to complete the setup of your camera.

Once added, a preview will appear in **Management** tab, showing Name of the camera, IP address, Status and more info.



Live View	Timeline	Manageme	nt			🎝 s	urveillance
Camera	Add , Delete	Edit , Enable	, Refresh	Configuration	Advanced .		
Q Camera List	Preview	Name	IP address	Status	Occupied	Limit to	Rotation
😽 Camera Group	Carlos I.	GXV3662_OutDoor	192.168.50.139	Normal	1 (G8)	10 (GB) / 10 (days)	Yes
Device							
VisualStation							
Event							
📑 Event List							
Export							
O Mount							
System							
e-Map							
Notification							
🛱 Advanced							
🔒 Privilege							
🔎 License							
🔯 Log							
	K K Page 1	of1 >>1 C				Dis	playing 1 - 1 of 1

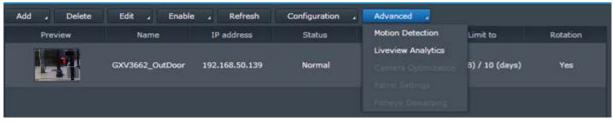
- Figure 16: Add Camera - Camera Preview (Complete Setup) -

You can always change the settings including resolutions, by selecting the camera in **Management** tab and pressing **Edit** button, to make **Device Info** window to appear.

MOTION DETECTION



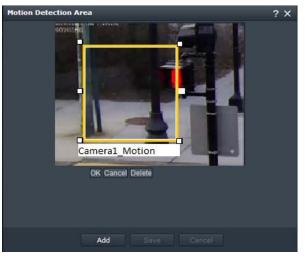
1. In Surveillance Station Management tab, select the camera on which you want to enable motion detection, and press Advanced button and select Motion Detection in the list.



- Figure 17: Management – Advanced > Motion Detection

- 2. Motion detection window will appear.
 - Motion detection by Surveillance Station is only available option
 - **Detection sensitivity:** set sensitivity percentage between 1 to 99%; if you set a smaller value, motion detection will be less sensitive and will only be triggered when the calculated difference between a series of frames is larger than the specified value.
 - **Threshold**: set threshold percentage between 1 to 99%; if you set a larger threshold, motion detection will be triggered when there is larger motion, or when the calculated difference between a series of frames exceeds the specified threshold.
 - Click **Detection Area** button, to add areas for motion detection (maximum 10 detection areas). Motion Detection Area will appear to allow you to Add, Name or Delete a Detection Area. Press Add to specify a new Detection Area, and set a Name for it. Confirm with Ok, and Save.

(You can adjust the size of Detection Areas by dragging small squares)



- Figure 18: Motion Detection Area

When a Motion Detection event is triggered, a recording will be saved (depending on your settings)



LIVEVIEW ANALYTICS

1. In Surveillance Station Management tab, select the camera on which you want to configure Liveview Analytics, and press **Advanced** button and select **Liveview Analytics** in the list.

Add , Delet	e Edit Enable	e . Refresh	Configuration	Advanced ,		
Preview	Name	IP address	Status	Motion Detection	Limit to	Rotation
1841451				Liveview Analytics		
GXV3662_C		or 192.168.50.139 Norr		10 (G8) / 10 (day) Yes

- Figure 19: Management – Advanced > Liveview Analytics

- 2. Choose an analytics type from the **Analytics Type** drop-down menu:
 - None: If None is selected, the other settings on this page will all be disabled.
 - Motion Detection: Detect for movements in the specified areas.
 - Missing Object: Detect if any objects in the specified areas are missing.
 - Foreign Object: Detect if any foreign objects appear in the specific areas.
 - **Camera Occlusion**: Detect when the camera lens is covered and unable to effectively monitor the environment.
 - Focus Lost: Detect when the camera focus is lost and unable to effectively monitor the environment.
 - **No-Idle Zone**: Detect if anyone or anything lingers in the restricted zone longer than the time specified in **Dwell time (sec.)**. Drag any of the four on-screen detection positions to define your no-idle zone.
 - **Tally Counter**: Detect and count the number of people or objects coming in and/or out of the virtual boundary line from both/either direction with the **Direction** drop-down menu. Drag either of the on-screen detection positions to adjust your boundary line. Calculation will be conducted at the bottom-left corner of the screen. You may click **Simulation** to have a preview of the liveview image.
 - Virtual Fence: Detect if anyone or anything approaches the virtual fence from both/either direction with the **Direction** drop-down menu. Drag either of the on-screen detection positions to adjust your virtual fence.
- 3. Choose a sensitivity level from the **Sensitivity** drop-down menu. The higher the level is, the more sensitive detection will be, and will be more likely to be triggered.
- 4. Choose a type of analytics area:
 - Detection Zone (not applicable to Camera Occlusion, Focus Lost, No-Idle Zone, Tally Counter, and Virtual Fence): Drag on the grid to define the analytics areas with the + or buttons. Or you can simply select or clear all areas by clicking Select All or Clear All.



