The Media Streaming Journal

Covering Audio and Video Internet Broadcasting

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Welcome to The Media Streaming Journal

Greetings,

Open Broadcaster Software (OBS) is a free and open-source software suite for recording and live streaming. OBS is a definite must have application for live stream production environment. The software can be installed and used on numerous operating systems, including Windows, Mac. Linux and FreeBSD.

The software is coded using C, C++, and Qt, and provides real-time source and device capture, scene composition, encoding, recording, and broadcasting. Transmission of data is primarily done via the Real Time Messaging Protocol (RTMP) and can be sent to any RTMP supporting destination. OBS includes many presets for streaming websites such as YouTube, Twitch, Instagram, and Facebook. *

OBS has released their latest version: 24.0.3 on October 11th 2019.

https://github.com/obsproject/obs-studio

https://www.obsproject.com

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

The Grand Master of Digital Disaster
(Editor In Chief)

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

* https://en.wikipedia.org/wiki/Open_Broadcaster_Software

David Childers

The Grand Master of Digital Disaster

<u>Current Member</u>: International Association Of Internet Broadcasters

<u>Former Member</u>: Society of Motion Picture and Television Engineers

Published Author

Introduction To Internet Broadcasting
Amazon Publishing

30 Creative Commons Computer, Technical and Internet Broadcasting Guides

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.ScenicTelevision.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.
http://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.
http://web.archive.org/web/20061104230522/http://www.organicadtm.com/index.php?module=articles&func=display&catid=37&aid=61

LinkedIn Contact Information

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

My Published Guides

<u>Computer Operating System</u>

- FreeBSD Compact Guide
  https://archive.org/details/FreeBSD.Compact.Guide

- Debian Linux Desktop
  https://archive.org/details/Debian.Linux.Desktop

<u>Security</u>

- Cyber Security
  https://archive.org/details/Cyber.Security

- Wireless Network Security
  https://archive.org/details/Wireless.Security

- Multimedia Server Security Guide
  https://archive.org/details/Multimedia.Server.Security.Guide

<u>Intelligence</u>

- Competitive Intelligence For Broadcasters
  https://archive.org/details/Competitive.Intelligence.For.Broadcasters

- Codex Notitia
  https://archive.org/details/Codex.Notitia

- Techniques For Information Research
  https://archive.org/details/Techniques.For.Information.Research

- Introduction To Open Source Intelligence
  https://archive.org/details/Introduction.To.Open.Source.Intelligence

<u>Technical</u>

- Basic Internet Video Production Guide
  https://archive.org/details/Video.Production.Guide

- SHOUTcast Audio And Video Streaming Guide
  https://archive.org/details/SHOUTcast.Audio.And.Video.Streaming

- SHOUTcast Streaming Best Of Technical Support
  https://archive.org/details/Shoutcast.Streaming.Best.Of.Tech.Support

- Tips For Internet Broadcasters
  https://archive.org/details/Tips.For.Internet.Broadcasters

- Icecast Multimedia Server Handbook
  https://archive.org/details/Icecast.Multimedia.Server.Handbook

- Internet Broadcasters Information Handbook
  https://archive.org/details/Internet.Broadcasters.Information.Handbook

- Linux Applications For Internet Broadcasters
  https://archive.org/details/Linux.Applications.For.Internet.Broadcasters

- Youtube Live Video File Streaming
  https://archive.org/details/Youtube.Live.Video.File.Streaming

Revenue

- Broadcaster Revenue Handbook
  https://archive.org/details/Broadcaster.Revenue.Handbook

- Effective Audio Commercials
  https://archive.org/details/Effective.Audio.Commercials

Marketing

- Broadcast Station Imaging
  https://archive.org/details/Broadcast.Station.Imaging

- Creating An Effective Media Kit
  https://archive.org/details/Creating.An.Effective.Media.Kit

- Creating An Effective Broadcast Station Newsletter
  https://archive.org/details/Creating.An.Effective.Broadcast.Station.Newsletter

- Broadcasters Promotion Handbook
  https://archive.org/details/Broadcasters.Promotion.Handbook

- Planning and Conducting Multimedia Influence Campaigns
  https://archive.org/details/Planning.and.Conducting.Multimedia.Influence.Campaigns

- Social Media Guide
  https://archive.org/details/Social.Media.Guide

Website

- Website Development
  https://archive.org/details/Station.Website.Development

- Search Engine Optimization
  https://archive.org/details/Search.Engine.Optimization

Audience

- Internet Broadcasters Guide To Understanding Your Audience
  https://archive.org/details/Internet.Broadcasters.Guide.To.Understanding.Your.Audience

- How To Mobilize Your Broadcast Audience
  https://archive.org/details/How.To.Mobilize.Your.Broadcast.Audience

General

- Creative Commons Licensing For Broadcasters
  https://archive.org/details/Creative.Commons.Licensing.For.Broadcasters

Open Broadcaster Software Studio
(Multiplatform) Help Guide

Join our technical discussion on Facebook

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

Magazine cover:

https://en.wikipedia.org/wiki/Test_card#/media/File:PM5544_with_non-PAL_signals.png

RADIOSOLUTION

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.

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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.
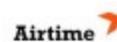
Relax With The Sights And Sounds Of Nature

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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.

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Open Broadcaster Software Studio
(Multiplatform) Help Guide

A comprehensive guide for installing and using the Open Broadcasters Software Studio.

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.

Open Broadcaster Software Studio (Multiplatform)
Help Guide

(app. ver. 24.0.0)

