



Grandstream Networks, Inc.

Synology Surveillance Station Configuration Guide

Surveillance IP cameras & IP video Encoders

Synology®



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SYNOLOGY CONFIGURATION GUIDE

SURVEILLANCE IP CAMERAS & IP VIDEO ENCODERS

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INTRODUCTION

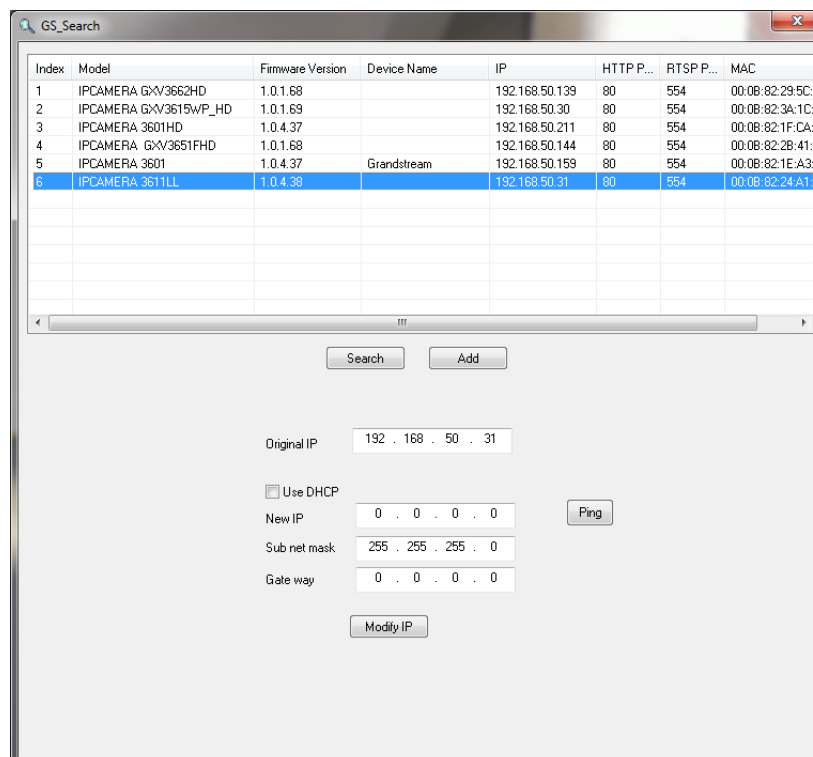
The purpose of this document is to guide you to configure/monitor Grandstream IP cameras & IP Video Encoders/Decoders using Synology DSM Surveillance Station.

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

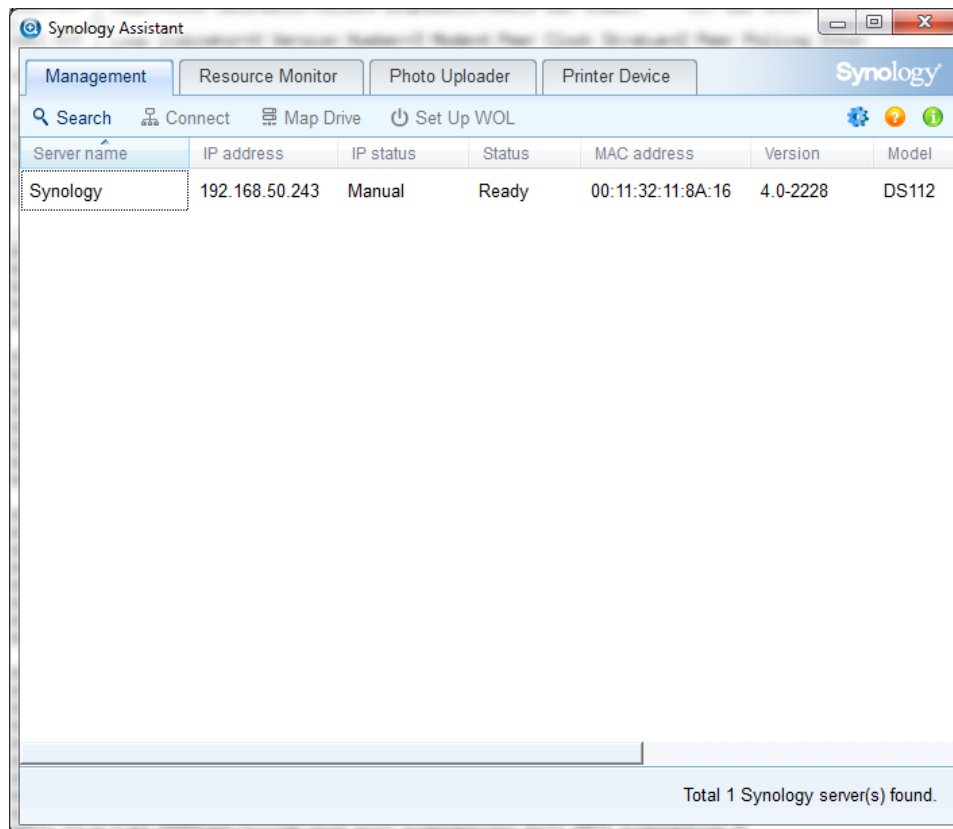
1. Connect your IP cameras/encoders to your network.
2. Download and open GS_Search tool from this link to locate IP of your cameras
http://www.grandstream.com/products/tools/surveillance/GS_Search.zip
3. Click **Search** button to start locating your cameras
4. Your cameras and their IPs will be displayed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



- Figure 1: GS_Search Tool -

ACCESS SYNOLOGY SURVEILLANCE STATION

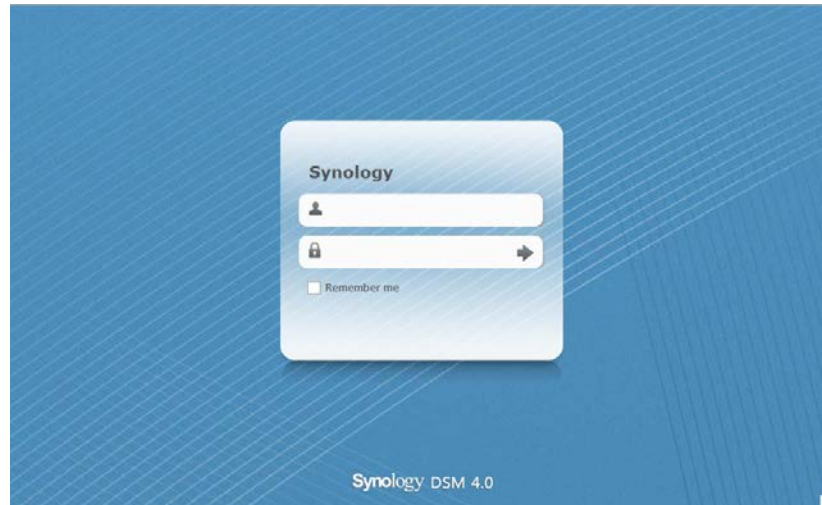
1. Assuming that Synology is already powered and connected to your local network, install and run “Synology Assistant” software (available in CD provided with your DSM) to locate the IP of your DSM.



