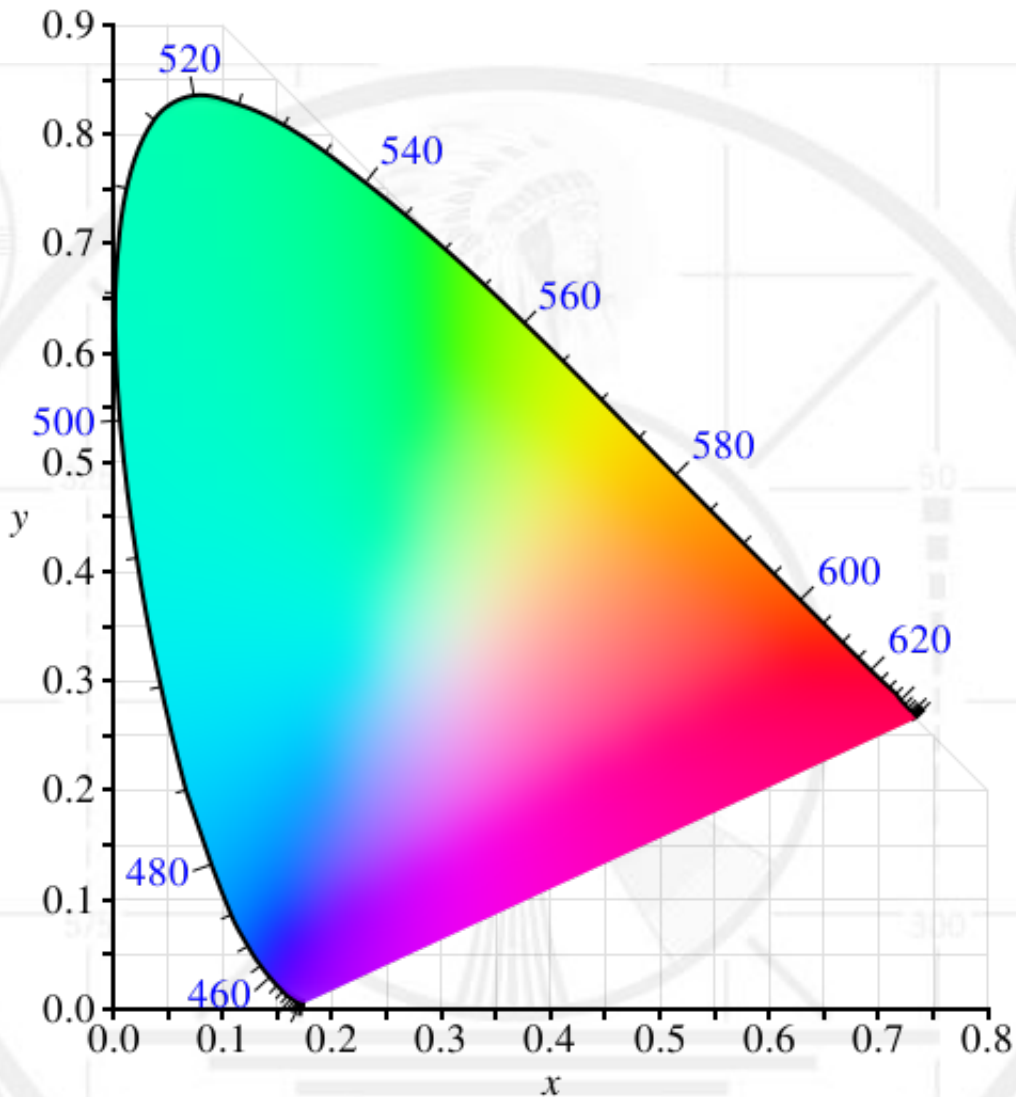


The Media Streaming Journal

March 2019



Covering Audio and Video Internet Broadcasting

Brought To You By

RADIOSOLUTION

www.radiosolution.info



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publicdomainvectors.org/en/free-clipart/Vintage-microphone-vector-graphics/6111.html

Welcome to The Media Streaming Journal

Greetings,

The Motion Picture Association of America (MPAA) recently released a report indicating that streaming video subscriptions increased to 613 million. The overall market substantially increased by 27 percent over the previous year of 2017. What does that mean for Internet broadcasters you might ask - it means that more and more people are leaving terrestrial broadcasters behind and turning to the web for their entertainment and information go to source.

The rollout of 5G ultra wideband wireless will soon turn any 5G enabled smartphone or tablet into a home entertainment system and allow people to enjoy a wide variety of HD multimedia content on the go as well.

The future is bright - but the allure of the web will continue to be original content.

Please feel free to contact either the Publication Director (Derek Bullard) or myself if you have any questions or comments regarding The Media Streaming Journal.

Namaste

David Childers

www.linkedin.com/pub/david-childers/4/736/72a

The Grand Master of Digital Disaster
(Editor In Chief)

David Childers

The Grand Master of Digital Disaster

Current Member: International Association Of Internet Broadcasters

Former Member: Society of Motion Picture and Television Engineers

Published Author

Introduction To Internet Broadcasting
Amazon Publishing

Numerous Creative Commons Computer, Technical and Internet Broadcasting Guides
<http://www.ScenicRadio.com/Library/BroadGuide/index.html>

Newspaper Interviews

New York Times

Lagniappe - "Something Extra for Mobile"

Internet TV: Don't Touch That Mouse!
Tim Gnatek
July 1, 2004

Mobile Gets Hoaxed
Rob Holbert
Mar 16, 2016

Cited By

Five Essays on Copyright In the Digital Era
Ville Oksanen
2009

Turre Publishing
Helsinki Finland

Open Source Developer

Developed software architecture to continuously source multimedia content to Youtube Live servers.
Scenic Television - The sights and sounds of nature on the Internet.
<http://www.ScenicRadio.com>

Projects

Researched and developed documentation for Peercast P2P multimedia streaming project.
<http://en.wikipedia.org/wiki/PeerCast>

Researched and developed technical documentation for NSV / Winamp Television.
https://web.archive.org/web/20080601000000*/http://www.scvi.net

MidSummer Eve Webfest

A virtual International festival focusing on Digital art and Free Software that was coordinated by OrganicaDTM Design Studio.

Presentation and discussion regarding Internet multimedia content distribution.
<https://web.archive.org/web/20061104230522/http://www.organicadm.com/index.php?module=articles&func=display&catid=37&aid=61>

LinkedIn Contact Information

<http://www.linkedin.com/pub/david-childers/4/736/72a>

The Media Streaming Journal

What is in this edition of the Media Streaming Journal

Open Broadcaster Software Studio (Multiplatform) Help Guide

Get a Mobile App for Your Radio Station.
Derek Bullard



Join our technical discussion on Facebook

<http://www.facebook.com/groups/internetradiosupport/>

Magazine cover:

https://en.wikipedia.org/wiki/Spectral_color

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RADIO SOLUTION

www.radiosolution.info

Our Mission

Let our friendly, knowledgeable staff assist you to build your project, such as an online radio station using our high end reliable video and audio streaming technologies. We want to become your partner for all your hosting needs, as well as your one stop shop for radio products such as custom DJ drops and radio ID's.

Start An Internet Radio Station

Whatever you need to start Internet radio station, we will deliver! We provide high quality Internet Radio services to make your music radio project a success. We can provide Wowza, Icecast, SHOUTcast hosting and internet radio services to hobbyists, deejays, amateurs and established professionals. No radio station client is too big or too small for Radiosolution.

Choose between complete hassle-free service packages or new features to add to start internet radio station. Benefit from customized services and the latest in internet radio technology. You will receive professional, personalized and better Internet Radio Station services than you have received up till now. If you already have an Icecast or SHOUTcast hosting provider, we can still help you transfer your radio server over to us with no hassle and at no charge.

Internet Radio Station Services

Launch your internet, digital, satellite or AM/FM radio station anywhere in the world with all of the right tools. A broadcasting specialist is on standby to help you get started with an SHOUTcast or Icecast hosting package. We have servers ready for reliable streaming in North America and Europe. Our hosting packages have all the features you need to make your radio station project a success.

If you stream live or with an Auto DJ, we can provide you with the latest in web-based Cloud technology. You will love the simple to use control panel. Discover how easy it is to manage live deejays, upload fresh music and create custom scheduled programming. You will be able to track your listeners by getting real time statistics.

Starting your own Internet radio has never been easier. Get in touch with us anytime to start your Internet radio station.

Radiosolution is a SHOUTcast hosting provider located in Quebec Canada. We also offer Icecast, Wowza and Web Hosting services. Contact us to discuss the best option available as you start internet radio station. Radiosolution can provide personalized service in English, Dutch, and French. Starting an internet radio station can be intimidating, many people want to start one, but have no idea where to start. Radiosolution will be there for you every step of the way. Everyday people are searching the internet for free SHOUTcast servers. With Radiosolution SHOUTcast hosting we will allow you to try our services for FREE. By trying our services, you can be confident that you have chosen the best radio server hosting provider. You have nothing to loose because we offer a 30 day satisfaction guarantee. What are you waiting for? Contact us now! Radiosolution offers everything you need to start internet radio station. You will not need to go anywhere else. We can create your website, market your station and help you submit your station to online directories. We also feature the voice of Derek Bullard aka Dibblebee He can create affordable commercials, DJ intros, sweepers, jingles, ids and so much more.



Relax With The Sights And Sounds Of Nature

Scenic Television

Your Window To The World

Scenic Television is an Internet television station that broadcasts the sights and sounds of nature 24 hours a day. Savor exotic tropical beaches, or relax in a remote rain forest. Meditate at a bubbling stream, or relish the view of soft rolling waves at a lake. We have beautiful nature video from locations all around the world.

Scenic Television originates from the Gulf coast of South Alabama and broadcasts to a global audience. The television broadcast is accessible on any device with an Internet connection. Such electronic devices include desktop computers, laptops, tablets, smartphones, game platforms, and Internet-connected televisions.

<http://www.scenictelevision.com>



all-free-download.com/free-vector/download/magnifying_glass_clip_art_23181.html

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Contact us today

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Get a Mobile App for Your Radio Station.

Derek Bullard

As a radio station or DJ it is important to be seen on mobile devices. Get a mobile app for your radio station and be heard by potential millions of listeners. Currently the number of smartphone users is around 2.5 billion, which represents about 36 percent of the world population. This number continues to grow and it is projected that over 3 billion people in the world will be a smartphone user. Are you now convinced that your radio station needs a mobile application? However, before planning the creation of your mobile app for your radio station, there are a few aspects to consider.

1- Create Your OWN Application

You want to create a mobile radio application that reflects best your radio station. There is nothing more annoying than having your radio station on a third party application that is loaded with irritating publicity. Although it is tempting to use free solutions that are full of listener annoyances, do yourself a favor and invest in a solution that will offer a fluid experience for your listeners. Radiosolution offers an affordable app builder easy-to-use solution that allows you to create your own radio mobile application. You can easily update the app as much as you wish. Our app builder is fully supported and is always running and respecting the latest mobile technological standards.

2- Use a Cross-Platform Solution

Do not waste time and money using solutions that do not offer cross-platform compatibility between Android and iPhones. Many application builder solutions are behind times and not listening to the requirements of radio station owners, offering single platform solutions such as Android OR iPhone. If you have the budget to spend on custom applications on both platforms go ahead. However, beware that you will probably be sinking thousands of dollars in maintenance fees and updates. Your freelancer programmer or I.T. development firm will love invoicing you! That is to say, if they are not too busy or decide to disappear with the source code. And then, even worse, you find out that your custom app is no longer supported by Google/Apple and needs a major re haul. We have seen this a million times and what a nightmare it is! Radiosolution's app builder is a cross-platform, fully supported solution that will allow you to build your radio station app on a reasonable budget.

3- Publish to AppStore and Google Play

Building an application that will be accepted to AppStore or Google Play can prove to be a tedious and long process. It is crucial to have your app on at least Google Play Store and the Apple AppStore. Google requires a one-time registration fee of \$25. Submitting to Apple is more expensive. They charge an Apple App Store fee of \$99 per year. It is recommended to start with Google Play since the process of submitting is easier and you will get more visibility. Afterwards, proceed with Apple AppStore. It is true that their fees are more important, especially since you may be starting out, but try to find the cash to submit eventually.

4- Display your Radio Station Content Clearly

With a radio smartphone application, thanks to easy website integration you can be sure your content will display perfectly. You can share your social media pages like Facebook, Instagram and Twitter. You can add your own logo and colors. With a conveniently located share button, people can share your station with their friends. A radio mobile application is so convenient; it is all just a tap of the button away. It is so much more convenient than simply browsing your website with the smartphone's navigator. Another great idea is to integrate podcasts or past shows using the RSS feature. Wake up your listeners to the sound of your radio station thanks to the alarm feature. You can schedule multiple alarms during the week. Another great feature you need on your mobile application is push notifications. What a great way to communicate with your audience in real time!

5- Compatibility on Other Devices

When you build a radio mobile app for smartphones, your application will work on other devices such as; tablets and smart TVs. However, you will need to take in to consideration adjusting the images for the

different layouts and sizes that these devices require. A good app builder will walk you through this process by telling you the exact sizes of images needed. Radiosolution's appbuilder will help get your radio station in your listener's living room and even their vehicles!

6- Consider Monetization

Although we mentioned that ads can be annoying to listeners, if a good balance is found without irritating your listeners, then by all means give it a shot. Any radio station could use a little extra revenue for expenses. Google's advertising platform AdMob will help you earn revenue with in-app ads. This feature can be activated or not in our Radiosolution app builder.

Get Started Today

Now that you have considered all the aspects involved in creating a radio station mobile application, it is time to begin! Let Radiosolution help you get started by considering their app builder. It is affordable and easy to use.

If you are a Radiosolution client then you can just purchase the ADD-ON in your client area and benefit from a 50% rebate.

If you have a radio station with another provider you can still use our radio app builder! Contact Radiosolution at info@radiosolution.info for more info.

Open Broadcaster Software Studio (Multiplatform) Help Guide

Current version of the Open Broadcaster Software MultiPlatform Help Guide distributed under the GNU GENERAL PUBLIC LICENSE Version 2, June 1991

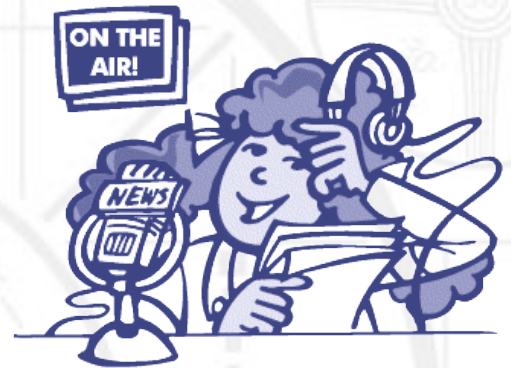
Welcome to Open Broadcaster Software Studio MultiPlatform (OBS Studio), the most relevant streaming and recording tool for all platforms. With its integrated Canvas Preview, Source Plugins and Filters, OBS Studio delivers a comprehensive environment for professional streamers and involved people to create sophisticated video broadcasting and recordings for Web services.

Hey You! Yes, You! Why Should Anyone Listen to You?!

Do you need compelling, clever copy or catchphrases for your Internet station? If you do, please visit and lets talk!

<http://www.ielectrify.com/work-with-me/>

I am a professional writer with 15+ years of experience creating high-converting copy, for a variety of radio, broadcasting and marketing applications.



https://www.wpclipart.com/people/professions/professions_3/radio_anchor.png.html

A large, abstract teal graphic on the left side of the page, consisting of several overlapping, rounded shapes that resemble a stylized 'Y' or a series of connected curves. The graphic is semi-transparent and has a slight gradient.

Open Broadcaster Software Studio (Multiplatform) Help Guide

(app. ver. 21.0.0)

23 Jan 2018

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Introduction

Welcome

Welcome to Open Broadcaster Software Studio MultiPlatform (OBS Studio), the most relevant streaming and recording tool for all platforms. With its integrated Canvas Preview, Source Plugins and Filters, OBS Studio delivers a comprehensive environment for professional streamers and involved people to create sophisticated video broadcasting and recordings for Web services.

Installing OBS Studio

You can install OBS Studio onto your hard drive or run it from a removable media. By default, non-portable version of the program store profile-based files and application settings in:

| | |
|---|-----------------|
| <code>%appdata%\obs-studio</code> | FOR Windows |
| <code>~/.config/obs-studio</code> | FOR Linux |
| <code>~/.obs-studio</code> | FOR Linux + XDG |
| <code>~/Library/Application Support/obs-studio</code> | FOR OS X |

Run installer and follow the on-screen installation instructions. The installer program automatically detects your system type and installs x86 and x64 binaries.

System requirements

High end PC recommended. Capturing, recording and broadcasting is resource demanding task.

OBS Studio uses hardware acceleration of **Direct3D** (from v10.1) or **OpenGL** (from v3.2). Without hardware acceleration it refuses



to start. OBS Studio uses hardware acceleration and shaders computing of the installed video card* to transform and combine sources, to render and filter output.

Earlier builds of the OBS Studio were tested on i7-4770K CPU + GTX980 GPU system. This, or same PC configuration, suitable for HD recordings.

Minimum OS requirements to be able to run the application itself, by platforms:

| | |
|-------|------------------------------------|
| Win | Windows Vista SP2 or later |
| Mac | OS X 10.10 or later |
| Linux | <distributions of 2014> or later** |

* Some video cards has build-in hardware encoders. OBS can use Intel's Quick Sync, AMD's VCE, NVIDIA's NVENC.

** Kernel specific not mentioned but OpenGL v3.2, FFmpeg and Qt is required.

Let's start!

Variety of options available for you to learn OBS Studio including Help guide and online Portal. Getting up to speed depends on your experience with previous versions of OBS.

If you are new to OBS Studio:

See [An Overview of Open Broadcaster Software Studio](#) on page [8](#)

If you want to create your first scene right now!:

See [Getting started](#) on page [29](#)

If you are an experienced OBS user:

See [What's New in OBS Studio](#) on page [10](#)

See [CHANGES since v20.1.3 of the application](#) on page [11](#)

If you want to focus on Web Streaming features:

See [Streaming](#) on page [109](#)

See [Output](#) on page [122](#)

See [Streaming tab](#) on page [125](#)

If you want to focus on Recording features:

See [Recording](#) on page [106](#)

See [Output](#) on page [122](#)

See [Recording tab](#) on page [129](#)

Using online Forum

Online forum provides community-based support with built-in bug report system.

(See [Post OBS Studio log-file](#) on page [14](#))

All users must accept Forum online agreement before asking questions online.

An Overview of Open Broadcaster Software Studio

With OBS Studio you can create high quality video streams for different web services. With this novelty software you can start simple broadcast, make replays and do standalone recordings.

Work more efficiently

Workspace controls and quick scene management – OBS Studio gives you the tools you need to keep the work on track and efficient.

Canvas Preview Real-time canvas preview gives you ability to view all changes you made to sources appearance and scene composition.

Studio Mode Allow to preview all changes made to the scene before it would become on-air.

Layers With layers, you can work on one element without changing others. To rearrange elements, simply shift the layer order in the *Sources* list.

Enjoy unlimited creative options

Filters Each source can change its appearance via *Filters*.

Crop, Transform, Chroma Key and many other visual effects



available by default.

Plugin Sources Choose the best plugins from the online community or even write your own. Open source code gives you a choice to modify and create your own future.

Transitions Transitions between scenes makes your shows more attractive.

Relax while your PC is working hard.

Hardware acceleration All tasks that require intensive calculation, like transformations, filtering and scene composing completed by Direct3D and OpenGL acceleration.

Encoding acceleration NVENC, VCE, Quick Sync can be used for encoding as well as other hardware based encoders via the plugins.

What's New in OBS Studio

Stay free

Now your imagination is unlimited by innovation technologies developed for the application.

Studio Mode Control visually all changes completed to scenes without changing an output. Your spectators always see what you want to show to them, not how you do it.

Multi-Track Allows to you to save audio sources in different tracks during recording. Up to 6 tracks supported. You can filter, add effects and adjust level of your microphone later, without affecting your game's sound, while all sounds stay in sync.

Multi-Output Now you can stream at one quality and make recordings in other simultaneously. Good option to stream in prime-time with overheated bandwidth – stream at medium and save it at full quality to upload your high resolution videos later.

Stay competitive

OBS Studio delivers enhanced tools to help you achieve your creative best.

New render engine To create professional OpenGL and Direct3D video recordings.



New audio grabbing engine Low latency, low memory consumption, multi-track support – all in one built-in solution.

Work fast and accurate

OBS Studio provides new controls over positioning and aligning sources.

Snap to borders Fast and accurate positioning of the sources with single mouse move.

Transform Customize output view for better appearance with easy mouse moves. No need to look for matched sources and adjust each manually. Also, all positions, size, cropping and aspect ratios can be adjusted pixel by pixel.

CHANGES since v20.1.3 of the application

New features, key points.

- ✓ Multi-channel audio (up to 7.1 ch) in each track of the output is supported now.
See [Audio](#) on page [136](#)
- ✓ In *Studio Mode* it is possible to transition to live output by scene double-click (option).
See [General Settings](#) on page [118](#)
- ✓ Program (live) output in *Studio Mode* now has its own Projector Window.
See [Full screen preview \(program\)](#) on page [113](#)

- ✓ *Studio Mode* has new vertical layout (option)
See [General Settings](#) on page [118](#)
- ✓ Now, it is possible to set transition type for each scene individually.
See [Transition Override \(per scene transitions\)](#) on page [38](#)
- ✓ Added new multi-view window to preview scenes all-in-one (with switch abilities).
See [Multi-view of scenes](#) on page [34](#)
- ✓ Side-chain audio source of the compressor filter can now control compression of other sources, in other words – “audio ducking” now available.
See [audio ducking](#) on page [92](#)
- ✓ Scripts written in Lua and Python can be used with OBS Studio, thanks to new scripting tool.
See [Scripts](#) on page [102](#)
- ✓ Dark theme for UI is now in favor for newcomers but you still able to change the application's themes on the fly. New theme “Acri” added.
See [Themes](#) on page [115](#)
- ✓ Falloff speed for volume meters of the [Mixer pane](#) is now adjustable.
See [Audio Meter Decay Rate](#) on page [137](#)
- ✓ Also, application has new [Help menu](#) entry and new look on [Mixer pane](#).

As always, number of known issues were fixed and added few new ^_^

Looking at the Work Area

Getting familiar with the work area

The OBS Studio work area is arranged to help you focus on creating and editing high quality streams and recordings.

About the work area

The work area consists of the following components:

Menu bar The menu bar contains menus for performing tasks. The menus are organized by topic. For example, the *Scene Collection* contains commands for working with scene collections.

Canvas preview area The canvas preview area provides real-time preview of the output/edit. Output easily adjustable:
See [Working with sources \(positioning\)](#) on page [31](#)
See [Video](#) on page [138](#)

Scene management and Control options Main screen control options hold tools to create and edit output:
See [Creating Scenes in OBS Studio](#) on page [29](#)
See [Output](#) section on page [122](#)

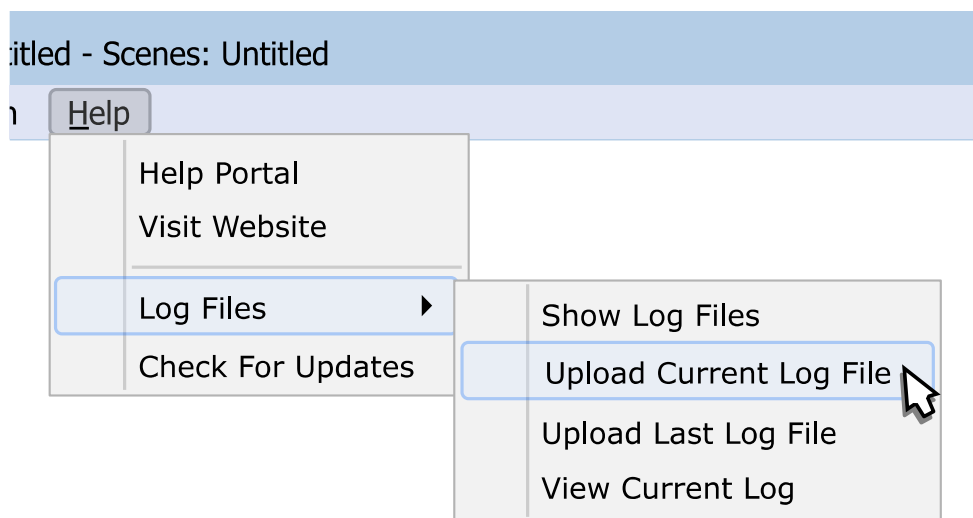
Using menu bar

Help menu

In the Help menu you can go to the online help portal, check for



program's update, view current log and post log-file online.

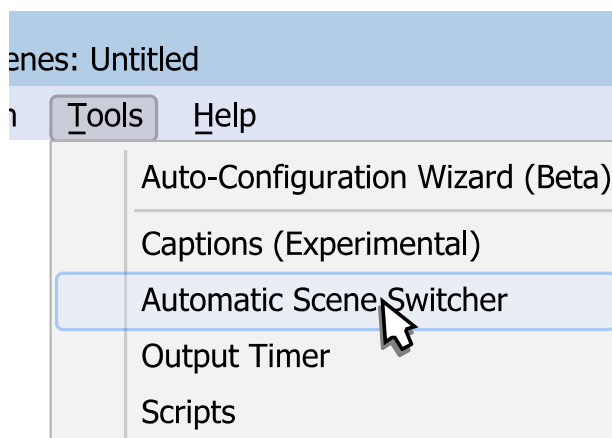


To **Post OBS Studio log-file online** (current session):

- 1) go to the *Help* menu;
- 2) choose *Log Files* sub-menu;
- 3) click *Upload Current Log File*, application uploads log-file automatically;
- 4) copy the generated link (URL) and follow OBS Studio's Forum online instructions.

Tools menu

Tools menu has fast access to the external plugins and its settings. There you can find additional overlay helpers, scene switchers and other program tools installed in OBS Studio.



Auto-Configuration Wizard (Beta) – plugin to automatically optimize application settings.

(See [Auto-Configuration Wizard \(Beta\)](#) on page [96](#))

Captions (Experimental) – plugin to add closed captions to the stream using speech recognition.

(See [Captions \(Experimental\)](#) on page [100](#))

Automatic Scene Switcher – plugin to switch scenes in special order.

(See [Automatic Scene Switcher](#) on page [97](#))

Output Timer – plugin to stop streaming/recording after fixed time interval.

(See [Output Timer](#) on page [101](#))

Scripts – plugin to manage custom written automation scripts.

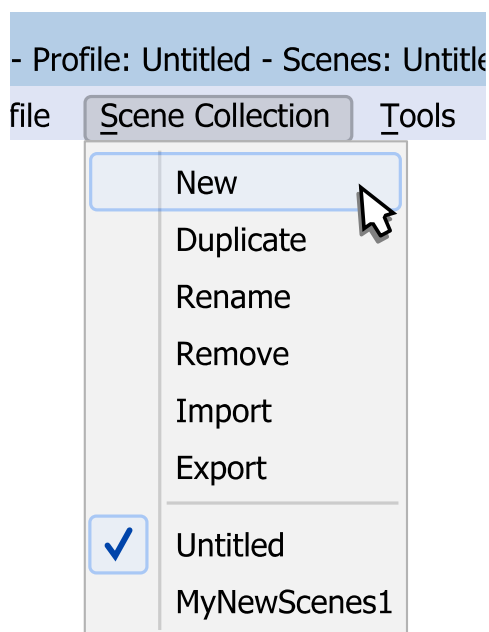
(See [Scripts](#) on page [102](#))

Scene Collections menu

Scene Collections menu specifies sets of the scenes you work

with. Current set (collection) is marked by icon.

You can specify new scene collection by selecting sub-menu option *New*.



Duplicate sub-menu option makes a copy of the current scene collection.

Rename sub-menu option allows to specify new name of the current scene collection.

Remove sub-menu option deletes current scene collection.



Removed scene collections cannot be recovered.

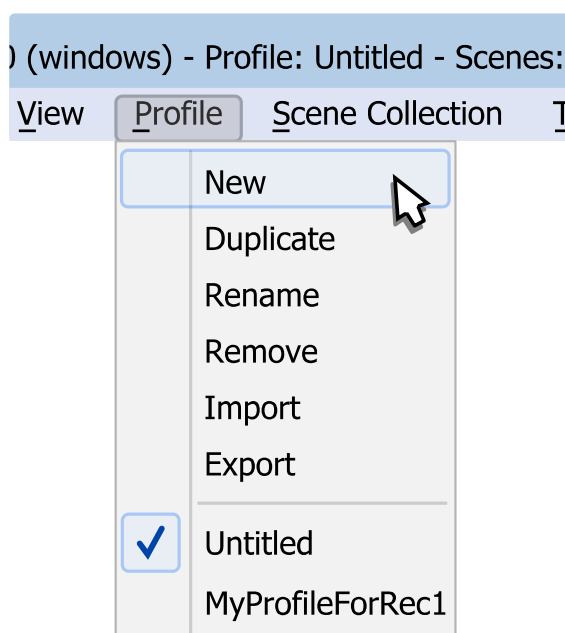
Import sub-menu option allows to load scene collection from the external folder/device.

Export sub-menu option allows to save current scene collection to the external folder/device.

Profile menu

Profile menu specifies sets of the application settings (profile) you work with. Current profile is marked by icon.

You can specify new profile by selecting sub-menu option *New*.



Duplicate sub-menu option makes a copy of the current profile.

Rename sub-menu option allows to specify new name of the current profile.

Remove sub-menu option deletes current profile.

 **Removed profiles cannot be recovered.**

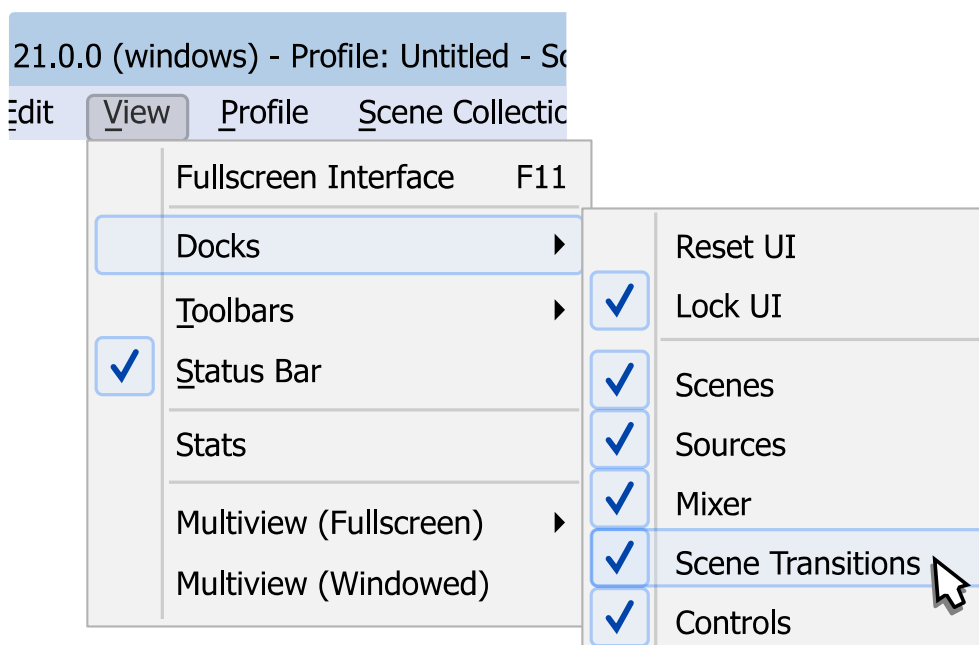
Import sub-menu option allows to load profile from the external folder/device.

Export sub-menu option allows to save current profile to the

external folder/device.

View menu

View menu specifies visibility of the user interface (UI) elements.



Fullscreen Interface sub-menu option allows to switch to borderless fullscreen UI of the program. Press *F11* hotkey to switch between normal/borderless-fullscreen view.

Docks sub-menu option enables next UI elements:

- *Scenes* : if checked, shows [Scenes](#) pane.
- *Sources* : if checked, shows [Sources](#) pane.
- *Mixer* : if checked, shows [Mixer pane](#).
- *Scene Transitions* : if checked, shows [Scene Transitions](#) pane.
- *Controls* : if checked, shows pane of control buttons.

To restore **default layout** – choose sub-menu option **Reset UI**.

To keep docked layout static – leave **Lock UI** sub-menu option checked by icon.

To make any **docking-pane float** – perform **drag-and-drop** move over the docking item.

(See [Floating docking-panes](#) on page [27](#))

Toolbars sub-menu option enables next UI elements:

- *Listboxes* : if checked, tool-bars at the [Scenes](#) and [Sources](#) lists panes are visible (enabled).

Status Bar sub-menu option shows *Status Bar* in main window.

Multiview (Fullscreen) sub-menu option allows to choose display device to show full screen up to 8 combined scenes previews.

(See [Multi-view of scenes](#) on page [34](#))

Multiview (Windowed) sub-menu option shows window of up to 8 combined scenes previews.

(See [Multi-view of scenes](#) on page [34](#))

Stats sub-menu option shows current output status and resources usage statistic window.

(See [Stats](#) on page [25](#))

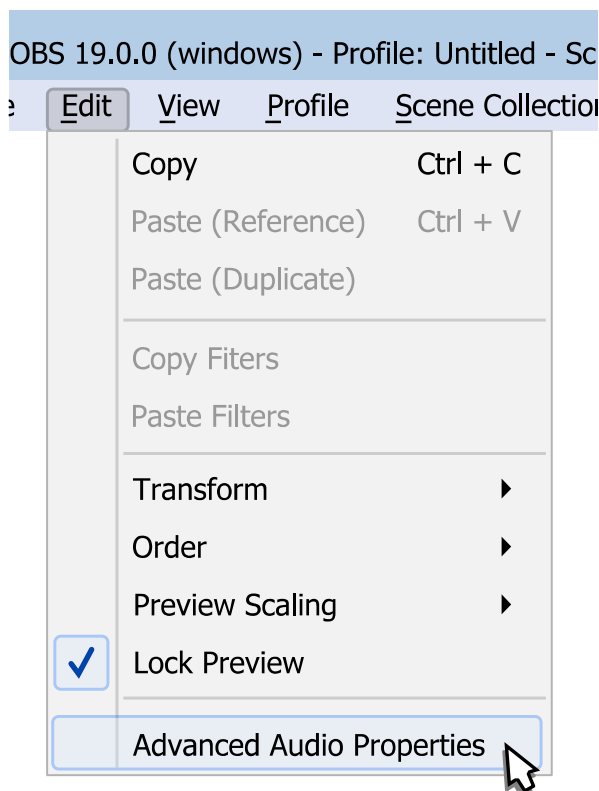
UI elements marked by icon are visible (checked).



