



**JMultiViewer User's Guide**

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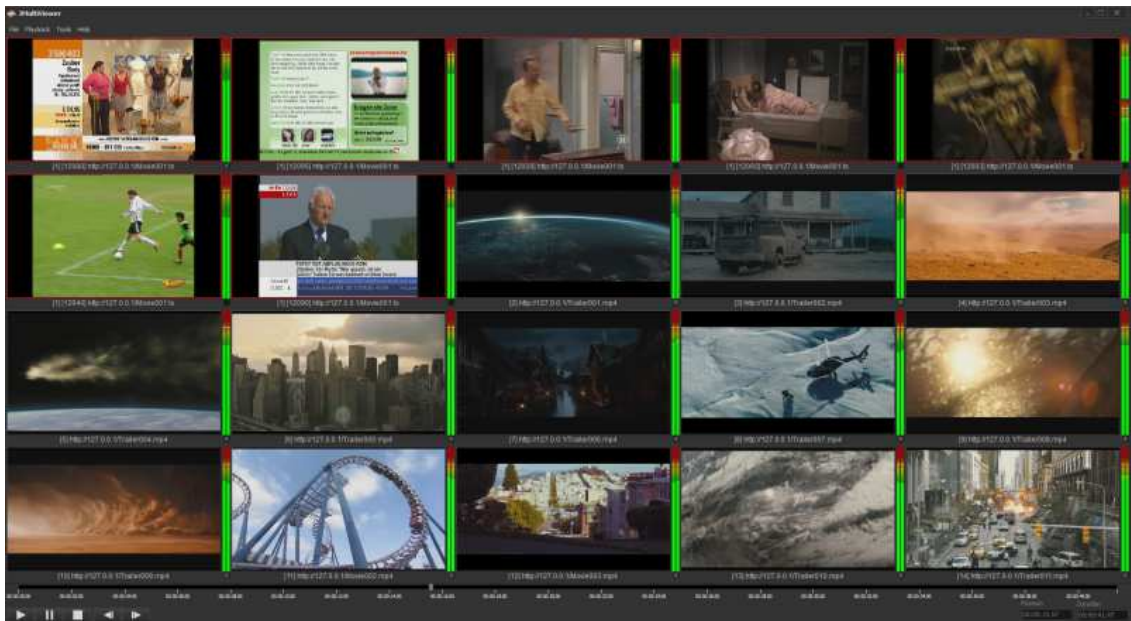


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## 1. Overview

**JMultiViewer** is a powerful solution for video and audio preview and monitoring. Supports, SDI, HDMI, Composite, Component, TCP, HTTP, UDP, RTP, RTSP, RTMP and HLS inputs. Both, real-time network input and file-based inputs are supported. Seeking preview in file mode. Adding and removing channels on the fly.



Supported container formats for file-based and IP input are MPEG Transport Stream – single and multi program streams, MXF, MP4, AVI, AVC, MPEG-2, AAC and MPEG Audio. Audio real-time volume level preview for up to 32 audio mono channels. Display of current position and duration for the file-based streams. Detailed audio and video streams format information.

## 1.1 General Features

- Powerful and easy to use multi viewer solution
- Input interfaces: SD-SDI, HD-SDI, 6G-SDI, HDMI, Composite, Component, IP, HTTP, UDP, RTP, RTSP, RTMP and HLS
- Simultaneous file source, IP stream based and file based source, and hardware input device source
- Containers supported: MPEG Transport Stream, MPEG Program Stream, MP4, MXF, AVI, WMV
- Multi-program Transport Stream support
- Video Compressions Supported: MPEG-1/2, AVC/H.264, DV, WMV
- Audio Compressions Supported: PCM, MPEG Audio Layer I/II/III, AAC, WMA
- Multi-audio support and control
- Seek per-stream control. Frame accurate seeking.
- Programs, channels, stream list and detailed information
- Timer

## 1.2 Supported Input Stream Formats

Supported multiplex formats:

- MPEG-2 Transport Stream
- MPEG-2 Program Stream
- MP4
- QuickTime
- MXF
- AVI
- WMV

Supported video compression formats:

- HEVC/H.265 Video
- AVC/H.264 Video

- MPEG-2 Video
- MPEG-4 Video
- MPEG-1 Video
- DV
- WMV

Supported audio compression formats:

- AAC Audio
- MPEG Audio Layer I/II/III
- PCM
- WMA

## 2. Installation

### 2.1 Installing JMultiViewer

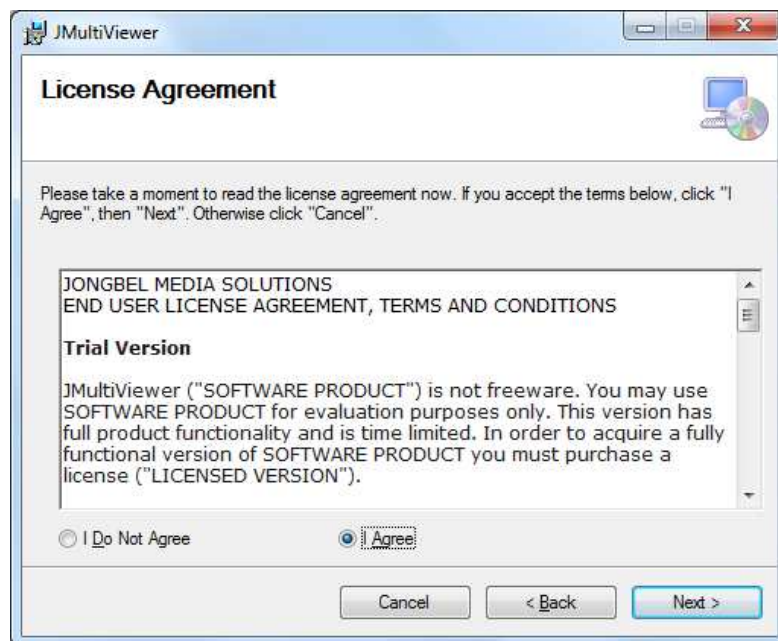
Before installing the **JMultiViewer** solution, make sure that any previous version of the product has been uninstalled refer 2.2.

The installation package of **JMultiViewer** is distributed in msi file. After downloading the file from the official Jongate web site – [www.jongate.com](http://www.jongate.com), execute the installation by starting the msi file.

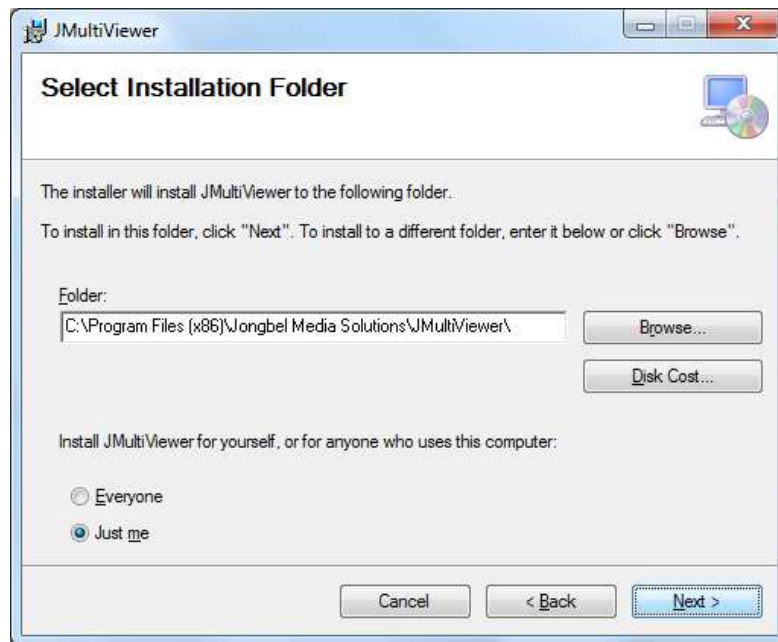
First a Welcome dialog pops up. Click “Next” in order to proceed.