- Figure 2: Synology Assistant -

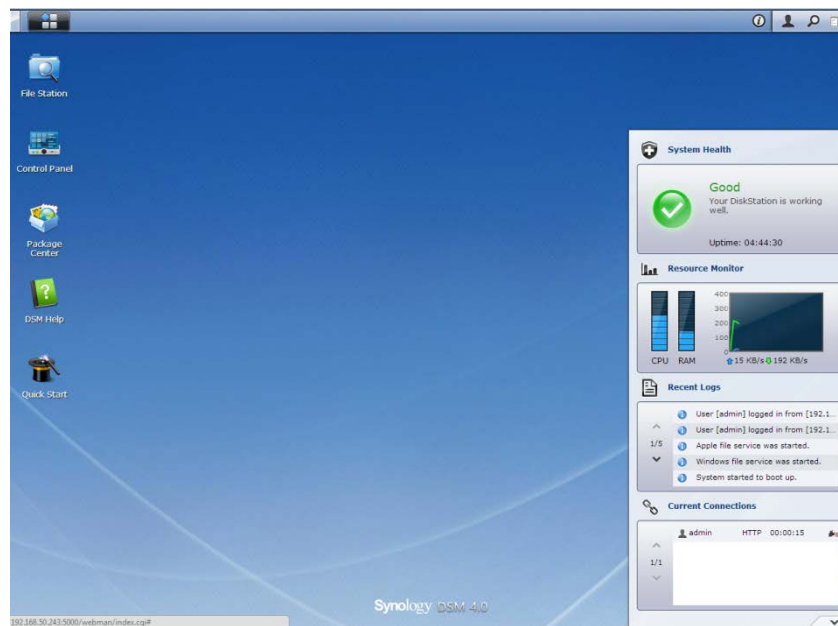
Note: if you are not able to find the IP of your device, make sure that no Firewall is running on your computer, and run software again.