If UI not visible – its functions not disabled. Many options still available through right-click menus or [Hotkeys](#).

Edit menu

Edit menu has fast navigation links to most used properties of the sources and scenes.



Copy sub-menu option copies selected source to clipboard.

Paste (Reference) – use it to paste source from clipboard inserting it into the scene as *add existing*.

Paste (Duplicate) – use it to paste source from clipboard inserting it into the scene as full copy.



Copy/Paste sources between *Scene Collections* not possible.
(See [Scene Collections menu](#) on page 15)

Copy Filters sub-menu option copies [filters](#) of the selected source to clipboard.

Paste Filters – use it to paste [filters](#) from clipboard to the selected source.



Copy/Paste of the filters between *Scene Collections* not possible.
(See [Scene Collections menu](#) on page [15](#))

Transform sub-menu option applies transform to the sources.
(See [Transform](#) on page [73](#))

Order sub-menu option allows to rearrange the layers.
(See [Layer shift \(order\)](#) on page [71](#))

Preview Scaling sub-menu option allows to change viewing size of the preview window.
(See [Preview Scaling](#) on page [23](#))

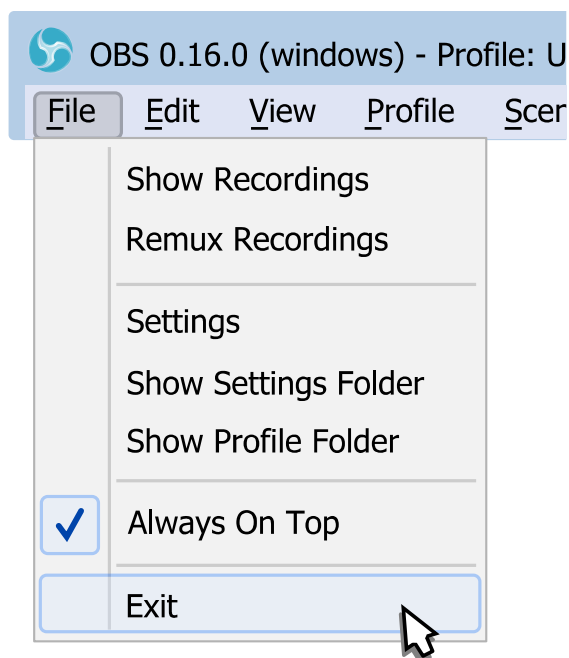
Lock Preview sub-menu option, if marked by icon then editing of the source position and size in preview window via [manual transform](#) inaccessible. This setting prevents editing of the scene by accident.
(See [Working with sources \(positioning\)](#) on page [31](#))

Uncheck *Lock Preview* option to enable edit in preview window.

Advanced Audio Properties sub-menu option opens audio mixer dialog window.
(See [Mixer](#) on page [146](#))

File menu

File menu has general program settings and options.



Show Recordings sub-menu option opens in default file manager a directory specified for the recordings.

Remux Recordings sub-menu runs small build-in application for quick remux video files to different container without re-encoding. For example, FLV to MP4.

Settings sub-menu opens application *Settings* window.
(See [Application Settings](#) on page [118](#))

Show Settings Folder sub-menu opens in default file manager a directory specified for the application settings.

Show Profile Folder sub-menu opens in default file manager a directory specified for the profiles.

Always On Top sub-menu option, if marked by icon then

application always visible over other windows.

Exit sub-menu closes OBS Studio application.

Using canvas preview area

By mouse right-click over preview area you can access to the menu of the source preferences and change scene appearance.

Enable Preview

If *Enable Preview* option is marked by icon then current output rendered to the preview area. Canvas size of the preview area depends on [Application Settings](#).

(See [Video](#) on page [138](#))

Uncheck *Enable Preview* option to disable preview.

Lock Preview

If *Lock Preview* option is marked by icon then editing of the source position and size in preview window via [manual transform](#) inaccessible. This setting prevents editing of the whole scene collection by accident.

(See, also [Working with sources \(positioning\)](#) on page [31](#))

Uncheck *Lock Preview* option to enable edit in preview window.



You can lock/unlock sources individually via sources lock icon.

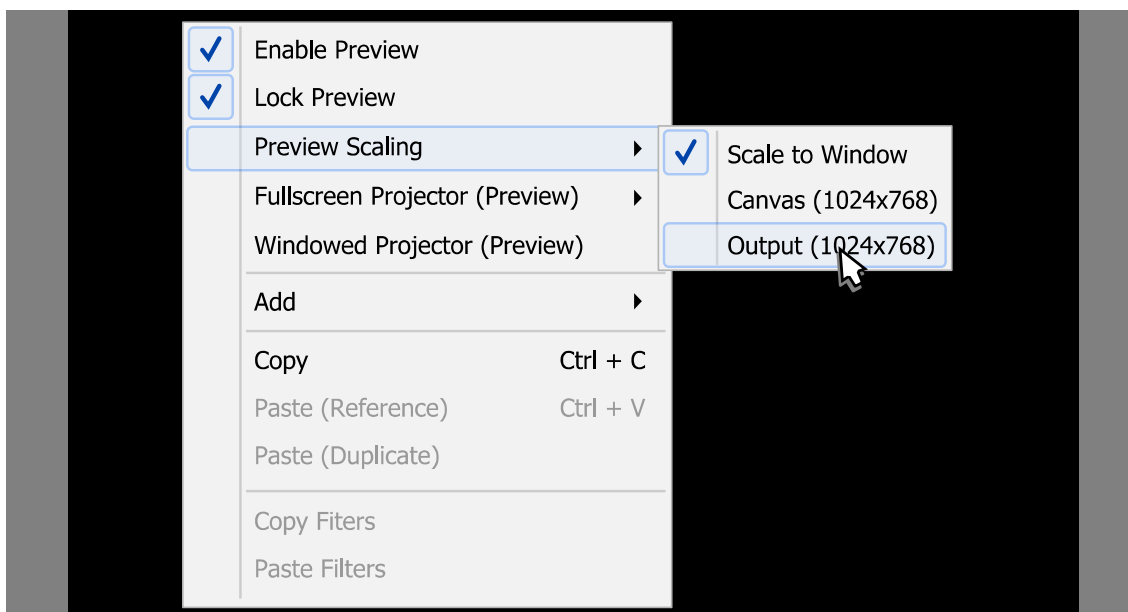
(See [Lock source](#) at page [48](#))

(See [Unlock source](#) at page [48](#))

Preview Scaling

To scale preview window to fixed size of *Output* (1:1 scale):

- 1) right-click on the preview area;
- 2) choose from sub-menu *Output (1024x768)* option, where *1024x768* is your current output resolution defined via field [Output \(Scaled\) Resolution](#), page [139](#).



Current scale of the preview window marked by icon.

Hold *Spacebar* key to drag and navigate the preview window by mouse when visible area is smaller than current preview window size (*Preview Scaling* is set to *Canvas* or *Output*).

Hold *Spacebar* key to zoom the preview window by mouse wheel when visible area is smaller than current preview window size (*Preview Scaling* is set to *Canvas* or *Output*).

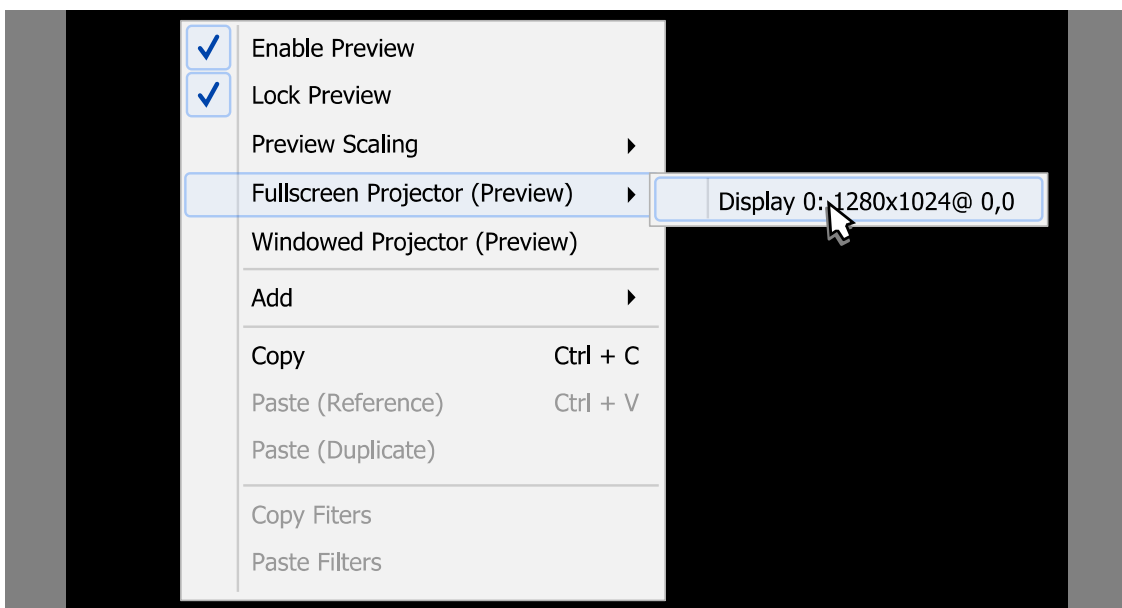
To restore **default zoom level** – set any *Preview Scaling* mode

again.

Full screen preview (canvas)

To preview canvas in full screen:

- 1) right-click on the preview area;
- 2) choose sub-menu *Fullscreen Projector (Preview)*;
- 3) select output device.



To exit full screen preview mode: press *Esc* button.

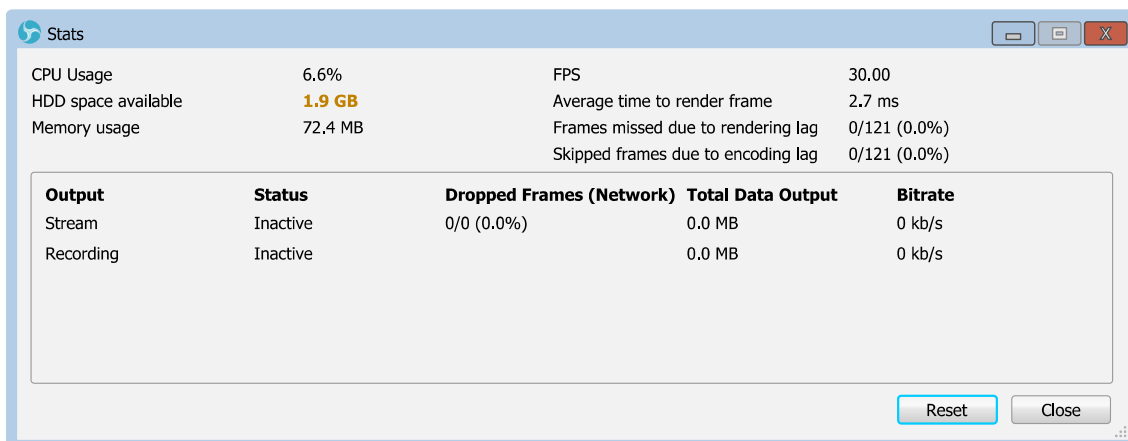
Windowed Projector (canvas)

To preview canvas in standalone resizable window:

- 1) right-click on the preview area;
- 2) choose sub-menu *Windowed Projector (Preview)*.

Using Stats window

Stats window shows output status of the OBS Studio, recent statistic on PC resources usage and encoding performance.



Parameters at **warning** level has yellow–orange color.

Parameters at **error** level has red color.

You can renew current statistic by pressing *Reset* button.

To open current *Stats* window, click corresponding [View menu](#) option.

(See [View menu](#) on page [18](#))

To open *Stats* window automatically, check the [Open stats dialog on startup](#) option.

(See [General Settings](#) on page [118](#))

Other controls

You can use advanced features of the OBS Studio user interface (UI) to get additional control over the working area and source appearance.

Interactive windows

Some sources may require user input (logging on the external

website, accept confirmations etc.)

To interact with this kind of sources, right-click over the source and choose the option *Interact*. The source content will open in a new window – there you can make your interactive changes.

Floating docking-panes

To make UI of the OBS Studio more handy you can place and/or combine into tabs any available docking-pane ([Sources](#) list pane, [Scenes](#) list pane, [Mixer pane](#) etc).

To make docking-pane float or combine it into tabs:

- 1) make unchecked the *Lock UI* option;
(See [Lock UI](#) on page [19](#))
- 2) grab by mouse the header of the docking-pane;
- 3) place pane to the new free area of the screen;
- 4) release the mouse button. Now the docking-pane is floating window.

(See [Illustration 1. Make pane float](#) on page [27](#))



Illustration 1. Make pane float

By placing floating docking-pane over the OBS Studio main UI

sides you can make it docked again.

To revert all changes and return to **default layout** use the *View menu Reset UI* option.

(See [Reset UI](#) on page [18](#))

Manipulation with sources/layers at preview area explained in:

[Getting started](#) on page [29](#);

[Using Layers](#) on page [69](#);

[Working with sources \(positioning\)](#) on page [31](#);

[manual transform](#) on page [76](#);

[easy cropping](#) on page [77](#); of the guide.

Creating Scenes in OBS Studio

About scenes and layers (OBS Studio)

OBS Studio uses scenes to combine output stream. Scene is combination of the video layers. Each layer has one input source. Different sets of layers joined into one scene. Only current scene (i.e. selected scene) goes to the output stream. So, you can prepare number of scenes and switch between them on the fly to change your output stream appearance.

Getting started


The first time you start the application, the blank scene named *Scene* appeared under the *Scenes* list pane. Its content is visible as empty list of the *Sources*.



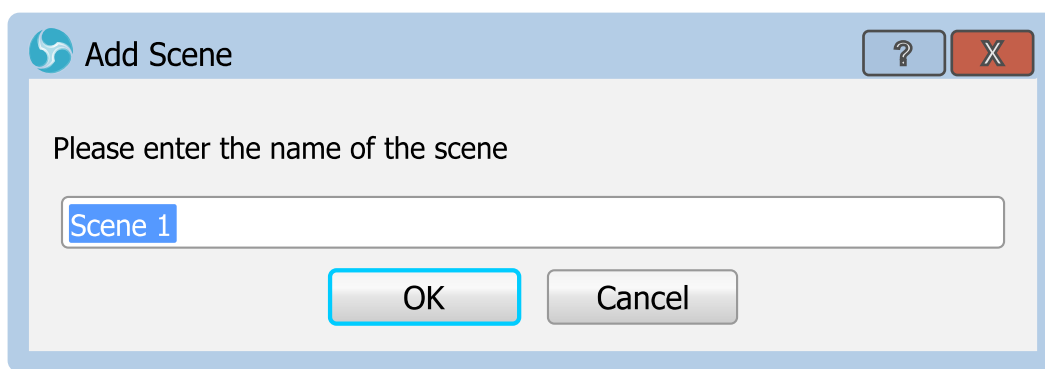
Visibility of the each list/pane and toolbar is switchable.
(See [View menu](#) at page [18](#))



Create a new scene

You can create a new scene in the *Scenes* list by clicking  icon on the toolbar of the *Scenes* list. Or by right-clicking at the empty space of the *Scenes* list and choosing action *Add*.

When you create a new scene, dialog will appear where you can specify the name of the new scene.



Give to the scenes informative names like "Intro", "Pause" and so on.

Broadcasting of the empty scene is not the best option – **just add a source of your future video to the scene!** The source can be your camera, gameplay, PC display, any compatible audio/video device or media file (stream).

Add source to scene

To add source to scene use [Getting Sources into OBS Studio](#) method. (See [Getting Sources into OBS Studio](#) on page [43](#))

Ready to start?

If you ready to start your first recording/streaming use main interface control buttons to run the task.

(See [Recording and Streaming](#) on page [106](#))

Adjusting Output

All video sources in scenes can be adjusted to match your output. As well as output can be adjusted to your requirements. (See [Video](#) on page [138](#))

Working with sources (positioning)

Source inside one scene can be moved to a different position by mouse drag-and-drop.

To perform source move:

- 1) click and hold left mouse button at the center of the **red** rectangle (bounding box) of the chosen source and drag it to the new position;
- 2) release the mouse button.

(See [Illustration 2. Source move](#) on page [31](#))

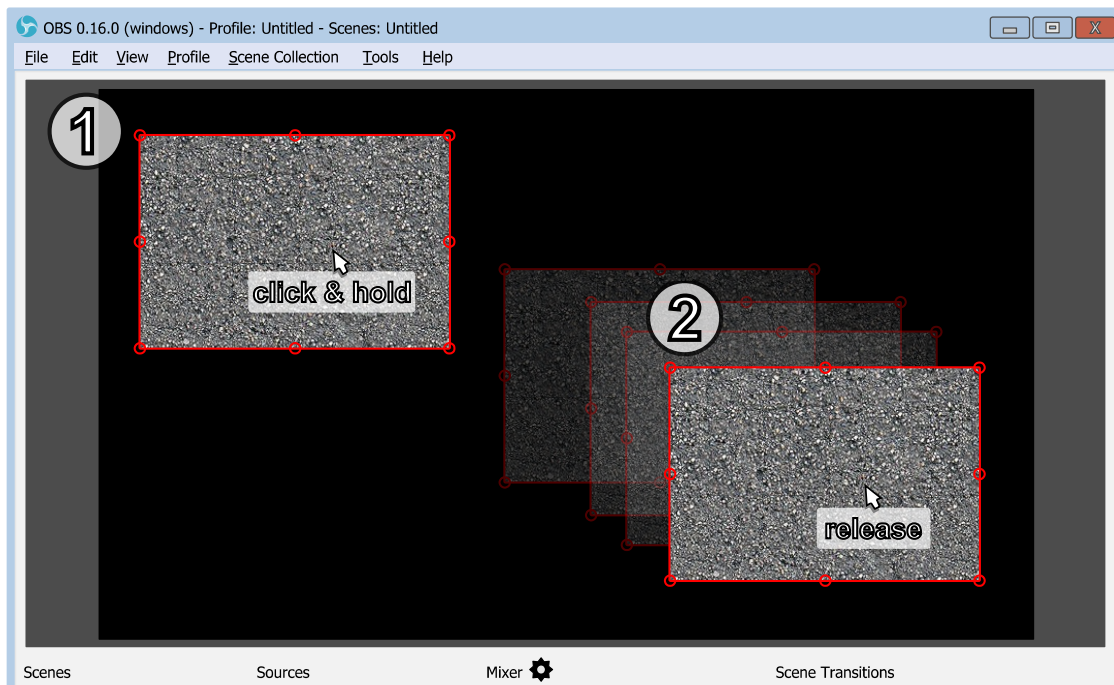


Illustration 2. Source move

You can temporary disable snapping by holding down the *Ctrl* key while dragging sources.



(See [General Settings](#) on page [118](#))

Make sure that *Lock Preview* option unchecked.

(See [Lock Preview](#) on page [23](#))

Make sure that source not locked.

(See [Lock source](#) at page [48](#))

(See [Unlock source](#) at page [48](#))

Source transform

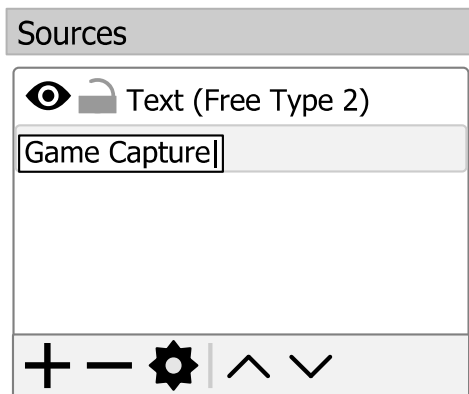
Each source can be adjusted via layer's *Transform*.

(See [Using Layers](#) on page [69](#))


Rename scene (source)

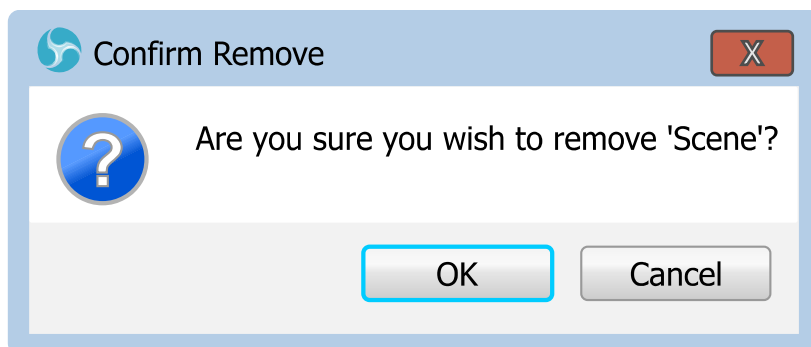
To rename scene or source:

- 1) right-click on the selected scene (source) in the *Scenes* list pane (*Sources* list pane);
- 2) choose *Rename* option. Blinking cursor will appear near the name of the scene (source);
- 3) specify a new name and press *Enter*.



Remove scene

To completely remove scene from a *Scenes* list: hit  icon on the toolbar of the *Scenes* list and agree to the confirmation dialog.

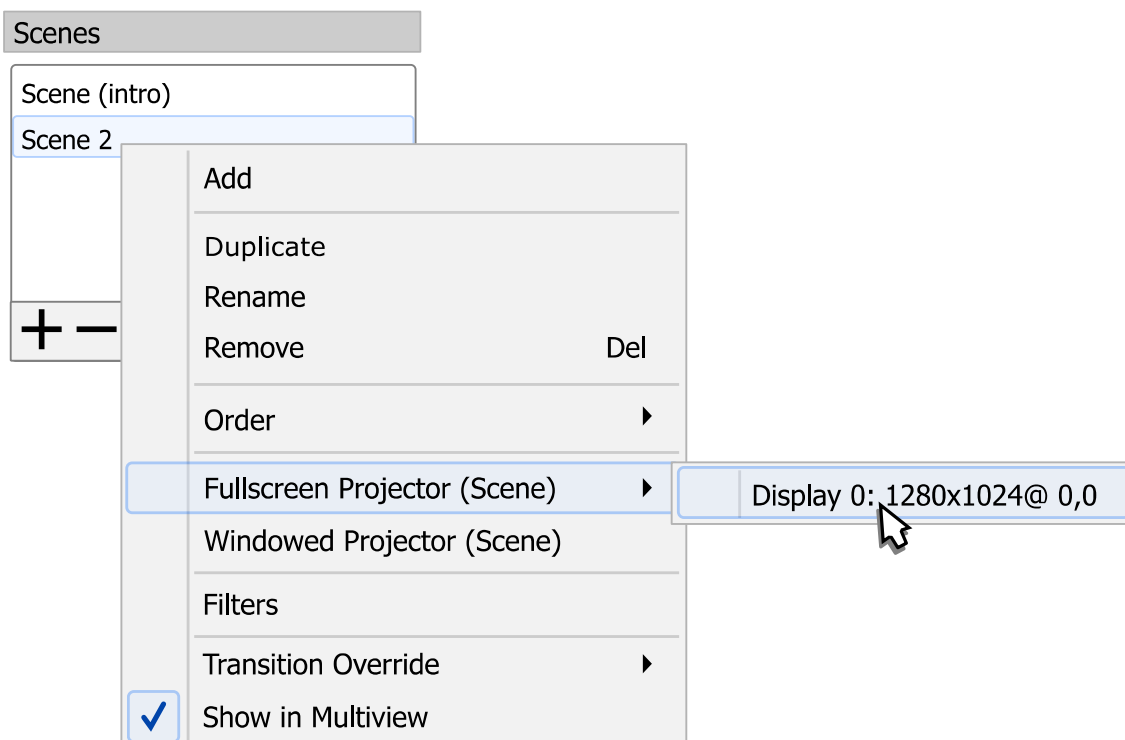


 Removed scenes cannot be recovered.

Full screen preview (scene)

To preview current scene in full screen:

- 1) right-click on the selected scene in *Scenes* list pane;
- 2) choose sub-menu *Fullscreen Projector (Scene)*;
- 3) select output device.





You can preview whole video output via right-clicking at preview window and choosing sub-menu *Fullscreen Projector (Preview)* (See [Full screen preview \(canvas\)](#) on page [25](#)).

To exit full screen preview mode: press *Esc* button.

Windowed Projector (scene)

To preview current scene in standalone resizable window:

- 1) right-click on the selected scene in *Scenes* list pane;
- 2) choose sub-menu *Windowed Projector (Scene)*.

Multi-view of scenes

Multi-view allows to preview number of scenes in one window.

To open new multi-view window see *View menu* options:

[Multiview \(Fullscreen\)](#) on page [19](#)

[Multiview \(Windowed\)](#) on page [19](#)

See example of the *Multiview (Fullscreen)* at [Illustration 3.](#)

[Multiview \(Fullscreen\) example](#) on page [35](#)

In multi-previews **current preview** (edit) scene marked by **green** outline.

In multi-previews **program (live)** scene marked by **red** outline.

Click once on multi-previews to **switch current preview (edit)** to the scene (perform [Scene transitioning](#)).

In [Studio Mode](#) you can click twice (depending on [General Settings](#)

of the application) on multi-previews to **switch program (live)** to the scene.

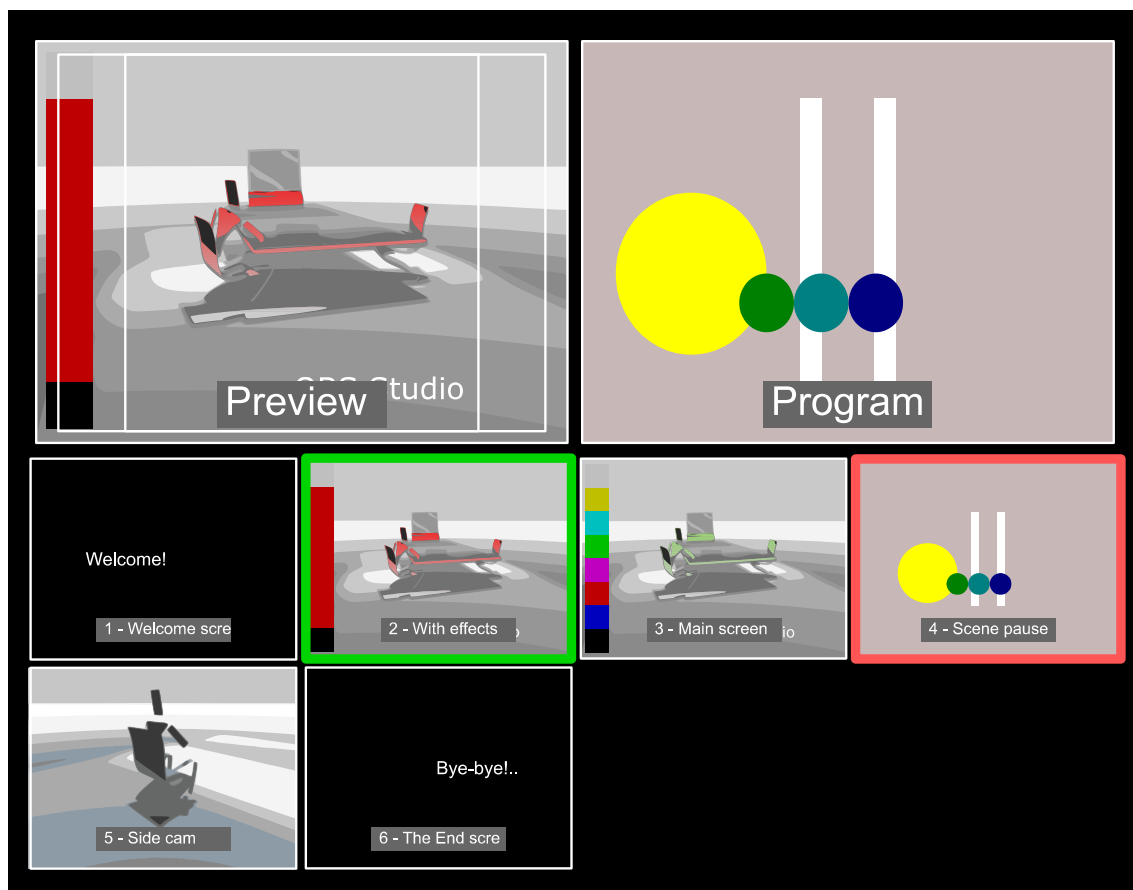
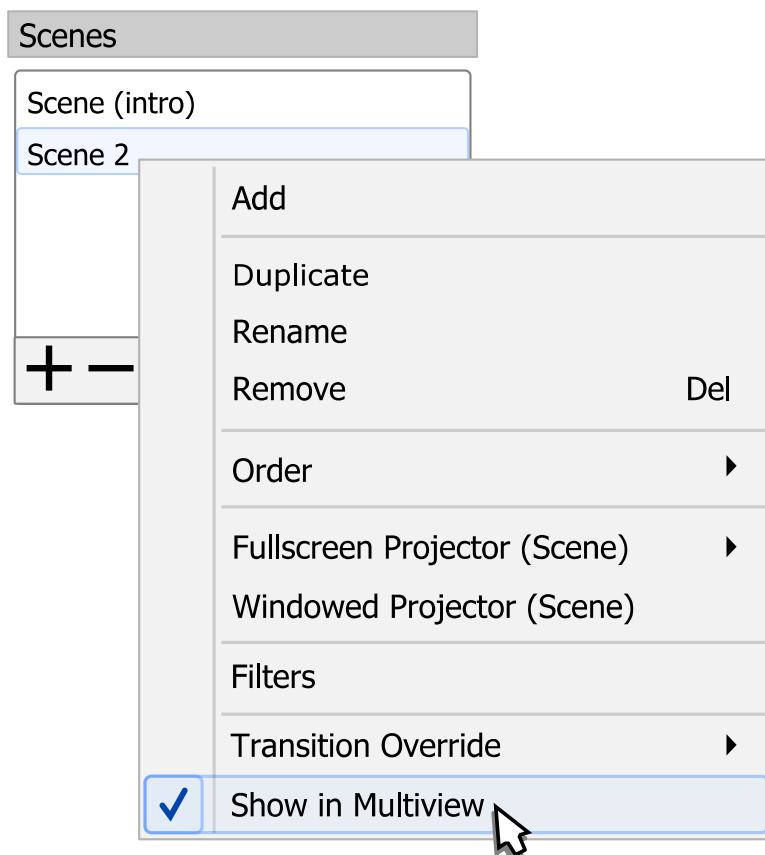


Illustration 3. Multiview (Fullscreen) example

To exit *Multiview (Fullscreen)* mode: press *Esc* button.

To **include scene to the multi-view** window make checked the scene option *Show in Multiview* :

- 1) right-click over the selected scene in [Scenes](#) pane;
- 2) click on *Show in Multiview* option to make it checked by icon;
- 3) the scene becomes available in both [Multiview \(Fullscreen\)](#) and [Multiview \(Windowed\)](#) multi-views at last free position (push back).



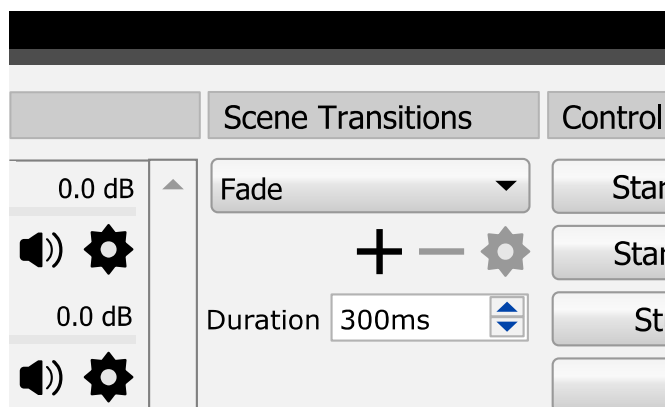
To **exclude scene from multi-view** make *Show in Multiview* unchecked.


To change layout of the multi-view previews see [General Settings](#) on page [118](#).

Scene transitioning


You can setup transitions when switching between scenes.


Transition type (effect) is specified by *Scene Transitions* drop down list (main window [Scene Transitions](#) pane). All effects performed by GPU.



You can add 'configurable' transition by clicking  icon under the [Scene Transitions](#) drop down list.

Dialog window should appear where you can specify a new name for the configurable transition. Then you can configure some options of the transition.

To remove configurable transition: click  icon under the [Scene Transitions](#) drop down list and agree to the confirmation dialog.

To re-configure selected transition: click  icon under the [Scene Transitions](#) drop down list. Options dialog will appear, complete changes and close dialog window by clicking *OK* button.

 Some transitions effects non-configurable.

Transition's time is defined by *Duration* parameter, in milliseconds.

To **perform transition from scene to scene**, simply select new scene in [Scenes](#) list pane, the transition effect will be applied automatically.

You can specify [Hotkeys](#) to switch to each scene or you can use [Multi-view of scenes](#) window to switch by the live previews of the scenes.