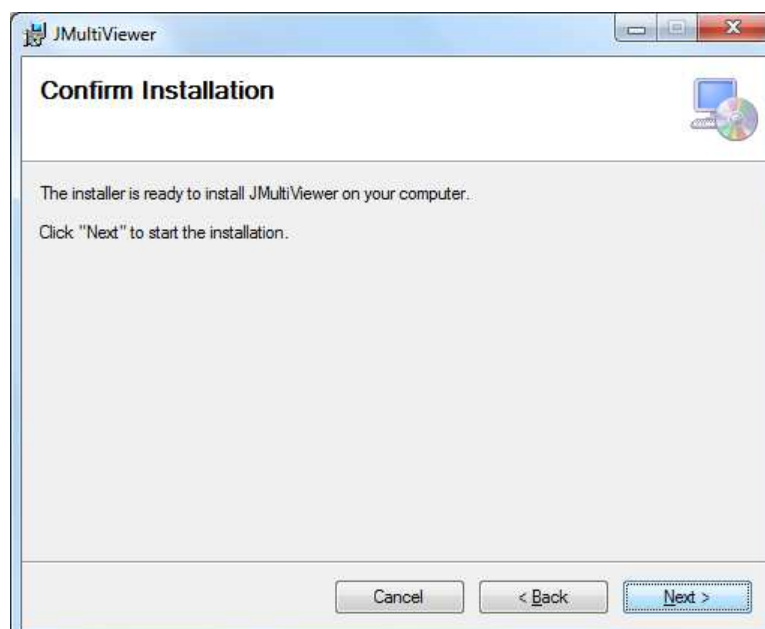
After this a License Agreement dialog pops up. Read the agreement carefully, select "I Agree" if you agree all the terms and click "Next" to proceed.



The next window shown specifies the installation product location and user access to the product. Change the destination product folder and user access if needed and click "Next" to proceed.

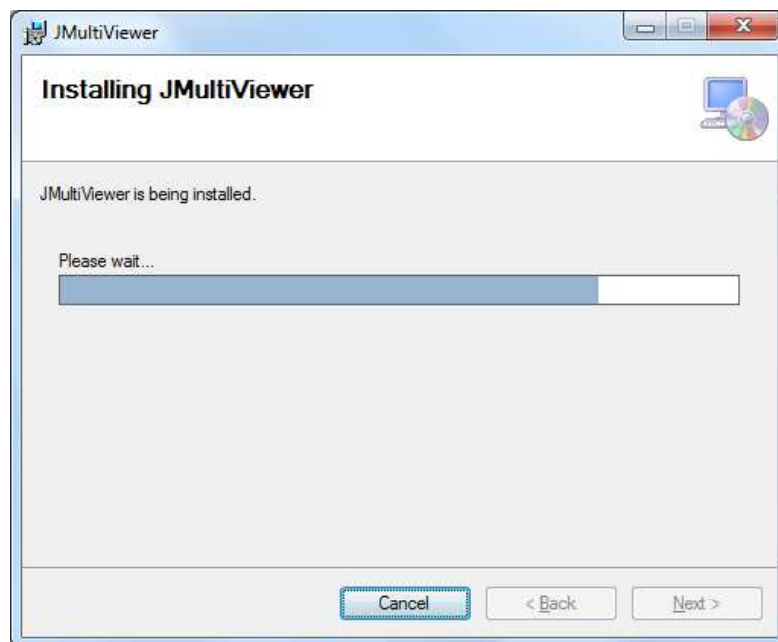


The next dialog is a confirmation dialog. Confirm by clicking “Next” in order to start the installation procedure.

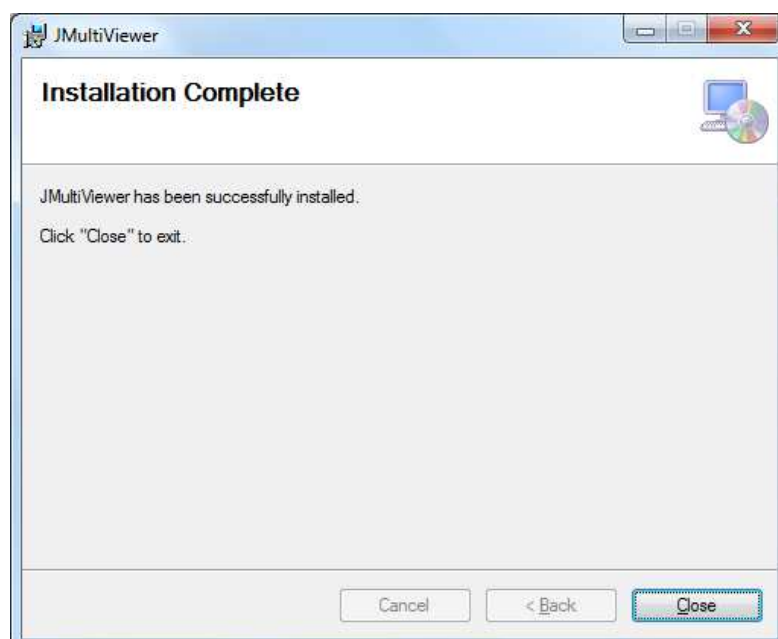


While the product is being installed an “Installing” window shows the installation progress. Wait until the product is being installed.