23 Sep 2019

Contents

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:

```
%appdata%\obs-studio                    FOR Windows
~/.config/obs-studio                    FOR Linux
~/.obs-studio                           FOR Linux + XDG
~/Library/Application Support/obs-studio  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 7 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 34

If you are an experienced OBS user:

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

See [CHANGES since v23.0.0 of the application](#) on page [11](#)

If you want to focus on Web Streaming features:

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

See [Output](#) on page [157](#)

See [Streaming tab](#) on page [161](#)

If you want to focus on Recording features:

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

See [Output](#) on page [157](#)

See [Recording tab](#) on page [165](#)

Using online Forum

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

(See [Post OBS Studio log–file](#) on page [16](#))

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.

Open Broadcaster Software Studio
Multiplatform

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 v23.0.0 of the application
New features, key points.

- ✔ The *Text (GDI+)* now has new option to transform all letters to lower or upper case.
    See Text (GDI+) on page 81
- ✔ Now Linux users can specify color range for their *Video Capture Device* too.
    See Video Capture Device on page 84
- ✔ *Image Slide Show* source can load more images to the RAM at once (5 images limit removed).
    See Image Slide Show on page 73

✔ *Media Source* option to hide source was reworded (Hide vs Show Nothing).

> See Media Source on page 76

✔ *Expander* audio filter was changed to not use obsolete setting ("None" detector was removed).

> See Expander on page 118

✔ New *Scale Filtering* algorithm was added (Area filter).

> See Scale Filtering on page 114
> See Downscale Filter on page 177

✔ Source align becomes easier now, new transform options in context menu were added (Center Vertically, Center Horizontally).

> See Transform on page 95

✔ Themes were renamed (Default to System).

> See Themes on page 148

✔ Added option to copy/paste filters directly from the Audio Mixer pane.

> See Audio Mixer pane on page 188

✔ Scene filters now can be copy/pasted too.

> See filter on page 94

✔ New Network Buffering option is added to the Media Source.