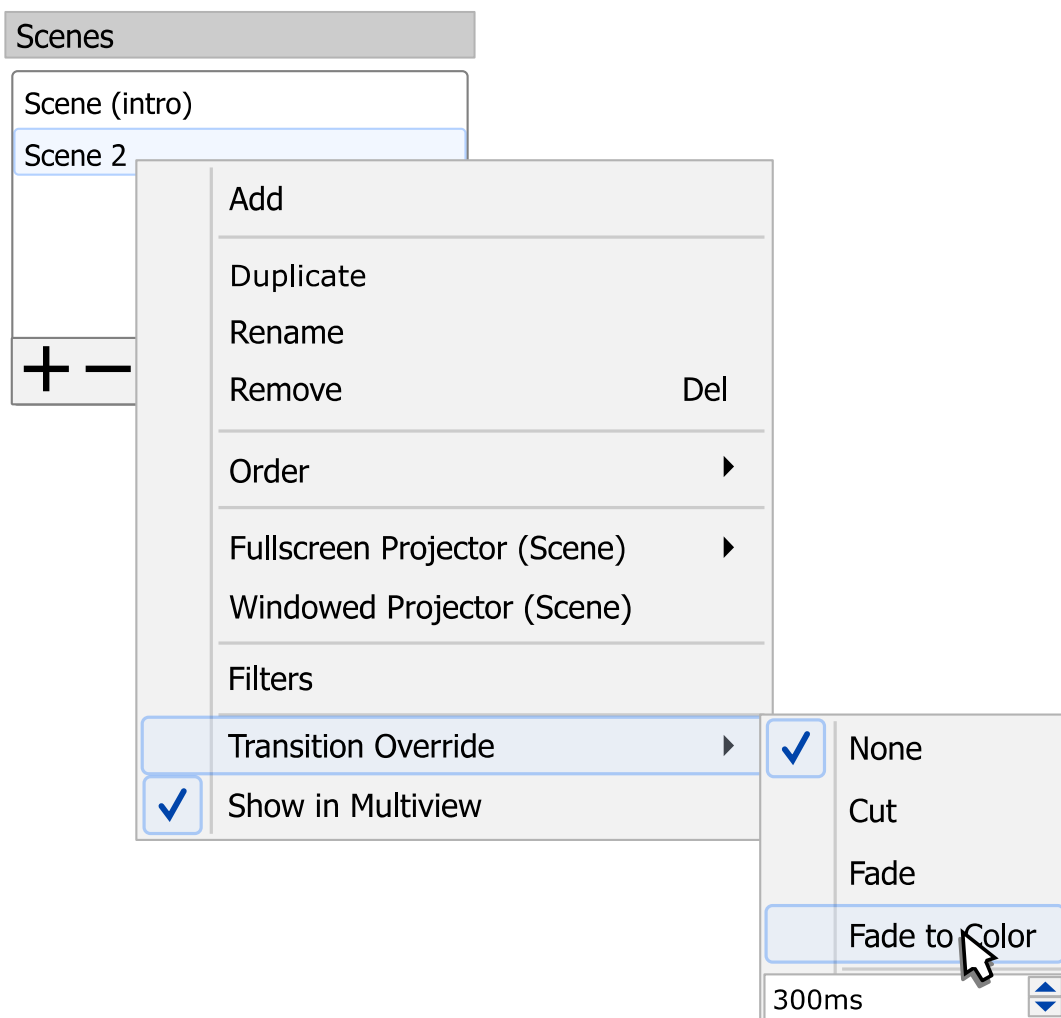
(See [Hotkeys](#) on page [141](#))

(See [Multi-view of scenes](#) on page [34](#))

Transition Override (per scene transitions)

To **apply transition effect** from the [Scene Transitions](#) drop down list **individually to the scene**:

- 1) right-click on the selected scene in [Scenes](#) list;
- 2) select *Transition Override* sub-menu;
- 3) choose desirable transition effect. Chosen effect marked by icon.
- 4) If needed, override transition duration too by setting new duration value in milliseconds at the bottom field of the same sub-menu.



To use global transition setup, apply transition override *None*.

Transitions types

By default, next transitions types available:

Cut [non-configurable] : switches from one scene to another immediately, the simplest type, low resources cost.

Fade [non-configurable] : switches from one scene to another in dissolve way, moderate resources cost.

Options

- ***Duration*** : defines duration of the complete scene

change, in milliseconds.

Fade to Color [configurable] : switches from one scene to another by fade into intermediate color, moderate resources cost.

Options

- *Duration* : defines duration of the complete scene change, in milliseconds.
- *Color* : defines intermediate color of the frame during transition. Shows color in the hexadecimal format – #AARRGGBB.
- *Peak Color Point (percentage)* : defines rise and fall speeds of the color maximum (low values = fast rise).

Luma Swipe [configurable] : switches from one scene to another by fading into luma level of the control image, high resources cost.

Options

- *Duration* : defines duration of the complete scene change, in milliseconds.
- *Image* : specifies type of the transition effect (type of the control image).
- *Softness* : defines softness of the transition.
- *Invert* : if checked, inverts direction of the transition.

Slide [configurable] : switches from one scene to another by horizontal or vertical frame replacement, moderate resources cost.

Options

- *Duration* : defines duration of the complete scene

change, in milliseconds.

- *Direction* : specifies direction of the frame movement (Left, Right, Up, Down).

Stinger [configurable] : switches from scene “A” to scene “B” using custom intermediate video file as overlay (alpha channel supported), high resources cost.

Options

- *Video File* : specifies video file which will be used as intermediate video overlay during transition.
Transition ends when playback of the video file ends.
Supported media types: mp4, ts, mov, flv, mkv, avi, gif, webm).
- *Transition Point Type* : specifies type of the start point measurement for the scene change.
 - *Transition Point (frame)* : defines **frame** at which picture from scene “A” replaced with picture from scene “B”. Frame number measured from the start of the intermediate file.
 - *Transition Point (milliseconds)* : defines **time** at which picture from scene “A” replaced with picture from scene “B”. Time measured from the start of the intermediate file, in milliseconds.
- *Audio Fade Style* : specifies type of the audio transition between scenes.
 - *Fade out to transition point then fade in* : audio from scene “A” fades out to [Transition Point \(frame\)](#) and then audio from scene “B” fades in.
 - *Crossfade* : audio from scene “A” fades out to transition's end; audio from scene “B” fades in from the start of the transition.

- **Audio Monitoring** : specifies control for intermediate file's audio output. Next options available:
 - *Monitor Off* : intermediate file that in use shall route its audio stream through the mixing options specified by [Tracks](#) settings.
(See [Advanced Audio Properties](#) on page 146).
 - *Monitor Only (mute output)* : intermediate file that in use shall route its audio stream only through the output device specified by [Audio Monitoring Device](#).
(See [Audio Monitoring Device](#) on page 144)



Routing media's source audio stream with *Monitor Only (mute output)* allow to user to hear the sound through the output device specified by [Audio Monitoring Device](#) and adjust volume of the media source by ear.

- *Monitor and Output* : intermediate file that in use shall route its audio stream through the output device specified by [Audio Monitoring Device](#) and through the mixing options specified by [Tracks](#) settings.
(See [Advanced Audio Properties](#) on page 146)

Swipe [configurable] : switches from one scene to another by horizontal or vertical frame movement, moderate resources cost.

Options

- *Duration* : defines duration of the complete scene change, in milliseconds.
- *Direction* : specifies direction of the frame movement (Left, Right, Up, Down).
- *Swipe In* : if checked, new scene will appear as side layer (instead of top/bottom one).

Getting Sources into OBS Studio

About video and audio sources

Internet streams can combine different sets of video and audio sources. You can work with both type of sources in OBS Studio. OBS Studio can hold up to 6 audio tracks and 1 video in the same output stream (recording video), while number of inputs unlimited. Recording and streaming can be run independently and may stop at any time.

Video sources Video sources – digital video content provided by applications (usually game or camera).

Audio sources Audio sources – digital audio content provided by applications (usually game sound or mic).

About video resolution and audio sample rate

In order to produce high-quality streams, it is important to understand how video resolution matches to canvas aspect ratio, and how to avoid of re-sampling audio tracks.

Video resolution and aspect ratio

Video resolution is an image size visible to viewer. It's width and height in pixels named 'Video Resolution'.

Usually, video plays at full resolution on the screen. Due to a different screen sizes and resolutions available on market, it is wise to make streams compatible with common displays. Also,



sources can use different resolution inputs (each can be adjusted by OBS Studio).

(See [Transform](#) on page [73](#))

Maintain aspect ratio of the video

To maintain aspect ratio ($\text{width_in_pixels} / \text{height_in_pixels}$) of the input video, when it displayed, use combination of *cropping* and *Transform*.

(See [Filters for Special Effects](#) on page [72](#))

To make sure that the output video has the same aspect ratio with the preview window – always set preview's canvas size (resolution) with the same aspect ratio as output video.

(See [Video](#) on page [138](#))

Audio sample rate

Digital copy of sound uses quantization algorithm for numeric representation. Thus, each sound stream consist of number of digit sets (samples) flow. That number must exceed, at least twice, the highest frequency of the sound stream. Human's ear can recognize frequencies up to 20000 Hz Thus, most common audio sample rates are 44100 Hz and 48000 Hz.

If your main audio input has 44100 Hz sample rate, then use in OBS Studio: 44,1 kHz setting. To reduce quantization noises – avoid sample rate conversions.

(See [Audio](#) on page [136](#)).



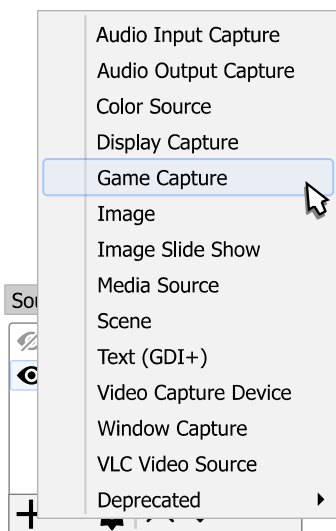
For Windows platform you can compare and change your sampling settings at:

- in Windows, the sampling settings located in Recording (or Playback) devices>Properties>Advanced>Default Format when device running in shared mode;
- in OBS Studio application, the sampling settings located in Settings>Audio>Sample Rate.

Add new audio/video source to OBS Studio scene

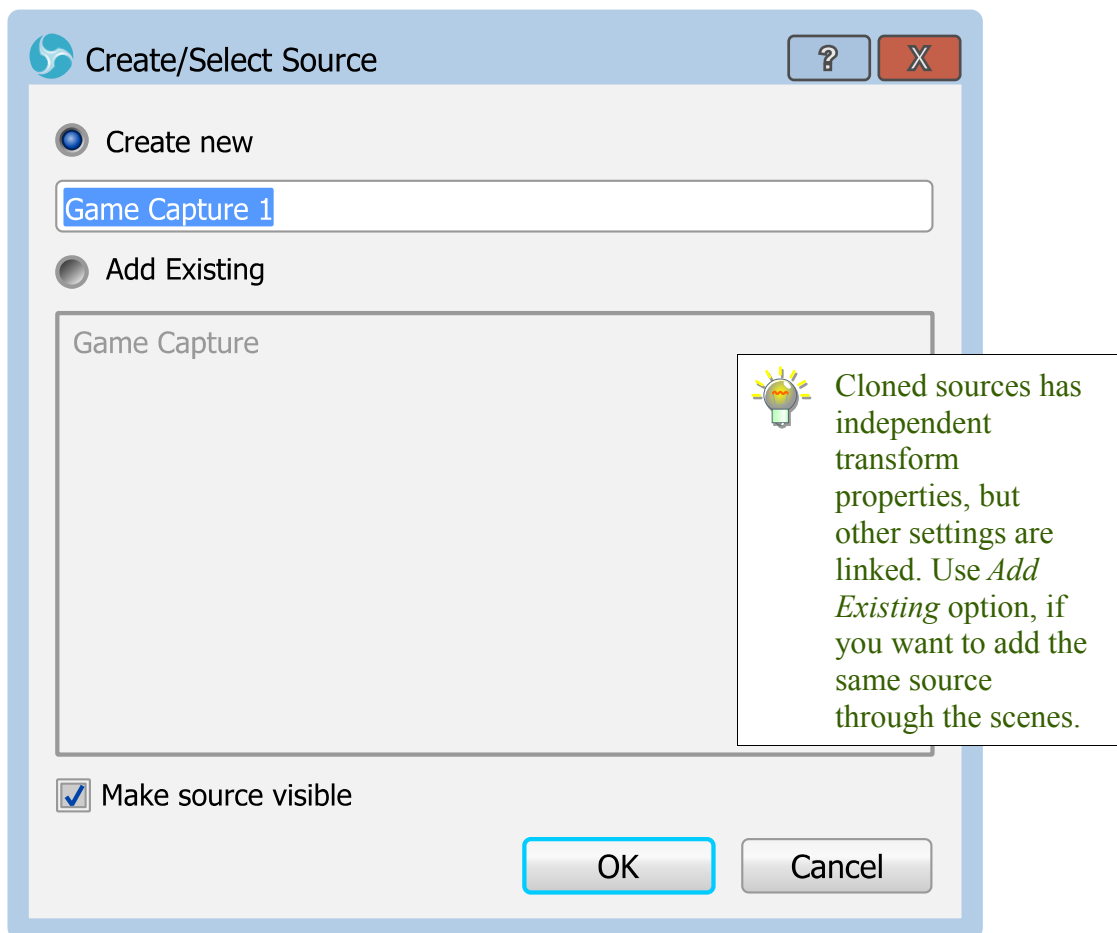
To add new video source to the current scene: click **+** icon on the toolbar of the [Sources](#) list pane. Or right-click at the empty space of the [Sources](#) list pane and choose action *Add*.

The pop-up list of the supported sources types should appear. Choose desirable one, for example: 'Game Capture'.



 For camera input try first [Video Capture Device](#) source.

In the next dialog you can specify the name of the **new** source or **add existing** one (in other words – make a clone, paste as reference).

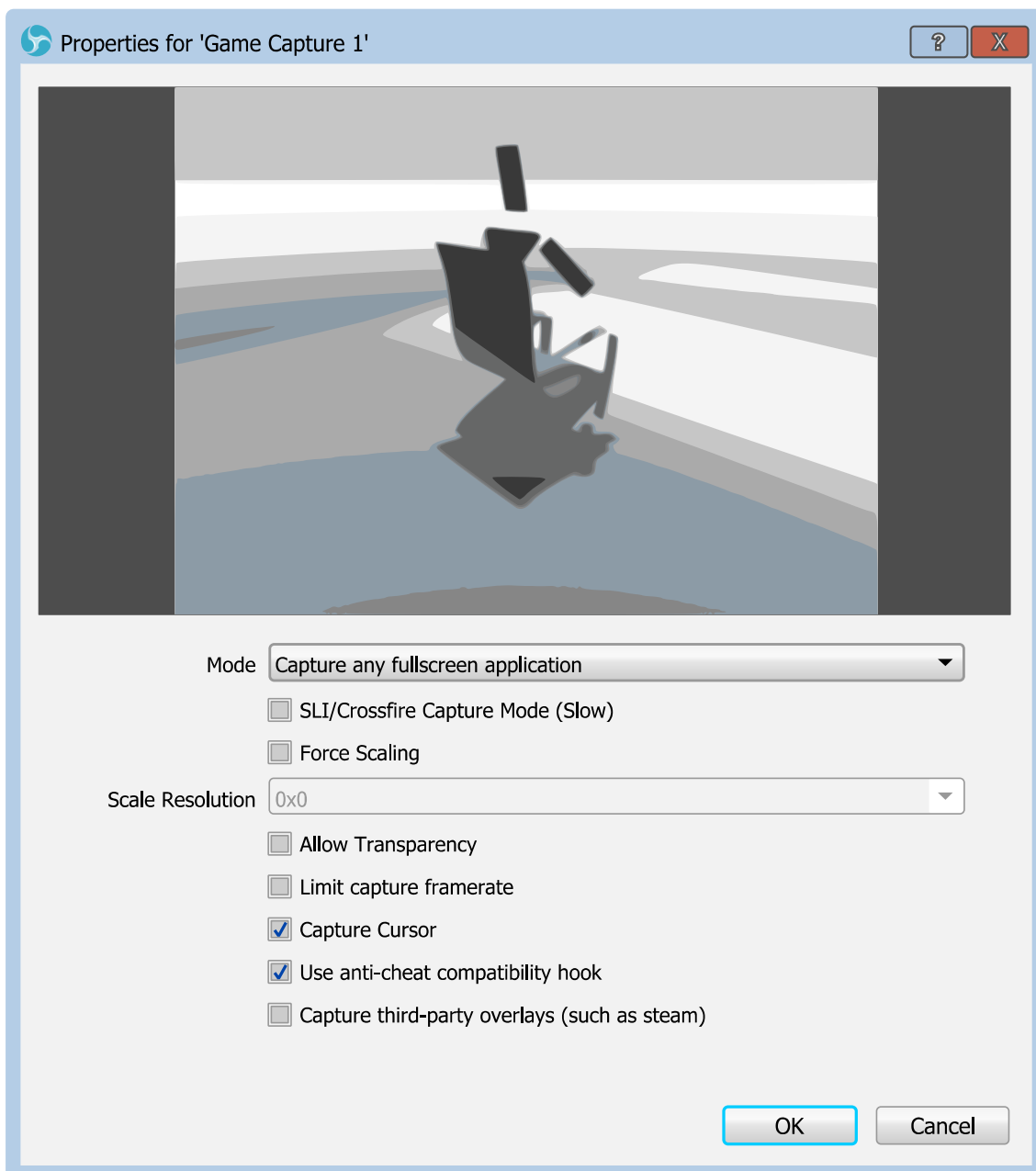


Make source visible check-box determines – will be this source enabled for output rendering or not. You can change this setting later.



(See [Temporary disable source](#) on page [47](#))

Enter new name and click *OK* button. OBS Studio will add source to the canvas preview and opens properties dialog for the newly created source input.



If required, adjust the properties and close dialog window by clicking *OK* button.





Temporary disable source

To temporarily disable an existing source or make it invisible: hit  icon in the [Sources](#) list, left to the source you wish to disable. The icon changes to , source excluded from the rendered output.


Temporary enable source

To temporary enable existing source or make it visible: hit  icon in the [Sources](#) list, left to the source you wish to enable. The icon changes to , source included in the rendering output.


Lock source from preview edit

To lock the source from accidental editing in preview: click  icon in the [Sources](#) list, left to the source you wish to exclude from the edit. The icon changes to , source excluded from the preview edit.



Unlock source to preview edit

To unlock the source, to be able to edit it in preview: click  icon in the [Sources](#) list, left to the source you wish to enable for edit.



The icon changes to , source editable in preview window.

 To lock/unlock whole preview window from accidental edit use [Lock Preview](#) by context menu or main menu [Lock Preview](#) option.


Disable audio source

To disable audio source or mute it: click  icon in the *Mixer pane*, right to the source you wish to disable. The icon changes to , source disabled (muted).

Enable audio source

To enable audio source: click  icon in the *Mixer pane*, right to the source you wish to enable. The icon changes to , source enabled.

Configure source

To re-configure selected source: click  icon on toolbar under the [Sources](#) list pane (or right under the source – in case of the audio from the *Mixer pane*). Dialog window of available options will appear. Choose needed, complete changes and close all opened dialog windows by clicking *OK* button.


Rename source

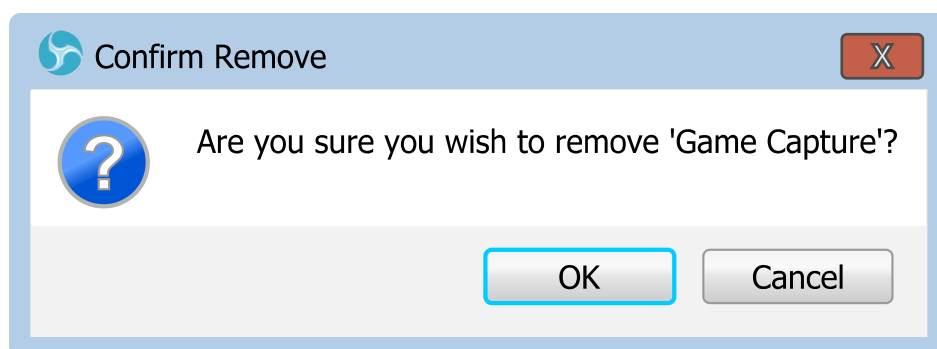
To rename source:

- 1) right-click on the selected source (layer) in the *Sources* list;
- 2) choose *Rename* option. Blinking cursor will appear near the name of the source;
- 3) specify a new name and press *Enter*.

(See [Rename scene \(source\)](#) on page [32](#))

Remove source

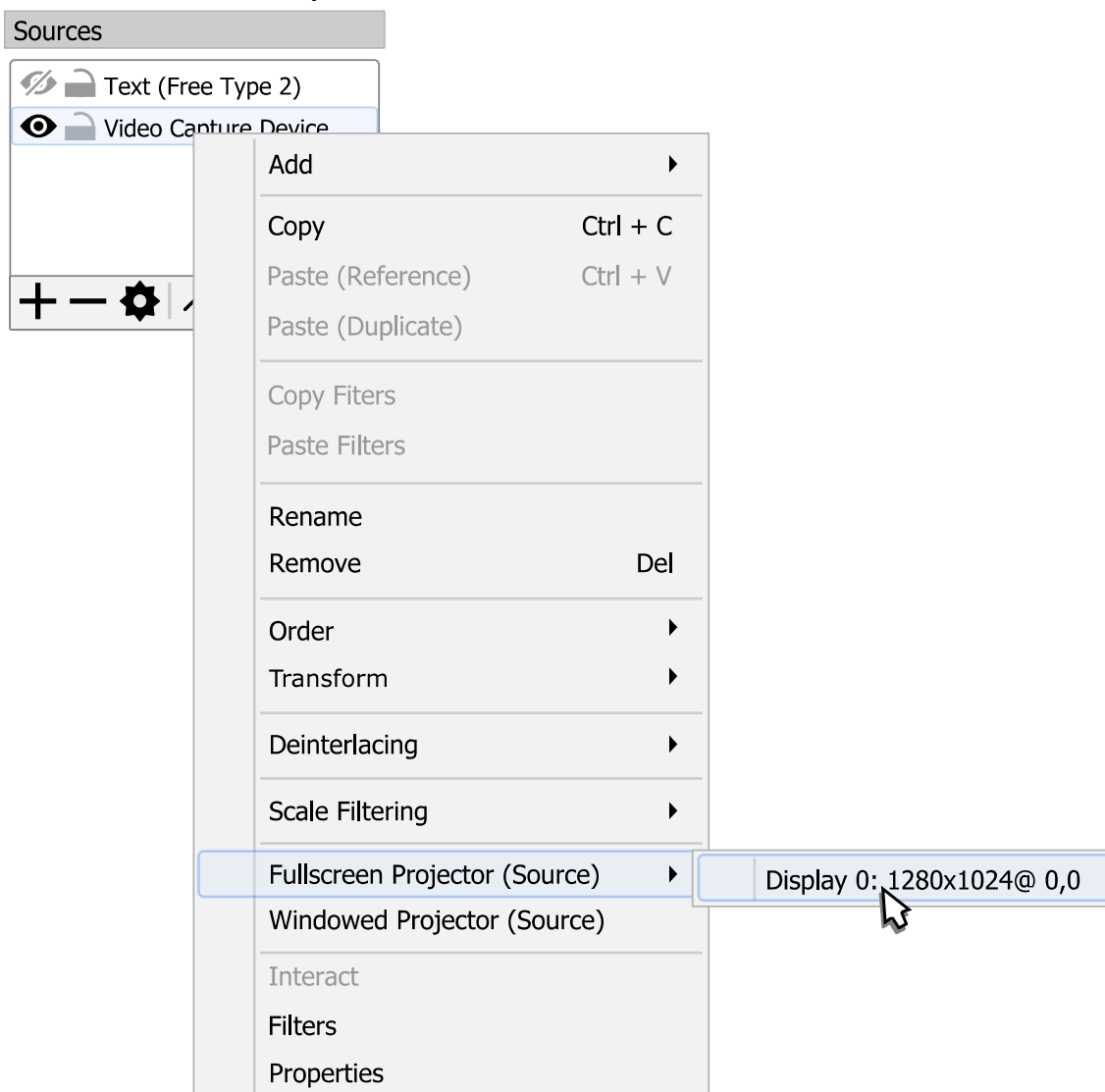
To completely remove selected source from the current scene: click  icon on the toolbar of the [Sources](#) list pane. And agree with the confirmation dialog.



Full screen preview (source)

To preview source in full screen:

- 1) right-click on the selected source (layer) in [Sources](#) list pane;
- 2) choose sub-menu *Fullscreen Projector (Source)*;
- 3) select output device.



To exit full screen preview mode: press *Esc* button.

Windowed Projector (source)

To preview source in standalone resizable window:

- 1) right-click on the selected source (layer) in [Sources](#) list pane;
- 2) choose sub-menu *Windowed Projector (Source)*.

Source properties

By default, next sources types available in OBS Studio:

Audio Capture Device (ALSA) (source available for Linux PC)

Properties

Device : specifies additional audio input device for capture.

Rate : defines audio sample rate for the device.

Audio Input Capture

Properties

Device : specifies additional audio input device for capture.

Use Device Timestamps : if checked, OBS Studio will use time-stamps from the specified device. [Unchecked by default]

Audio Output Capture

Properties

Device : specifies additional audio device to capture output.

Use Device Timestamps : if checked, OBS Studio will use time-stamps from the specified device. [Checked by default]

default]

Blackmagic Device

(video input devices from Blackmagic Design)

Properties

Device : specifies video device installed in the system.

Supported devices: availability of the Blackmagic Design devices depends on OS installation and hardware.

Mode : specifies video mode of the device digital output (NTSC, PAL, 1080p23.98, 1080i50 etc).

Pixel Format : specifies format of the video received from the device (8-bit YUV, YUV 4:2:0 etc).

Channel : specifies audio input configuration, number of channels (2ch, 5.1ch, 7.1ch etc).

Use Buffering : if checked, device buffering enabled.

Color Source

Properties

Color : defines color of the rectangle. Shows color of the background in the hexadecimal format - #AARRGGBB.

Width : defines width of the rectangle filled with the solid color, in pixels.

Height : defines height of the rectangle filled with the solid color, in pixels.

Display Capture

Properties

Display : specifies display that will be captured.

SLI/Crossfire Capture Mode (Slow) : if checked, program will use compatibility mode for systems with two or more video

cards installed.



Enabling *SLI/Crossfire Capture Mode (Slow)* option can slightly decrease capture performance due to additional VRAM to RAM downloading and uploading job. Use it with SLI and CrossFire, if capture task cannot be completed in usual way.

Capture Cursor : if checked, system cursor will be captured to the video.

Game Capture



Properties

Mode : specifies capture source (window) selection method.

Next options available:

- *Capture any fullscreen application* : if selected, OBS Studio will try to hook (capture) to any full screen application.



If you got hook errors in log – temporary disable your security software. To capture UWP (Metro/Store) applications make sure that OBS Studio folder has access rights of user group *ALL APPLICATION PACKAGES* with permissions to *Read & execute|List folder contents|Read*.

- *Capture specific window* : if selected, you can specify the window that will be captured.



Use *Capture specific window* option with executable name specified (see [below](#)), if you switching screens (alt-tabbing) too often.

- *Capture foreground window with hotkey* : if selected, you can specify any foreground window that will be captured by 'Capture foreground window' hotkey. Window remembered until 'Deactivate capture' hotkey is pressed.

(See [Hotkeys](#) on page [141](#))



Use *Capture foreground window with hotkey* option, if you switching screens (alt-tabbing) too often and want to capture only specific window for a some time.

Window : specifies capture window or application's name. Option available only if *Mode: Capture specific window* is selected.

Window Match Priority: specifies priority for window type recognition. Option available only if *Mode: Capture specific window* is selected.

SLI/Crossfire Capture Mode (Slow) : if checked, program will use compatibility mode for systems with two or more video cards installed.



Enabling *SLI/Crossfire Capture Mode (Slow)* option can slightly decrease capture performance due to additional VRAM to RAM downloading and uploading job. Use it with SLI and CrossFire, if capture task cannot be completed in usual way.

Force Scaling : if checked, video will be scaled before went to render. This scaling performed by GPU.

Scale resolution : specifies new resolution of the input before it went to render. This resolution appears as initial value of the 'Size' parameter for further transformations.

(See [Transform dialog window](#) on page [74](#))

Allow transparency : if checked, alpha channel can be applied.

Limit capture framerate : if checked, capture processing will be completed in fixed intervals, regardless the input can provide higher fps values.



Enable *Limit capture framerate* if you experience CPU overload with very high fps video rendering (for example, game source itself isn't locked at 30fps or rendered without vertical sync, and thus, can run at 300fps instead – that overloads CPU).

Capture Cursor : if checked, system cursor will be captured to the video.

Use anti-cheat compatibility hook : if checked, OBS Studio

will try to hook the application to capture it in an unusual way. [Checked by default]



Try to enable *Use anti-cheat compatibility hook* if you experienced hook errors with certain games.

Capture third-party overlays (such as steam) : if checked, additional overlays (Steam like) will be captured to the video output.

Game Capture (Syphon)

(source available for Mac PC)

Properties

Source : specifies source.

Allow Transparency : if checked, alpha channel can be applied.

Launch SyphonInject : when clicked – Syphon capture started.

- *Inject* : if checked, inject allowed.
- *Application* : specifies application to capture.

Crop : if checked, cropping to capture applied.

- *Crop left* : defines amount of pixels cropped at left of the capture.
- *Crop top* : defines amount of pixels cropped at top of the capture.
- *Crop right* : defines amount of pixels cropped at right of the capture.
- *Crop bottom* : defines amount of pixels cropped at bottom of the capture.

Syphon License : when clicked – displays Syphon license.

Image

Properties

Image file : path to the local image.

Supported image types: bmp, tga, png, jpeg, jpg, gif.

For animated GIF use [Media Source](#) input.



Unload image when not showing : if checked, free memory, when image not in use.

Image Slide Show

Properties

Visibility behavior : specifies playback control for all pictures (slides) of the *Image files* list. Next options available :

- *Stop when not visible, restart when visible* : stops playback of the slides in *Image files* list when source invisible and restart playback from the top of the *Image files* list if source became visible.
- *Pause when not visible, unpause when visible* : pause playback of the slides in *Image files* list when source invisible and resume playback from the current point in *Image files* list if source became visible.
- *Always play even when not visible* : continuously playback slides in *Image files* list, regardless of the source visibility.

Slide Mode : specifies control over the slides playback order, i.e. manual (via [Hotkeys](#)) or automatic.

Transition : specifies transition effect from image to image.

Time Between Slides (milliseconds) : defines duration of the

one frame (image) in slideshow, in milliseconds.

Transition Speed (milliseconds) : defines duration of the complete change between frames (images), in milliseconds.


Loop : if checked, slideshow will play infinity times.

Hide when slideshow is done : if checked, makes the source transparent as soon as playback ends.


Randomize Playback : if checked, ignores images order and output shuffle list.


Bounding Size/Aspect Ratio : defines aspect ratio or size of the shown images. May be used as internal restriction to any [Transform](#) settings.


Image files : list of the images/directories included in the slideshow. Top file is a first on playback.


 : click icon to add new images to the *Image files* list.

- *Add Files* : opens dialog to add multiply files;
- *Add Directory* : opens dialog to add folder;

 : click icon to remove selected images/directories from the *Image files* list.

 : click icon to change (replace) selected image in the *Image files* list.

 : click icon to shift selected images/directories one level up in the *Image files* list.

 : click icon to shift selected images/directories one level down in the *Image files* list.

JACK Input Client



(source available for Linux PC)

Properties

Start JACK Server : if checked, starts jack server.

Number of Channels : defines number of audio channels available for input.

Media Source



Properties

Local File check-box : if checked, enables local path browse.

- *Local File* : path to the local resource.

Supported media types: mp4, ts, mov, flv, mkv, avi, mp3, ogg, aac, wav, gif, webm).

- *Loop* : if checked, source will play infinity times.

To create playlist (here it means concatenation of files with same codecs), make txt file:



```
ffconcat version 1.0

file my_file01.flv
file myfile-02.flv
file myfile.flv
```

and place it in the same folder as your *my_file01.flv*, *myfile-02.flv*, *myfile.flv* (media's filename does not contain a protocol specification and is relative and all components only contain characters from the portable character set {letters, digits, period, underscore and hyphen} and have no period at the beginning of a component).

Choose that *txt* file as *Local File* to play files sequentially.

For more info see Demuxers (Concat) on developer's internet page.

Input : specifies "file" to be parsed by ffmpeg demuxer (general input string for libavformat library). Option

available only if *Local File* is unchecked.



"file" in meaning of the ffmpeg can be regular file, pipe, network stream, grabbing device, etc.

Local relative/absolute path to the file also acceptable:

.\..\..\Temp\file.png (this is example of the Windows relative path from the application's .exe to the destination file).

Input Format : specifies type of the ffmpeg demuxer for input. Enabled demuxers depends on build. Option available only if *Local File* is unchecked.



Recently available input formats are – aa, applehttp, apng, asf, concat, flv (use it in case of RTMP input), gif (animated), image2 (sequences), mov mp4 3gp QuickTime, mpegts, mpjpeg. For auto-selection leave *Input Format* field empty.

Restart playback when source becomes active : if checked, source will start its playback from the start, each time you make it active (enabled/visible).



For each source you can specify *Restart Media* hotkey via *Hotkeys*. When pressed, it will playback media from the start. (See [Hotkeys](#) on page 141)

Use hardware decoding when available : if checked, OBS Studio will try to use hardware acceleration to playback the source.

Hide source when playback ends : if checked, makes the source transparent as soon as playback ends.

Close file when inactive : if checked, frees file from usage when source not active (not playbacks, not visible). Thus file in use can be updated (overwritten).

YUV Color Range : specifies type of the input video color range (Auto, Partial, Full).



Overbright clipping and darkness in shadows of the imported video may take place when wrong color range specified. Set *YUV Color Range: Auto* – to let the decoder detect input color range automatically.

Seekable : if checked, performs HTTP source as seekable. Forces time range header reading. [Unchecked by default] not all HTTP sources allow time range header reading.



Scene

(dummy source for scene cloning)

Properties

No properties available.



Source can be adjusted via changes completed to the “parent” of the cloned scene.

Screen Capture (XSHM)

(source available for Linux PC)

Properties

Screen : specifies screen that will be captured.

Capture Cursor : if checked, system cursor will be captured to the video.

Advanced Settings : if checked, next options became available.

- *X Server* : specifies X Server (configuration).

Text (Free Type 2)

(Deprecated)

Properties

Select font : opens standard font select window (system installed fonts available only).

Text : write there your text, which should be displayed as text source.

Read from file : if checked, OBS Studio will use content from the text file instead of *Text* field.

Chat log mode (last 6 lines) : if checked, last 6 lines of the

input file will be used as text source.

Text File (UTF-8 or UTF-16) : path to the text file.

Supported code pages: UTF-8, UTF-16.

Color 1 : defines top color of the gradient fill. Shows color of the font body in the hexadecimal format – #AARRGGBB.

Color 2 : defines bottom color of the gradient fill. Shows color of the font body in the hexadecimal format – #AARRGGBB.

Outline : if checked, text becomes outlined.

Drop Shadow : if checked, text will cast shadow.

Custom text width : defines custom text width in pixels. Zero value means no restrictions.

Word Wrap : if checked, words will be wrapped to maintain width defined by *Custom text width*.

Text (GDI+)



Properties

Select font : opens standard font select window (system installed fonts available only).

Text : write there your text, which should be displayed as text source.

Read from file : if checked, OBS Studio will use content from the text file instead of *Text* field (new dialog window will appear to select the text file itself).

Text File (UTF-8) : path to the text file.

Supported code pages: UTF-8.

Vertical : if checked, uses vertical text left-to-right writing method of displaying for the text block.



Do not use *Vertical* option with Latin letters – it may become rotated 90 degree clockwise instead of vertical effect. Try Chinese, Japanese etc. characters set that supports vertical scripting.

Color : defines color of the font. Shows color of the font body in the hexadecimal format – #AARRGGBB.

Opacity : defines opacity of the font.

Gradient : if checked, enables gradient fill over the text body. Next options available:

- *Gradient Color* : defines color of the gradient fill. Shows color of the gradient fill over the font body in the hexadecimal format – #AARRGGBB.
- *Gradient Opacity* : defines opacity of the gradient fill.
- *Gradient Direction* : defines the angle for the direction of the linear gradient fill. In degrees.