At the end an "Installation Complete" dialog pops up, which denotes the successful **JMultiViewer** installation. Click "Close" to finalize the process.



## 2.2 Uninstalling JMultiViewer

The application can be removed opening the Control Panel – Programs and Features. Select the **JMultiViewer** application and click Uninstall.

## 3. Functions

### 3.1. File Functions

The following functions are available from the application's **File** menu.

**Open File** – Opens file from a local or network drive and adds all the programs in to the multi-view of the solution.

**Open URL** – Opens file or stream from network source and adds all the programs in to the multi-view of the solution. A URL can be opened in two ways - without specified network device and with specified network device.

URL without defined network device:

```
udp://224.1.2.3:1234
```

, where the 'udp' is the protocol, 224.1.2.3 is the IP address of the stream and 1234 is the port.

URL with defined network device:

```
udp://192.168.1.101@224.1.2.3:1234
```

, where 'udp' is the protocol, 192.168.1.101 is the IP address of the network device receiving the stream, 224.1.2.3 is the IP address of the stream and 1234 is the port.

**Device Select** – Opens a device select dialog for hardware source. Supported are all BlackMagic capture cards. The video and audio preview are added the multi-view of the solution.

**Close** – Closes/Ejects the currently selected video source. The closed video source is removed from the multi-view preview.

**Close All** – Closes/Ejects all the video sources and clears the multi-view of the solution.

**PID Info** – Opens an informational dialog, showing the programs, streams and PID information of the selected video source.

**Exit** – Closes the JMultiViewer solution.

### 3.2. Playback Functions

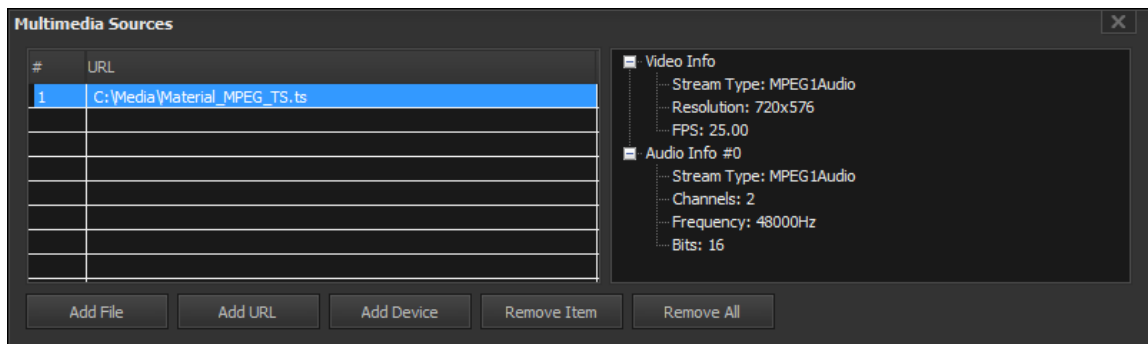
The following functions are available from the application's **Playback** menu.

**Play** – Starts the playback of the selected video source. The function is also available as a button at the bottom of the main form.

**Pause** – Pauses the playback of the selected video source. The function is also available as a button at the bottom of the main form.

**Stop** – Stops the playback of the currently selected video source. The function is also available as a button at the bottom of the main form.

**Show Playlist** – Opens an informational dialog with the list of all the local, network and hardware sources currently loaded.



Along with the multimedia sources list, the form includes programs and streams information for each source.

**Show Timer** – Shows/hides the timer form, which displays the current system time.

**Show Audio Controls** – Shows/hides the audio volume checkboxes in the multi-view component.

**Loop** – Sets the playback of all the file-based media sources into loop mode – after the playback has finished it starts again from the beginning.