> See Media Source on page 76

✔ *Monitoring Device* settings renamed and now moved to the Audio page.

> See Monitoring Device on page 175

✔ New Luma Key filter added for video effects.

> See Luma Key on page 112

✔ Now sound track's number of the media file enabled for selection.

See [VLC Video Source](#) on page [86](#)

✔ Now subtitles track's number of the media file enabled for selection too.

    See [VLC Video Source](#) on page [86](#)

✔ New parameter for statistic was added which can help to monitor recording time left to fill the whole disk.

    See [Stats](#) on page [30](#)

✔ New options for Blackmagic Disign video capture devices added (swapping of the LFE and Front audio channels).

    See [Decklink Output](#) on page [130](#)

✔ Configurable transition effect between the scenes can be previewed now.

    See [Transitions types](#) on page [45](#)

✔ Added new feature to pause local recordings.

    See [pause/continue recording](#) on page [139](#)

✔ Local recordings has new optional confirmation dialog before stopping the recording event.

    See [General settings](#) on page [151](#)

✔ Now recording will stop when disk space is low (500 MBytes limit).

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

✔ Added new script to pause recording when switching to a specific scene.

    See [Scripts](#) on page [133](#)

✔ It is possible to to create custom browser docks in the UI now.

    See [View menu](#) on page [21](#)

✔ Added dynamic bitrate support (RTMP only).

    See [Network](#) on page [184](#)

✔ Browser-source has new audio rendering mechanism that allows to control all browser sounds as regular OBS Studio audio source.

See Reroute audio to OBS on page 68
✔ Added box selector to preview (finally, you can use mouse to select multiply sources!).

See Select multiply sources on page 58

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

Open Broadcaster Software Studio
Multiplatform

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 36
See Video on page 176

Scene management and Control options Main screen control options hold tools to create and edit output:
See Creating Scenes in OBS Studio on page 34
See Output section on page 157

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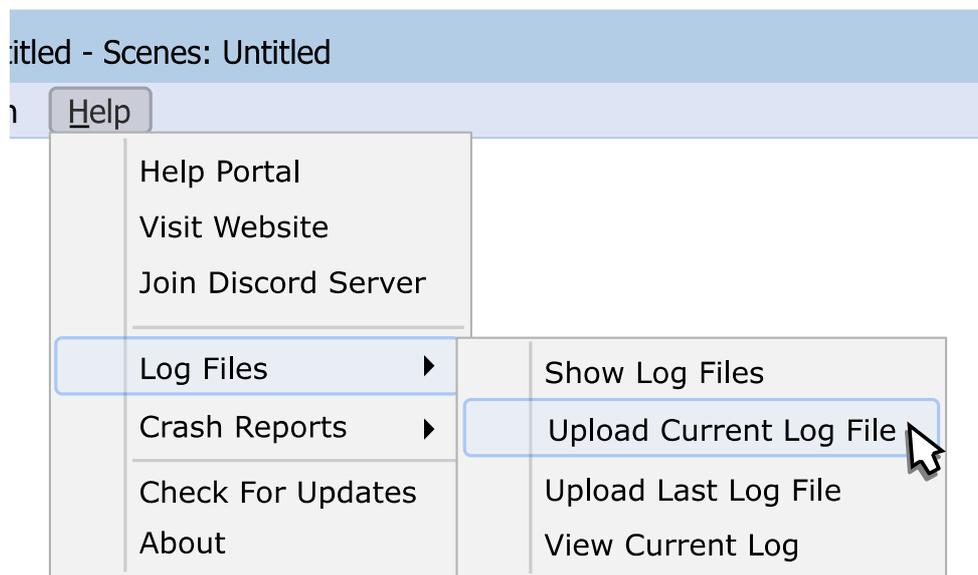
To **Post OBS Studio log-file online** (current session):

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.

Help Portal