Background Color : defines color of the font background. Shows color of the font background in the hexadecimal format – #AARRGGBB.

Background Opacity : defines opacity of the background.

Alignment : specifies horizontal alignment of the text inside text block [Left], [Center], [Right].

Vertical Alignment : specifies vertical alignment of the text inside text block [Top], [Center], [Bottom].

Outline : if checked, text becomes outlined. Next options available:

- *Outline Size* : specifies, size of the text outline.
- *Outline Color* : specifies, color of the text outline.
- *Outline Opacity* : specifies, opacity of the text outline.

Chatlog Mode : if checked, last N number of lines of the

input file will be used as text source. **N** determined via:

- *Chatlog Line Limit* : number of the lines shown in the *Chatlog Mode*. Option available only if *Chatlog Mode* is checked.

Use Custom Text Extents : if checked, enables additional control over text properties. Next options available:

- *Width* : defines custom text width in pixels. Truncates width of the text string if it larger than specified value.
- *Height* : defines custom text height in pixels. Truncates height of the text string if it larger than specified value.
- *Wrap* : if checked, words will be wrapped to maintain width defined by *Width*.

Video Capture Device

Properties

Device : specifies video device installed in the system.

Supported devices: DirectShow input enabled device for Windows; kernel enabled for Linux; AV Foundation enabled for Mac.

Deactivate : deactivates selected device.

Configure Video : configure device options if any available.

Configure Crossbar : configure device options if any available.

Deactivate when not showing : if checked, device will be turned off when not displaying. This also disables sound from the device.

Resolution/FPS Type : specifies to use device default resolution or set custom.

- *Resolution* : defines the value of the resolution for the

device. Option available only if *Resolution/FPS Type* parameter is set to custom.

- *FPS* : defines the value of the fps for the device. Option available only if *Resolution/FPS Type* parameter is set to custom.
- *Video Format* : specifies type of video format for the device. Option available only if *Resolution/FPS Type* parameter is set to custom.



In some rare cases, camera input may display in purple color, like PAL signal on NTSC screen. If that happen, specify *Video Format* manually.

YUV Color Space : specifies color space of the input video.

YUV Color Range : specifies type of the input video color range (how to decode it).

Buffering : specifies buffer type for the input device.



[Auto-detect] - sets buffer enabled for devices that has internal delay;

[Enabled] - forces buffer ON for most accurate playback (but latency may increase);

[Disabled] - forces buffer OFF (good for facecam and low latency preview, in cost of accuracy of the playback).

Flip vertically : if checked, flips video input top down.

Audio Output Mode : specifies to capture only or make sound heard from other devices (like desktop speakers).



If *Audio Output Mode* set other than 'Capture audio only', then audio may be captured from the general desktop device.

(See [Audio](#) on page [136](#))

Use custom audio device : if checked, you can specify other audio device for input capture.

- *Audio Device* : specifies other audio capture device. Option available only if *Use custom audio device* is checked.

Input : specifies hardware input (option available for Linux)

PC).

Video Standard : specifies video standard of the input (option available for Linux PC).

DVTiming : specifies DV timing (option available for Linux PC).

Use buffering : if checked, device buffering enabled (option available for Linux PC).

VLC Video Source



Require VLC Player installed (at least, libvlc, libvlccore libraries and plugins folder – last tested v2.2.8). By default, the libraries [libvlc.5.dylib | libvlc.dll | libvlc.so.5] search locations:

Mac

/Applications/VLC.app/Contents/MacOS/lib/
/Applications/VLC.app/Contents/MacOS/

Win

by registry path and key

[HKEY_LOCAL_MACHINE\SOFTWARE\VideoLAN\VLC]
“InstallDir”

Linux

default libs location

Properties

Playlist : list of the movies/directories included in the video playlist. Top file is a first on playback.

Supported media types: mp4, ts, mov, flv, mkv, avi, mp3, ogg, aac, wav, webm).

Loop Playlist : if checked, playlist will play infinity times.

Shuffle Playlist : if checked, randomizes the playback order when multiply media added. If playlist alternates – new order applies.

Visibility behavior : specifies playback control for all movies in *Playlist*. Next options available :

- *Stop when not visible, restart when visible* : stops


playback of the movies in *Playlist* when source invisible and restart playback from the top of the *Playlist* if source became visible.


- *Pause when not visible, unpause when visible* : pause playback of the movies in *Playlist* when source invisible and resume playback from the current point in *Playlist* if source became visible.
- *Always play even when not visible* : continuously playback movies in *Playlist*, regardless of the source visibility.


Network Caching (ms) : specifies duration of the caching for network-based media files.


 : click icon to add new movies to the *Playlist*.

- *Add Files* : opens dialog to add multiply files;
- *Add Directory* : opens dialog to add folder;
- *Add Path/URL* : opens dialog to add any path or URL to the file (network hosted files);

 : click icon to remove selected movies/directories from the *Playlist*.

 : click icon to change (replace) selected movie in the *Playlist*.

 : click icon to shift selected movies/directories one level up in the *Playlist*.

 : click icon to shift selected movies/directories one level down in the *Playlist*.



You can override playback order (Next | Previous) and duration (Play/Pause | Restart

| Stop) at any time via [Hotkeys](#).
(See [Hotkeys](#) on page 141)

Window Capture

Properties

Window : specifies window that will be captured.

Window Match Priority : specifies priority for window type recognition.

Capture Cursor : if checked, system cursor will be captured to the video.

SLI/Crossfire Capture Mode (Slow) : if checked, program will use compatibility mode for systems with two or more video cards installed.



Enabling *SLI/Crossfire Capture Mode (Slow)* option can slightly decrease capture performance due to additional VRAM to RAM downloading and uploading job. Use it with SLI and CrossFire, if capture task cannot be completed in usual way.

Show Windows with empty names : if checked, could show unlisted application's windows to capture (option available for Mac PC).

Show Window shadow : if checked, window shadow captured (option available for Mac PC).

Window Capture (Xcomposite)

(source available for Linux PC)

Properties

Window : specifies window that will be captured.

Crop Top (pixels) : defines amount of pixels cropped at top of the window.

Crop Left (pixels) : defines amount of pixels cropped at left of the window.

Crop Right (pixels) : defines amount of pixels cropped at

right of the window.

Crop Bottom (pixels) : defines amount of pixels cropped at bottom of the window.

Swap red and blue : if checked, swaps Red and Blue channel colors in captured window.

Lock X server when capturing : if checked, X server locked while capturing.

Include X border : if checked, X border included in video.

Use alpha-less texture format (Mesa work around) : if checked, special texture format is used to help capture certain windows with Mesa drivers.

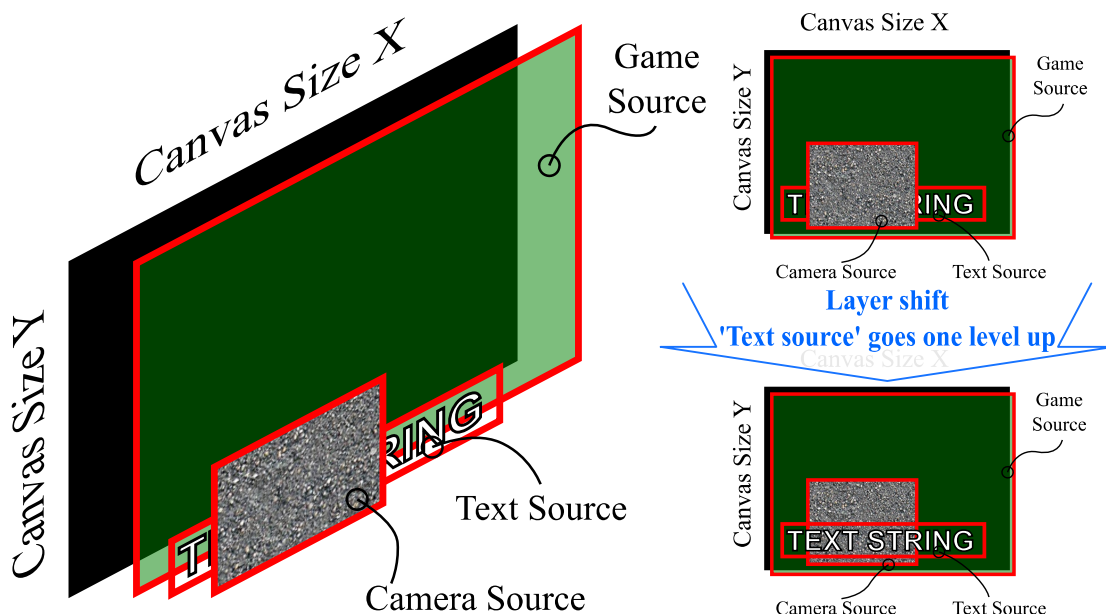
Using Layers

About layers (OBS Studio)

OBS Studio uses layers mechanism to render output stream.

Understanding Layers

Each source added to OBS Studio lies on a different layer. OBS Studio uses layers combination to render output picture that will be streamed.



Layers can have different properties: size, transparency, color overlay etc. Top layer is the highest in the *Sources* list pane. All layers in the list can be shifted by mouse drag-and-drop. The top layer can cover content of the bottom one, arrange the layers with caution and check its appearance in Preview.



Manage Layers

Add new layer

New layer can be added to OBS Studio scene via add new source option.

(See [Add new audio/video source to OBS Studio scene](#) on page [45](#))

Rename layer

To rename layer use *Rename* source option.

(See [Rename source](#) on page [49](#))

Remove layer

Existing layer can be deleted via remove existing source option.

(See [Remove source](#) on page [49](#))

Temporary disable layer

Layer can be disabled via temporary disable source option.

(See [Temporary disable source](#) on page [47](#))

Temporary enable layer

Layer can be enabled via temporary enable source option.

(See [Temporary enable source](#) on page [48](#))

Transform layer

Layer can be changed via *Filters*.

(See [Transform](#) on page [73](#))

Preview layer Fullscreen

To preview layer in full screen mode, use *Fullscreen Projector* option.



(See [Full screen preview \(source\)](#) on page [50](#))

Layer shift (order)

To rearrange layers, perform mouse drag-and-drop move over the layer in the [Sources](#) list pane:

- 1) select the layer you want to shift;
- 2) click and hold mouse button;
- 3) move selection to the new order;
- 4) release mouse button.



Or: select a layer from the [Sources](#) list, click icon  on the toolbar of the [Sources](#) list to shift the layer one level up; click icon  to shift selected layer one level down.

Also, you can right-click over the source, select *Order* sub-menu and go to the arrange options.

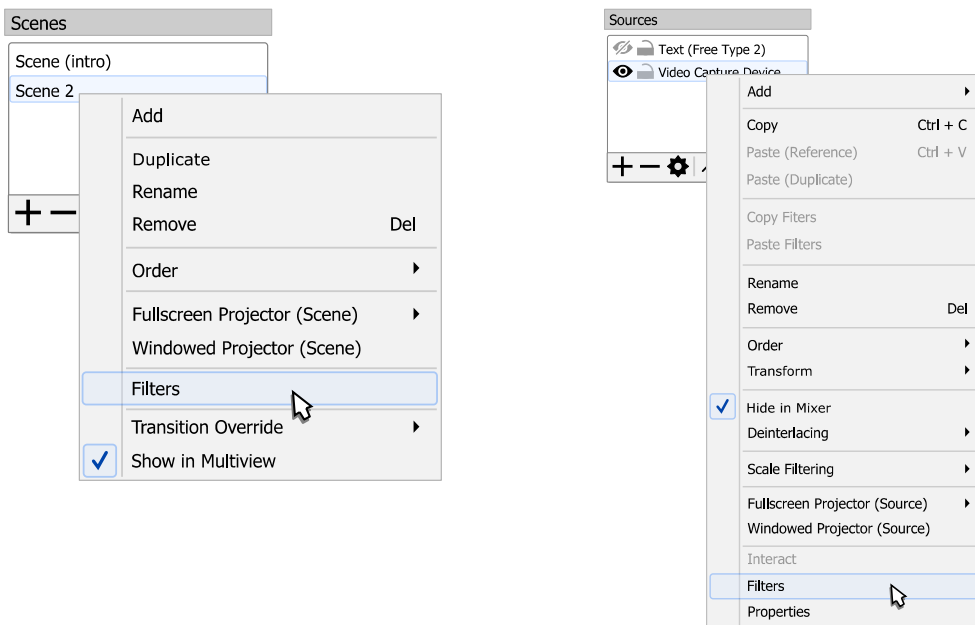
Filters for Special Effects

About plugin filters

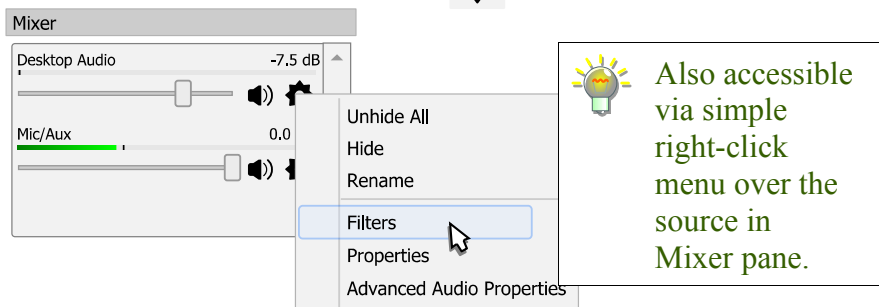
You can install plugin filters developed by online community. Once installed, the plugin filters appear at the *Filters* list and work in the same way as built-in filters.

Using filters

To apply a filter, right-click on source (scene) and choose the appropriate option from the pop-up menu. Some filters available only for video sources, some – only for audio.



To access filters on audio source, click  icon in Mixer pane.

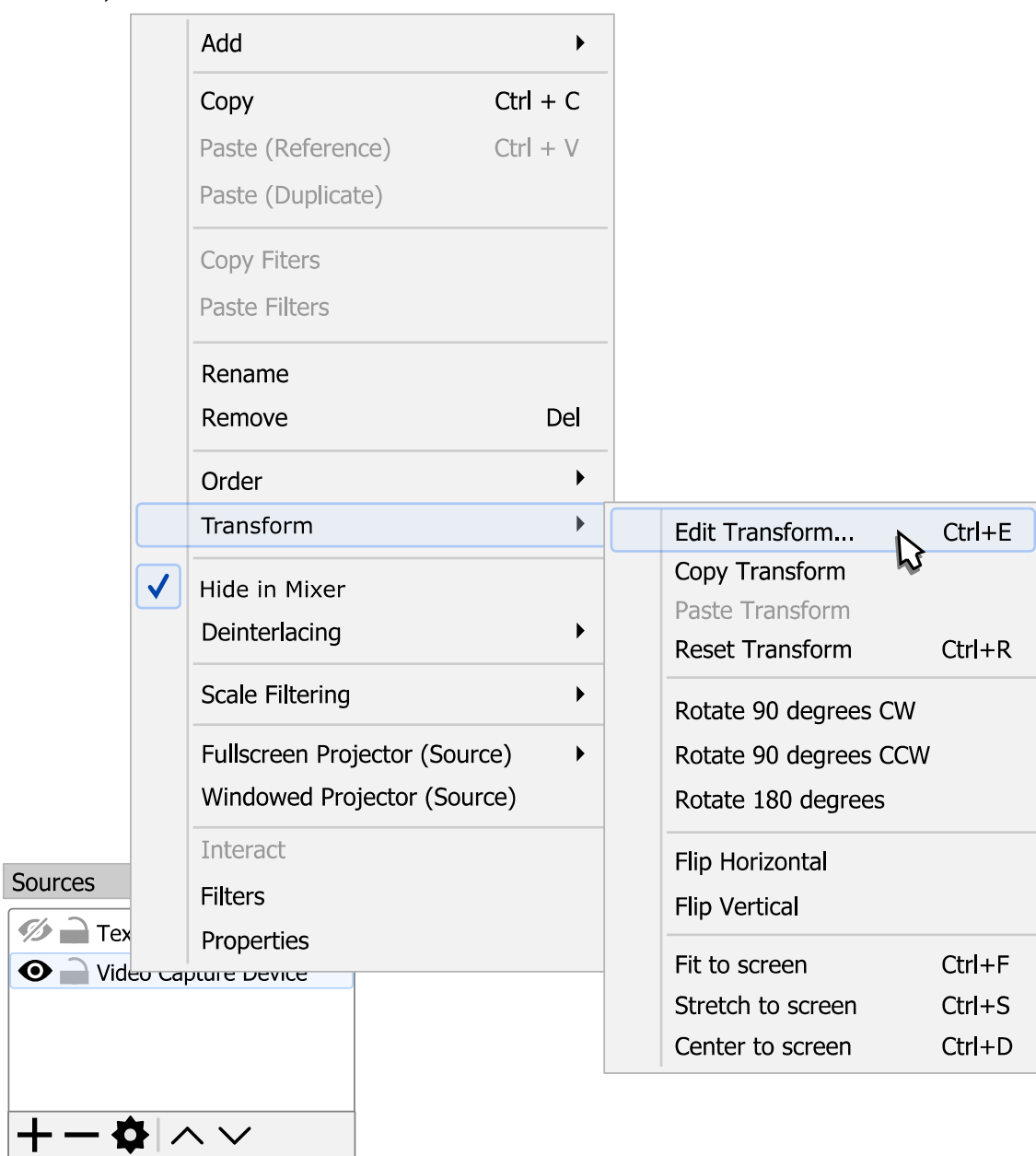


General Filters

Transform Transform filter changes appearance of the video source: size, mirroring, rotation and cropping.

To make source (layer) transform:

- 1) right-click on the source in the [Sources](#) list pane;
- 2) choose *Transform* sub-menu;
- 3) click on *Edit Transform...*



4) Transform settings dialog will appear. Make changes to the desirable fields and click close window button to complete changes.

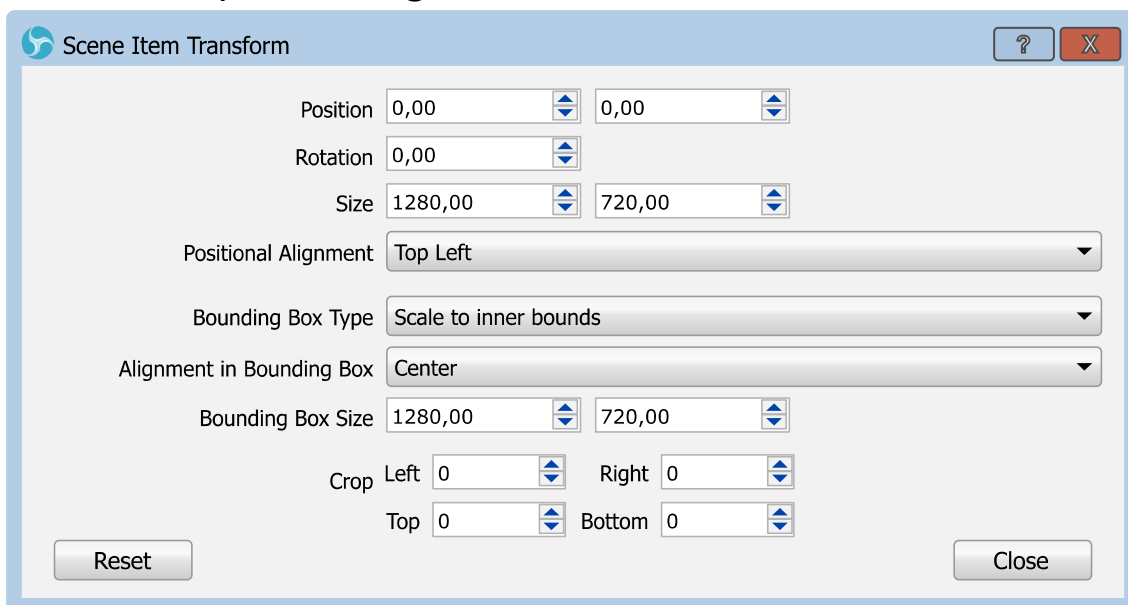



Illustration 4. Transform dialog window

 To get best result from transform filter use [Transform options \(dependencies\)](#) table on page [74](#).

All coordinates measured in pixels and begins from the top left corner of the screen. The highest value is bottom right corner.

Table 1. Transform options (dependencies)

| Bounding Box Type | Size parameter | Bounding Box Size | Aspect ratio (defined by) | Alignment in Bounding Box |
|-------------------|----------------|-------------------|------------------------------|---------------------------|
| No bounds | Scale image | - | Fixed (original input) | - |
| Stretch to bounds | Doesn't affect | Scale image | Variable (Bounding Box Size) | Doesn't affect |

| Bounding Box Type | Size parameter | Bounding Box Size | Aspect ratio (defined by) | Alignment in Bounding Box |
|---------------------------|----------------|--|---------------------------|---------------------------|
| Scale to inner bounds | Scale image | Scale image | Fixed (Size parameter) | adjustable |
| Scale to outer bounds | Scale image | Scale image (image exceed bounds on height or width) | Fixed (Size parameter) | adjustable |
| Scale to width of bounds | Scale image | Scale image (width always in bounds) | Fixed (Size parameter) | adjustable |
| Scale to height of bounds | Scale image | Scale image (height always in bounds) | Fixed (Size parameter) | adjustable |
| Maximum size only | Scale image | Scale image (but max size of the image is fixed by Size parameter) | Fixed (Size parameter) | adjustable |



Fast transform *Fit to screen (Ctrl+F)* option sets *Bounding Box Size* to 'Scale to inner bounds', resets *Size* parameter to original input, and sets *Bounding Box Size* to canvas size.

Stretch to screen (Ctrl+S) option sets *Bounding Box Size* to 'Stretch to bounds', resets *Size* parameter to original input, and sets *Bounding Box Size* to canvas size.

Center to screen (Ctrl+D) option sets *Position* parameters to center in accordance with *Position Alignment*.

Reset transform (Ctrl + R) option sets *Position* to (0; 0), *Rotation* to 0, *Size* to source's input size, *Positional Alignment* to 'Top Left', *Bounding Box Type* to 'No bounds', *Crop* to (0; 0; 0; 0).

You can *Copy Transform* values (all-in-one) to clipboard and *Paste Transform* values from clipboard over any selected scene item, including items from different scene collections.

To perform **manual transform** of any source in the preview window:

- 1) click and hold mouse button over any red circle of the source bounding box, in canvas preview window;



You can choose any available source, and drag its any bounding box circle in any direction.

- 2) move mouse to a new position to achieve desirable scale of the source (layer);
- 3) release mouse button.

(See [Illustration 5. Transform with mouse move](#) on page [76](#))

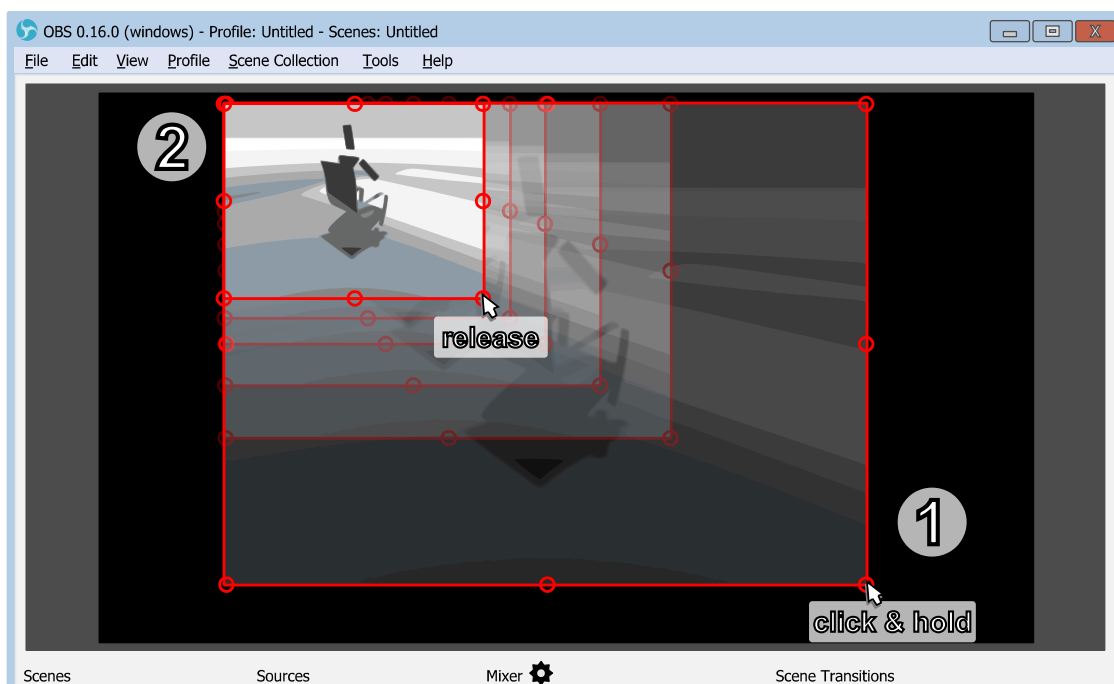


Illustration 5. Transform with mouse move



You can temporary disable snapping by holding down the *Ctrl* key while resizing.
(See [General Settings](#) on page [118](#))

Make sure that [Lock Preview](#) option unchecked.
(See [Lock Preview](#) on page [23](#))

Make sure that source not locked.

(See [Lock source](#) at page 48)

(See [Unlock source](#) at page 48)

To perform **easy cropping** (alt-cropping) move, over any source in the preview window:

- 1) set *Bounding Box Type* of the source to 'No bounds';
(See [Transform](#) on page 73)
- 2) press and hold *Alt* key;
- 3) click and hold mouse button over any **red** circle of the source bounding box, in canvas preview window;
- 4) move mouse to new position to achieve desirable cropping of the source (the cropped side of bounding box turns **green** color);
- 5) release mouse button;
- 6) release *Alt* key.

(See [Illustration 6. Easy cropping with mouse move](#) on page 78)



Cropping values stored in relative coordinates under the *Crop* section of the *Scene Item Transform* window.

(See [Illustration 4. Transform dialog window](#) on page 74)

Make sure that *Lock Preview* option unchecked.

(See [Lock Preview](#) on page 23)

Make sure that source not locked.

(See [Lock source](#) at page 48)

(See [Unlock source](#) at page 48)

On Linux you may find out that *Alt + Mouse* reserved for other actions (like window dragging). In this case look for the solutions online, also try *Super + Alt + Mouse* combination instead.

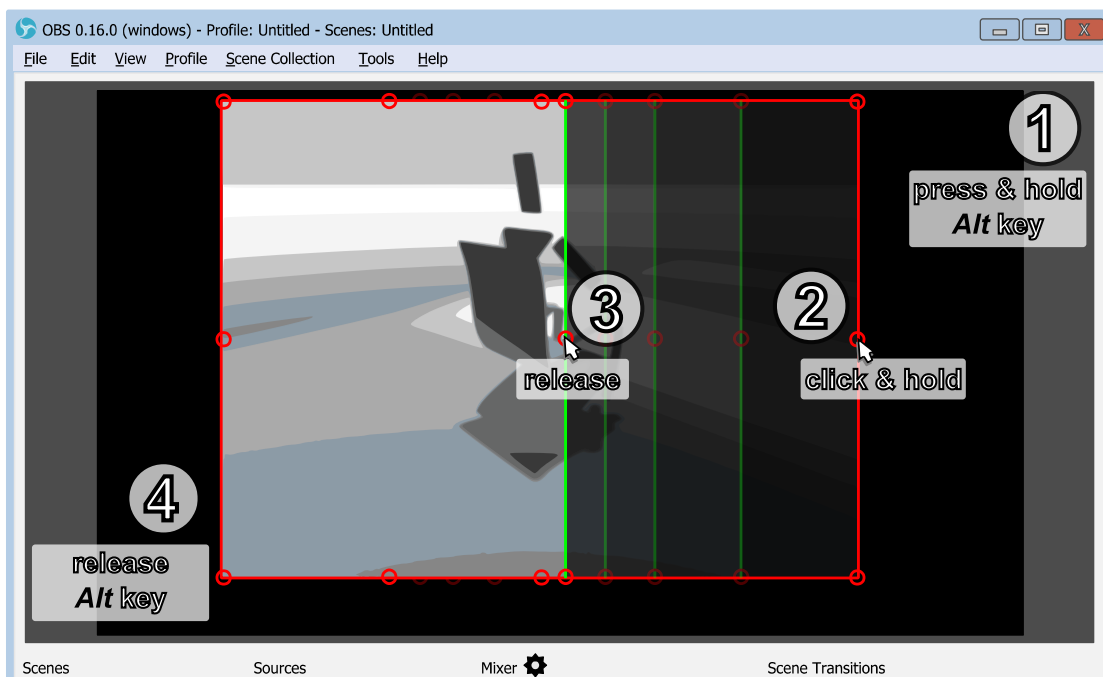


Illustration 6. Easy cropping with mouse move

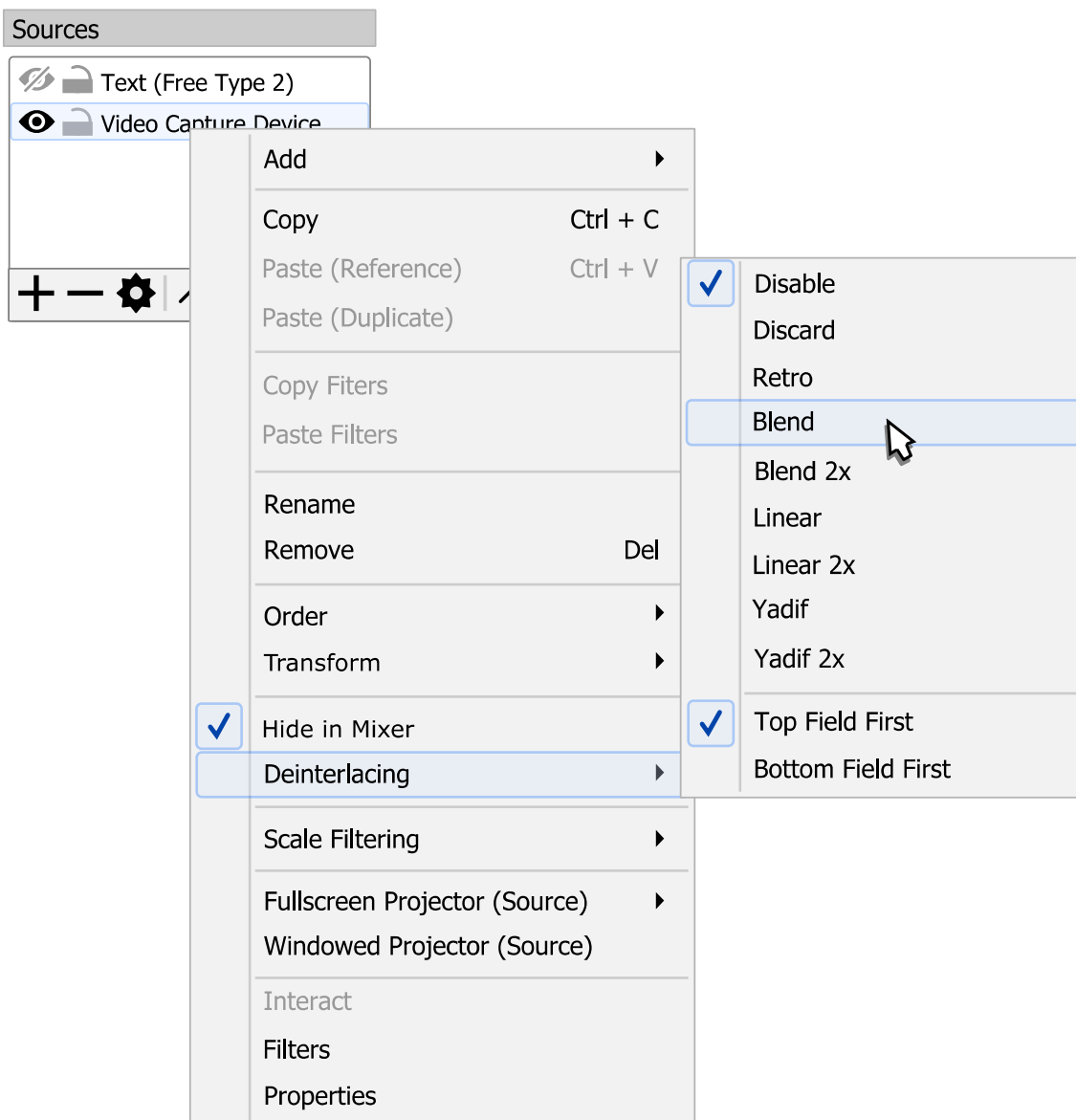
Deinterlacing Deinterlacing filter converts interlaced source into progressive video.



Deinterlacing filter available only for supported types of the input sources. If your input has visible horizontal stripes on fast moving objects, probably you have interlaced source – apply deinterlacing filter.

To apply deinterlacing filter (remove interlacing of the video):

- 1) right-click on the interlaced source in [Sources](#) list;
- 2) select *Deinterlacing* sub-menu;
- 3) choose desirable deinterlacing filter and specify first field (Top or Bottom). Chosen filter marked by icon.



To remove deinterlacing filter, apply deinterlacing filter *Disable*.

Deinterlacing filters (from simplest to complex):

- *Discard* – only display one of the half-pictures (displaying each line twice), discard the other.
- *Retro* (Bob or Discard 2x) – display each half-picture like a full picture, by simply displaying each line twice. Double framerate.

- *Blend* – averages both half-pictures into single frame.
- *Blend 2x* – averages half-pictures into frames (if needed previous used). Double framerate.
- *Linear* – interpolates lines of one half-picture, discard the other.
- *Linear 2x* – interpolates lines of each half-picture. Double framerate.
- *Yadif* – interpolates lines of one half-picture using info from both fields.
- *Yadif 2x* – interpolates lines of each half-pictures using info from both fields. Double framerate.