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



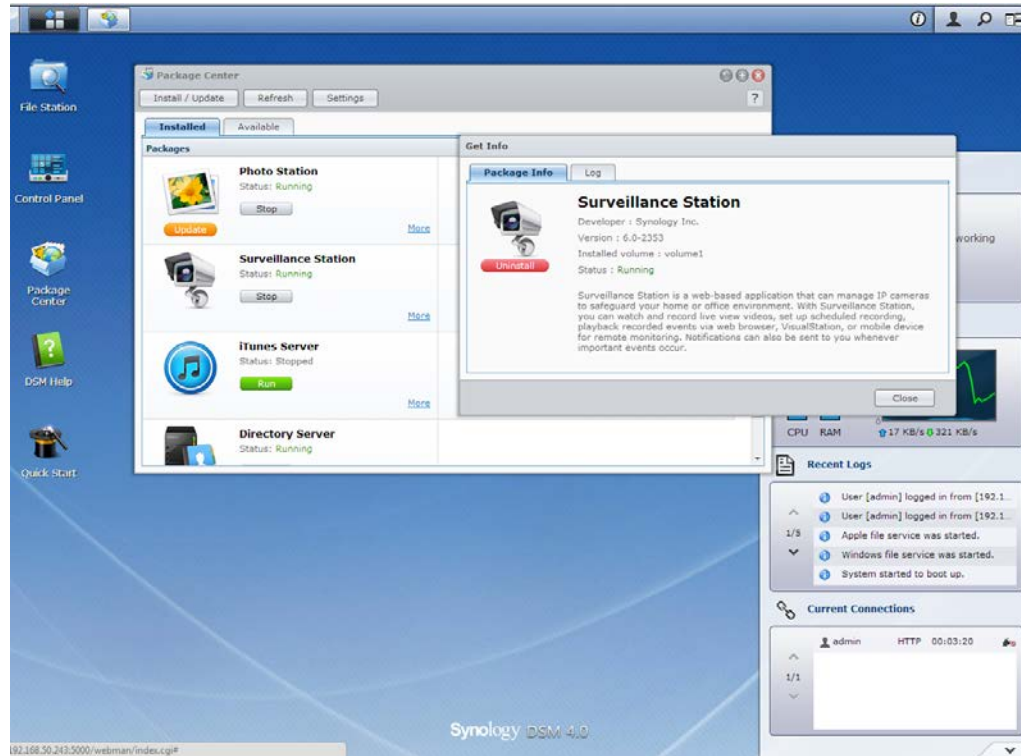
- Figure 3: Synology Login page -

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



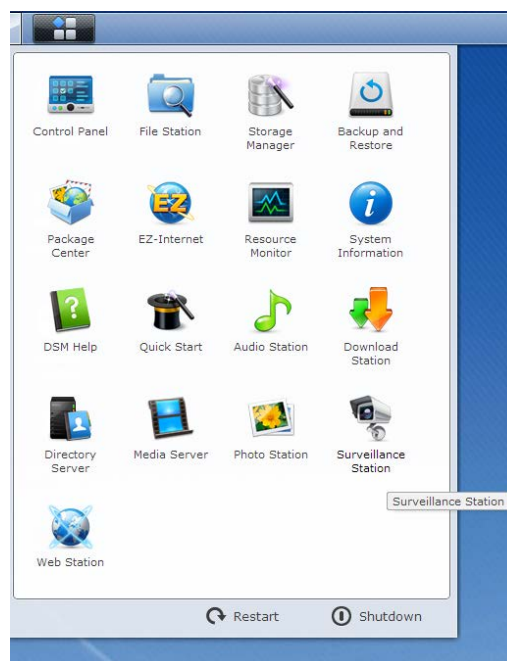
- Figure 4: Synology main screen -

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



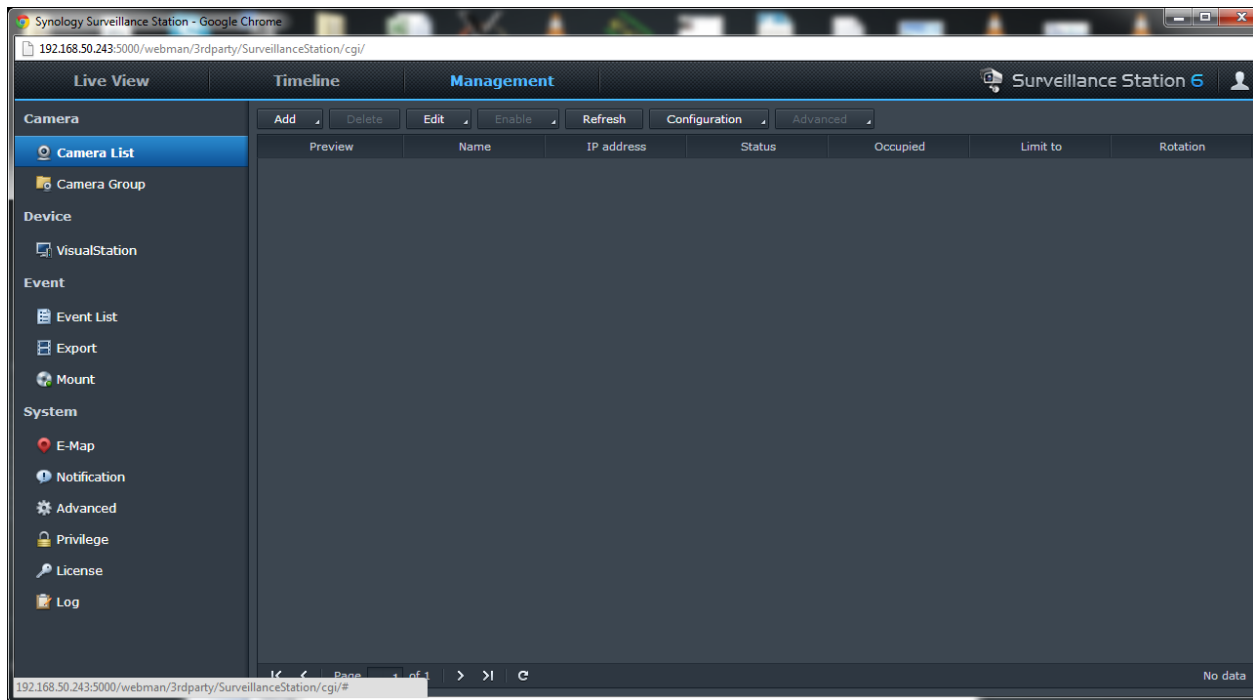
- Figure 5: Synology Package Center (Surveillance Station Status) -

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



- Figure 6: Synology Menu > Surveillance Station -

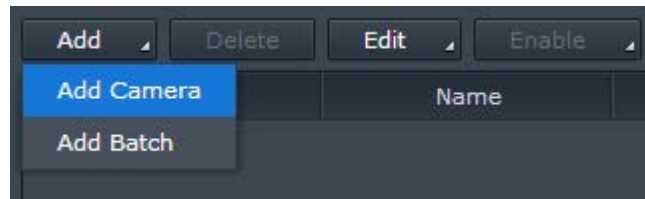
7. Surveillance Station window will be opened as shown in Figure 7.



- Figure 7: Synology Surveillance Station Management page -

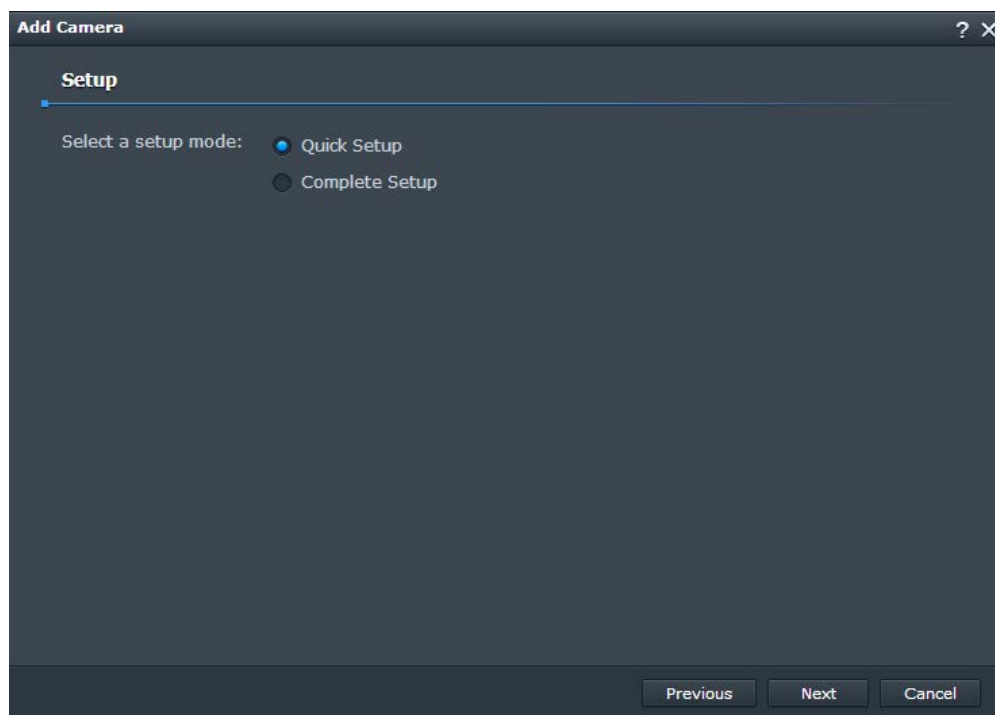
ADDING IP CAMERAS AND/OR IP VIDEO ENCODERS

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.