opens in the browser official web-page of the OBS Studio, there you can find some additional info about the application and it usage.

Join Discord Server

opens browser to invite you into OBS Community on Discord. There you can get brief help info on your problem, if any.

Crash Reports
>   section allows to view and upload last possible crash-log, if
>   any.

Check for updates
>   starts online check for the most latest OBS Studio available.
>   If any will be found the application will prompt to update to
>   the most recent one.

About
>   opens brief info window about authors, version and license.

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.
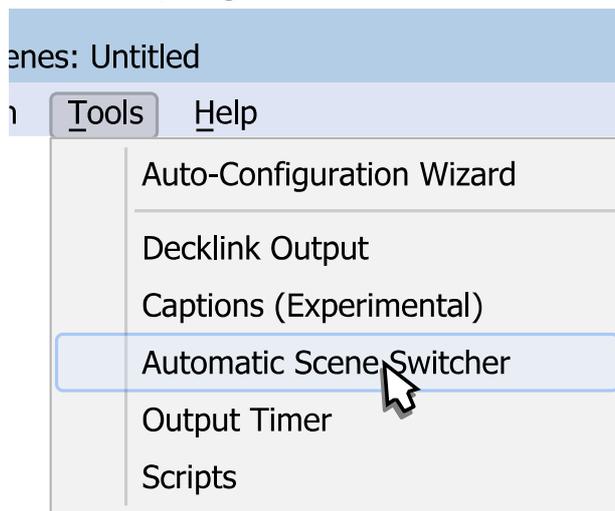
Auto-Configuration Wizard
>   tool to automatically optimize application settings.

(See Auto-Configuration Wizard on page 125)

Decklink Output

    tool to control Blacknagic Design video capture devices.
(See Decklink Output on page 130)

Captions (Experimental)

    tool to add closed captions to the stream using speech
recognition.
(See Captions (Experimental) on page 129)

Automatic Scene Switcher

    tool to switch scenes in special order.
(See Automatic Scene Switcher on page 126)

Output Timer

    tool to stop streaming/recording after fixed time interval.
(See Output Timer on page 132)

Scripts

    tool to manage custom written automation scripts.
(See Scripts on page 133)

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*.

- Profile: Untitled - Scenes: Untitle

file   Scene Collection   Tools

New

Duplicate

Rename

Remove

Import

Export

✓   Untitled

MyNewScenes1
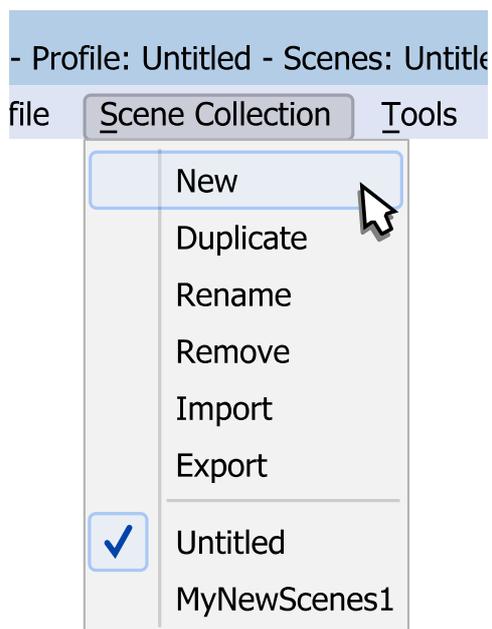
Duplicate

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*.
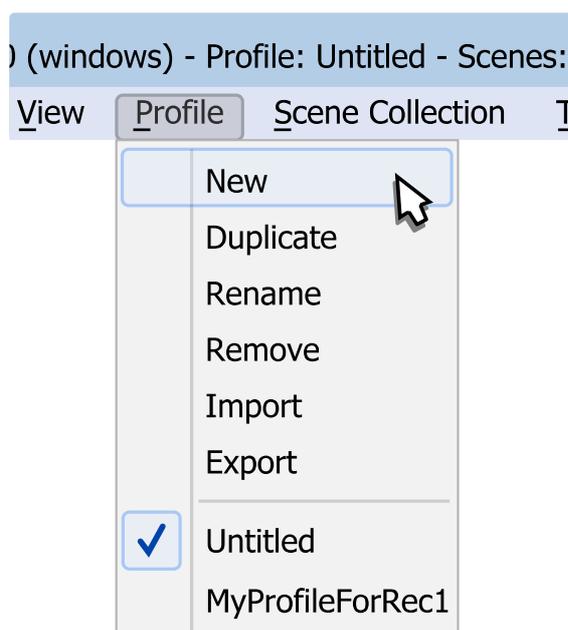
Duplicate

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.
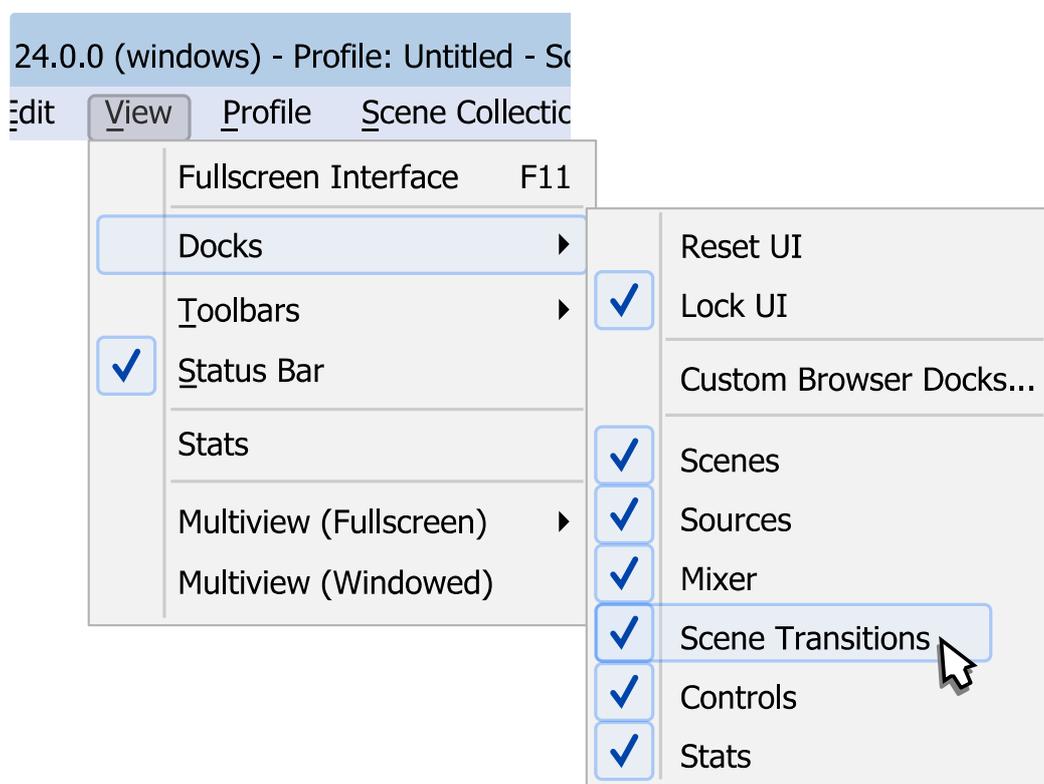
Fullscreen Interface

>   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:

- *Custom Browser Docks...* :

  when clicked opens new dialog window where custom browser widget docks can be added/removed. Each new dock pane can point to different web-page, so user don't have to open extra browsers.

- *Scenes* :

  if checked, shows *Scenes* pane.

- *Sources* :

  if checked, shows *Sources* pane.

- *Mixer* :

  if checked, shows *Audio Mixer pane*.

- *Scene Transitions* :

  if checked, shows *Scene Transitions* pane.

- *Controls* :

  if checked, shows pane of control buttons.

- *Stats* :