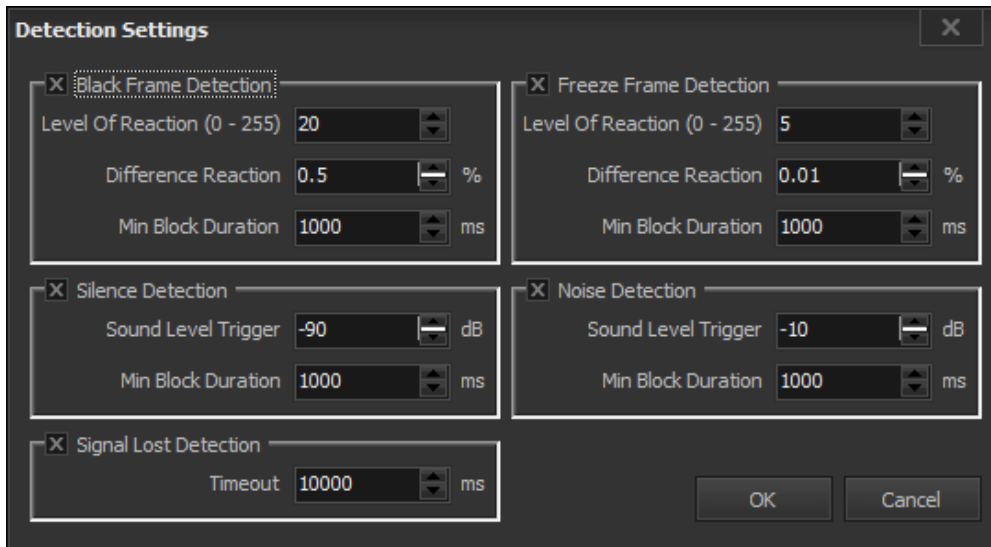
**Single Program Audio** – Sets the preview in single program audio mode. If disabled all the audio channels of all the loaded sources will be enabled.

### 3.3. Tools Functions

The following functions are available from the application's **Tools** menu.

**Change Style** – Opens the visual style form, which allows the user to change visual style of the solution.

**Detection Settings** – Opens the detection configuration setup form.



Through the detection settings dialog it is possible to enable, disable and configure the detection of problems with the video audio and network streams.

The following video detections are available:

**Black Frame Detection – Level Of Reaction** denotes the pixel channel 8 bit level of reaction (from 0 to 255), which is applied in the black frame detection mechanism if enabled. Pixels having values of all color channels below the Level Of Reaction are not detected as black pixels and are not included in the overall calculation.

**Black Frame Detection – Difference Reaction** denotes the non-black size of the video frame in percentage, which is applied in the black frame detection mechanism if enabled. Video frames having more non-black pixels than the difference reaction are not detected as black frames and are not included in the overall calculation.

**Black Frame Detection – Min Block Duration** denotes the minimum interval of time with subsequent black video frames, which will be detected as a black frames block. Blocks of subsequent black frames with smaller interval duration will not be detected as black frame blocks.

**Freeze Frame Detection – Level Of Reaction** denotes the pixel channel 8 bit level of reaction (from 0 to 255), which is applied in the freeze frame detection mechanism if enabled. Pixels having values of all color channels with difference bigger than the Level Of Reaction are not detected freeze pixels and are not included in the overall calculation.

**Freeze Frame Detection – Difference Reaction** denotes the non-freeze size of the video frame in percentage, which is applied in the freeze frame detection mechanism if enabled. Video frames having more non-freeze pixels than the difference reaction are not detected as freeze frames and are not included in the overall calculation.

**Freeze Frame Detection – Min Block Duration** denotes the minimum interval of time with subsequent freeze video frames, which will be detected as a freeze frames block. Blocks of subsequent freeze frames with smaller interval duration will not be detected as freeze frame blocks.

The following audio detections are available:

**Silence Detection - Sound Level Trigger** denotes the maximum volume level in dB, which will be registered as silence.

**Silence Detection - Min Block Duration** denotes the minimum silence block duration in milliseconds, having volume below the Silence Level, which will be registered as silence.

Both, Silence Level and Min Silence Block Duration configure the way the silence detector will work. The PCM data of the analyzed input audio stream is processed and each PCM block with duration equal or greater than the Min Silence Block Duration and volume level below or equal the Silence Level will be registered and reported as silence block. Each silence block is reported with start time and duration.