- Figure 8: Management tab, Add Camera -

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



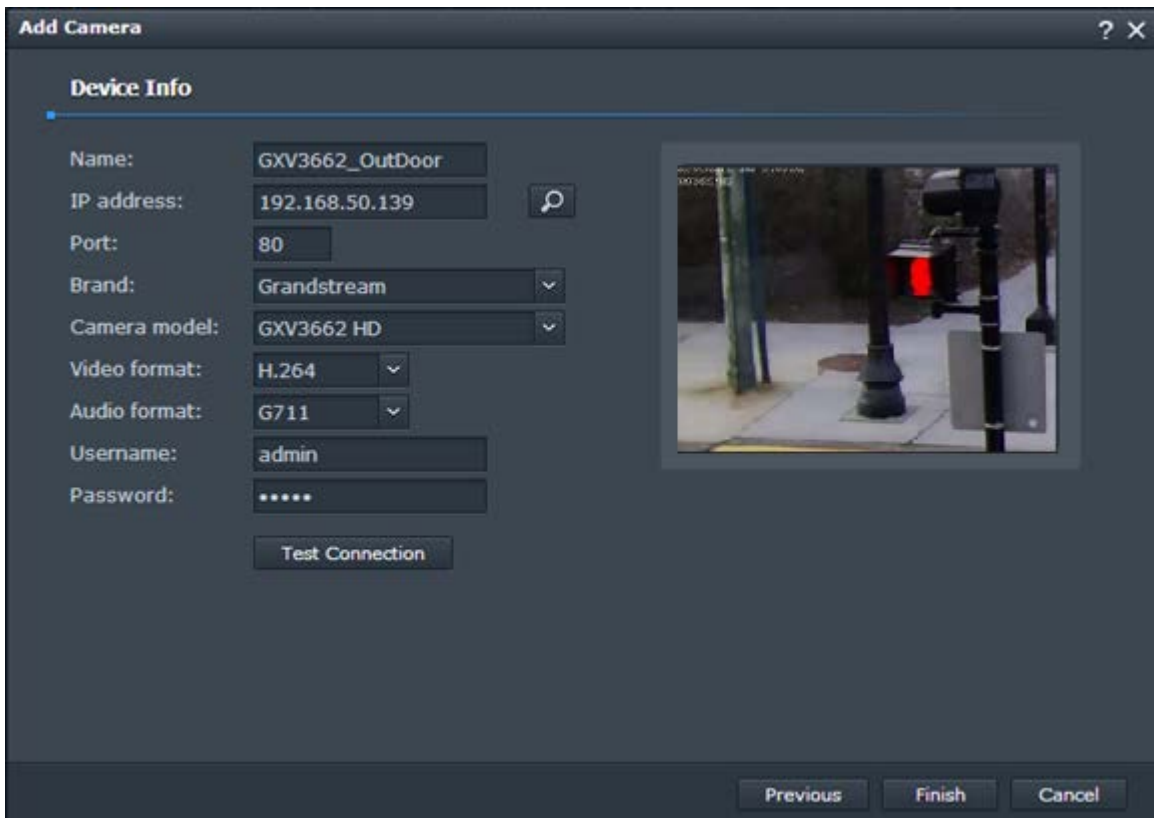
- Figure 9: Setup Mode selection

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.



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

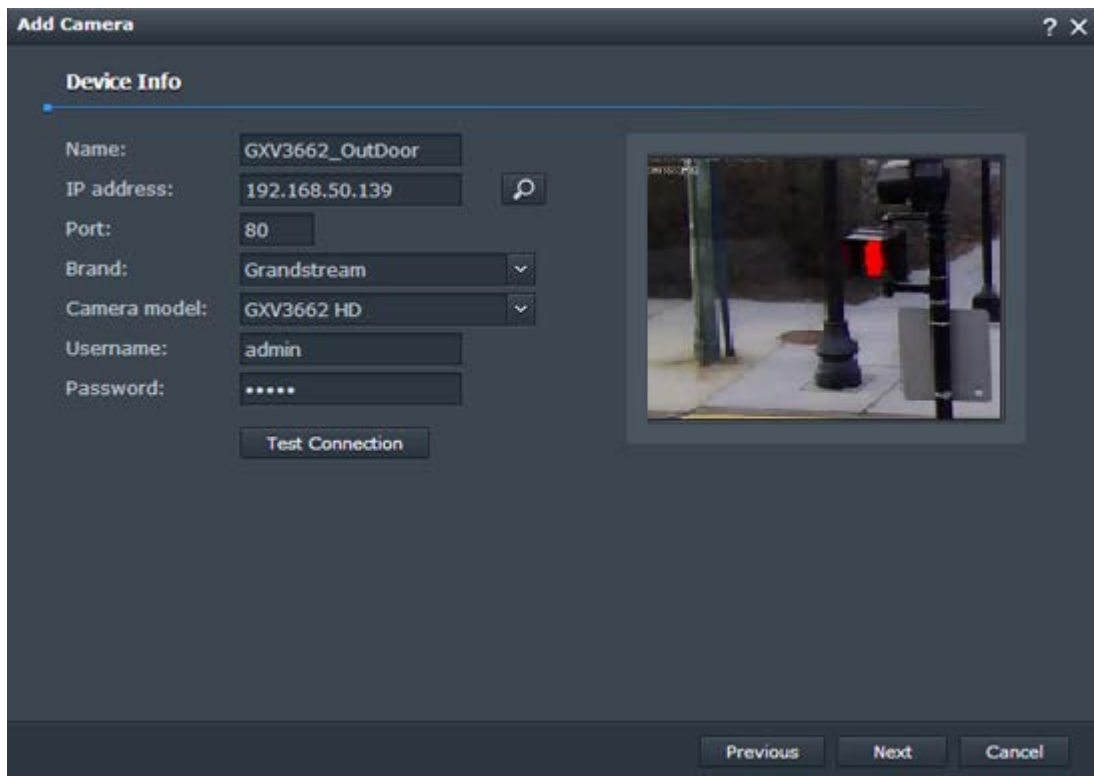
Press **Finish** button to finish the setup process

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.