  if checked, shows *Stats* as additional docking-pane.

- *OTHER_DOCKING_PANE* :

  if checked, shows docking pane of the enabled service, if any.

  (See)

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 32)

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 39)

Multiview (Windowed)

    sub-menu option shows window of up to 8 combined
scenes previews.
(See Multi-view of scenes on page 39)

Stats

    sub-menu option shows current output status and
resources usage statistic window.
(See Stats on page 30)

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.
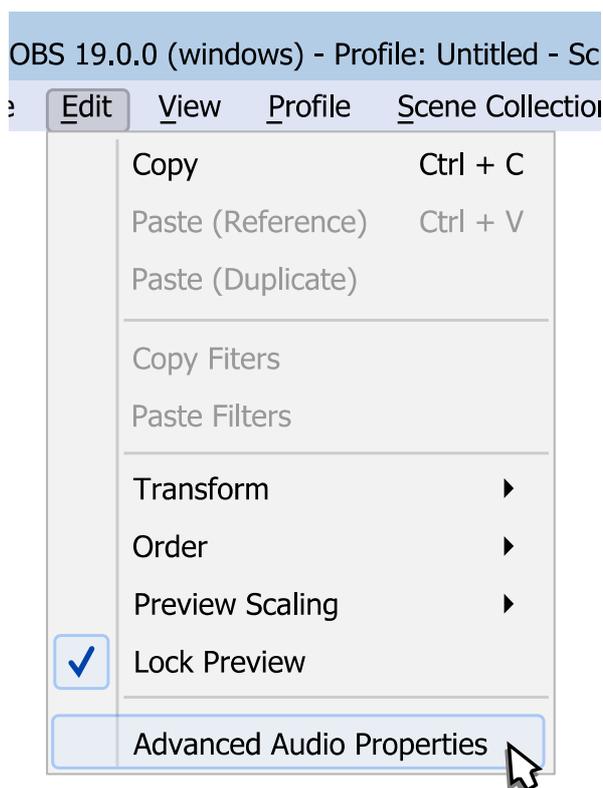
Copy

> 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 yet.

(See Scene Collections menu on page 18)

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 18)

Transform

sub-menu option applies transform to the sources.

(See Transform on page 95)

Order

sub-menu option allows to rearrange the layers.

(See Layer shift (order) on page 93)

Preview Scaling

sub-menu option allows to change viewing size of the preview window.

(See Preview Scaling on page 28)

Lock Preview

sub-menu option, if marked by ✓ icon then editing of the source position and size in the preview window via manual transform inaccessible. This setting prevents editing of the scene by accident.

(See Working with sources (positioning) on page 36)

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

Advanced Audio Properties

sub-menu option opens audio mixer dialog window.
(See Mixer on page 186)

File menu

File menu has general program settings and options.
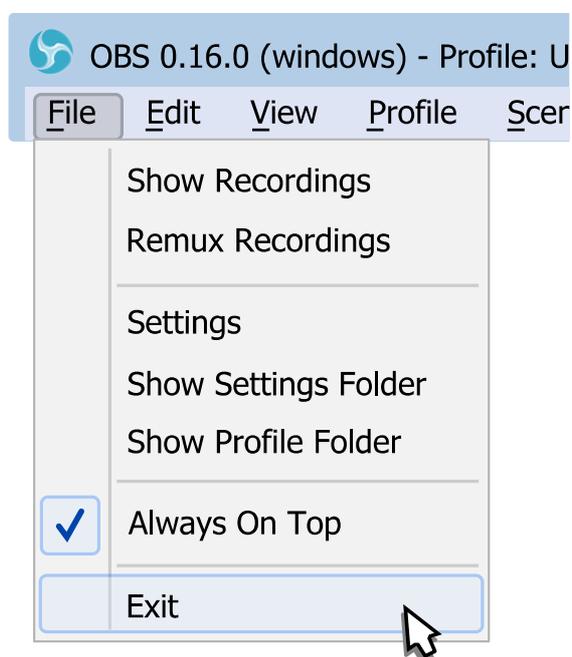
Show Recordings

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 151)

Show Settings Folder

> sub-menu opens in default file manager of the system the directory where application stores its settings.

Show Profile Folder

> sub-menu opens in default file manager of the system the directory where application stores its 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 176)

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 36)

Uncheck *Lock Preview* option via right-click menu or by *View menu* to enable edit in preview window.

You can lock/unlock sources individually via sources lock icon.
(See Lock source at page 56)
(See Unlock source at page 56)

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 177.
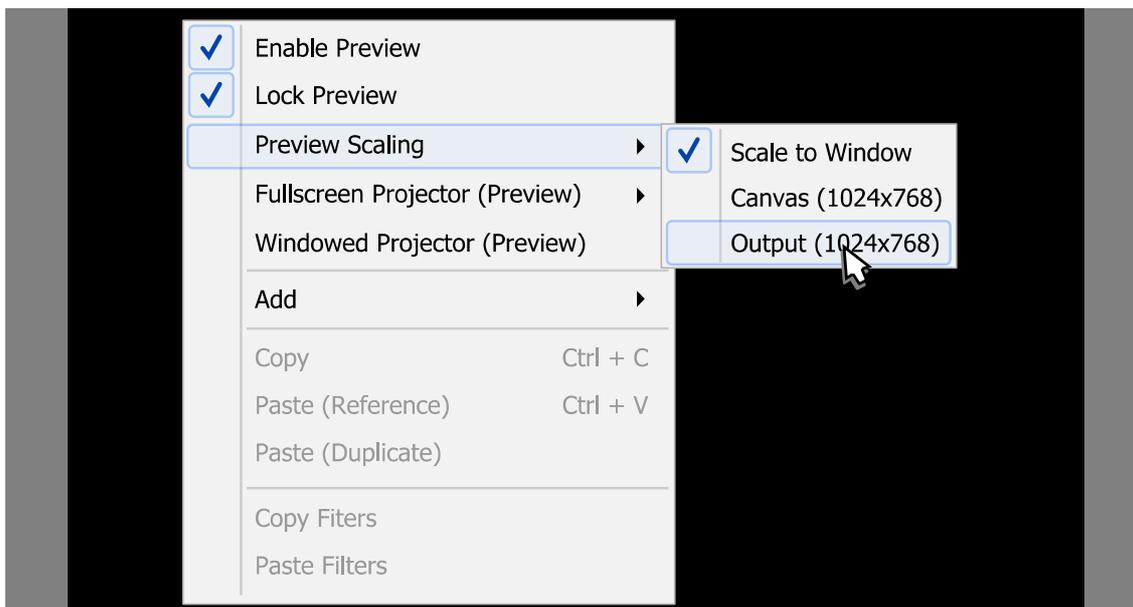
Current scale of the preview window marked by ✓ icon.