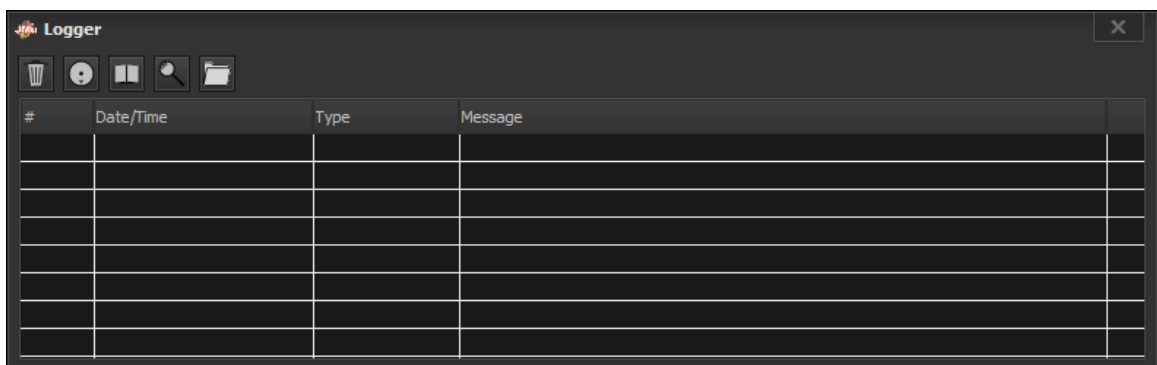
**Noise Detection - Sound Level Trigger** denotes the minimum volume level in dB, which will be registered as noise.

**Noise Detection - Min Block Duration** denotes the minimum noise block duration in milliseconds, having volume level above the Noise Level, which will be registered as noise.

Both, Noise Level and Min Noise Block Duration configure the way the noise detector will work. The PCM data of the analyzed input audio stream is processed and each PCM block with duration equal or greater than the Min Noise Block Duration and volume level above or equal the Noise Level will be registered and reported as noise block. Each noise block is reported with start time and duration.

**Signal Lost Detection - Timeout** denotes the minimum signal lost time in milliseconds. If a stream is not received for more than the configured timeout the signal lost will be reported.

**Show Logger** – Opens the logger form, which is used to display the errors detected in the input streams.



The following control buttons are available in the logger form:

*Clear* - clears the logger form

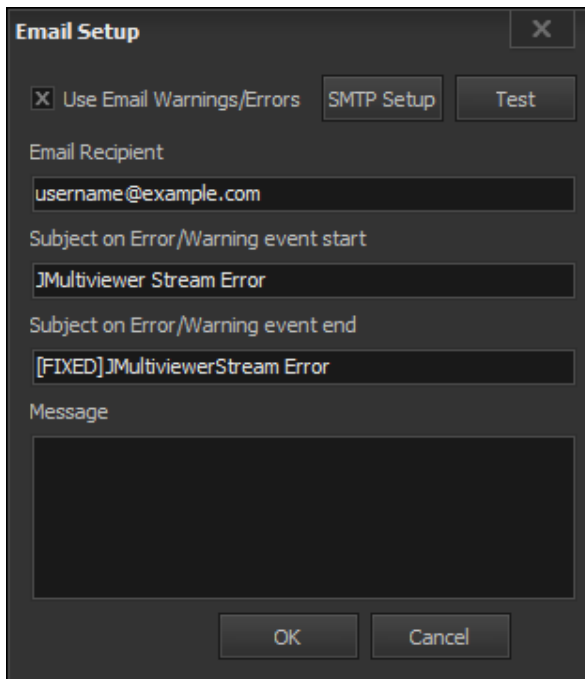
*Autoscroll* - enables/disables the autoscroll of the newly appeared logs

*History Depth* - configures the max number of logs kept in the logger form

*Search* - searches for a text in the logs shown in the logger form

*Go To Log Folder* - opens the destination folder of all the logs

**Email Notification** – Opens the email notification setup form.



The following configuration fields are available in the Email Setup form:

Use Email Warnings/Errors - enables or disables the email notification

Email Recipient - the email recipient of the notification emails

Subject on the Error/Warning events start - the email subject of the notification email on error block start

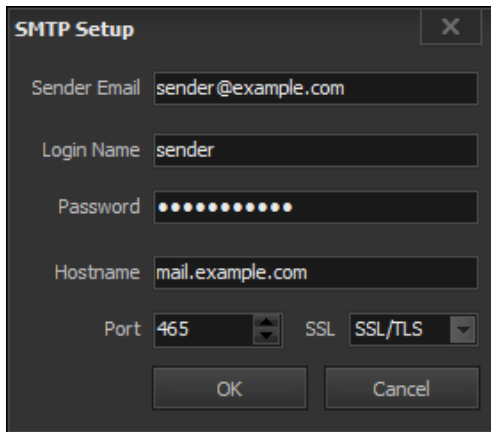
Subject on the Error/Warning event end - the email subject of the notification email on error block end

Message - the email body of the notification email

The "Test" button tests the current email configuration by connecting to the email server.