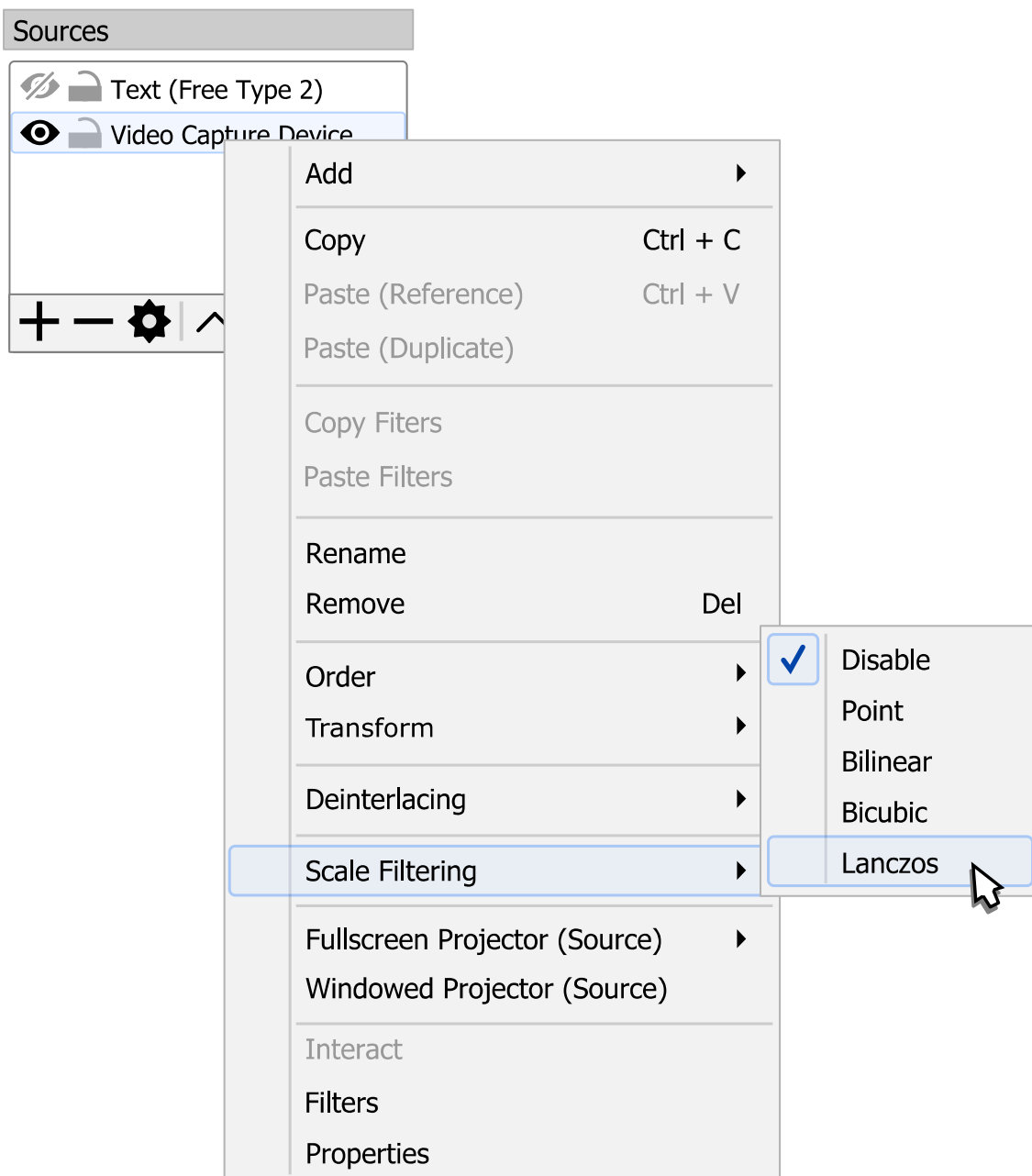
Scale Filtering Scale Filtering determines mathematics algorithm used for interpolation when image scaled up or down.

To apply scale filtering or simply force to use one of the scale algorithms for any selected item:

- 1) right-click on the source in [Sources](#) list pane;
- 2) select *Scale Filtering* sub-menu;
- 3) choose desirable scale filter from the list. Chosen filter marked by icon.



For *Bicubic* and *Lanczos* algorithms, if the item's scale is under half of the source's original size, then application uses the *Bilinear Low Resolution Downscale* algorithm.



To remove scale filter, apply scale filter *Disable*.

Scale filters (from simplest to complex):

- *Point* (or Nearest-neighbour) – uses 1 pixel sample.
- *Bilinear* – uses 4 pixels sample.
- *Bicubic* – uses 16 pixels sample.
- *Lanczos* – uses 32 pixels sample.

Effects Filters

The top filter in the list applies first in the filters queue, the bottom – applies last from all filters.

Let's apply, for example, the [Crop/Pad filter](#).

To apply [Crop/Pad filter](#) under the *Filters* dialog: click **+** icon on the toolbar of the *Effects Filters* list. Or right-click at the empty space of the *Effects Filters* list and choose action *Add*. (See [Illustration 7. Filters dialog window](#) on page 82)

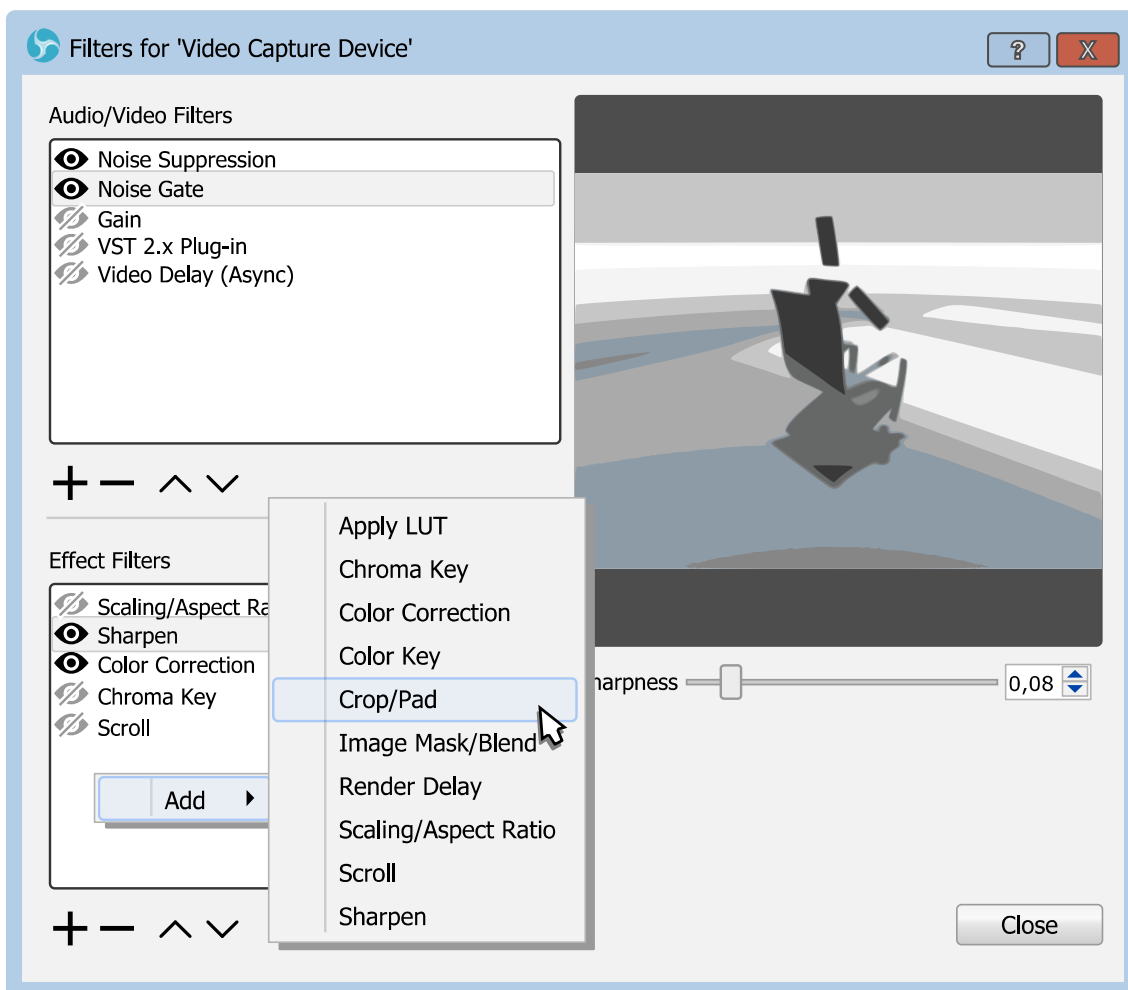
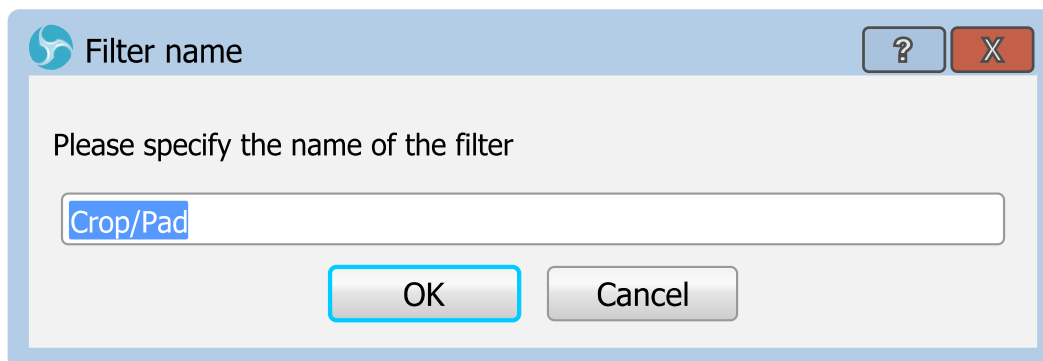


Illustration 7. Filters dialog window

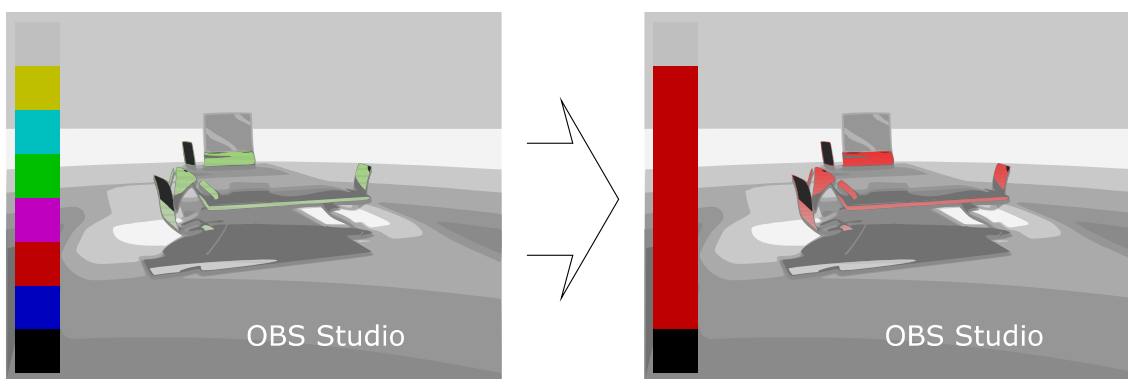
New dialog will appear where you can specify the name of the new filter.



Crop/Pad filter properties accessible right to the *Effects Filters* list.

Make changes to filter's properties and close dialog window.

Apply LUT Apply LUT filter do color styling of the video. The filter similar to color profiling and color grading, it applies color Look-Up Table (LUT) to produce visual effect.



Properties

Path : specifies path to the profiling color table (*.PNG files).

Amount : defines level of the effect. Lower values – less

changes completed to the original image.

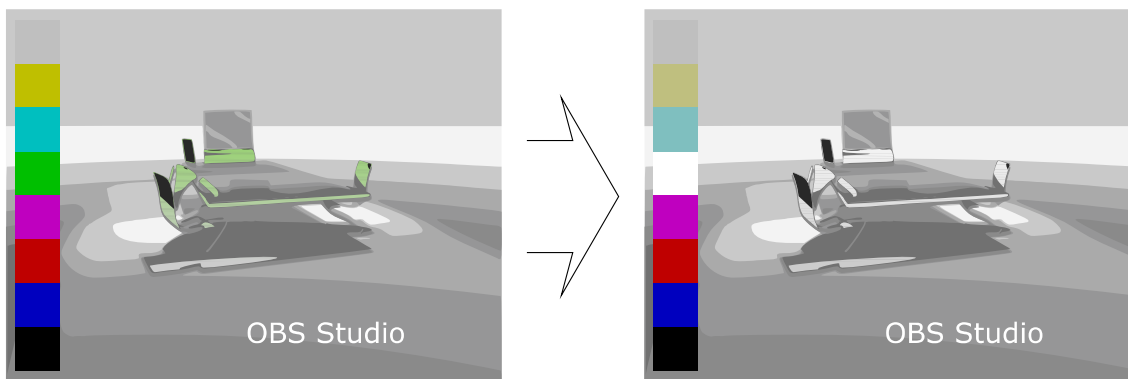


To make new OBS Studio compatible custom LUT in PNG format – just apply same color adjustments to the file “original.png” (neutral LUT table) as you did it for the sample image that is adjusted using any editor program. Save changes and use this recently changed LUT file in OBS Studio. Always keep copy of the neutral LUT file to be able to make new LUTs from the scratch.

Chroma Key Chroma Key filter cuts video's background using information based on a specified color ('green screen').



Use well lightened solid color backgrounds to achieve best results with *Chroma Key* filter.



Properties

Key Color Type : specifies key color of the background that will be extracted.

Key Color : defines color of the background. Shows color of the background in the hexadecimal format – #AARRGGBB.

Similarity (1–1000) : defines color similarity.

Smoothness (1–1000) : defines color smoothness of the extraction.

Key Color Spill Reduction (1–1000) : defines color spill reduction.

Opacity : defines image opacity in %.

Contrast : defines image contrast.

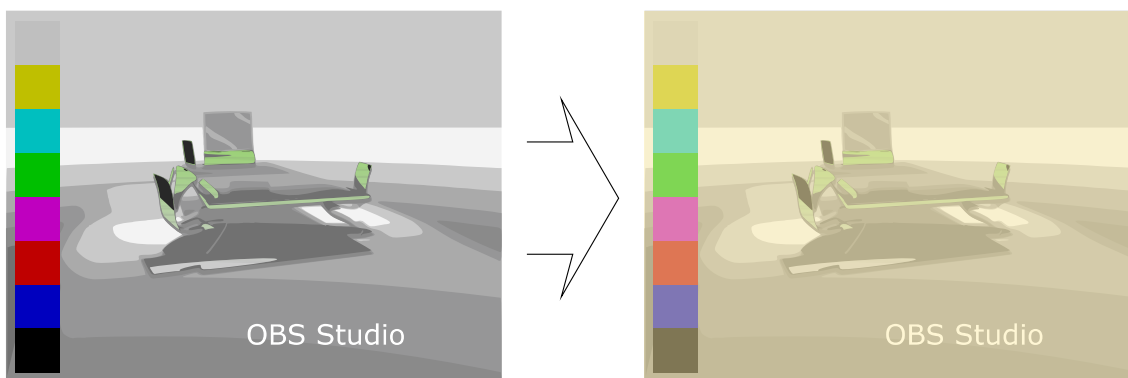
Brightness : defines image brightness.

Gamma : defines image gamma.

Color Correction Color Correction filter makes some adjustments to image color and appearance.



Use *Color Correction* to achieve special effects.



Properties

Contrast : defines image contrast.

Brightness : defines image brightness.

Gamma : defines image gamma.

Saturation : defines image saturation.

Hue Shift : defines image hue, in degrees.

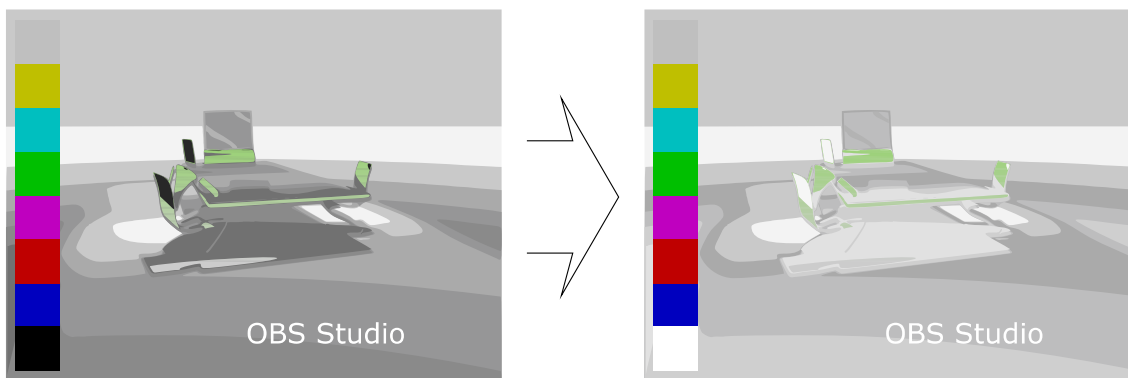
Opacity : defines image opacity in %.

Color : defines color tint of the image. Shows color of the background in the hexadecimal format - #AARRGGBB.

Color Key Color Key filter removes video's background. Same as *Chroma Key* filter.



If *Color Key* produce robust result, then try to use [Chroma Key](#) filter.



Properties

Key Color Type : specifies key color of the background that will be extracted.

Key Color : defines color of the background. Shows color of the background in the hexadecimal format – #AARRGGBB.

Similarity (1–1000) : defines color similarity.

Smoothness (1–1000) : defines color smoothness of the extraction.

Opacity : defines image opacity in %.

Contrast : defines image contrast.

Brightness : defines image brightness.

Gamma : defines image gamma.

Crop/Pad Crop/Pad filter cuts the unneeded parts of the video source from top, bottom, left, right sides. Or adds transparency areas to top, bottom, left, right side of the video.

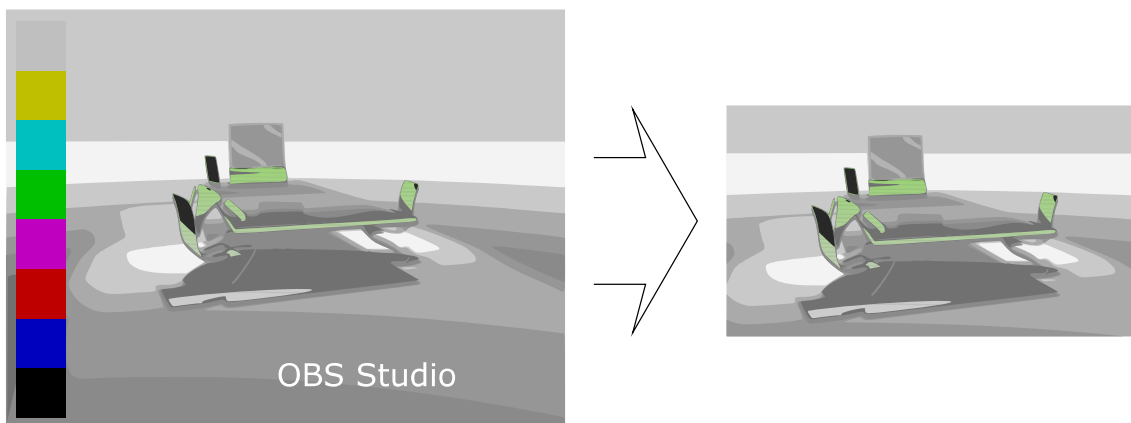


Use *Crop/Pad* filter if you have letter-boxed source or you want to make a letter-boxed source.

Always apply *Crop/Pad* filter first (move it at the top of the list) – that leaves to render less data, thus you can free some CPU/GPU power.



This filter acts independently of any cropping performed via 'easy cropping' function. (See [easy cropping](#) on page [77](#))



Properties

Relative : if checked, all coordinates of the image calculated as relative. Next options become available:

- *Left* : defines crop/pad value from the left side of the source's image.
- *Top* : defines crop/pad value from the top side of the source's image.
- *Right* : defines crop/pad value from the right side of the source's image.
- *Bottom* : defines crop/pad value from the bottom side of the source's image.

Positive values – do cropping, negative values – do padding.



X : defines new image size in pixels starting from top left corner by X coordinate (horizontal axis).

Y : defines new image size in pixels starting from top left corner by Y coordinate (vertical axis).

Width : defines new image width in pixels.

Height : defines new image height in pixels.

Image Mask/Blend Image Mask/Blend filter sets opacity or blends the source to the specified image.



Image Mask/Blend useful to produce round-looking camera's inputs.



Properties



Type : defines type of mask and blend.

If alpha mask is present in the image file itself, then choose type *Alpha Mask (Alpha Channel)* to use it.

Path : specifies path to local image file.

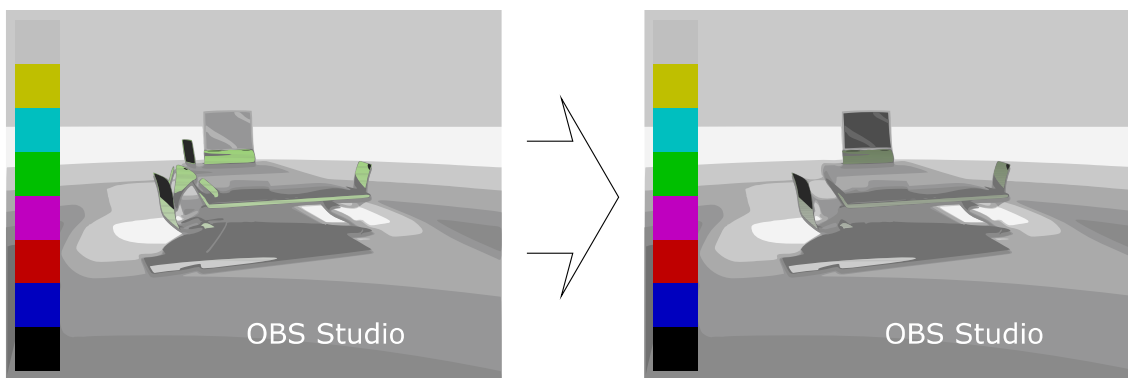
Supported image types: bmp, tga, png, jpeg, jpg, gif.

Color : defines color tint of the image. Shows color of the background in the hexadecimal format - #AARRGGBB.

Opacity : defines image opacity in %.

Stretch Image (discard image aspect ratio) : if checked, mask will be stretched to match source's size.

Render Delay Render Delay filter can hold video for small amount of time (showing nothing) and only then render it.



Properties

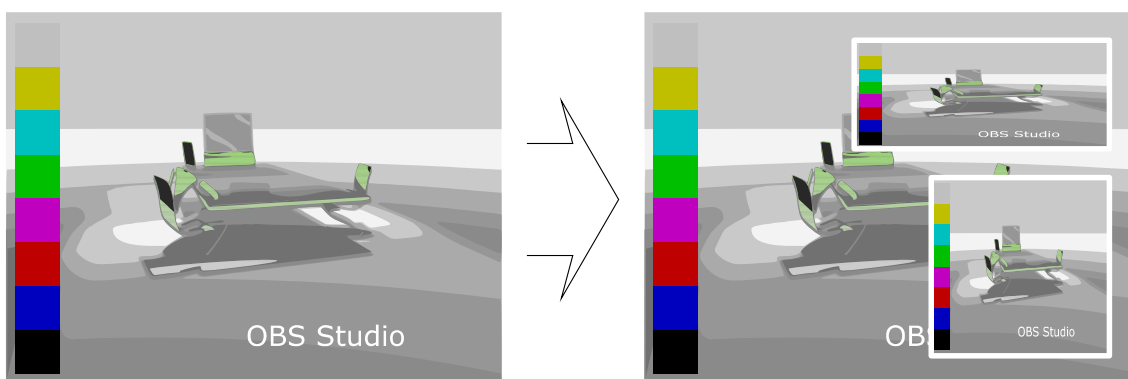
Delay (milliseconds) : defines video delay of the source, in

milliseconds.



Render Delay – data stored in Video RAM almost uncompressed, so 1 second of 1920x1080@30fps can cost about 94..187MB of video memory.

Scaling/Aspect Ratio Scaling/Aspect Ratio filter overrides default scaling filter of the source/scene.



Properties

Scale Filtering : specifies mathematics algorithm of the scaling (interpolation algorithm).



For *Bicubic* and *Lanczos* algorithms if the item's scale is under half of the source's original size, application uses the *Bilinear Low Resolution Downscale* shader instead.

Point scaling allow old-looking style for retro art.

If your source (camera) produces stretched image by default, and you want to correct this, then apply filter *Scaling/Aspect Ratio* and set desirable aspect ratio of the image to the field *Resolution* (type it manually in **WidthScale:HeightScale** format, or just exact size **WidthxHeight** format).

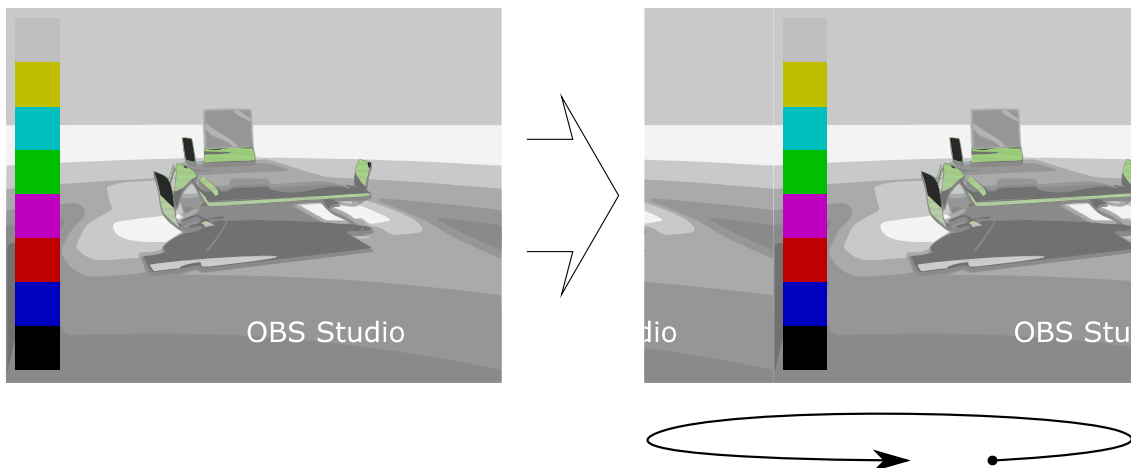
Resolution : specifies resolution or aspect ratio of the scaled image. This field must be set to other than *None* to apply filtering specified by *Scale Filtering* field.

Undistort center of image when scaling from ultrawide : if checked, makes center of the image uniform scaled while left and right sides has distorted look.

Scroll Scroll filter enables source self move along the bounding box.



Use *Scroll* filter together with the text source to make scrolling string.



Properties

Horizontal Speed : defines speed of the horizontal movement of the source inside the bounding box.

Vertical Speed : defines speed of the vertical movement of the source inside the bounding box.

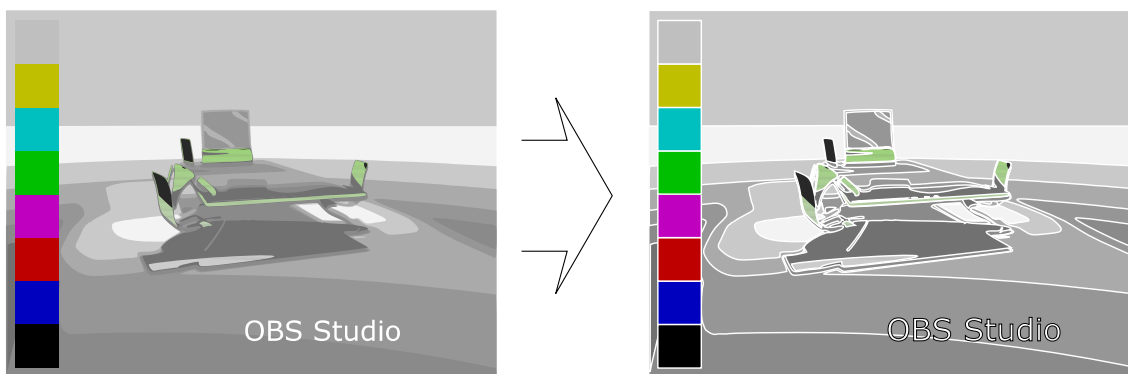
Limit Width : if checked, limits scrolling width of the source.

- *Width* : defines max width of the scroll (where image repeats itself), in pixels.

Limit Height : if checked, limits scrolling height of the source.

- *Height* : defines max height of the scroll (where image repeats itself), in pixels.

Sharpen Sharpen filter slightly sharpens video.

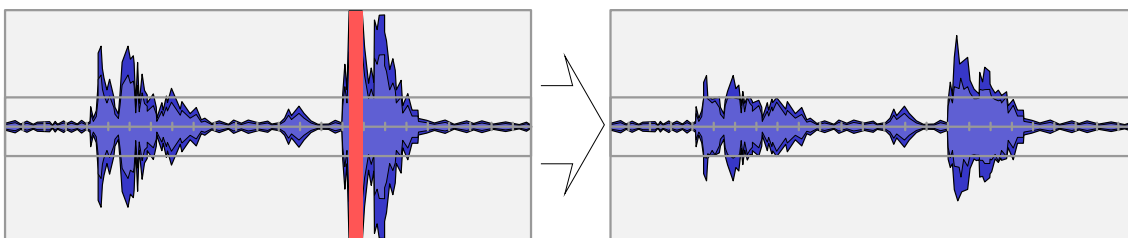


Properties

Sharpness : defines strength of sharpness enhancement.

Audio/Video Filters

Compressor Compressor filter lowers dynamic range of the audio. Also, can be used as simple limiter.



Properties

Ratio (X:1) : defines compression ratio of the input signal.

Threshold (dB) : defines the level from which all sounds will affect filtering by this filter, in decibels.

Attack (ms) : defines front length of the sound signal, in milliseconds (how fast filter reacts on volume level change).

Release (ms) : defines back length of the sound signal, in milliseconds (how fast filter fades from its changes).

Output Gain (dB) : defines gain of the output after filtering,

in decibels.

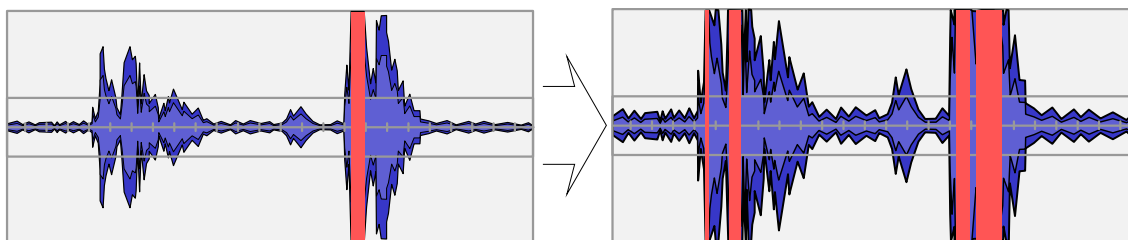
Sidechain/Ducking Source : specifies different audio source (if any) which will be used as side-chain audio track (helper track, smother track) to adjust current audio.



Compression value applied to the current audio but values to trigger this compression are taken from side-chain audio source (helper track, mute track, smother track). So, if side-chain track audio fits threshold gate then the main track is compressed (applies *Ratio ... Output Gain*). Kind of "audio ducking" feature when filter used as simple audio limiter.

Some systems has global build-in ducking feature, see [Windows audio ducking](#) on page [144](#)

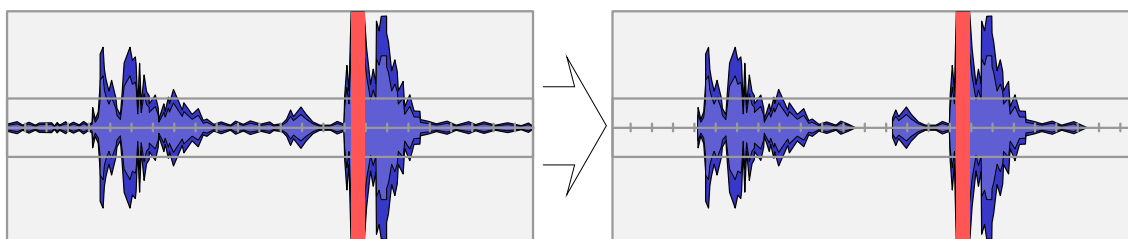
Gain Gain filter makes audio source louder.



Properties

Gain (dB) : defines gain of the audio, in decibels.

Noise Gate Noise Gate filter cutoff all sounds lower than defined volume level in audio input. Filters sound signal pikes on start.



Properties

Close Threshold (dB) : defines close threshold, in decibels,

i.e. volume level to mute sound signal.

Open Threshold (dB) : defines open threshold , in decibels,

i.e. volume level to unmute sound signal.



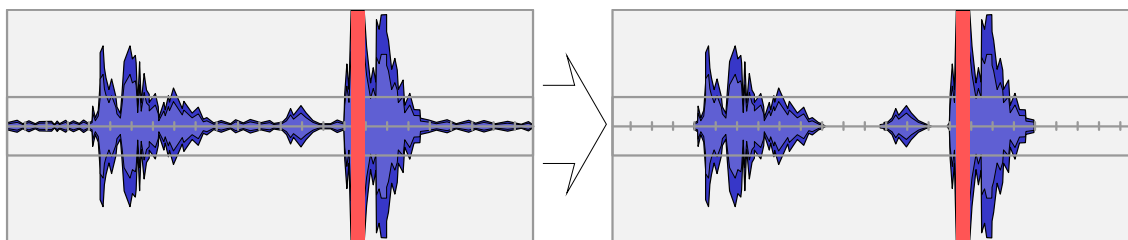
To get best of the *Noise Gate* filter, set *Close Threshold* to minimum and set *Open Threshold* to maximum, then adjust *Open Threshold* until level meter in [Mixer pane](#) begins to react (to environmental noise, if you adjusting mic), and then make adjustments to the *Close Threshold* again (about 8dB lower). For example, *Close Threshold* = -96 bB *Open Threshold* = 0 dB, you'll find out that at *Open Threshold* = -30 dB level meter begins to react, then set *Close Threshold* = -38 dB. Threshold values are negative, thus -38 dB lower than -30 dB. *Close Threshold* level value should be lower than *Open Threshold*. For mic – make all adjustments in silent.

Attack Time (milliseconds) : defines front length of the sound signal, in milliseconds (duration of the fade-in).

Hold Time (milliseconds) : defines hold time of the sound signal, in milliseconds (duration of the pause before 'close' should trigger, when *Close Threshold* level already reached, i.e. time hysteresis for 'close').

Release Time (milliseconds) : defines back length of the sound signal, in milliseconds (duration of the fade-out).

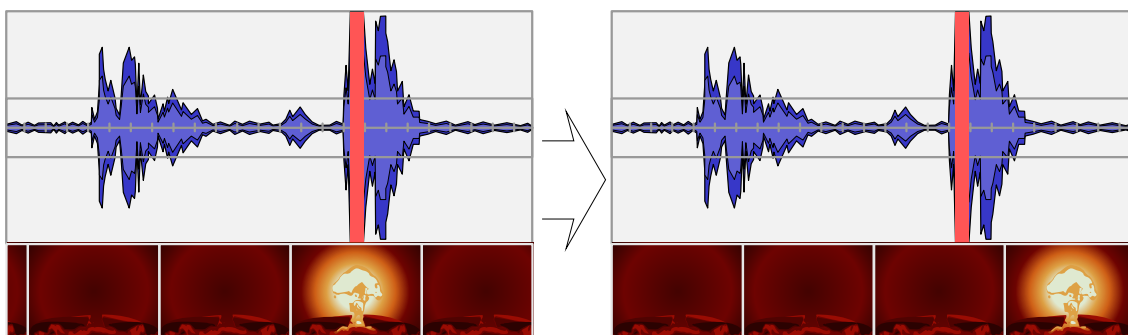
Noise Suppression Noise Suppression filter lowers noise level of the audio source.