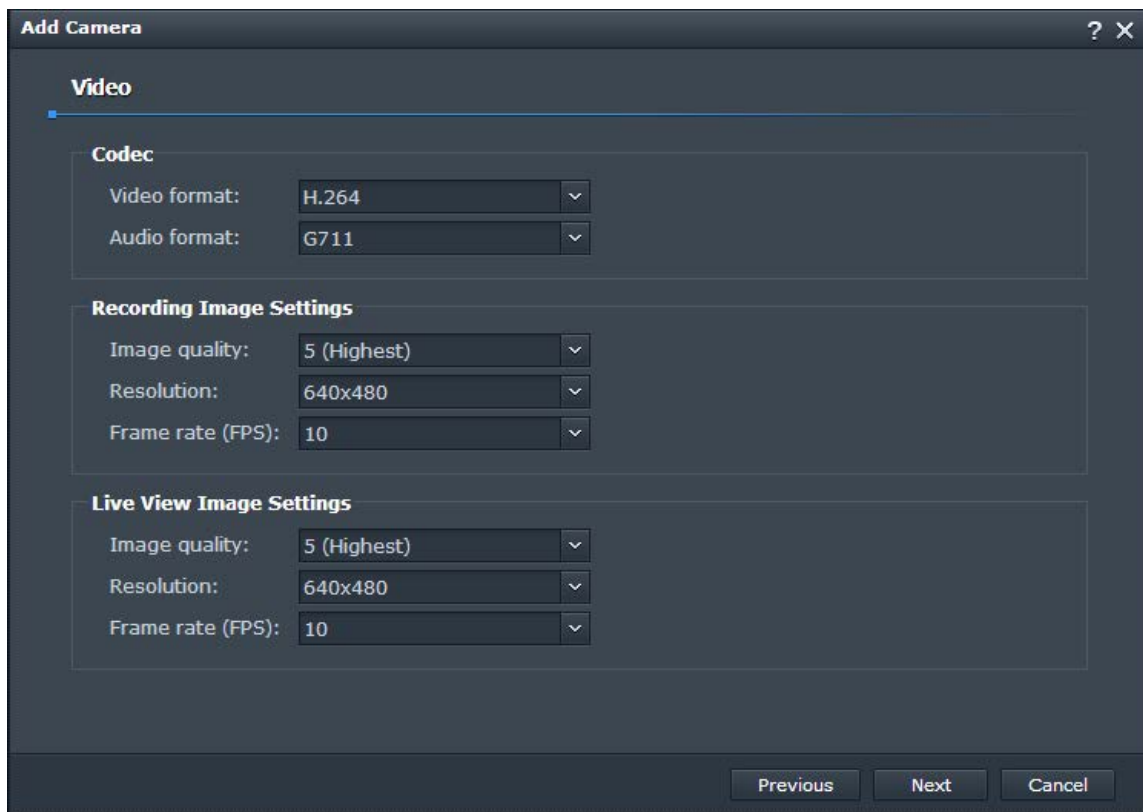


- Figure 11: Add Camera – Device Info page (Complete Setup) -

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)



The screenshot shows a dark-themed configuration window titled "Add Camera" with a "Video" tab selected. It contains three sections of settings, each with a title and three dropdown menus:

- Codec:** Video format: H.264, Audio format: G711
- Recording Image Settings:** Image quality: 5 (Highest), Resolution: 640x480, Frame rate (FPS): 10
- Live View Image Settings:** Image quality: 5 (Highest), Resolution: 640x480, Frame rate (FPS): 10

At the bottom right, there are three buttons: "Previous", "Next", and "Cancel".

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

Press **Next** button

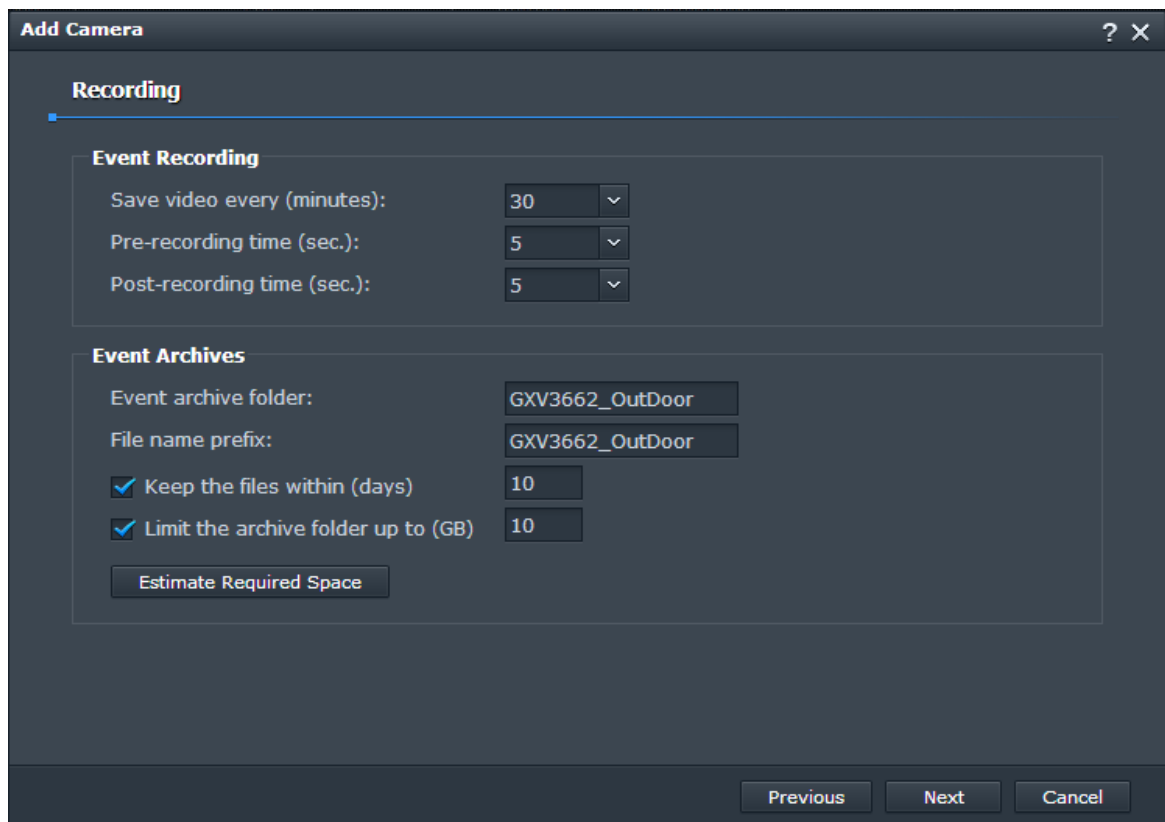
In **Recording** page, adjust settings following your needs