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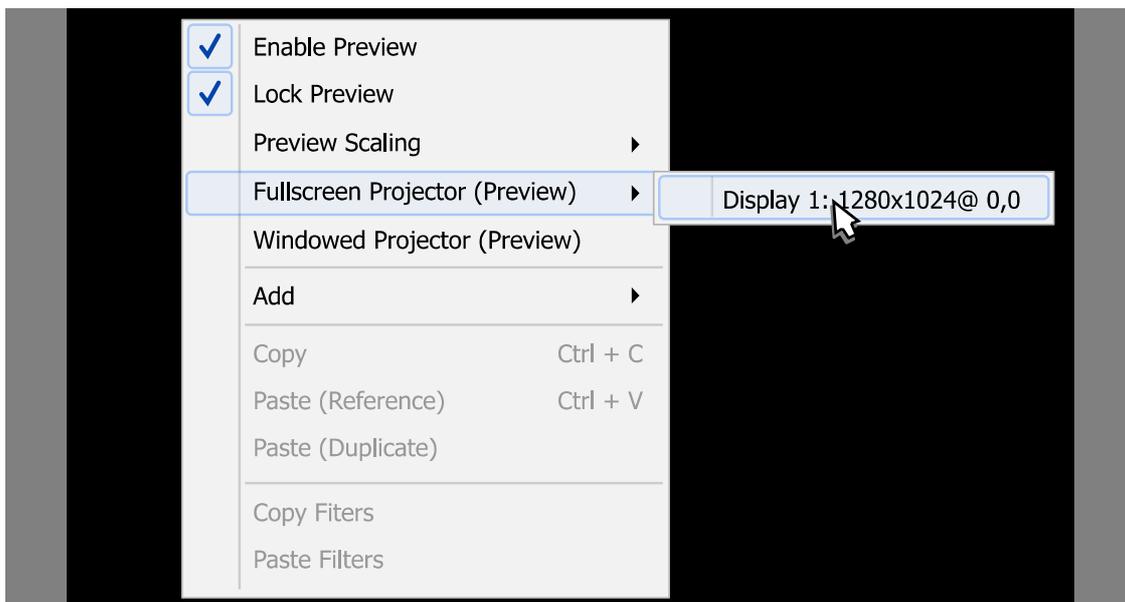
To exit full screen preview mode: press *Esc* button.

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.

Stats				□ ▣ ✕
CPU Usage	26%	FPS	30.00	
Disk space available	**1.9 GB**	Average time to render frame	2.7 ms	
Disk full in (approx.)	2 Hours, 14 Minutes	Frames missed due to rendering lag	0/1828 (0.0%)	
Memory usage	280.4 MB	Skipped frames due to encoding lag	0/878 (0.0%)	

Output	Status	Dropped Frames (Network)	Total Data Output	Bitrate
Stream	Inactive	0/0 (0.0%)	0.0 MB	0 kb/s
Recording	Recording		12.6 MB	1982 kb/s

Reset   Close

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 (*Stats* window has own docking-pane too).
(See View menu on page 21)

To open *Stats* window automatically, check the Open stats dialog
on startup option or use it as docking-pane.
(See General settings on page 151)
(See View menu on page 21)

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, *Audio 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 22)
   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 32)

Illustration 1. Make pane float

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

sides you can make it docked again.

By placing floating docking-pane over the other dock pane from the main UI – the docking-pane will be combined into tabs.

To revert all changes and return to **default layout** use the *View menu Reset UI* option.
(See Reset UI on page 22)

Manipulation with sources/layers at preview area explained in:
Getting started on page 34;
Using Layers on page 91;
Working with sources (positioning) on page 36;
manual transform on page 98;
easy cropping on page 99; of the guide.

Open Broadcaster Software Studio

Multiplatform

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 (this action named *Transition*) 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 21)

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.

Add Scene	? X
Please enter the name of the scene	
Scene 1	
OK Cancel	
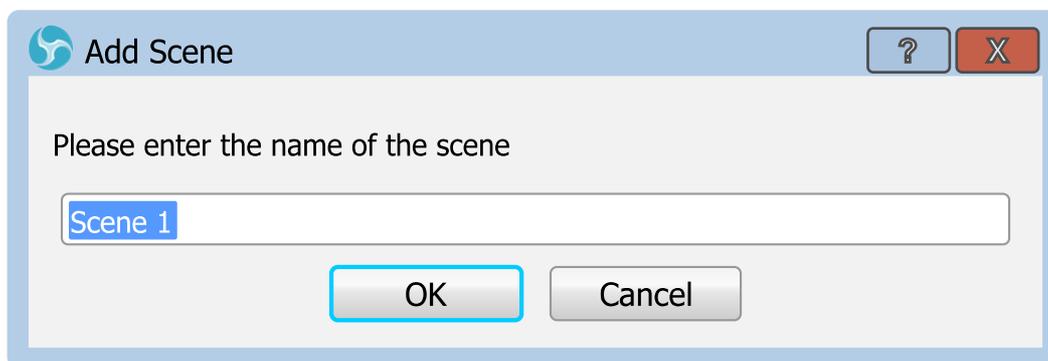
Give to the scenes informative names like "Intro", "Pause" and so on.

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 (other 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 51)

Ready to start?

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

Adjust 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 176)
(See Output on page 157)

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.