Properties

Suppression Level (dB) : defines noise reduction level of the audio, in decibels. Higher value – more noise hiss removed.

Video Delay (Async) Video Delay (Async) filter delays video of the source, while audio capturing of the source ignores this filter. Makes video and audio asynchronous. Applies only to sources that contains both tracks (video+audio). Common usage is *Video Capture Device* source, which usually imports both tracks into OBS Studio and sometimes can link to alternate audio source or has buffered/filtered audio import that can cause additional undesirable delay.



Properties

Delay (milliseconds) : defines video delay of the source, in milliseconds.

VST 2.x Plug-in VST 2.x Plug-in filter can use any external VST plugin v2 installed in the system. Thus, almost any real-time audio effect is available for OBS Studio via this entry.

Properties

VST 2.x Plug-in : external plugin selection. Availability of plugins depends on system.

Open interface when active : if checked, each time when plugin selected its interface window opens automatically.

To open settings window of the external plugin click *Open*

Plug-in Interface button (button's name changes to *Close Plug-in Interface*).



By default, the VST 2.x Plug-in searches for libraries [`*.vst | *.dll | *.so | *.o`] in:

Mac

/Library/Audio/Plug-Ins/VST/
~/Library/Audio/Plug-ins/VST/

Win

C:/Program Files/Steinberg/VstPlugins/
C:/Program Files/Common Files/Steinberg/Shared Components/
C:/Program Files/Common Files/VST2
C:/Program Files/Common Files/VSTPlugins/
C:/Program Files/VSTPlugins/

Win x64

C:/Program Files (x86)/Steinberg/VstPlugins/
C:/Program Files (x86)/Common Files/Steinberg/Shared Components/
C:/Program Files (x86)/Common Files/VST2
C:/Program Files (x86)/Common Files/VSTPlugins/
C:/Program Files (x86)/VSTPlugins/

Linux

by VST_PATH environmental variable or:

/usr/lib/vst/
/usr/lib/lxvst/
/usr/lib/linux_vst/
/usr/lib64/vst/
/usr/lib64/lxvst/
/usr/lib64/linux_vst/
/usr/local/lib/vst/
/usr/local/lib/lxvst/
/usr/local/lib/linux_vst/
/usr/local/lib64/vst/
/usr/local/lib64/lxvst/
/usr/local/lib64/linux_vst/
~/vst/
~/lxvst/

Additional Tools

About additional tools

OBS Studio supports external plugins. All external plugins and its settings available under the main menu *Tools* , if other not mentioned by plugin's creator.

(See [Tools menu](#) on page [14](#))

Tools

All program tools are optional if other not mentioned.

See [Auto-Configuration Wizard \(Beta\)](#) on page [96](#)

See [Automatic Scene Switcher](#) on page [97](#)

See [Captions \(Experimental\)](#) on page [100](#)

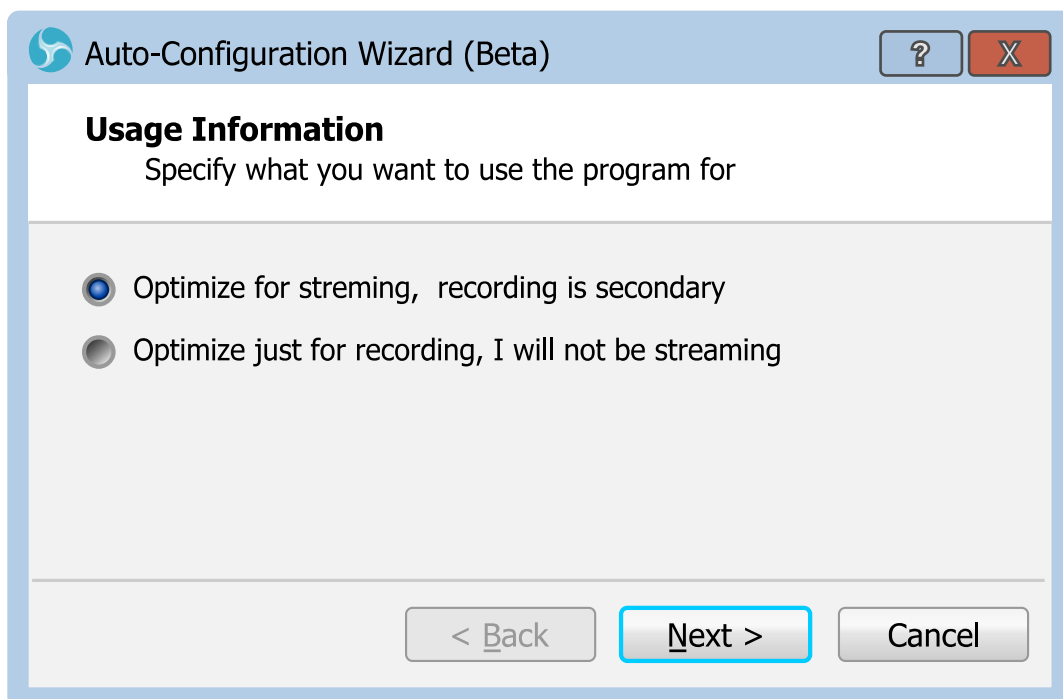
See [Output Timer](#) on page [101](#)

See [Scripts](#) on page [102](#)

Auto-Configuration Wizard (Beta)

Auto-Configuration Wizard (Beta) plugin designated to automatically optimize application's main settings for streaming and recording.





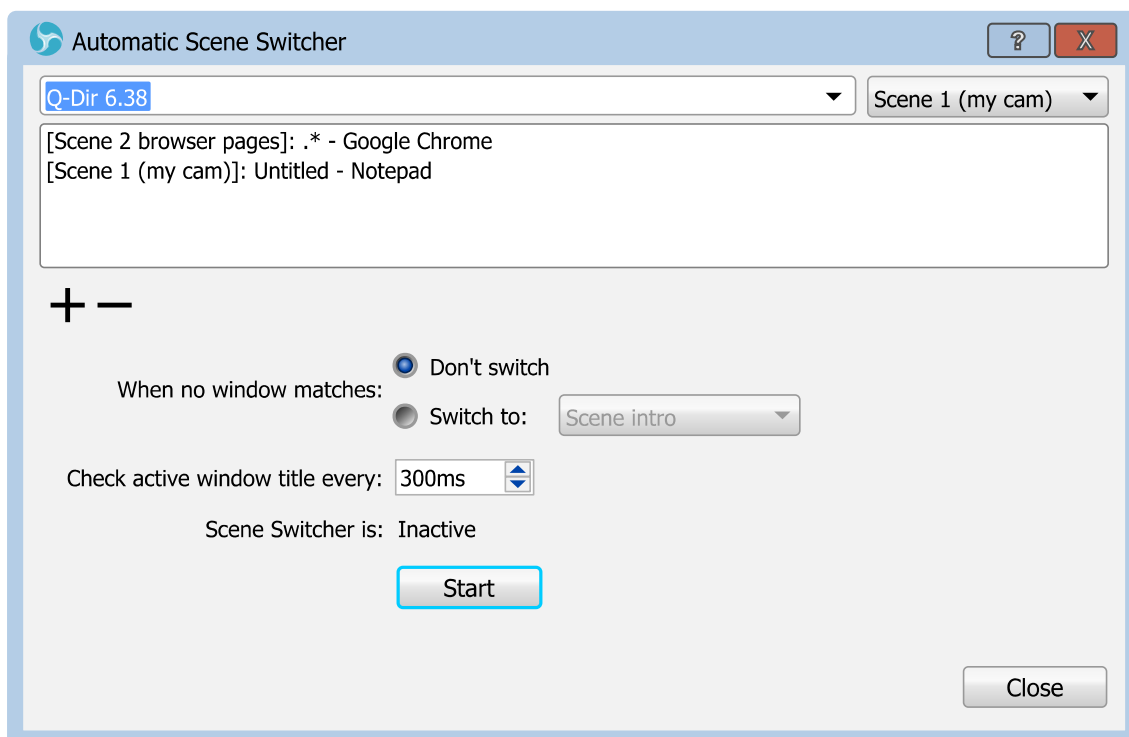
Wizard will run few performance tests of the PC and suggest to apply new optimized settings at the end.

While in “beta”, only single audio track setups supported by this wizard.

(See Output Mode: [Simple](#) on page [123](#))

Automatic Scene Switcher

Automatic Scene Switcher plugin designed to help switch OBS Studio scenes in accordance to the current active window.



You can setup batch of the scene switching and use it when you alt-tabbing between program windows. The current output scene should change by follow your tabbing. By default, global transition's filter is used.

(See [Scene transitioning](#) on page [36](#))

Properties

At the top of the properties window there is:

- drop down list of the available program windows (left);
- drop down list of the available OBS Studio scenes.

You can type regular expression (mask) in the field of the drop down list of the available program windows.



From the list of metacharacters `{ } [] () ^ $. | * + ? \` for regular expression, most popular are:

- `.` – point, matches any single character;
- `[]` – matches a single character that is contained within the brackets. You can specify massive of the characters inside the brackets, but only one used for compare;
- `[^]` – matches a single character that is not contained within the brackets. You can specify massive of the characters inside the brackets, all excluded from the compare;

* – matches the preceding element zero or more times. If preceding element is "." then matches any character set (word);
 {*m*} – matches the preceding element at least *m* times;
 \ – with following character, a backslash causes the metacharacter to be treated as a literal character. Thus you can use "\[" as meaning of "[" character.

Example

Window 1 header: *OBS 0.16.0 (64bit, windows) - Profile: test01 - Scenes: test01*

Window 2 header: *OBS 0.16.1 (64bit, windows) - Profile: test01 - Scenes: test02*

Window 3 header: *OBS 0.16.2 (64bit, windows) - Profile: test01 - Scenes: test03*

Window 4 header: *OBS 0.16.0 (windows) - Profile: test22 - Scenes: test_1*

Window 5 header: *OBS 0.16.1 (windows) - Profile: t22222 - Scenes: test_2*

Window 6 header: *OBS 0.16.2 (windows) - Profile: t22233 - Scenes: test_3*

.*** – matches 1, 2, 3, 4, 5, 6;

.**64bit.** – matches 1, 2, 3;

.**test_.* – matches 4, 5, 6;

.**test_1* – matches 4;

.**test0[13].** – matches 1, 2, 3; there "1" and "3" within the brackets are literal characters, not a number;

.**2{3}.** – matches 5, 6;

.**\(\.....\).* – matches 4, 5, 6;

*OBS 0\.16\.2.** – matches 3, 6.

List of the scenes and matching windows : specifies the list of the assignments (i.e. Scene – program Window).

+ : click icon to add new assignment (link/rule) to the *List of the scenes and matching windows*. New assignment (link/rule) based on the current selection of the 'program Window – Scene' pair from the two drop down lists at the top of the properties window (right above the *List of the scenes and matching windows*).

– : click icon to remove selected assignment (link/rule) from the *List of the scenes and matching windows*.

When no window matches : specifies action on window change when current window not on the *List of the scenes and*

matching windows. Next options available:

- *Don't switch* : if selected, do nothing.
- *Switch to* : if selected, sets current scene to the scene selected from the drop down list right to the parameter.

Check active window title every : defines refresh rate of the plugin's window check trigger, in milliseconds.



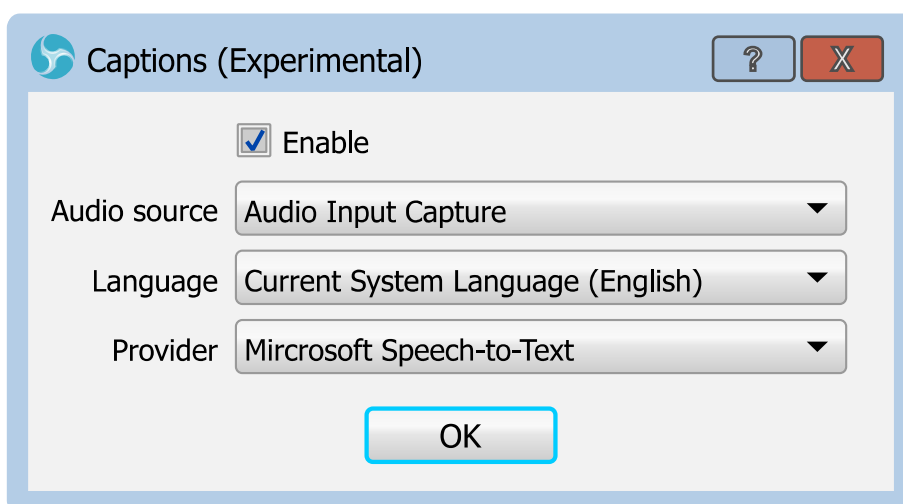
Lower value – faster response on program window change.

Scene Switcher is : info string, showing current state of the plugin (Active, Inactive etc.).

Plugin activates (deactivates) by clicking *Start (Stop)* button.

Captions (Experimental)

Captions (Experimental) plugin designed to automatically add closed captions to the stream.



The Captions (Experimental) tool uses system's speech recognition engine (speech-to-text) to make closed captions.

The web service and user's player must support closed captions decoding to able to see the subtitles on the screen.

Properties

Enable : if checked, enables closed captions in the stream.

Audio source : specifies the source of the audio for speech recognition.

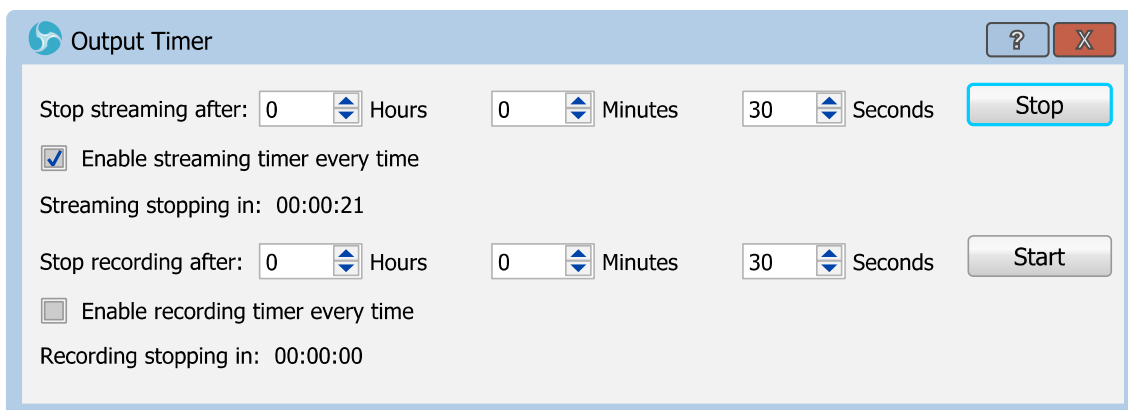
Language : specifies the language of the closed captions and language for speech recognition.

Provider : specifies external module for speech recognition that is used right now.

 Availability and quality of the speech recognition depends on system.

Output Timer

Output Timer plugin designed to automatically stop streaming or recording event after fixed amount of time elapsed.



Properties

Stop streaming after : defines time interval to stop streaming event (hour, minutes, seconds).

Enable streaming timer every time : If checked, the timer should start countdown automatically when you begin

streaming via [Start Streaming](#) button.

Streaming stopping in : shows remaining time of the streaming event.

Stop recording after : defines time interval to stop recording event (hour, minutes, seconds).

Enable recording timer every time : If checked, the timer should start countdown automatically when you begin recording via [Start Recording](#) button.

Recording stopping in : shows remaining time of the recording event.

Plugin activates (deactivates) by clicking *Start (Stop)* button in accordance to the event.

You can terminate streaming/recording event before timer ends from OBS Studio main interface as usual.

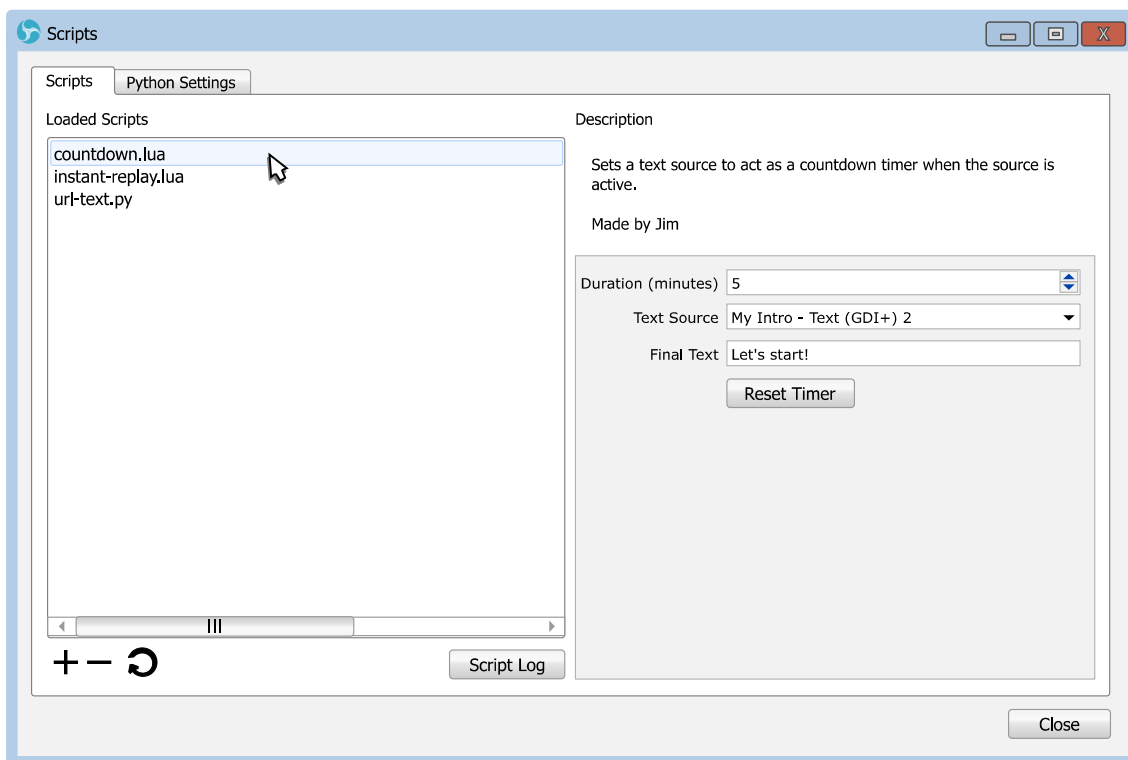
(See [Recording](#) on page [106](#))

(See [Streaming](#) on page [109](#))

Also, you can start *Output Timer* while streaming/recording already active.


Scripts

Scripts plugin designed to automate different tasks and extend application capabilities by using custom written scripts.



Programming languages supported by *Scripts* tool:

- LuaJIT v2 (which is close to Lua 5.1);
- Python v3.


 Both LuaJIT (.lua) and Python (.py) written scripts can use third party external libraries – this potentially weakens the security of the system.


Improperly written scripts can result in bad capture performance and application crash.

Properties

Scripts tab – list of the loaded scripts, its controls and options. Next controls available on this tab:

Loaded Scripts : list of the loaded scripts.

 : click icon to add new script to the list of the loaded scripts.

 : click icon to remove selected script from the list of the loaded scripts.

 : click icon to reload selected script. The script will

restart.

Script Log : opens new window with script's own logging info (if any).

Description : short info on the selected script itself.

Below the *Description* there is user adjustable script's properties (optional).

Python Settings tab – controls to customize the path to the Python main executable (installation folder).



On Windows, you must install Python v3.6 64bit for OBS Studio 64bit (default), or Python v3.6 32bit if using OBS Studio 32bit to be able to use *.py* scripts files.

Scripts shipped with the application:



- *clock-source.lua* : places new source named *Lua Clock* to the *Add* list of new sources. *Lua Clock* source renders simple analog clocks of the current system time zone.
- *countdown.lua* : replaces *Text* field of the specified text source with the simple countdown timer 00:00:00.
- *instant-replay.lua* : plays back the last [Replay Buffer](#) file in the specified media source.
- *url-text.py* : replaces *Text* field of the specified text source with the text from the URL.

Working example of the Lua script – "**countdown.lua**" you can find in:

```
application's_folder\data\obs-plugins\frontend-tools\scripts
```

That script replaces *Text* field of the specified text source with the simple countdown – 00:00:00.

To enable the "countdown.lua" script:

- 1) add *Text (GDI+)* or *Text (Free Type 2)* source to the [Scene](#);
(See [Getting Sources into OBS Studio](#) on page [43](#))
- 2) open *Scripts* tool;
(See [Tools menu](#) on page [14](#))
- 3) add script by clicking  button and navigating the "countdown.lua" file;
- 4) click reload script button () to get list of recent added text sources and choose desirable one at *Text Source* drop down list of the script's properties.

The example script ("countdown.lua") start to work immediately.

The script will run until the end of the countdown, then message defined by the field *Final Text* of the script properties will be shown instead of the 00:00:00.

To reset the countdown timer of the "countdown.lua" script:

- press *Reset Timer* button of the script properties;
- or disable/enable text source;
(See [Temporary enable source](#) on page [48](#))
- or switch to scene that has source affected by this script.
(See [Scene transitioning](#) on page [36](#))

To **change the countdown duration** – just type new value in *Duration (minutes)* field of the script properties. Changes applies immediately.



The example script "countdown.lua" doesn't work if [Duplicate Sources](#) is checked while you are working in [Studio Mode](#).

For more info on scripts writing check the developer's internet page [obsproject.com].

Recording and Streaming

About recording and streaming

Two types of output takes place in OBS Studio:

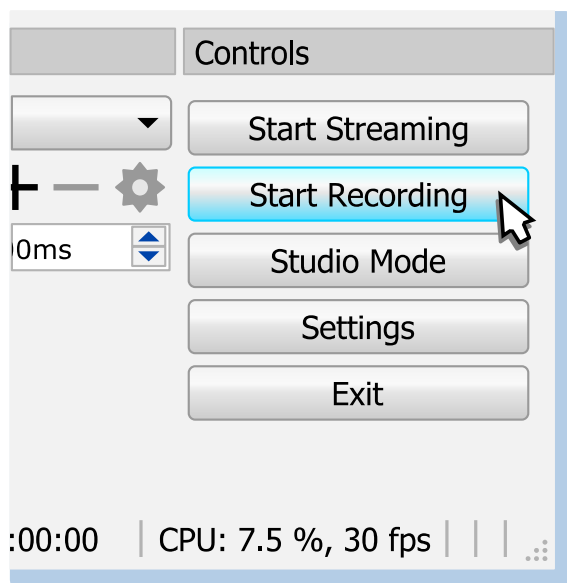
Local recording – when capturing material are stored on local PC;

Network streaming – when capturing material streamed over the Web.

Both types of output in OBS Studio can be running simultaneously and independently.

Recording

User may start and stop record at any time. Click the button *Start Recording* to begin recording current scene.



The button's name changes to *Stop Recording*.



Click the button *Stop Recording* to stop recording current scene.



When stop recording triggered, button's name changes to 'Stopping Recording...'

For fast access to your recordings, use [File menu](#) *Show Recordings*. (See [Show Recordings](#) on page [22](#))

To change default path where recordings stored in Output Mode: Simple, see [Recording path](#) on page [124](#).

To change default path where recordings stored in Output Mode: Advanced, see [Recording path](#) on page [130](#).

You may define hotkeys (shortcuts) to start and stop recording. (See [Hotkeys](#) on page [141](#))

For fine tuning Recording in Output Mode: Simple, see [Recording](#) on page [124](#).

For fine tuning Recording in Output Mode: Advanced, see [Recording tab](#) on page [129](#).

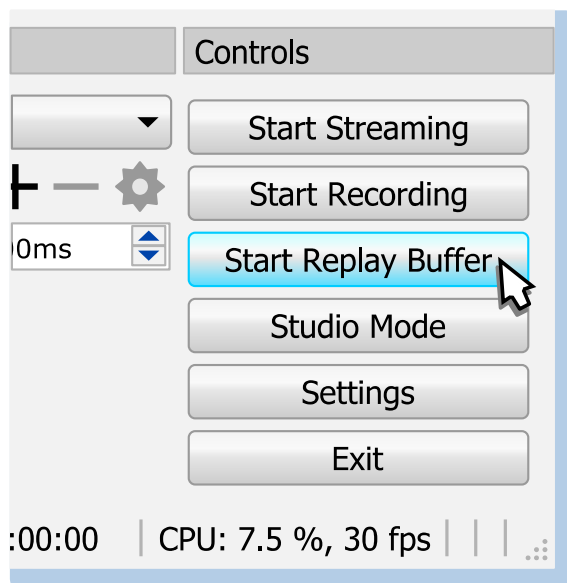
Replay Buffer

User may start and stop Replay Buffer feature at any time. Click the *Start Replay Buffer* button to begin recording current scene to the PC memory (RAM) using circular buffer technology. This allows to save short fragment of the real-time footage (for the past few seconds) to playback it again later or repeat it immediately (i.e. make replay).

To enable Replay Buffer button, **check the option** [Enable Replay Buffer](#).

(See [Output Mode: Simple](#) on page [123](#))

(See [Output Mode: Advanced](#) on page [125](#))



If enabled, new button *Start Replay Buffer* added to the Controls pane.

To save last fragment of the recorded video **from the RAM to the disk** – use hotkey *Save Replay*.

(See [Hotkeys](#) on page [141](#))

When Replay Buffer started, the button's name changes to *Stop Replay Buffer*.

Click the button *Stop Replay Buffer* to stop recording current scene using circular buffer technology.



When stop replay buffer triggered, button's name changes to 'Stopping Replay Buffer...'

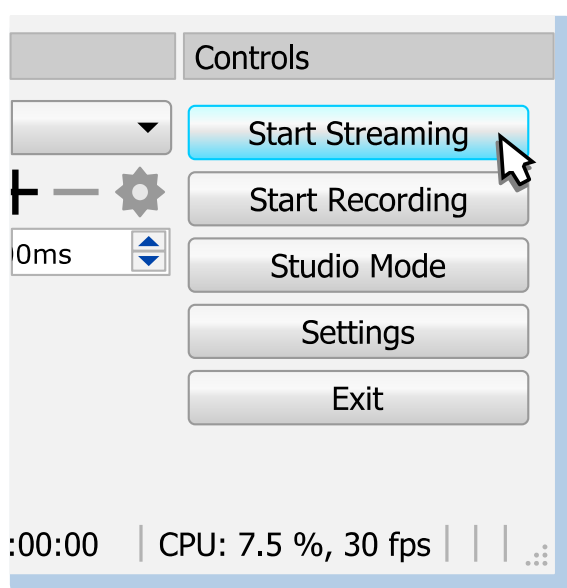
For **fine tuning** Replay Buffer:

See [Enable Replay Buffer](#) on page [124](#) {*Output Mode: Simple*}

See [Enable Replay Buffer](#) on page [135](#) {*Output Mode: Advanced*}

Streaming

User may start and stop stream at any time. Click the button *Start Streaming* to begin streaming current scene.



The button's name changes to *Stop Streaming*.

Click the button *Stop Streaming* to stop streaming current scene.



If you enable *Stream Delay* (buffer), then you'll have two possible options to stop the stream: by click *Stop Streaming* and choose 'Stop Streaming' – application transmit data until empty buffer; or by click *Stop Streaming* and choose 'Stop Streaming (discard delay)' – application immediately stops data transmit.

(see [Advanced Settings](#) on page [143](#))



When stop streaming triggered, button's name changes to 'Stopping Stream...'

To change the **streaming URL** and web server settings see [Stream settings](#) on page [121](#).

You may **define hotkeys** (shortcuts) to **start and stop streaming**. (See [Hotkeys](#) on page [141](#))

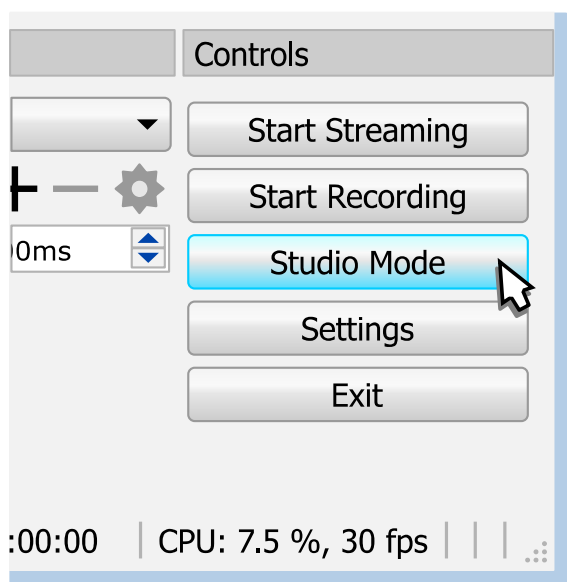
For **fine tuning** Streaming in Output Mode: Simple, see [Streaming](#) on page [123](#).

For **fine tuning** Streaming in Output Mode: Advanced, see [Streaming tab](#) on page [125](#).

Studio Mode

While streaming or recording you can change scenes without affecting an output.

To **enter the Studio Mode**: click the *Studio Mode* button (main window).



The button's color changes to 'selected' state (blue).

The preview canvas splits into two screens:

The left one – scene to edit (or “Preview”).

The right one – actual output (or “Program”), not editable.

(See [Illustration 8. Studio Mode view](#) on page [112](#))

For vertical layout (portrait mode of the display:


The top one – scene to edit (or “Preview”).

The bottom one – actual output (or “Program”), not editable.

(See [Enable portrait/vertical layout for Studio Mode](#) on page [121](#))

To make any changes to scenes in Studio Mode: select scene from the [Scenes](#) list pane and edit it in the left screen.

To adjust Studio Mode interface see [General Settings](#) on page [118](#).

To adjust Studio Mode options: click  icon at the center of the main window. Next options available:

Duplicate Scene : if checked, [Scene](#) virtually doubled, thus you can edit current output scene, while keeping the 'old scene version' at the output. Only transform, position and visibility of the layers are editable.



Always keep *Duplicate Scene* checked if you planning to edit all scenes 'live', including current scene.

Duplicate Sources : if checked, sources inside scene virtually doubled, thus you can edit also [Source properties](#). Option accessible only if *Duplicate Scene* is checked.

Not all sources able to copy themselves virtually – changes completed to such sources

💡 properties would be shown immediately. First, try to edit not current scene: select current scene (it goes to output), enter [Studio Mode](#), select desirable scene, complete changes, and then make transition (or [exit Studio Mode](#) and switch to already changed scene later).

Swap Preview/Output Scenes After Transitioning : if checked, after transition completed in *Studio Mode*, OBS Studio will select scene that was on output before that transition.

💡 Check *Swap Preview/Output Scenes After Transitioning* if you planning to change and switch between two editable scenes too often. It is rare setting, you may leave it unchecked.

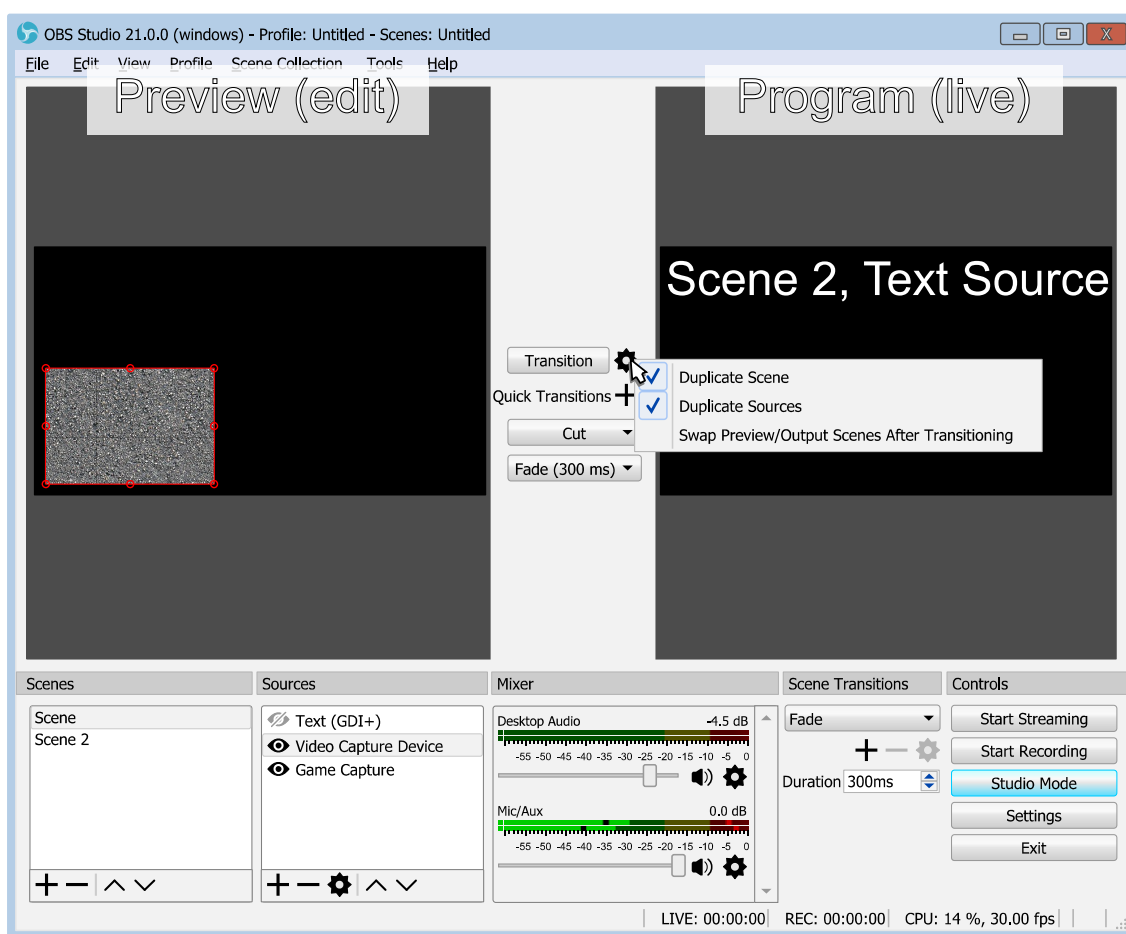


Illustration 8. Studio Mode view

The **changes** made to the scene **become visible** (goes to the output) when you:

- click on *Transition* button (at the center of the main window – between left and right previews);

- double-click [Scene](#) in [Scenes](#) list pane (depending on application's [General Settings](#));
(See [General Settings](#) on page [118](#))
- double-click previews in [Multi-view of scenes](#) window.
(See [Multi-view of scenes](#) on page [34](#))

New transition type in Studio Mode can be added via *Quick Transitions* button: click  icon at the center of the main window and choose new transition type.