- **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**

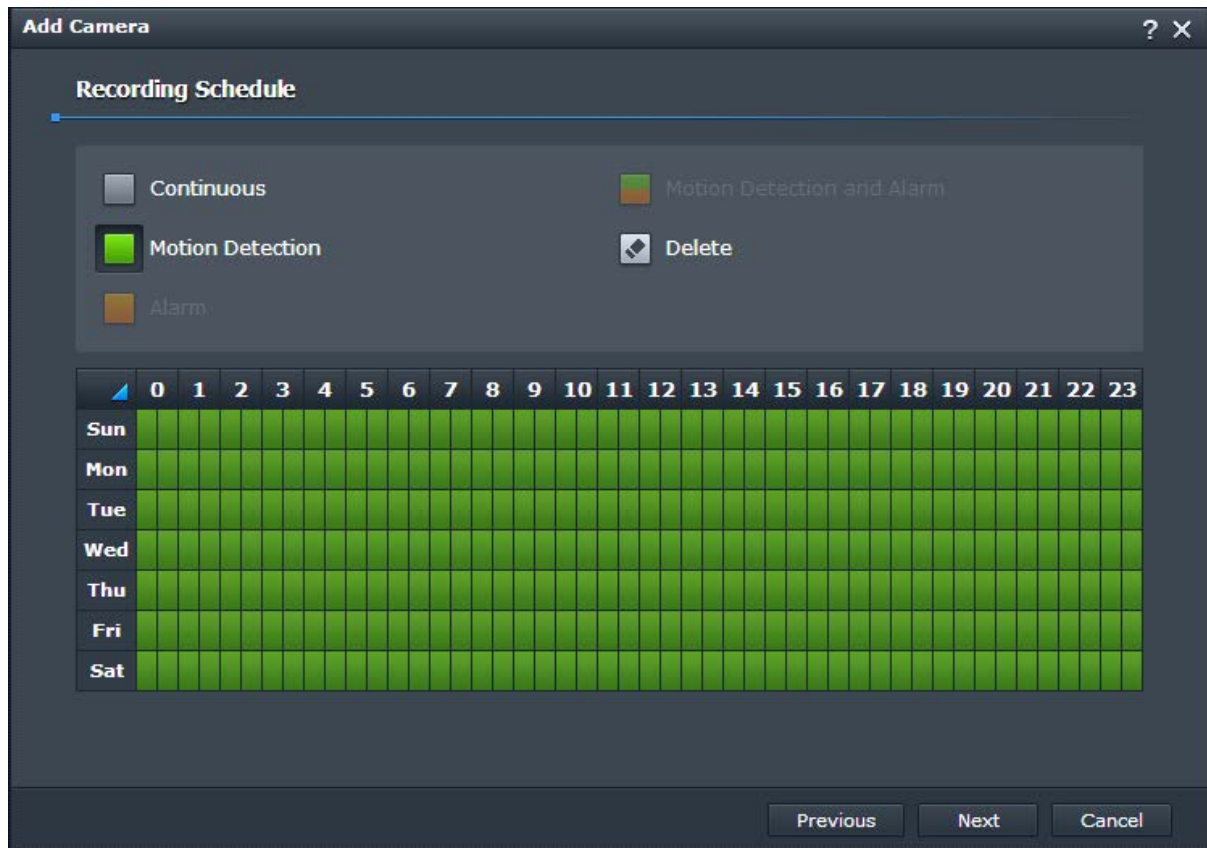
- **Event archive folder:** Name of folder when recording will be saved in your hard drive.
- **File name prefix:** Prefix to be prepended for each saved file.
- **Keep the files within (days):** Check this option and specify number of days to remove saved files after this period. If not checked saved 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**)



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

Press **Next** button

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



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

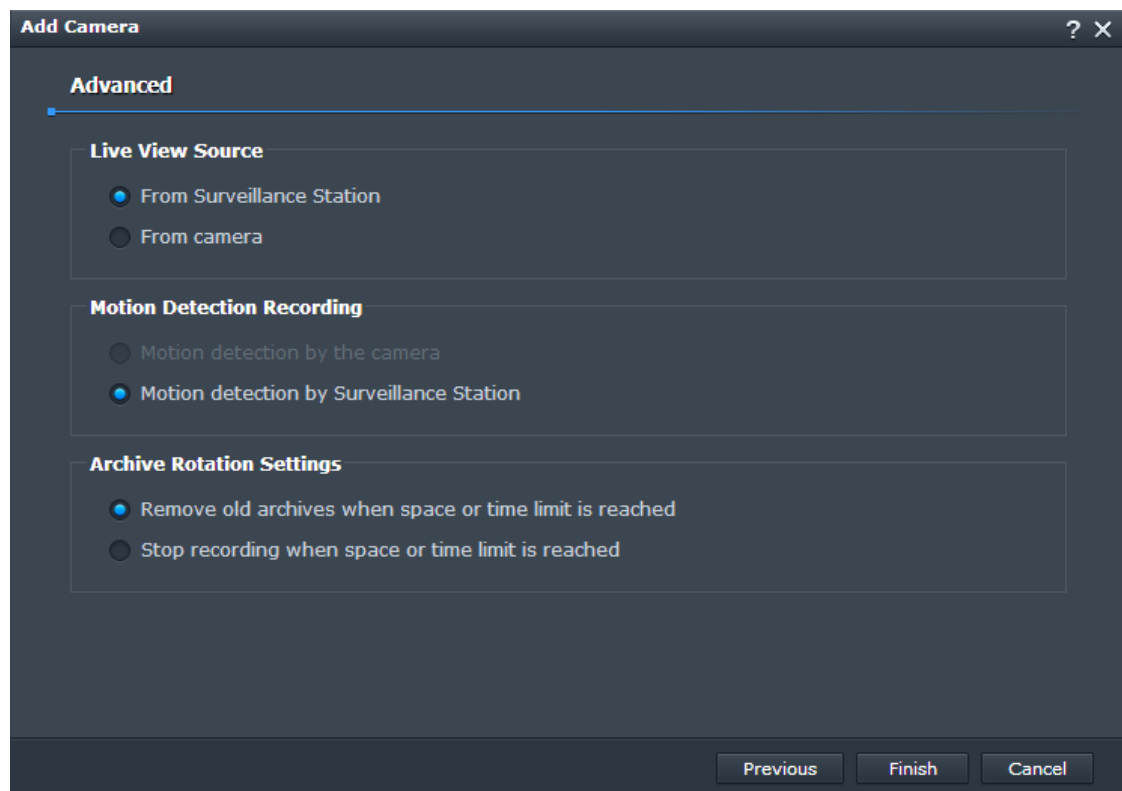
Press **Next** button

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.