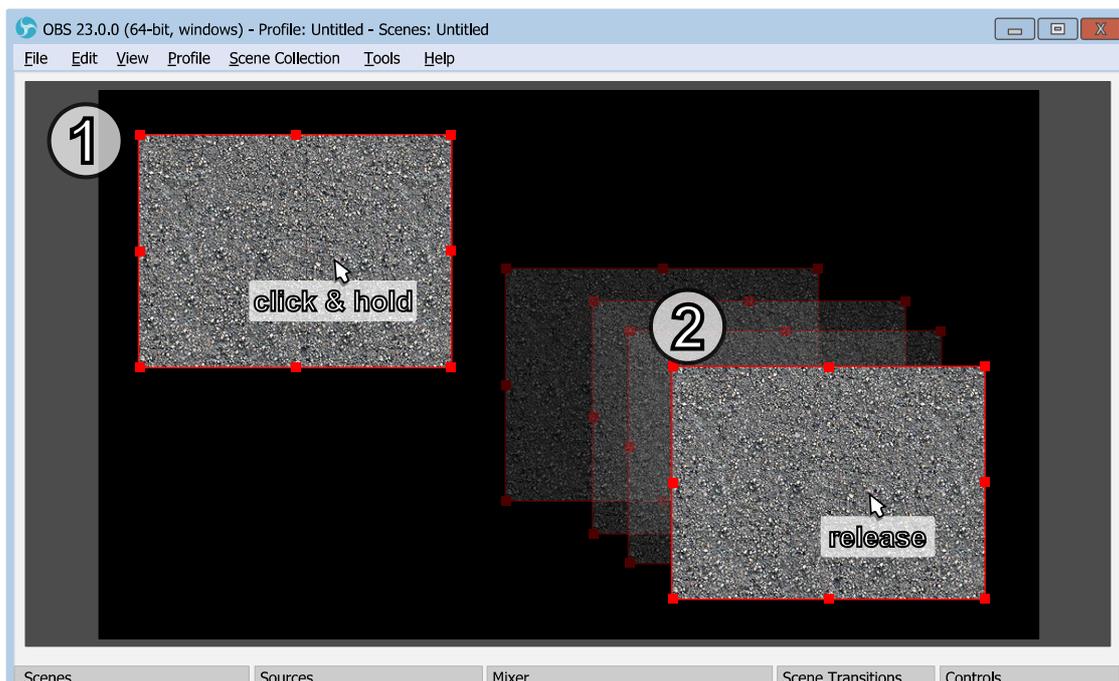
Illustration 2. Source move

(See Illustration 2. Source move on page 37)

You can temporary disable snapping by holding down the *Ctrl* key while dragging sources. (See General settings on page 151)

Make sure that *Lock Preview* option unchecked. (See Lock Preview on page 28)

Make sure that source not locked. (See Lock source at page 56) (See Unlock source at page 56)

Source transform

Each source can be adjusted via its layer's *Transform*. (See Using Layers on page 91)

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*.

Sources
Text (Free Type 2) 👁 🔓
Game Capture|
➕ ➖ ⚙ │ ∧ ∨
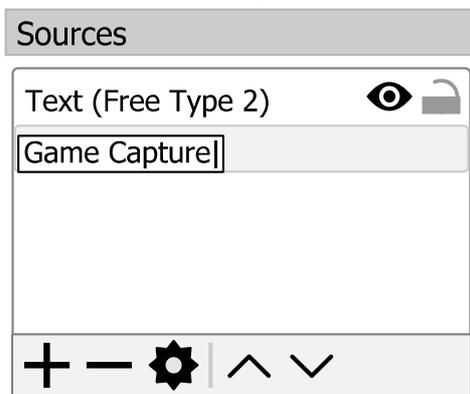
Remove scene

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

Confirm Remove   X

❓ Are you sure you wish to remove 'Scene'?

OK   Cancel
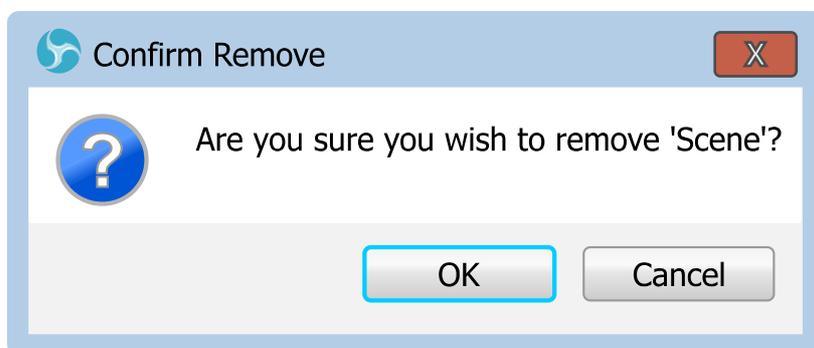
⚠ Removed scenes cannot be recovered.

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.

Scenes
Scene (intro)
Scene 2

Add
Duplicate
Copy Filters
Paste Filters
Rename
Remove　　　　　　　　　　Del
Order　　　　　　　　　　　►
Fullscreen Projector (Scene)　►
Windowed Projector (Scene)
Filters
Transition Override　　　　►
✓ Show in Multiview

Display 1: 1280x1024@ 0,0
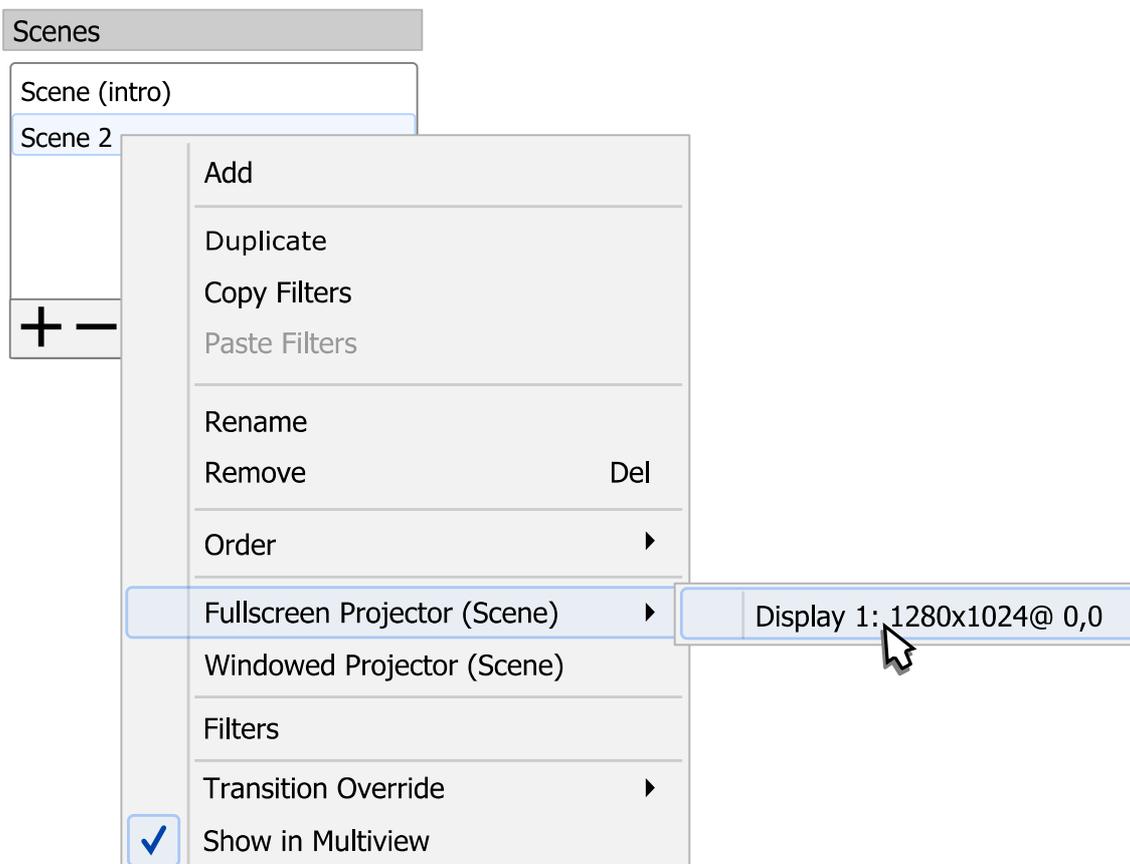
You can preview whole video output via right-clicking at preview window and choosing sub-menu *Fullscreen Projector (Preview)*
(See Full screen preview (canvas) on page 29).

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 (Windowed) on page 23
Multiview (Fullscreen) on page 23

See possible layout of the *Multiview (Fullscreen)* at Illustration 3. Multiview (Fullscreen) example on page 41

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

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

Click once on one of the multi-previews **to switch current preview (edit)** to the desirable scene (perform Scene transitioning).

In *Studio Mode* you can click twice (depending on General settings of the application) on one of the multi-previews **to switch program (live)** to the desirable scene.
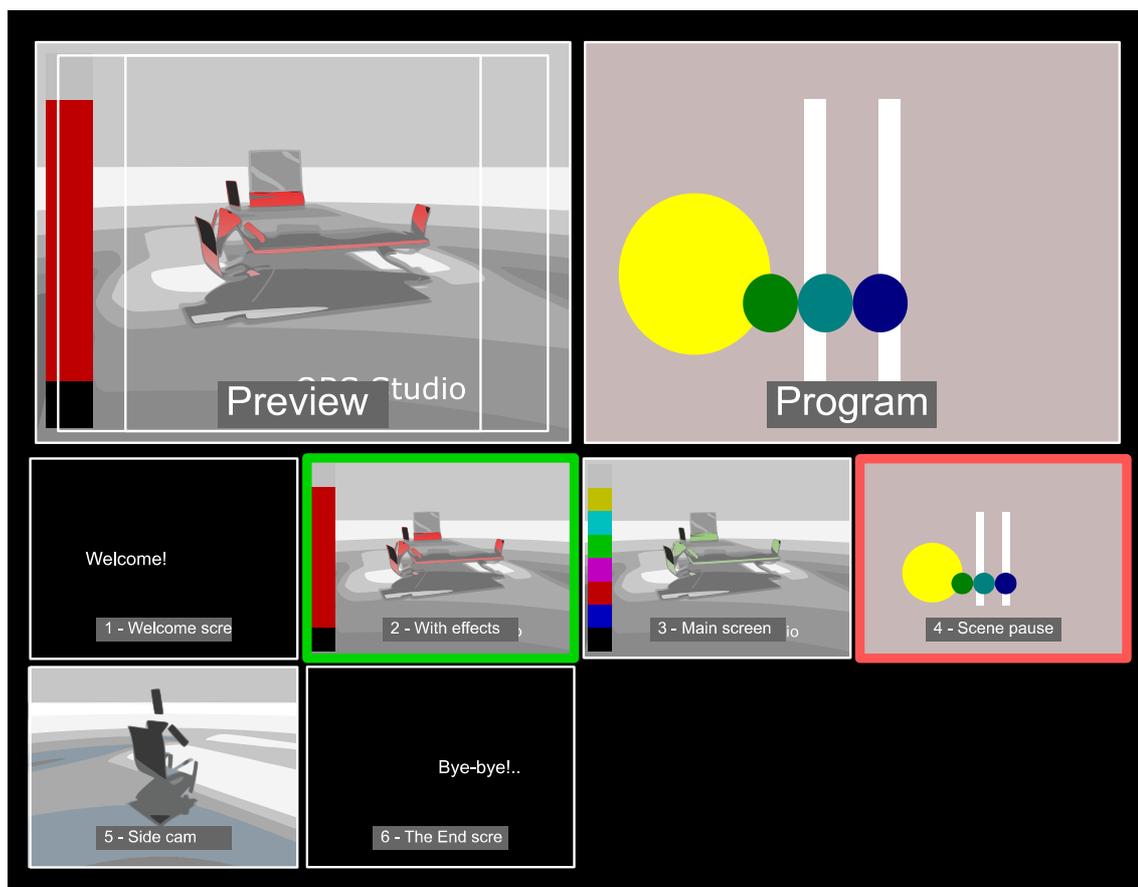
Illustration 3. Multiview (Fullscreen) example

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).

Scenes
Scene (intro)
Scene 2

Menu item	Shortcut
Add	
Duplicate	
Copy Filters	
Paste Filters	
Rename	
Remove	Del
Order	▶
Fullscreen Projector (Scene)	▶
Windowed Projector (Scene)	
Filters	
Transition Override	▶
✓ Show in Multiview	