Each *Quick Transitions* is adjustable via its own drop-down menu.

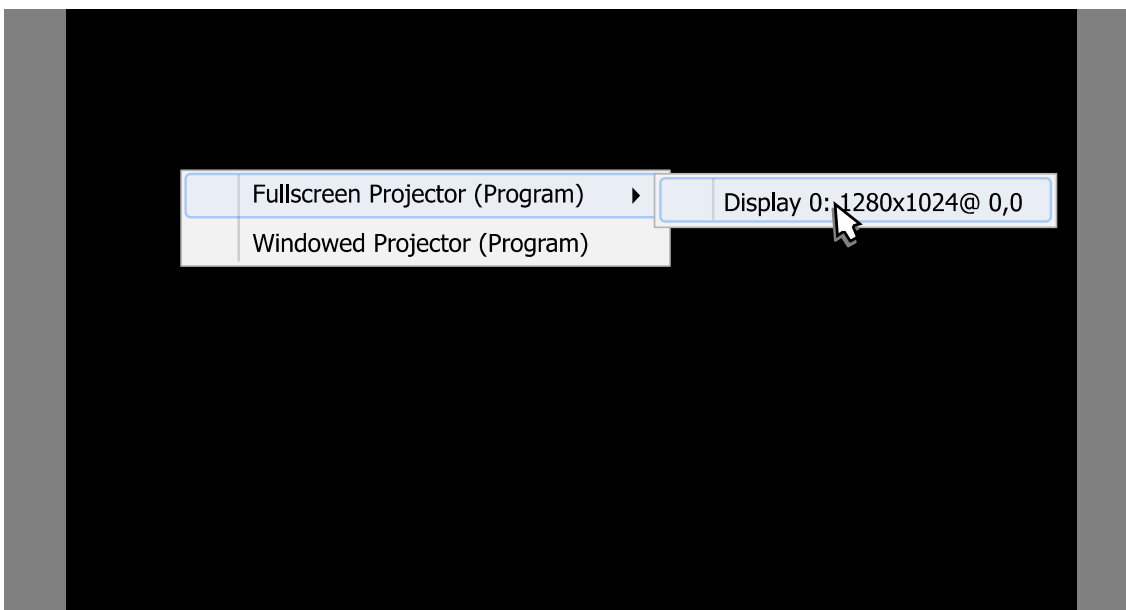
This *Quick Transitions* accessible via application's [Hotkeys](#) too.

Quick Transitions ignores [Transition Override \(per scene transitions\)](#) scene setting.

Full screen preview (program)

To preview program (live) output in full screen:

- 1) enter [Studio Mode](#);
- 2) right-click in the right view ("Program") of the *Studio Mode*;
- 3) choose sub-menu *Fullscreen Projector (Program)*;
- 4) select output device.



To exit full screen preview mode: press *Esc* button.

Windowed Projector (program)

To preview program (live) output in standalone resizable window:

- 1) enter [Studio Mode](#);
- 2) right-click in the right view ("Program") of the *Studio Mode*;
- 3) choose sub-menu *Windowed Projector (Program)*.

Program (live) preview as well as editable window preview also available at multi-view window.

(See [Multi-view of scenes](#) on page [34](#))

To exit **Studio Mode**: click the button *Studio Mode* again.



Exit from Studio Mode doesn't change an output. OBS Studio will display current output scene (that was on right half of the screen or "Program") at preview window.

Themes

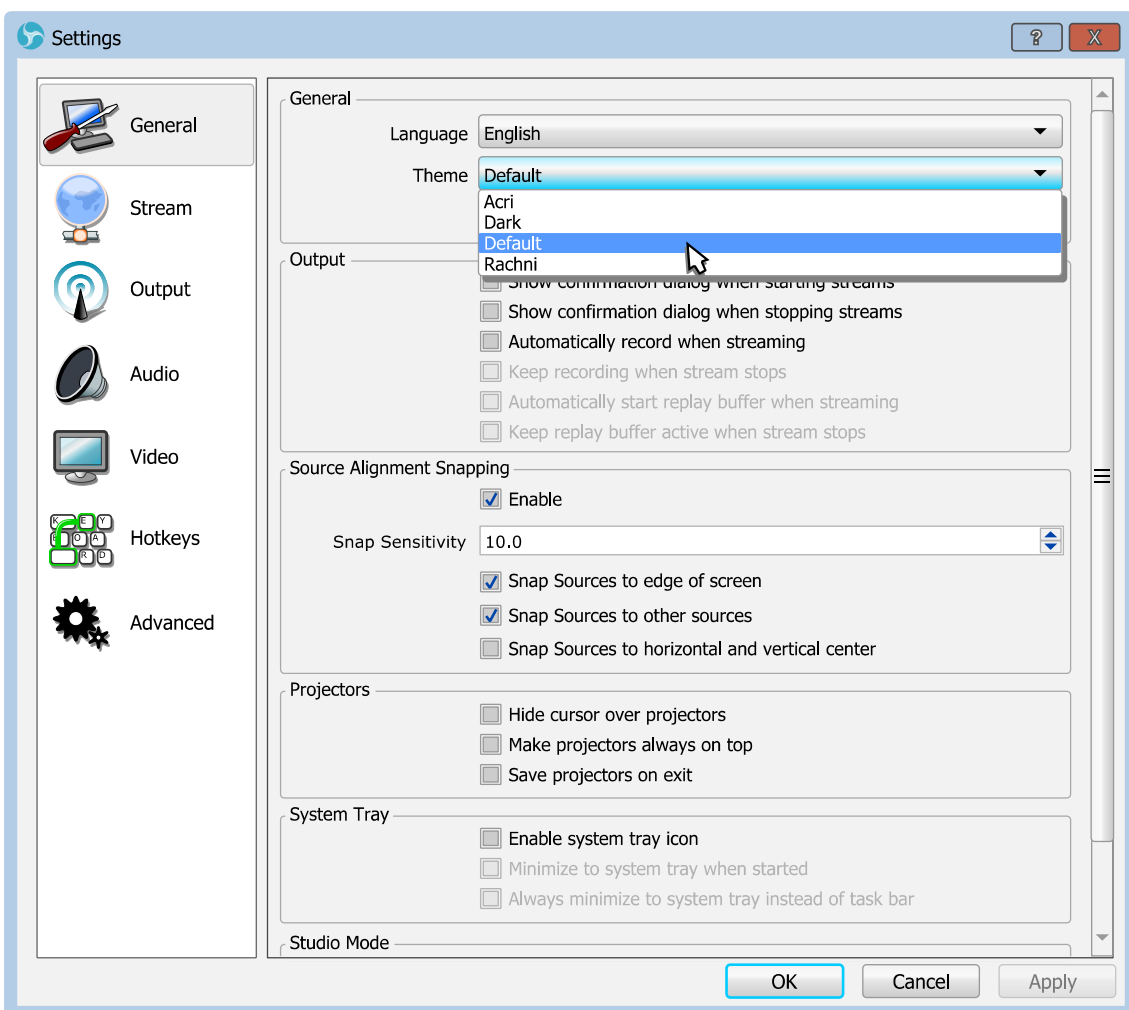
About themes

OBS Studio can use different program themes (skins).

The 'Dark' theme suitable for evening time streaming, while 'Default' theme is versatile.

Changing current theme

To change current theme click *Settings* button. Navigate to [General](#) options in Settings window, choose a new theme from the drop-down list and click *OK* button to save changes.



Custom themes

OBS Studio Studio uses *.qss* file format to store application themes (skins). To use any custom theme – place the folder named “themes” (with **.qss* files in it) to the user's folder where application stores its profile-based files and settings. Use [File menu](#) to access this folder.

(See [Show Settings Folder](#) on page [22](#))

Make sure that theme name is unique. Otherwise application will use default theme. New theme become available under the same list with the pre-installed ones.

(See [General Settings](#) on page [118](#))

Qt Style Sheet terminology and syntactic rules are almost identical to those of HTML Cascading Style Sheets (CSS) but adapted to the world of widgets.

If you novice to CSS and Qt programming but still want to start your own theme, it is wise to begin from the default themes pre-installed with the application.



Sometimes, instead of direct addressing widgets, application can use pointers.

Manage Profiles

About profiles in OBS Studio

All program preferences stored as profiles. You can use different settings for frequently used tasks by simply changing profiles.

To change, make new, rename, duplicate, remove, import or export profile: See [Profile menu](#) on page [17](#).

Any information related to [Sources](#) stored in *Scene Collections*: See [Scene Collections menu](#) on page [15](#).



Application Settings

About settings

By default, application is ready to record and to stream out-of-the-box. But for a fine tune and for individual requirements you can adjust every option on your wish. All the settings available through the *Settings* button, main window, or same [File menu](#) option.



General

There is options to specify default interface language, theme, confirmations and snapping options.

General Settings

Defines common settings of the application user interface.

General

Language : specifies interface language.

Theme : specifies appearance of the program (skin).

(See [Themes](#) on page [115](#))

Automatically check for updates on startup : if checked, the program shall check update server for new versions of the software each time it starts.

Open stats dialog on startup : if checked, the [Stats](#) window will open automatically each time you run the application.

Output

Show confirmation dialog when starting streams : if checked,



confirmation dialog will appear before stream begins.

Show confirmation dialog when stopping streams : if checked, confirmation dialog will appear before stream ends.



Check *Show confirmation dialog when stopping streams* and *Show confirmation dialog when starting streams* to avoid stop/run a stream by accident.

Automatically record when streaming : if checked, both streaming and recording started after [Start Streaming](#) button pressed.

- *Keep recording when stream stops* : if checked, recording stops only by user action on [Stop Recording](#) button. Option available only if *Automatically record when streaming* is checked.

Automatically start replay buffer when streaming : if checked, both streaming and replay buffer started after [Start Streaming](#) button pressed. Option available only if [Enable Replay Buffer](#) is checked.

(See [Replay Buffer](#) on page [107](#))

- *Keep replay buffer active when stream stops* : if checked, replay buffer stops only by user action on [Stop Replay Buffer](#) button. Option available only if *Automatically start replay buffer when streaming* is checked.

Source Alignment Snapping

- *Enable* : if checked, source's bounding box will 'magnetize' to selected elements of preview window. Next options adjustable when *Source Alignment Snapping: Enable* checked:
 - *Snap Sensitivity* : defines strength (width) of the snapping zone, in pixels.
 - *Snap Sources to edge of the screen* : if checked, all sources can snap to edges of the preview window.

- *Snap Sources to other sources* : if checked, source can snap to bounding box of another source.
- *Snap Sources to horizontal and vertical center* : if checked, source can snap to center of the preview window.

Projectors

Hide cursor over projectors : if checked, cursor shouldn't appear over projector's screen until right-click action not performed by user.

(See [Full screen preview \(canvas\)](#) on page [25](#))

Make projectors always on top : if checked, other windows shouldn't appear over projector's screen.

Save projectors on exit : if checked, projector's screen position (Display) remembered on exit and restored upon application startup.

System Tray

Enable system tray icon : if checked, application's icon added to the system tray. You can hide/show application window via tray icon menu.

- *Minimize to system tray when started* : if checked, application starts minimized. You can show application from the tray icon menu. Option available only if *Enable system tray icon* is checked.
- *Always minimize to system tray instead of task bar* : if checked, when user presses 'minimize window' button – application hides to system tray. Option available only if *Enable system tray icon* is checked.

Studio Mode

Transition to scene when double-clicked : if checked, enables transition to scene by double-click over any scene in [Scenes](#) list pane when in [Studio Mode](#).

Enable portrait/vertical layout for Studio Mode : if checked, enables vertical layout of Preview/Program windows (Preview above Program window) when in [Studio Mode](#).

Multiview Layout : defines [Multi-view of scenes](#) previews placement.



Stream

There is options to specify streaming Web service, streaming server and individual stream key.

Stream settings

You can use automatically updated list of supported web services or customize your own server

Stream Type : specifies type of the stream ([Streaming Services](#) or [Custom Streaming Server](#)).

Streaming Services

Service : specifies a Web service to stream to.

Show all services : if checked, *Service* list extends to full list of available services instead of most popular one.

Server : specifies streaming server.

Stream key : specifies individual user's stream key. By security reasons key shown wildcards.

Usually, stream key (“stream name” for some services) provided by Web service, in



way defined by Web service itself.

Show : when pressed, *Stream key* showed normally (no wildcards).

Custom Streaming Server

URL : specifies streaming server (customize).

Stream key : specifies individual user's stream key. By security reasons key shown wildcards.

Show : when pressed, *Stream key* showed normally (no wildcards).

Use authentication : if checked, next options available:

- *Username* : specifies login on server, if required.
- *Password* : specifies password to login on server, if required.
- *Show* : when pressed, *Password* showed normally (no wildcards).



Output

There is options to define encoder settings, bitrate, output path and number of audio tracks available in output video.

Output Mode

Under the *Output Mode*: [Simple](#) only one audio track (#1) is forced to output stream/record.

Set *Output Mode* to [Advanced](#) to get advantage of the multi-track feature.

To set *Output Mode* to [Advanced](#) , navigate to *Output* options in *Settings* window, choose *Output Mode: Advanced* from the drop-down list and click *Apply* button to save changes.

Output Mode: Simple

Streaming

- *Video Bitrate* : defines encoding bitrate for the output video. Value in kbps.
- *Encoder* : encoder type. Default value is 'Software (x264)'.
Availability of encoders depends on PC configuration.



- *Audio Bitrate* : defines encoding bitrate for the output sound. Value in kbps.
- *Enable Advanced Encoder Settings* : when checked, new options for Encoder available:
 - *Enforce streaming service bitrate limits* : if checked, default maximum bitrate for selected streaming service should be applied instead of value specified on this tab.
 - *Encoder Presets (higher = less CPU)* : presets that increases scanning deep of the encoder algorithm for motion detection. Highest value is *ultrafast* (no scan). Lowest value is *slower* (deep scan).



Set *Encoder Presets (higher = less CPU)* to *veryfast* or *superfast* – most modern CPUs unable to encode high resolution video in real-time under lower presets without frames drop. Lower presets generates video with higher quality at the same bitrate.

- *Custom Encoder Settings* : defines custom encoder settings that overrides any preset settings, parameters separated with space. For example, `qp=24 bframes=0 colormatrix=bt470bg`



List of the parameters depends on the encoder. Default encoder is x264. Look for parameters list on the developer's internet page [obsproject.com]. Make sure

that keys separated with space (no invisible special symbols).

Recording

- *Recording path* : defines directory (folder) where new recordings will be stored.
- *Generate File Name without Space* : if checked, a new file name for recording will not contain space symbols.
- *Recording Quality* : preset that defines does the recording would be saved under the same as stream encoding settings or not.



Recording under the settings other than *Same as Stream* uses more resources in case both recording and streaming running simultaneously.

Up to Lossless quality is possible here. To true lossless quality you need to specify non-subsampled color format at [Advanced Settings](#) of the OBS Studio as well as Full color range.

- *Recording Format* : defines container format for recordings.



Use mp4 container if you plan to edit your recordings later. Use [Custom Muxer Settings](#) to write a fragmented mp4/mov file (to be able to save aborted recordings).

- *Encoder* : encoder type. Default value is 'Software (x264)'. Availability of encoders depends on PC configuration.



- *Custom Muxer Settings* : defines custom muxer settings, that overrides any preset settings; parameters separated with space. For example, *movflags=frag_keyframe min_frag_duration=4000000*



Look for full parameters list of the ffmpeg muxer on the developer's internet page [obsproject.com]. Make sure that keys separated with space (no invisible special symbols).

- *Enable Replay Buffer* : if checked, enables special output mode with circular buffer recording. This allows to save short fragment of the real-time footage for the past few

seconds to playback it again later (make replay). If enabled, next options becomes available:

- *Maximum Replay Time (Seconds)* : defines max length of the [Replay Buffer](#) fragment stored in the memory, in seconds (i.e. length of the fragment you able to save to the disk as “replay”).
- *Maximum Memory (Megabytes)* : defines max size of RAM memory used for the [Replay Buffer](#) feature, in Megabytes. Used as additional restriction when estimation based on *Maximum Replay Time (Seconds)* unavailable.



Enable Replay Buffer uses much more of the PC memory when [Recording Quality](#) is set to other than *Same as stream*, thus the length of the video fragment available for saving may vary.

To change replay file naming see [Replay Buffer Filename](#) on page [144](#).

Output Mode: **Advanced**

| | | | |
|--|--|--|--|
| Streaming tab 125 | Recording tab 129 | Audio tab 134 | Replay Buffer tab 135 |
|--|--|--|--|

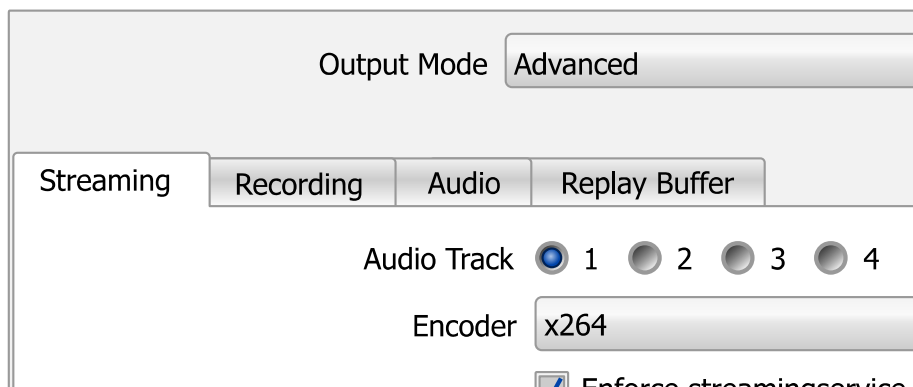
Streaming tab

Streaming tab available only in *Output Mode: Advanced*

(See [Output Mode](#) on page [122](#))

On the streaming tab you can select # of track which will be streamed (now only one track in a stream is supported by Web hosts).

- *Audio Track* : # of the audio track that will be streamed.



Only one track is selectable for streaming. Multi-track is available in recordings. (See [Recording tab](#) on page [129](#))

Check selected track in [Advanced Audio Properties](#) on page [146](#).

- **Encoder** : encoder type. Default value is 'x264'.

Availability of encoders depends on PC configuration.



- **Enforce streaming service encoder settings** : when checked, default streaming service encoder settings should be applied instead of values specified on this tab.
- **Rescale Output** : when checked, video will be scaled and encoded with different resolution (don't forget to specify new image size). This scaling performed by CPU. Rescale uses *fast_bilinear* scaling from FFmpeg.

Use [Rescale Output](#) on [Streaming tab](#) to stream at low resolution while recording still running at full, otherwise leave it unchecked.



- **Rate Control** : specifies encoding bitrate control for the output video.

Rate Control values are CBR – constant bitrate; ABR – average bitrate; VBR – variable bitrate; CRF – constant rate factor.



Use CBR for compatibility purposes, streaming.

Use CRF for high-quality local recording.

Use VBR to enable CRF-like encoding with upper limit of *Bitrate* (bitrate = maxrate).

Use ABR to enable CBR-like encoding but without bitrate padding. Video bitrate can fluctuate with this setting.

- **Bitrate** : defines encoding bitrate for the output video in kbps. Option available only if *Rate Control* is set to CBR, ABR or VBR.
- **Use Custom Buffer Size** : when checked, enables custom buffer size settings. Option available only if *Rate Control* is set to CBR, ABR or VBR.
 - **Buffer Size** : defines buffer size in kb.
If *Buffer Size* = 0 then *Bitrate* limit ignored.



- **CRF** : defines Constant Rate Factor value of the encoder. Integer values [0..51] (i.e. [good...bad] quality). Option available only if *Rate Control* is set to VBR or CRF.
Setting *CRF* = 0 forces the high444 lossless profile.

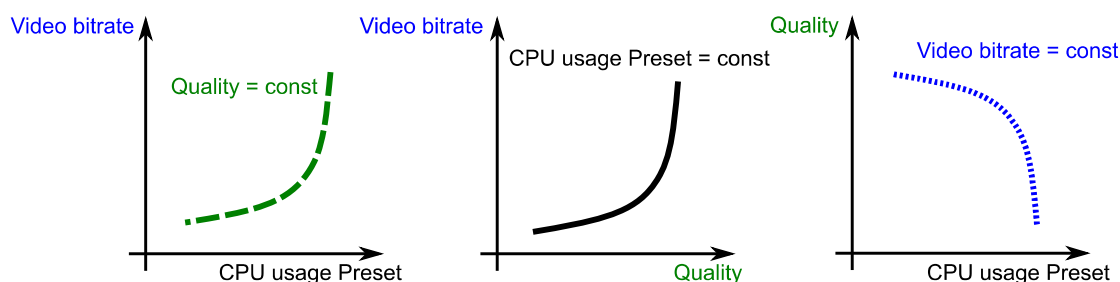


- **Keyframe Interval (seconds, 0 = auto)** : force keyframes insertion into video by fixed time intervals, in seconds. If set to 0, then time intervals calculated automatically.



Set *Keyframe Interval (seconds, 0 = auto)* manually if you experience long 'trails' and mpeg 'ghost' appearance. Lower values can raise bitrate of the encoding video.

- **CPU usage Preset (higher = less CPU)** : presets that increases scanning deep of the encoder algorithm for motion detection. Highest value is *ultrafast* (no scan). Lowest value is *placebo* (deep scan).



Set *CPU usage Preset (higher = less CPU)* to *veryfast* or *superfast* – most modern



CPUs unable to encode high resolution video in real-time under lower presets without frames drop. Lower presets generates video with higher quality at the same bitrate.

- **Profile** : defines compatibility with hardware players, sets some restrictions to maximum output bitrate.



Use the [Table 2.H264 profiles and levels](#) provided on page [128](#) and recommendations from your streaming Web server.

- **Tune** : encoder's presets for not typical encoding tasks.
- **x264 Options (separated by space)** : defines custom encoder settings, that overrides any preset settings; parameters separated with space. For example, `qp=24 bframes=0 colormatrix=bt470bg`



Look for parameters list of the x264 encoder on the developer's internet page [obsproject.com]. Make sure that keys separated with space (no invisible special symbols).

Table 2.H264 profiles and levels

| level | Base & Main max kbps | High max kbps | Max Resolution@Frequency (reference frames) |
|-------|----------------------|---------------|--|
| 3 | 10000 | 12500 | 352x480@61.4 (12) 352x576@51.1 (10) 720x480@30.0 (6) 720x576@25.0 (5) |
| 3.1 | 14000 | 17500 | 720x480@80.0 (13) 720x576@66.7 (11) 1280x720@30.0 (5) |
| 3.2 | 20000 | 25000 | 1280x720@60.0 (5) 1280x1024@42.2 (4) |
| 4 | 20000 | 25000 | 1280x720@68.3 (9) 1920x1080@30.1 (4) 2048x1024@30.0 (4) |
| 4.1 | 50000 | 62500 | 1280x720@68.3 (9) 1920x1080@30.1 (4) 2048x1024@30.0 (4) |
| 4.2 | 62500 | 62500 | 1280x720@145.1 (9) |

| level | Base & Main max kbps | High max kbps | Max Resolution@Frequency (reference frames) |
|-------|----------------------|---------------|---|
| | | | 1920x1080@64.0 (4) 2048x1080@60.0 (4) |
| 5 | 135,000 | 168,750 | 1920x1080@72.3 (13) 2048x1024@72.0 (13) 2048x1080@67.8 (12) 2560x1920@30.7 (5) 3672x1536@26.7 (5) |
| 5.1 | 240,000 | 300,000 | 1920x1080@120.5 (16) 2560x1920@51.2 (9) 3840x2160@31.7 (5) 4096x2048@30.0 (5) 4096x2160@28.5 (5) 4096x2304@26.7 (5) |
| 5.2 | 240,000 | 300,000 | 1920x1080@172.0 (16) 2560x1920@108.0 (9) 3840x2160@66.8 (5) 4096x2048@63.3 (5) 4096x2160@60.0 (5) 4096x2304@56.3 (5) |

| | | | |
|--|--|--|--|
| Streaming tab 125 | Recording tab 129 | Audio tab 134 | Replay Buffer tab 135 |
|--|--|--|--|

Recording tab

Recording tab available only in *Output Mode: [Advanced](#)*.

(See [Output Mode](#) on page [122](#))

On the recording tab you can choose recording *Type: [Standard](#) or [Custom Output \(FFmpeg\)](#)*.



Under recording *Type: Standard* available encoder – x264 (and hardware based relaxes),

containers – flv, mp4, mov, mkv, ts, m3u8.

Under recording *Type: Custom Output (FFmpeg)* many other containers and encoders available.

To set recording *Type to Custom Output (FFmpeg)* – navigate to *Output* options in the Settings window, click Recording tab, choose under the *Type* option the *Custom Output (FFmpeg)* from the drop-down list and hit *Apply* button to save changes.

- *Type* : sets the output to *Standard* (x264 encoder and flv, mp4 containers) or to *Custom Output (FFmpeg)* with different container/encoder set.

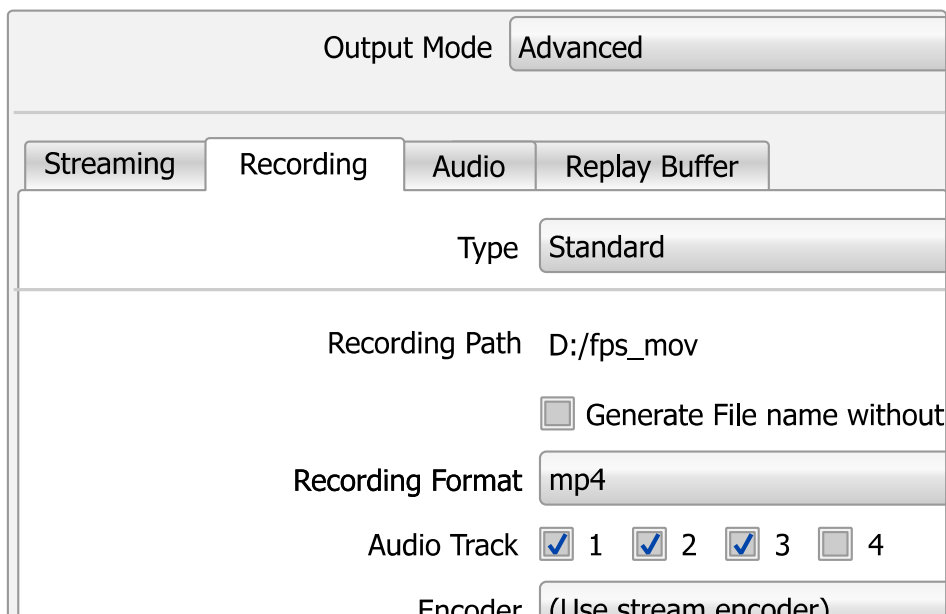
Recording Type: **Standard**

- *Recording path* : specifies directory (folder) where new recordings will be stored.
- *Generate File Name without Space* : if checked, a new file name for the recording will not contain spaces.
- *Recording format* : defines container format for recordings.



Use mp4 container if you plan to edit your recordings later. Use [Custom Muxer Settings](#) to write a fragmented mp4/mov file (to be able to save aborted recordings).

- *Audio Track* : # of the track and quantity of the audio tracks that will be encoded during recording. Maximum 6 audio tracks available for encode.



The screenshot shows the 'Recording' tab in the OBS Studio Application Settings. At the top, 'Output Mode' is set to 'Advanced'. Below it, the 'Recording' tab is selected among 'Streaming', 'Recording', 'Audio', and 'Replay Buffer'. The 'Type' is set to 'Standard'. The 'Recording Path' is 'D:/fps_mov'. There is an unchecked checkbox for 'Generate File name without'. The 'Recording Format' is 'mp4'. Under 'Audio Track', checkboxes for 1, 2, and 3 are checked, while 4 is unchecked. The 'Encoder' is set to '(Use stream encoder)'.



Certain formats (like FLV) do not support multiply tracks per recording.



Use a modern player with ability to playback more than one audio track in the movie (when more then one audio track is selected).

Check selected tracks in [Advanced Audio Properties](#) on page [146](#).

- **Encoder** : switches presets between
 - **Use stream encoder** : when selected, reuses streaming encoder settings defined on [Streaming tab](#).

(See [Streaming tab](#) on page [125](#))



When *Encoder: Use stream encoder* preset is selected, the recorded video will be the same quality as during streaming.

- **x264** : when selected, enables sets of options for the independent tuning of the recording with x264 encoder:



Use *Encoder : x264* preset when you want to override encoder settings for recording. Useful for low bandwidth streaming and high-quality recording.

- **Rescale Output** : same as for [Streaming tab](#) on page [125](#).
- **Rate Control** : same as for [Streaming tab](#) on page [125](#).
- **Bitrate** : same as for [Streaming tab](#) on page [125](#).

- *Use Custom Buffer Size* : same as for [Streaming tab](#) on page [125](#).
 - *Buffer Size* : same as for [Streaming tab](#) on page [125](#).
- *CRF* : same as for [Streaming tab](#) on page [125](#).
- *Keyframe Interval (seconds, 0 = auto)* : same as for [Streaming tab](#) on page [125](#).
- *CPU usage Preset (higher = less CPU)* : same as for [Streaming tab](#) on page [125](#).
- *Profile* : same as for [Streaming tab](#) on page [125](#).
- *Tune* : same as for [Streaming tab](#) on page [125](#).
- *Variable Framerate (VFR)* : same as for [Streaming tab](#) on page [125](#).
- *x264 Options (separated by space)* : same as for [Streaming tab](#) on page [125](#).
- *OTHER_ENCODER_NAME* : when selected, enables sets of options for the independent tuning of the hardware based encoder (depends on system).



Runtimes to operate hardware encoders in OBS Studio usually shipped with the graphic's driver. For example, Quick Sync uses Intel's graphics driver, NVENC uses NVIDIA video driver, AMD VCE uses AMD video driver.

If you have problems with the hardware encoder - check the video driver first, keep it up to date or make clean reinstall.

- *Custom Muxer Settings* : defines custom muxer settings, that overrides any preset settings; parameters separated with space. For example, *movflags=frag_keyframe min_frag_duration=4000000*



Look for full parameters list of the ffmpeg muxer on the developer's internet page [obsproject.com]. Make sure that keys separated with space (no invisible special symbols).

Recording Type: **Custom Output (FFmpeg)**

- *FFmpeg Output Type* : specifies the FFmpeg's output

destination. Next options available:

- *Output to File* : if selected, enables special configuration of the FFmpeg to save the output to the disk.
 - *Generate File Name without Space* : if checked, a new file name for recording will not contain space symbols.
- *Output to URL* : if selected, enables special configuration of the FFmpeg to transmit the output over network.
- *File Path or URL* : specifies the path or URL for FFmpeg output.
- *Container Format* : specifies media container to multiplexing output Audio/Video data.
- *Container Format Description* : short info on selected container (if any).
- *Muxer Settings (if any)* : specifies custom muxer settings string for FFmpeg output.
- *Video Bitrate* : defines bitrate of the video for output (in kbit/s).
- *Keyframe interval (frames)* : defines GOP period (size).
- *Rescale Output* : when checked, video will be scaled and encoded with different resolution (don't forget to specify new image size). This scaling performed by CPU. Rescale uses *fast_bilinear* scaling from FFmpeg.
- *Show all codecs (even if potentially incompatible)* : if checked, shows full list of available encoders for both video and audio. Some media containers has restrictions on encoder use.
- *Video Encoder* : specifies video encoder for selected container.

- *Video Encoder Settings (if any)* : specifies custom video encoder settings string for FFmpeg output.



General format is *parameter=value*, parameters separated with space.

For example, *libx264* codec require additional parameter *x264-params* to override the preset settings, thus use it like this (2 parameters overridden for preset *fast*):
`preset=fast crf=18 x264-params=fast_pskip=0:bframes=0`

- *Audio Bitrate* : defines bitrate of the audio for output (in kbit/s).
- *Audio Track* : # of the audio track that will go to output.
- *Audio Encoder* : specifies audio encoder for selected container.
- *Audio Encoder Settings (if any)* : specifies custom audio encoder settings string for FFmpeg output.

| | | | |
|--|--|--|--|
| Streaming tab 125 | Recording tab 129 | Audio tab 134 | Replay Buffer tab 135 |
|--|--|--|--|

Audio tab

Audio tab available only in *Output Mode: [Advanced](#)*.

(See [Output Mode](#) on page [122](#))

Encoding settings available only per track. To adjust mixing options for both recording and streaming, see [Advanced Audio Properties](#) on page [146](#).

Six tracks is available for configuration:

- Track 1
Audio Bitrate : defines bitrate for encoding audio track #1 in kbps

Name : defines a name for the audio track #1

...

- Track 6

Audio Bitrate : defines bitrate for encoding audio track #6 in kbps

Name : defines a name for the audio track #6

| | | | |
|--------------------------------------|--------------------------------------|----------------------------------|--|
| Streaming tab 125 | Recording tab 129 | Audio tab 134 | Replay Buffer tab 135 |
|--------------------------------------|--------------------------------------|----------------------------------|--|

Replay Buffer tab

Replay Buffer tab available in *Output Mode*: [Advanced](#).

(See [Output Mode](#) on page 122)

Encoding settings controlled by [Recording tab](#).

- *Enable Replay Buffer* : if checked, enables special output mode with circular buffer recording. This allows to save short fragment of the real-time footage for the past few seconds to playback it again later (make replay). Option available only for recording *Type: Standard* [page 130]. If enabled, next options becomes available:
 - *Maximum Replay Time (Seconds)* : defines max length of the [Replay Buffer](#) fragment stored in the memory, in seconds (i.e. length of the fragment you able to save to the disk as “replay”).
 - *Maximum Memory (Megabytes)* : defines max size of RAM memory used for the [Replay Buffer](#) feature, in

Megabytes. Used as additional restriction when estimation based on *Maximum Replay Time (Seconds)* unavailable.



Enable Replay Buffer uses much more of the PC memory when [Recording Quality](#) is set to other than *Use stream encoder* at [Recording tab](#), thus the length of the video fragment available for saving may vary.

To change replay file naming see [Replay Buffer Filename](#) on page [144](#).



Audio

Under Audio section of the settings you can adjust audio output sample rate, number of audio channels (Mono, Stereo etc.), default audio input devices and audio sources, push-to-mute/push-to-talk delays.