The "SMTP Setup" button opens the SMTP configuration dialog:





The following configuration fields are available in the SMTP Setup form.

Sender Email - the email of the sender

Login Name - the login name of the sender email

Password - the password of the sender email

Hostname - the host name of the email server of the sender

Port - the port of the email server of the sender

SSL - the SSL option of the email server of the sender

#### EMAIL setup

In order to setup the JMultiViewer to work with GMAIL email account it is required to adjust the GMAIL settings first

#### Option 1:

The security shall be setup for less security apps. The setting is available from the link below:

<https://www.google.com/settings/security/lesssecureapps>

#### Option 2:

Visit the following Google link for password generation:

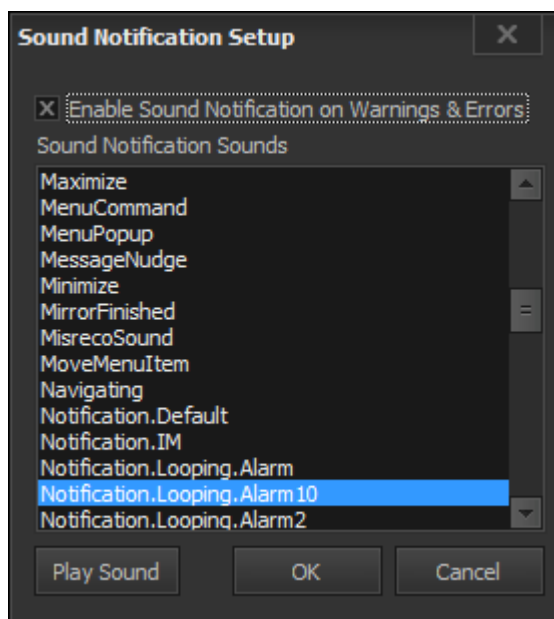
<https://security.google.com/settings/security/apppasswords>

There you click on "Select app" and choose "Other (Custom Name)" and enter a custom name that will make sense to you and click "Generate".

Copy the newly generated password and enter it inside the JMultiViewer SMTP Settings instead of your real password.

After you enable the 2-step verification it might be necessary to log again on all your devices which are logged to your GMAIL address.

**Sound Notification Setup** – Opens the sound notification setup form.



The following configuration fields are available in the Sound Notification Setup form.

Enable Sound Notification on Warnings & Errors - enables or disables the sound notifications.

Sound Notification Sounds - a list with the available on the system alert sounds, which can be used for the sound notification. The selected alarm is used for the actual sound alarming.

Play Sound button - tests the currently selected sound alarm.

### 3.4. Help Functions

The following functions are available from the application **Help** menu.

**Registration** – Opens the product registration form. This function is available only in the full licensed version of the product.

**Check For Updates** – Enables/Disables automatic check for updates.

**About** – Opens the About dialog box of the product.

#### 4. Trial and NFR version restrictions

The Trial and NFR versions of the JMultiViewer solution have the following restrictions: the decoded video has burned-in decoder demo logo. The decoded audio streams are limited to 30 seconds only. After the 30<sup>th</sup> second the audio stream is encoded with silence. The IP streams stops after 10 minutes.

#### 5. Shortcuts

The following shortcuts are available in JMultiViewer:

JMultiViewer	General
Ctrl+O	Open File
Ctrl+F	
Ctrl+N	Open URL
Ctrl+D	Device Select
Delete	Remove Item
Shift+Delete	Remove All Items
Alt+I	PID Info
Ctrl+Shift+I	
Ctrl+S	Save Preset
Ctrl+L	Load Preset
Ctrl+P	Play
Ctrl+U	Pause

Ctrl+T	Stop
Alt+P	Show Playlist
Ctrl+Shift+P	
Alt+A	Show Audio Controls
Ctrl+Shift+A	
Alt+L	Loop
Ctrl+Shift+L	
Alt+S	Single Program Audio
Ctrl+Shift+S	
Ctrl+G	Detection Settings
Ctrl+I	
Alt+O	Show Logger
Ctrl+Shift+O	
Ctrl+M	Mail Setup
Alt+T	Show Timer
Ctrl+Shift+T	
Alt+Y	Change Style
Ctrl+Shift+Y	