- **Object Size** (only applicable to **Foreign Object**): Drag to resize and reposition the yellow rectangle which is larger than the object you want to search.
- 5. Enable the following visual/audio aids to better monitor the liveview analytics process:
 - **Beep when detected**: DiskStation will play beep sounds when any of the analytics type is detected.
 - **Show detection frames**: Detection frames will appear on liveview screen to indicate the location of the figure, object, or event of the selected analytics type for each camera.
 - Show path tracking: Tracking paths will be shown on-screen to indicate the movements of people or objects.
 - **Show virtual zone**: Enabling this option to display the virtual zone defined by the four detection positions on-screen will help you identify the target's activities in the vicinity of the restricted zone more easily.
 - **Show boundary line**: Enabling this option to display the boundary line composed of two detection positions on-screen will help you distinguish how many targets come from which direction.
 - **Show virtual fence**: Enabling this option to display the virtual fence composed of two detection positions on-screen will help you pinpoint what targets coming from which direction.
 - **Simulation**: Turn on this button while fine tuning liveview analytics settings to verify whether analytics behavior is easily reproducible.
- 6. Click **OK** to save your settings.



EVENTS LIST

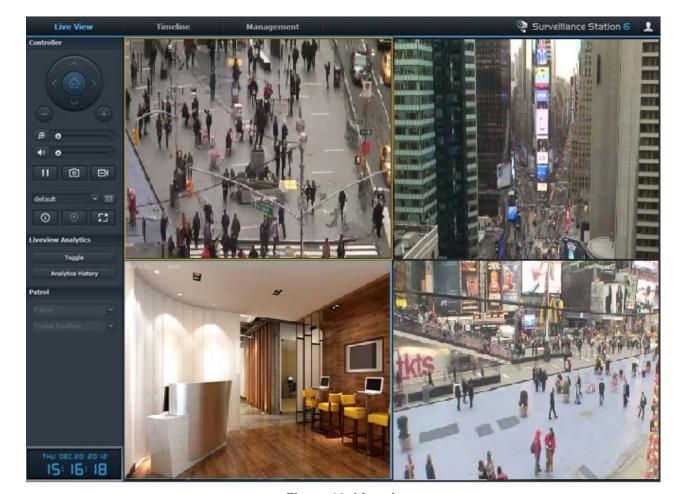
- 1. Select **Event List** in left panel of the Surveillance Station.
- 2. All stored events will be displayed, showing the name of the camera, Mode (Green is for Motion Detection), Start Time, Duration, Size and Video format.
- 3. Select and event and press **Play** or **Download** (to download to your computer). If you double click on an event, the captured video will be played.

Camera	Play Download	Delete 🖌 Lock 🖌	Unlock 🖌 Stop Recording	Refresh Filter		
🧕 Camera List	Camera	Mode	Start Time	Duration	Size	Video format
log Camera Group	GXV3662_Out	Door	2012-12-20 11:31:09	00:00:17	7.26 MB	H.264
evice	GXV3662_Out	Door	2012-12-20 11:30:51	00:00:18	7.11 MB	H.264
🖫 VisualStation	GXV3662_Out	Door	2012-12-20 11:29:48	00:00:33	8.28 MB	H.264
vent	GXV3662_Out	Door	2012-12-20 11:29:33	00:00:15	7.25 MB	H.264
🛱 Event List	GXV3662_Out	Door	2012-12-20 11:29:18	00:00:15	7.07 MB	H.264
Export	GXV3662_Out	Door	2012-12-20 11:02:59	00:00:35	9.41 MB	H.264
Rount	GXV3662_Out	Door	2012-12-20 10:56:34	00:00:15	6.67 MB	H.264
ystem	GXV3662_Out	Door	2012-12-20 09:46:43	00:00:08	6.4 MB	H.264
9 E-Map	GXV3662_Out	Door	2012-12-19 17:36:38	00:00:13	15.66 MB	H.264
	GXV3662_Out	Door	2012-12-19 17:34:05	00:00:47	17.84 MB	H.264
Advanced	GXV3662_Out	Door	2012-12-19 17:33:47	00:00:15	8.29 MB	H.264
Arivilege						
License						
📝 Log						

- Figure 20: Event List -



LIVE VIEW



1. Click Live View to monitor added camera(s) to your Surveillance Station.

2. You can adjust display by adding/removing cameras from

References:

For more information about the Grandstream IP Cameras and other products capabilities, please visit http://www.grandstream.com or contact us at esupport.grandstream.com

For more information about Synology server please refer to http://www.synology.com