Sample Rate : defines outputs sample rate (44100, 48000 Hz)

Channels : defines output channels settings (Stereo, Mono etc.)



Surround sound like 5.1, require much higher bitrates for audio encoding for the same quality as Stereo sound.

Not all online services supports surround audio ingests, and sometimes services can re-encode audio back to Stereo.

Make sure that all your sources, Microphone for example, able to output surround 5.1 exactly at right position (CENTER channel) to mix it by OBS Studio in [Advanced Audio Properties](#) without placing averaged signal to all 5.1 channels of one track.

Desktop Audio Device : specifies device available as default for audio source named 'Desktop Audio Device' that will be placed in all scenes.

Desktop Audio Device 2 : specifies device available as default for audio source named 'Desktop Audio Device 2' that will be

placed in all scenes.

Mic/Auxiliary Audio Device : specifies device available as default for audio source named 'Mic/Auxiliary Audio Device' that will be placed in all scenes.



Set *Mic/Auxiliary Audio Device* to your microphone's default input – of course if you do not planning to switching it live to different microphone (source) or you don't want to mute it per scene individually (otherwise use per scene [Audio Input Capture](#) source and set this to Disable).

Mic/Auxiliary Audio Device 2 : specifies device available as default for audio source named 'Mic/Auxiliary Audio Device 2' that will be placed in all scenes.

Mic/Auxiliary Audio Device 3 : specifies device available as default for audio source named 'Mic/Auxiliary Audio Device 3' that will be placed in all scenes.



Use *Desktop Audio Device 2*, *Mic/Auxiliary Audio Device 2*, *Mic/Auxiliary Audio Device 3* in special cases only, other way set it to Disable.

Audio Meter Decay Rate : specifies falloff speed for volume meters of the [Mixer pane](#). Next options available:

- *Fast* : falloff speed is 40 dB/1.7 seconds.
- *Medium (Type I PPM)* : falloff speed is 20 dB/1.7 seconds.
- *Slow (Type II PPM)* : falloff speed is 24 dB/2.8 seconds.

Mic/Aux

- *Enable Push-to-mute* : if checked, push-to-mute and delay is enabled for Mic/Aux devices. For hotkey set, see [Hotkeys](#) on page [141](#).
 - *Push-to-mute* : defines push-to-mute delay length in milliseconds for Mic/Aux devices.
- *Enable Push-to-talk* : if checked, push-to-talk and delay

is enabled for Mic/Aux devices. For hotkey set, see [Hotkeys](#) on page [141](#).

- *Push-to-talk* : defines push-to-talk delay length in milliseconds for Mic/Aux devices.

Desktop Audio

- *Enable Push-to-mute* : if checked, push-to-mute and delay is enabled for Desktop Audio devices .
 - *Push-to-mute* : defines push-to-mute delay length in milliseconds for Desktop Audio devices.
- *Enable Push-to-talk* : if checked, push-to-talk and delay is enabled for Desktop Audio devices.
 - *Push-to-talk* : defines push-to-talk delay length in milliseconds for Desktop Audio devices.



Video

Video options adjusts the size of the canvas and output, specifies filter for scaling, defines frame rate of the output.

[Output](#) options can override settings defined here, keep that in mind when selecting aspect ratio for main output. There is two possible situations shown on the pictures:

[Illustration 9. Output at the same size](#) on page [140](#)

[Illustration 10. Output at different sizes](#) on page [141](#)

that can take place in OBS Studio.

Base (Canvas) Resolution : defines the canvas preview aspect ratio and base rendering resolution (canvas size). Custom


resolution supported. Type new resolution in **Width x Height** format.

Output (Scaled) Resolution : defines main output resolution. Settings at *Output (Scaled) Resolution* will be used as input for [Rescale Output](#) operations. Custom resolution supported. Type new resolution in **Width x Height** format.

 If you not sure, set *Base (Canvas) Resolution* = main input resolution (game resolution) = *Output (Scaled) Resolution*.

OBS Studio requires that the *Output (Scaled) Resolution* width is a multiple of 4 and *Output (Scaled) Resolution* height is a multiple of 2 in order to correctly process video data using SSE optimizations. Special encoding functions of FFmpeg itself, sometimes require width multiply of 32 to correctly process the videos.

Downscale Filter : specifies, filter used in scale operations between [Base \(Canvas\) Resolution](#) and [Output \(Scaled\) Resolution](#) setups.

 If you setup *Base (Canvas) Resolution* = *Output (Scaled) Resolution*, then set *Downscale Filter* to Bilinear filter. This downscale operations performed by GPU.

Bilinear, Bicubic and Lanczos filters acts same as for [Scale Filtering](#).

Common FPS Values, [Integer FPS Value], [Fractional FPS Value] : specifies sets of frame rates (fps) at which OBS Studio will render its output. [defines frame rate at which OBS Studio will render its output – integer or fractional values accepted].

 Make attention, that for NTSC standard common value is 29.97 fps (numerator 30000 / denominator 1001) ; for PAL – 25 fps. OBS Studio produce progressive frames.

Disable Aero : if checked, OBS Studio will try to disable Windows Aero.

 Some transparent windows cannot be captured if Aero disabled.

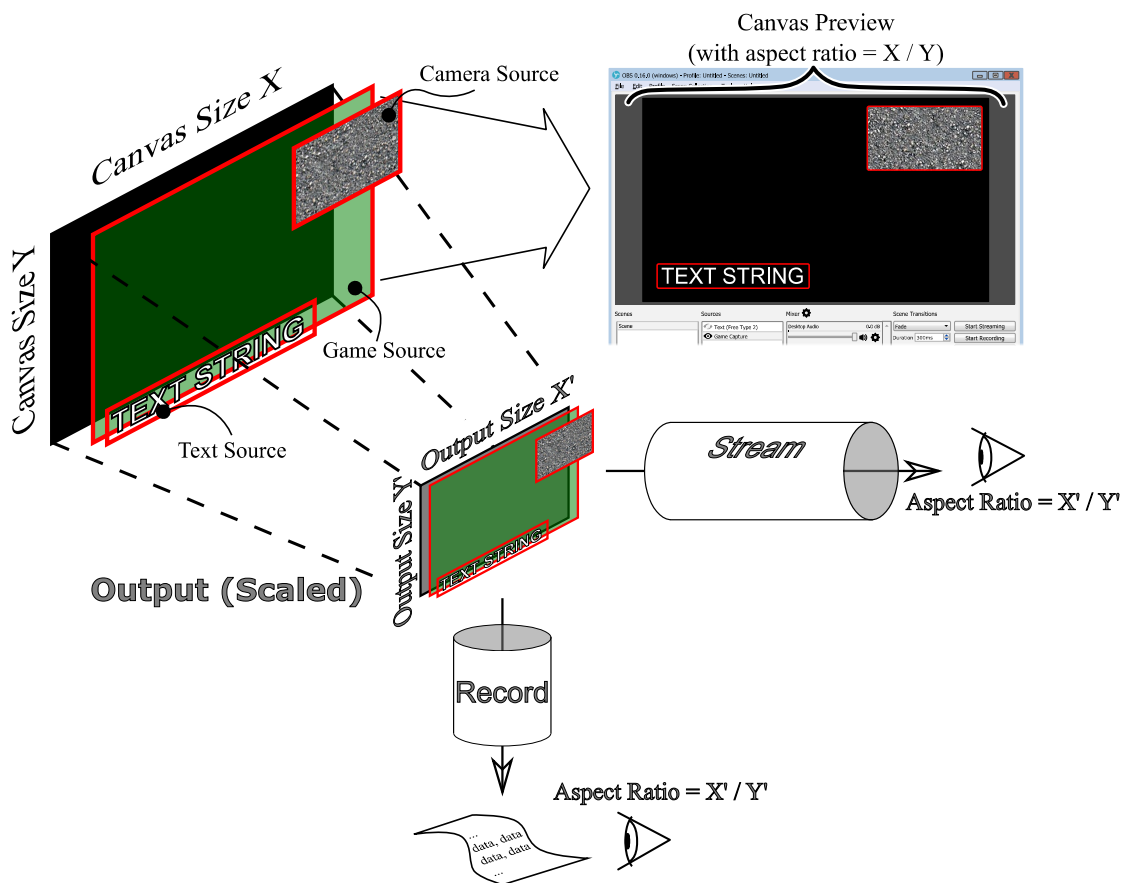


Illustration 9. Output at the same size



If you use [Rescale Output](#) option, then aspect ratio of the output can differ from the aspect ratio of the preview canvas size. (See [Output](#) settings on page [122](#))

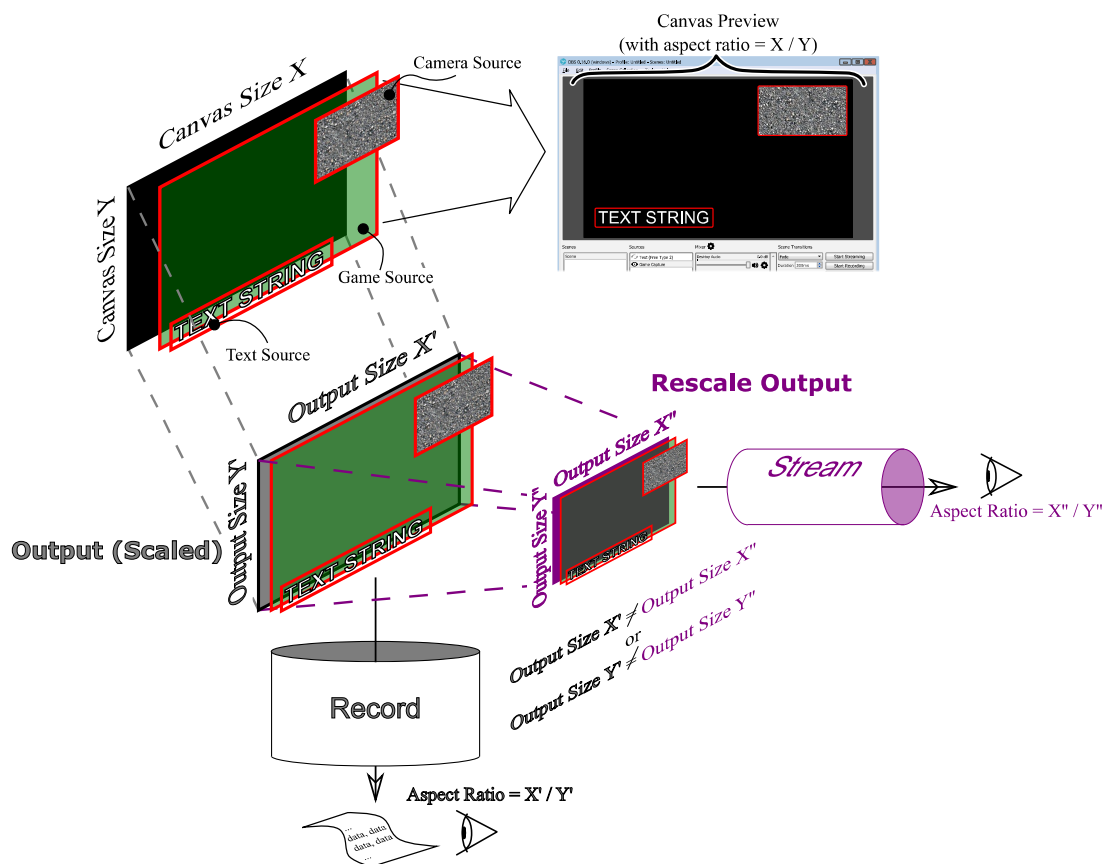


Illustration 10. Output at different sizes



If two resize task performed in output with different sizes via [Rescale Output](#), then it can eat more CPU power. Use original size for the local recordings (together with fast profile), and scale down stream by [Rescale Output](#). (See [Output](#) settings on page [122](#))



Hotkeys

Hotkeys section of the settings allow to you to assign custom keys for common actions, like: controls, sources management and scene transitions.

Navigate to *Hotkeys* option in Settings window, choose a new action, click on empty edit string field and hit desirable key shortcut.

(See [Define hotkeys \(shortcuts\)](#) picture on page [142](#))

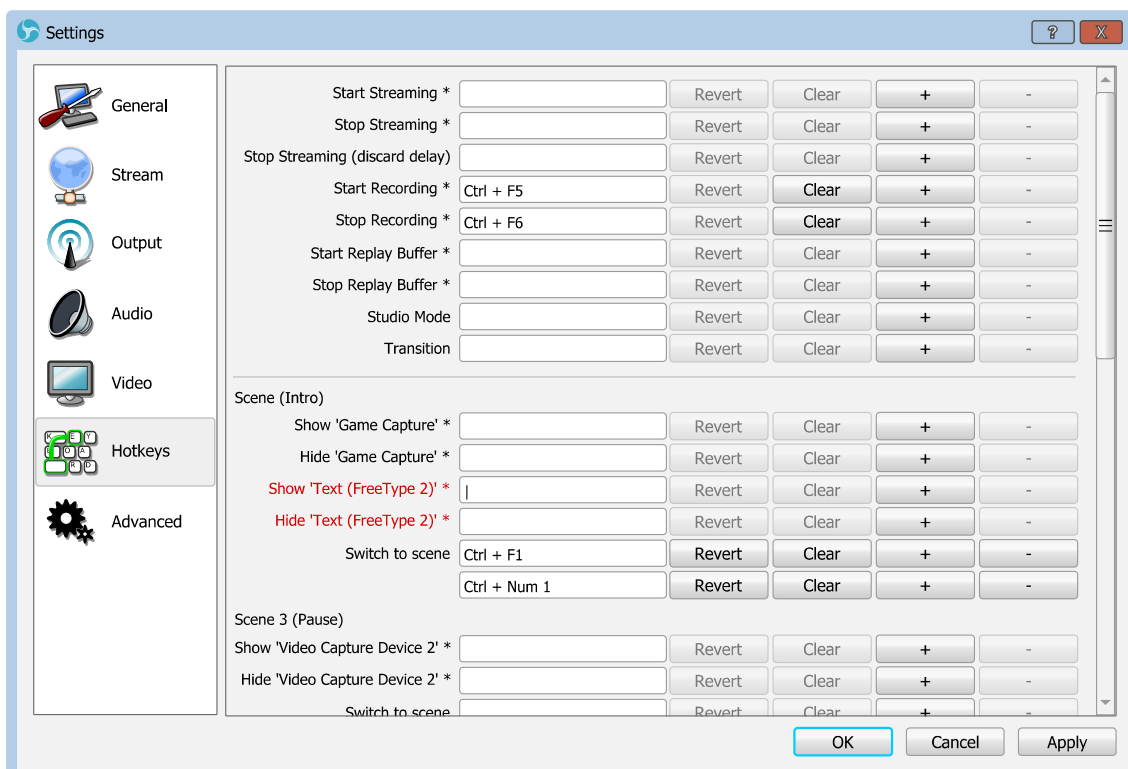


Illustration 11. Define hotkeys (shortcuts)

Each layer in scenes has independent control by hotkeys. By default, *Start Streaming*, *Stop Streaming*, *Start Recording*, *Stop Recording*, *Start Replay Buffer*, *Stop Replay Buffer* and *Save Replay* hotkeys not defined – set up this keys manually.



Save Replay hotkey only enabled when *Enable Replay Buffer* is checked.

OBS Studio (try to run it as administrator) should run with the same privileges as target application (to make hotkeys work when main window of the OBS Studio not in focus).

You can **add another one** shortcut to the same action by clicking



button.

To remove additional shortcut: click  button.

You can remove shortcut linking by clicking  button.

Click *OK* button to save changes and exit.



Advanced Settings

Advanced Settings allows to you to change the base configuration settings.



Make changes to this tab with caution. Many options require program restart. Incorrect settings may result in low capture & streaming performance.

General

- *Process Priority* : specifies priority of the application among other tasks.

Video

- *Renderer* : specifies renderer that will be used by OBS Studio to render an output. Depend on system and configuration.

(See [Command Line Options](#) on page 150)



AdapterIdx parameter under **[Video]** section of *global.ini* allows setting a specific graphics adapter index to use it for Direct3D 11 renderer (default is **AdapterIdx=0**, the place where all stuff rendered and captured from).

(See [Show Settings Folder](#) on page 22)

- *Color format* : specifies color format for encoder's output (common value is *NV12*).
- *YUV Color Space* : specifies color space for encoder's output (common value is *601*).



Specify *YUV Color Space*: 709 for HD setups, i.e. 720p and larger outputs. Leave this setting unchanged for SD videos.

- *YUV Color Range* : specifies color range for encoder's output, i.e. how to encode it (common value is Partial).
- *Disable OSX V-Sync* : if checked, OS X V-Sync will be disabled for OBS Studio (option available for Mac PC).
- *Reset OSX V-Sync on Exit* : if checked, OS X V-Sync resets its state after OBS Studio close (option available for Mac PC).

Audio

- *Audio Monitoring Device* : specifies output device to be used with [Audio Monitoring](#).
- *Disable Windows audio ducking* : if checked, disables automatic Windows audio volume reducing for [Audio Monitoring](#) when communication devices (like mic) is used.

Recording

- *Filename formatting* : specifies filename mask to generate new filename for the recordings.



Default mask format `%CCYY-%MM-%DD %hh-%mm-%ss`, for example, means file name `2016-04-19 23-40-58` for recording started 19 April 2016 at 23:40:58 o'clock. Full list of mask variables – is at hint message over the edit field *Filename formatting* of the application.



To specify directory creation – use symbol “ / ” (slash). For example, mask `myrec %DD/%hh-%mm-%ss`, will create directory `myrec19` first, then file with name `23-40-58` will be placed in it, for recording started 19 April 2016 at 23:40:58 o'clock.

- *Overwrite if file exist* : if checked, files with same names will be overwritten.
- *Replay Buffer Filename*
 - *Prefix* : the string that will be added before the filename

to mark Replay recordings.

- *Suffix* : the string that will be added at the end of the filename to mark Replay recordings.

Stream Delay

- *Enable* : when checked, enables stream delay (“buffer”) feature.



With a setting *Stream Delay: Enable* checked, Stream output appears on-air later, but connection issues has lower impact on the stream smooth play.

- *Duration (seconds)* : defines duration of the stream delay in seconds.
- *Preserve cutoff point (increase delay) when reconnecting* : if checked, delay will grow after reconnecting, streaming data preserved.



Web server can flush its own buffer if connection lost.

Automatically Reconnect

- *Enable* : when checked, enables automatically reconnect feature
 - *Retry Delay (seconds)* : delay between connection attempts.
 - *Maximum Retries* : number of attempts to establish connection to the streaming server.

Network

- *Bind to IP* : specifies network adapter to use for streaming.
- *Enable new networking code* : if checked, other method of handling network packets shall be used.
 - *Low latency mode* : if checked, the application will try to maintain network buffer as fast as possible, keeping its


fullness as low as possible. Causes less impact on other networking programs which running simultaneously by the same PC. Option available only if *Enable new networking code* is checked.

Advanced Audio Properties

At Advanced Audio Properties you can define special mixing parameters, like channel balance, volume, track's # in media file, source output monitoring and synchronization offset.

(See [Illustration 12. Advanced Audio Properties](#) on page 146)

This advanced audio settings (or “Mixer”) accessible through:

- application's [Edit menu](#), sub-menu *Advanced Audio Properties*;
- by right-click over the *Mixer pane* and choose *Advanced Audio Properties* option;
- by click  icon at *Mixer pane* (main window) right to any available audio source and select appropriate option.

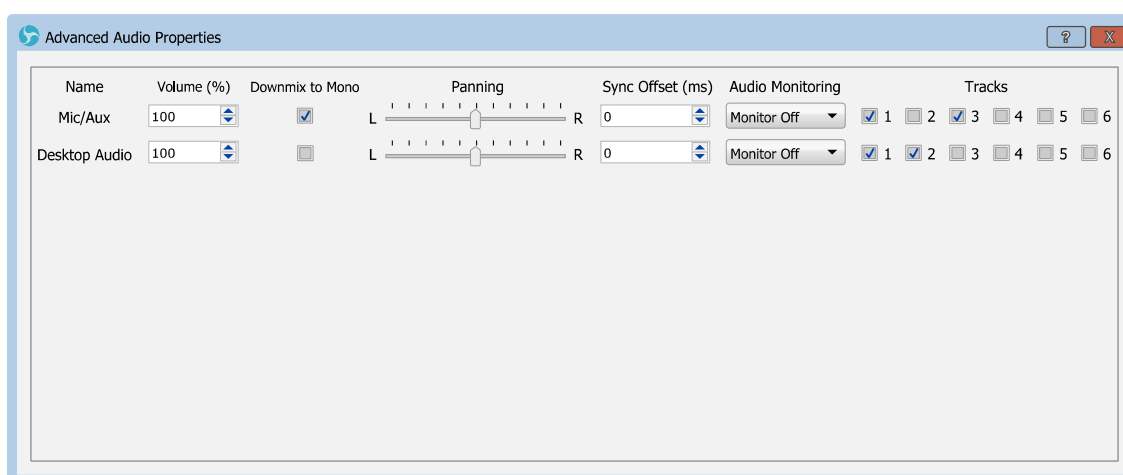


Illustration 12. Advanced Audio Properties


Name : shows name of the input.

Volume : defines volume of the input in %.

Downmix to Mono : if checked, mixes sound track to planar audio before encoding. For example, if one of the two input channels of the Stereo track is muted, with this setting enabled application will fill both channels with average sound data (makes planar stereo).

Panning : |not implemented yet. defines channel balance, volume level between Right (R) and Left (L) channels.

Sync Offset (ms) : defines synchronization offset of the audio source when mixing it into [Tracks](#), in milliseconds (negative values are accepted).

 Set *Sync Offset (ms)* to negative value, if your microphone's sound appears too late. Set *Sync Offset (ms)* to positive value, if sound appear ahead of the video. The acceptable negative value is fully depends on internal buffer of the device itself (usually less than 1000 ms).

Audio Monitoring : specifies control for media source output.

Next options available:

- *Monitor Off* : the media source shall route its audio stream through the mixing options specified by [Tracks](#) settings (see [below](#)).
- *Monitor Only (mute output)* : the media source shall route its audio stream only through the output device specified by [Audio Monitoring Device](#).

(See [Audio Monitoring Device](#) on page [144](#))



Routing media's source audio stream with *Monitor Only (mute output)* allow to user to hear the sound through the output device specified by [Audio Monitoring Device](#) and adjust volume of the media source by ear.

- *Monitor and Output* : the media source shall route its

audio stream through the output device specified by [Audio Monitoring Device](#) and through the mixing options specified by *Tracks* settings (see [below](#)).

Tracks : specifies track's number where input will be mixed (to Track #1, to Track #2, ...) and encoded.



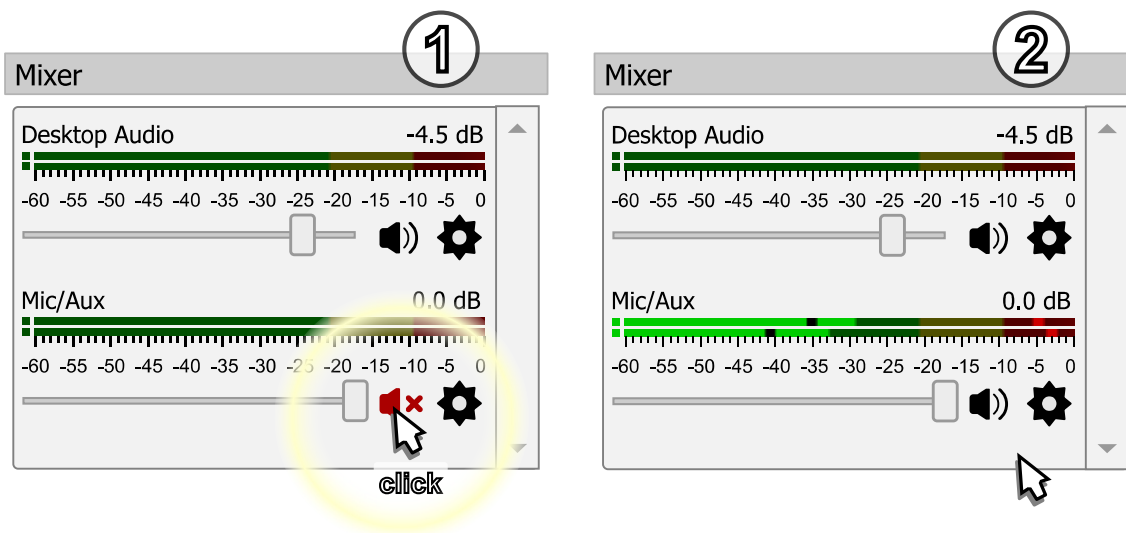
Set the Track #1 checked for all inputs you want to hear in the stream. And specify this inputs as separate tracks for Track #2, 3, 4..., for recording job, which is running simultaneously.

For example, for settings shown on the picture [Illustration 12. Advanced Audio Properties](#) on page [146](#), application mixes **Desktop Audio** and **Mic/Aux** devices to Track #1, mixes **Desktop Audio** device only to Track #2, mixes **Mic/Aux** device only to Track #3.

Thus, you should specify:

- 1) on [Streaming tab](#) *Audio Track* #1;
- 2) on [Recording tab](#) *Audio Track* #1, #2, #3 (or only #2, #3 if you planning to mix your audio recordings manually later).

Make sure, that audio source not muted at *Mixer* pane (list):



See [Enable audio source](#) on page [48](#).

Level meter of the source temporary turns **red** when signal clipping occur. **Black** marks on meter shows average loudness of the source. The scale is in dB (decibels).

If Mixer pane list is empty – either you scene lack any audio sources

(See [Add new audio/video source to OBS Studio scene](#) on page [45](#))

or some sources were hidden from the list:

to **show all** previously hidden **audio sources** from the *Mixer pane*, right-click over the *Mixer pane* and select *Unhide All* option. Now all audio sources shown;

to **hide any audio source** in the *Mixer pane* :

- right-click over the source in *Mixer pane* and select *Hide in Mixer* option. The source becomes hidden (but not excluded from the tracks “*Mixer*” processing);
- or you can right-click over the source in *Sources* pane and click the *Hide in Mixer* option;

if source's *Hide in Mixer* option marked by icon (right-click menu over the source in *Sources* pane) then its audio representation is hidden from the *Mixer pane* , not from the tracks “*Mixer*” processing [[page 146](#)];

to **show in Mixer pane** the single **audio source** that was previously hidden, right-click over the source in the *Sources* pane and make unchecked the *Hide in Mixer* option.

Command Line Options

About Command Line Options

OBS Studio supports additional command line keys to run specific tasks and troubleshoot setups.

Command Line Keys

You can specify two and more keys simultaneously. Each key separated with space and begins with double minus if other not mentioned.

For full list of supported commands see [Table 3. Command Line Keys](#) on page [150](#). Some external plugins can add to the application its own key options not listed here.

Table 3. Command Line Keys

| Command line key | Description | Example (Windows) |
|---|--|--|
| <code>--allow-opengl</code> | Enables Open GL Renderer for selection in Advanced Settings . Windows only. | <code>obs32.exe --allow-opengl</code> <code>obs64.exe --allow-opengl</code> |
| <code>--always-on-top</code> | Start application with Always On Top checked. | <code>obs32.exe --always-on-top</code> <code>obs64.exe --always-on-top</code> |
| <code>--collection [scene_collection_name]</code> | Scene Collection with name <code>scene_collection_name</code> will be loaded instead of last used. | <code>obs32.exe --collection MyNewScenes1</code> |



| Command line key | Description | Example (Windows) |
|-------------------------------------|---|---|
| <pre>--help -h</pre> | Prints list of available command line keys to standard output (terminal). | <pre>obs32.exe --help obs64.exe -h</pre> |
| <pre>--minimize-to-tray</pre> | Application starts minimized to tray icon (starts hidden to tray). The setting Enable system tray icon should be enabled in application's settings before use this key. | <pre>obs32.exe --minimize-to-tray obs64.exe --minimize-to-tray</pre> |
| <pre>--multi -m</pre> | Skips multi-instance warning when more than one application started from home or from any portable folder. | <pre>obs32.exe --multi obs64.exe --multi obs32.exe -m</pre> |
| <pre>--portable -p</pre> | Runs OBS Studio in portable mode (profiles stored in application's home folder). | <pre>obs32.exe --portable obs64.exe --portable obs32.exe -p</pre> |
| <pre>--profile [profile_name]</pre> | Profile with name profile_name will be loaded instead of last used. | <pre>obs32.exe --profile MyProfileForRec1</pre> |
| <pre>--scene [scene_name]</pre> | Scene with name scene_name will be specified as current instead of last used in current Scene Collection. | <pre>obs32.exe --scene MyBlankScene1 "obs64.exe --startrecording --profile Rec1 --collection SkypeCall1 --scene SkypeFullscreen1"</pre> |

| Command line key | Description | Example (Windows) |
|--|--|---|
| <code>--startrecording</code> | OBS Studio starts Recording immediately. | <code>obs32.exe --startrecording</code> <code>obs64.exe --portable --startrecording</code> |
| <code>--startreplaybuffer</code> | OBS Studio starts Replay Buffer immediately. | <code>obs32.exe --startreplaybuffer</code> <code>obs64.exe -p --startreplaybuffer</code> |
| <code>--startstreaming</code> | OBS Studio starts Streaming immediately | <code>obs32.exe --startstreaming</code> <code>obs64.exe --portable --startstreaming</code> |
| <code>--studio-mode</code> | OBS Studio starts Studio Mode immediately | <code>obs32.exe --studio-mode</code> <code>obs64.exe --portable --studio-mode</code> |
| <code>--unfiltered_log</code> | Repeated log file lines doesn't shortened to the first line. | <code>obs32.exe --unfiltered_log</code> |
| <code>--verbose</code> | Messages and LOG_INFO will be added to the log file. | <code>obs32.exe --verbose</code> |
| <code>--version</code> <code>-V {this is capital letter}</code> | Prints current version to standard output (terminal) | <code>obs64.exe --version</code> |

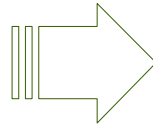


If name of the scene contains space symbols, place full name in double quote like in this example,

```
obs64.exe --startrecording --collection SkypeCall1 --scene "Skype Fullscreen 1"
```

Instead of using `--portable` command line key, you can place any file named **“portable_mode”** or **“portable_mode.txt”** in OBS Studio home folder:

/bin
/data
/obs-plugins



/bin
/config {creates automatically}
/data
/obs-plugins
portable_mode.txt

Linux Shortcuts

Positioning sources

| Result | Action |
|------------------|-----------------|
| Center to canvas | <i>Ctrl + D</i> |

Transform sources

| Result | Action |
|------------------------------|-----------------|
| Open Transform dialog window | <i>Ctrl + E</i> |
| Fit to canvas (screen) | <i>Ctrl + F</i> |
| Stretch to canvas (screen) | <i>Ctrl + S</i> |
| Reset Transform | <i>Ctrl + R</i> |

Copying sources

| Result | Action |
|-------------------------------------|-----------------|
| Copy source to clipboard | <i>Ctrl + C</i> |
| Paste source as ref. from clipboard | <i>Ctrl + V</i> |

Layers shift

| Result | Action |
|---------------------|--------------------|
| Move one level Up | <i>Ctrl + Up</i> |
| Move one level Down | <i>Ctrl + Down</i> |



| | |
|-----------------|--------------------|
| Raise to Top | <i>Ctrl + Home</i> |
| Lower to Bottom | <i>Ctrl + End</i> |

Navigate Preview*

| Result | Action |
|---------------------|-------------------------------|
| Drag Preview window | <i>Spacebar + Mouse</i> |
| Zoom Preview window | <i>Spacebar + Mouse Wheel</i> |

* See [Preview Scaling](#) on page [23](#)

User interface

| Result | Action |
|---|------------|
| Switch windowed / borderless–fullscreen | <i>F11</i> |

Default actions not global. Works only when OBS Studio main window in focus (active).

Mac Shortcuts

Positioning sources

| Result | Action |
|------------------|-----------------|
| Center to canvas | <i>Ctrl + D</i> |

Transform sources

| Result | Action |
|------------------------------|-----------------|
| Open Transform dialog window | <i>Ctrl + E</i> |
| Fit to canvas (screen) | <i>Ctrl + F</i> |
| Stretch to canvas (screen) | <i>Ctrl + S</i> |
| Reset Transform | <i>Ctrl + R</i> |

Copying sources

| Result | Action |
|-------------------------------------|-----------------|
| Copy source to clipboard | <i>Ctrl + C</i> |
| Paste source as ref. from clipboard | <i>Ctrl + V</i> |

Layers shift

| Result | Action |
|---------------------|--------------------|
| Move one level Up | <i>Ctrl + Up</i> |
| Move one level Down | <i>Ctrl + Down</i> |



| | |
|-----------------|--------------------|
| Raise to Top | <i>Ctrl + Home</i> |
| Lower to Bottom | <i>Ctrl + End</i> |

Navigate Preview*

| Result | Action |
|---------------------|-------------------------------|
| Drag Preview window | <i>Spacebar + Mouse</i> |
| Zoom Preview window | <i>Spacebar + Mouse Wheel</i> |

* See [Preview Scaling](#) on page [23](#)

User interface

| Result | Action |
|---|------------|
| Switch windowed / borderless–fullscreen | <i>F11</i> |

Default actions not global. Works only when OBS Studio main window in focus (active).

Windows Shortcuts

Positioning sources

| Result | Action |
|------------------|-----------------|
| Center to canvas | <i>Ctrl + D</i> |

Transform sources

| Result | Action |
|------------------------------|-----------------|
| Open Transform dialog window | <i>Ctrl + E</i> |
| Fit to canvas (screen) | <i>Ctrl + F</i> |
| Stretch to canvas (screen) | <i>Ctrl + S</i> |
| Reset Transform | <i>Ctrl + R</i> |

Copying sources

| Result | Action |
|-------------------------------------|-----------------|
| Copy source to clipboard | <i>Ctrl + C</i> |
| Paste source as ref. from clipboard | <i>Ctrl + V</i> |

Layers shift

| Result | Action |
|---------------------|--------------------|
| Move one level Up | <i>Ctrl + Up</i> |
| Move one level Down | <i>Ctrl + Down</i> |



| | |
|-----------------|--------------------|
| Raise to Top | <i>Ctrl + Home</i> |
| Lower to Bottom | <i>Ctrl + End</i> |

Navigate Preview*

| Result | Action |
|---------------------|-------------------------------|
| Drag Preview window | <i>Spacebar + Mouse</i> |
| Zoom Preview window | <i>Spacebar + Mouse Wheel</i> |

* See [Preview Scaling](#) on page [23](#)

User interface

| Result | Action |
|---|------------|
| Switch windowed / borderless–fullscreen | <i>F11</i> |

Default actions not global. Works only when OBS Studio main window in focus (active).

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