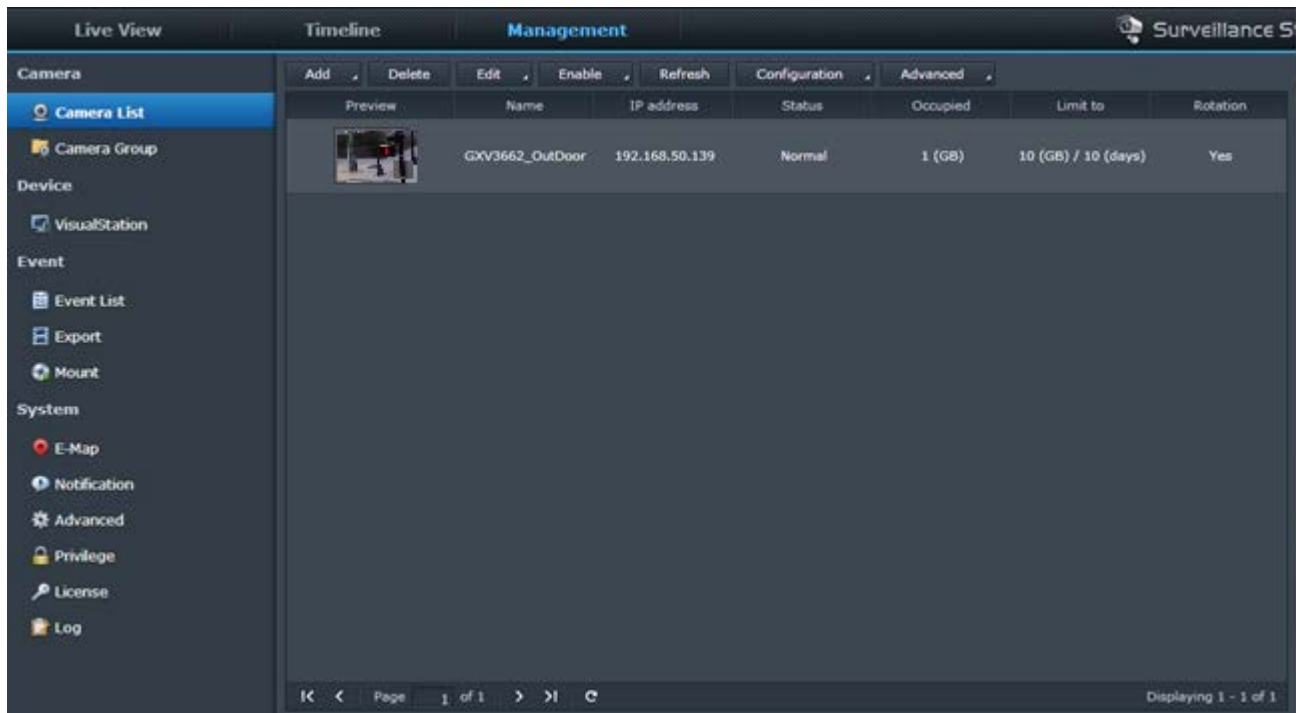
- **Archive Rotation Settings**
 - **Remove old archives when space or time limit is reached:** This allows to Surveillance station to remove old archives to free space for new recordings.
 - **Stop recording when space or time limit is reached:** This will stop recording when no more space is available



- 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.

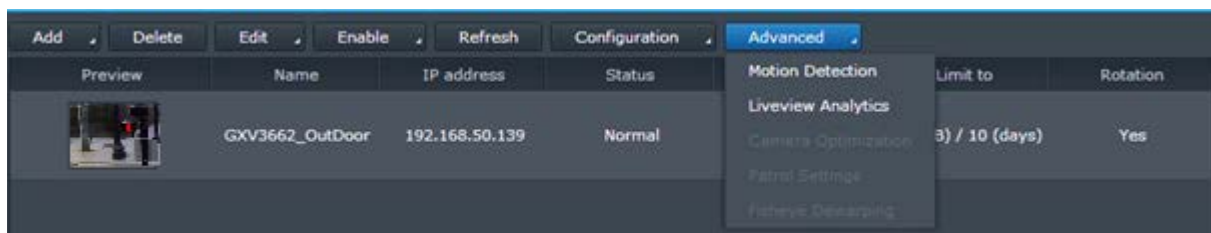


- Figure 16: Add Camera – Camera Preview (Complete Setup) -

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

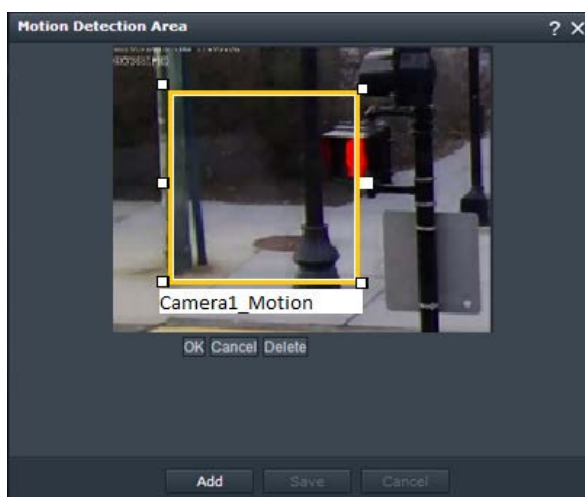
1. In Surveillance Station Management tab, select the camera on which you want to enable motion detection, and press **Advanced** button and select **Motion Detection** in the list.



- 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)

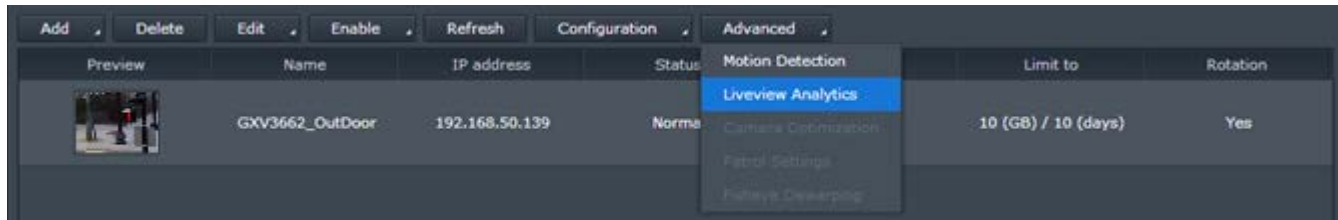


- Figure 18: Motion Detection Area

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.



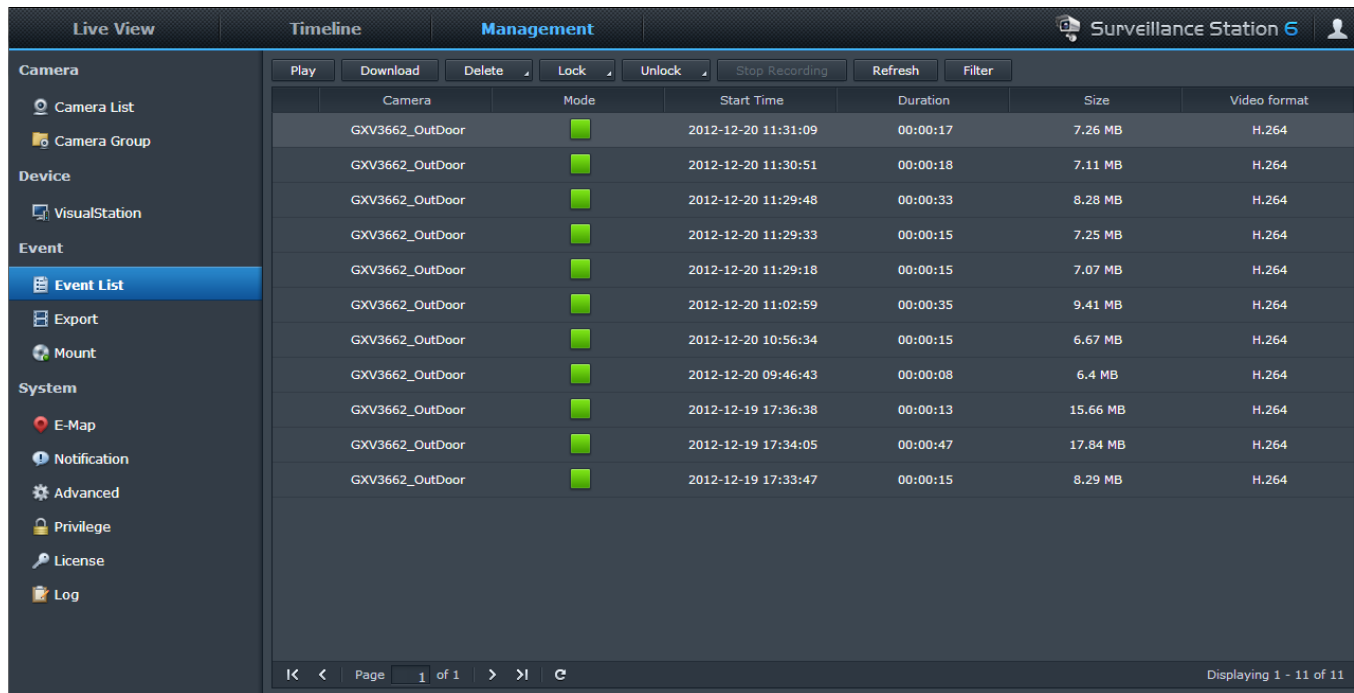
- Figure 19: Management – Advanced > Liveview Analytics

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 an event and press **Play** or **Download** (to download to your computer). If you double click on an event, the captured video will be played.

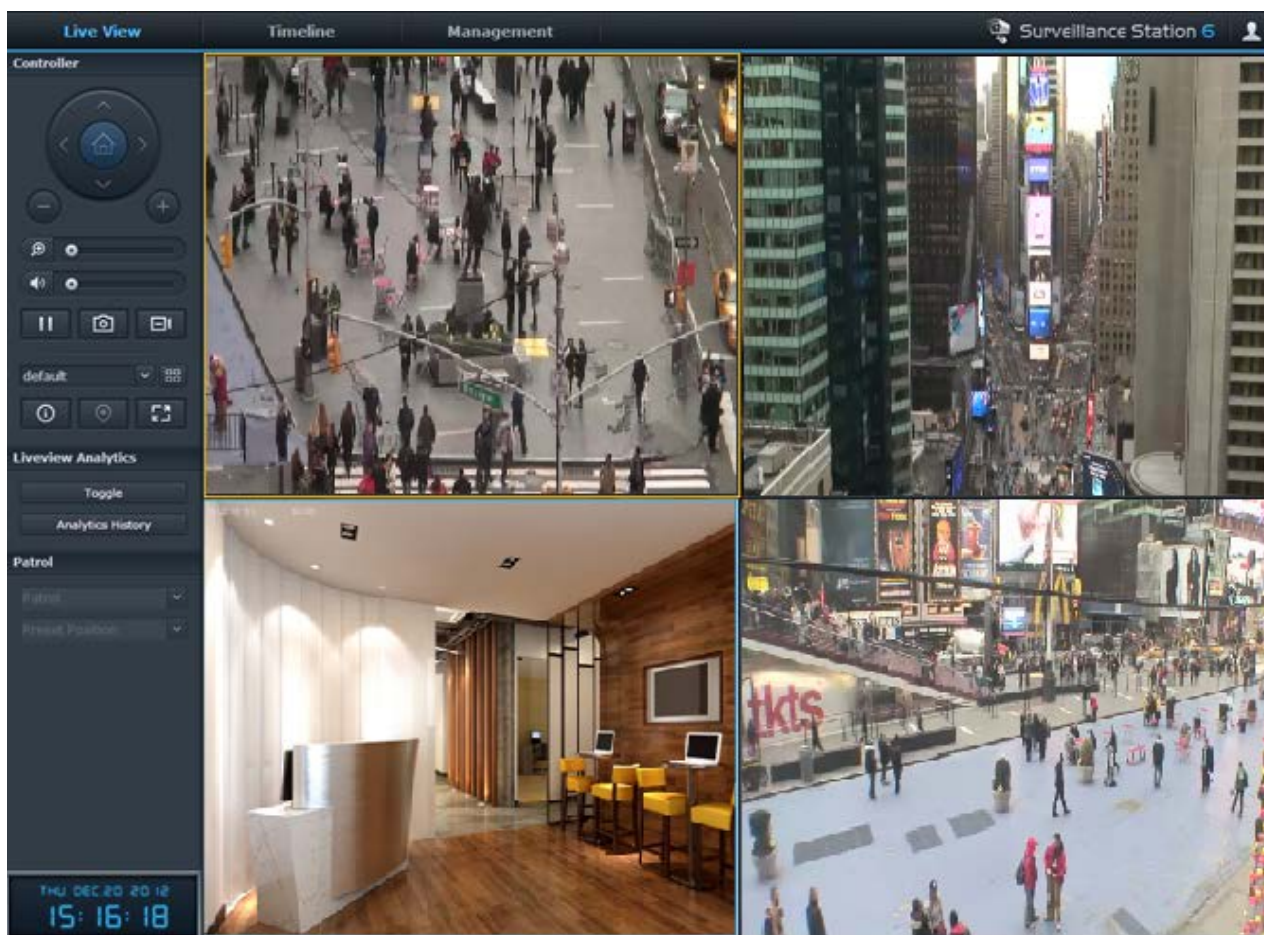


Camera	Mode	Start Time	Duration	Size	Video format
GXV3662_OutDoor	■	2012-12-20 11:31:09	00:00:17	7.26 MB	H.264
GXV3662_OutDoor	■	2012-12-20 11:30:51	00:00:18	7.11 MB	H.264
GXV3662_OutDoor	■	2012-12-20 11:29:48	00:00:33	8.28 MB	H.264
GXV3662_OutDoor	■	2012-12-20 11:29:33	00:00:15	7.25 MB	H.264
GXV3662_OutDoor	■	2012-12-20 11:29:18	00:00:15	7.07 MB	H.264
GXV3662_OutDoor	■	2012-12-20 11:02:59	00:00:35	9.41 MB	H.264
GXV3662_OutDoor	■	2012-12-20 10:56:34	00:00:15	6.67 MB	H.264
GXV3662_OutDoor	■	2012-12-20 09:46:43	00:00:08	6.4 MB	H.264
GXV3662_OutDoor	■	2012-12-19 17:36:38	00:00:13	15.66 MB	H.264
GXV3662_OutDoor	■	2012-12-19 17:34:05	00:00:47	17.84 MB	H.264
GXV3662_OutDoor	■	2012-12-19 17:33:47	00:00:15	8.29 MB	H.264

- 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 **- Figure 16: Live view**

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>