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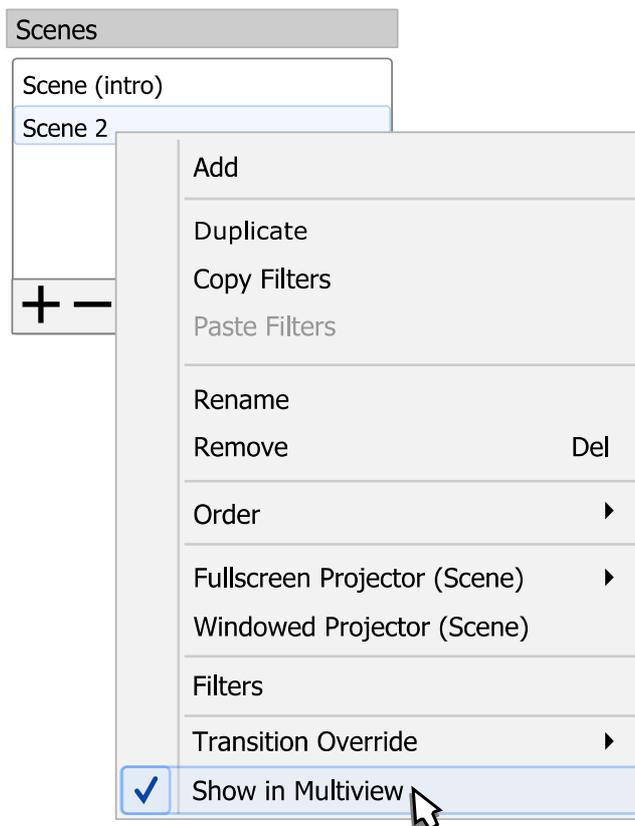
To **exclude scene from multi-view** make *Show in Multiview* unchecked.

To change layout of the multi-view previews see General settings on page 151.

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 new 'configurable' transition by clicking **+** icon

		Scene Transitions	Control
0.0 dB	▲	Fade ▼	Star
🔊 ⚙		╋ ━ ⚙	Star
0.0 dB		Duration 300ms ⬍	St
🔊 ⚙			
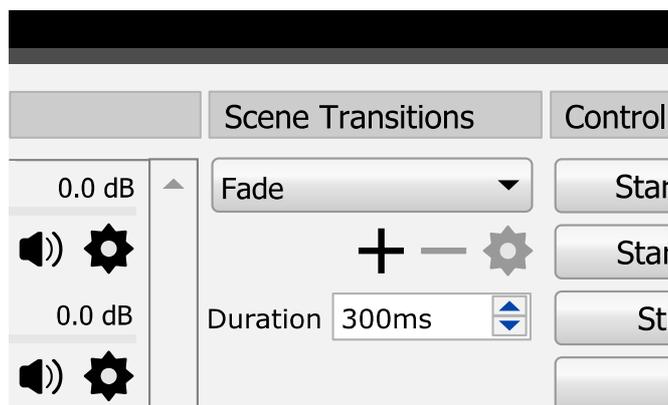
under the *Scene Transitions* drop down list.

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

To remove selected 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 180)

(See Multi-view of scenes on page 39)

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.

Scenes
Scene (intro)
Scene 2

+ ―

Add
Duplicate
Copy Filters
Paste Filters
Rename
Remove   Del
Order   ▶
Fullscreen Projector (Scene)   ▶
Windowed Projector (Scene)
Filters
Transition Override   ▶
✓ Show in Multiview

✓	None
	Cut
	Fade
	Fade to Color

300ms
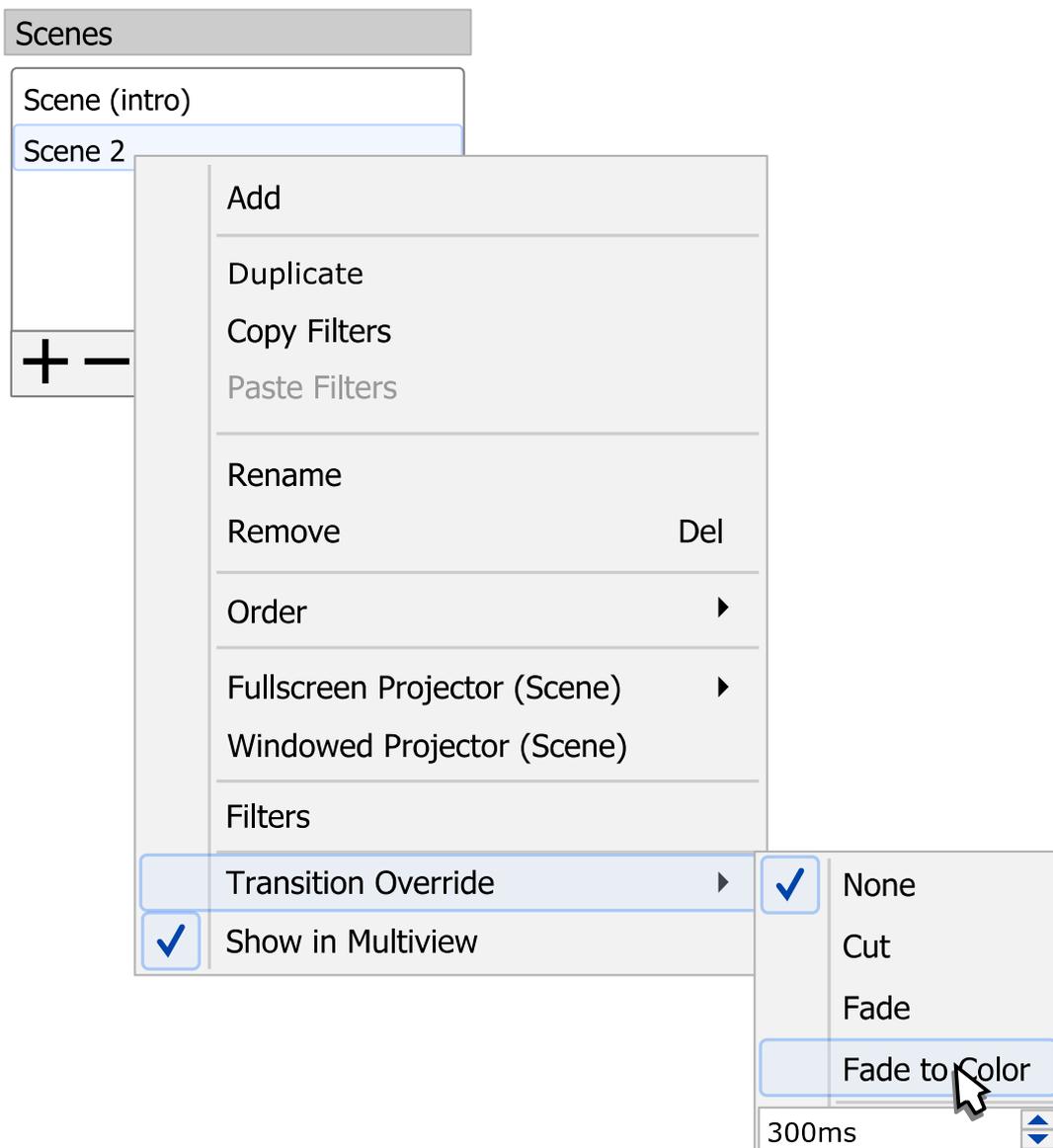
To use global transition setup for the scene, apply transition override *None.*

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* :

  defines rise and fall speeds of the color maximum (lower values means faster rise).

- *Preview Transition* :

  when clicked, the transition effect will playback in the preview area of the properties window by changing test image letter "A" (green) to letter "B" (blue).

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.

- *Preview Transition* :

    when clicked, the transition effect will playback in the preview area of the properties window by changing test image letter "A" (green) to letter "B" (blue).

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).

- *Preview Transition* :

    when clicked, the transition effect will playback in the preview area of the properties window by changing test

image letter "A" (green) to letter "B" (blue).

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).

Files in *.mov* container with *qtrle* encoder was tested for intermediate videos with 8-bit alpha support.

- *Transition Point Type* :

specifies type of the start point measurement for the scene change. Next options available:

- *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. Next options available:

- *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 185).

- ○ *Monitor Only (mute output)* :

  intermediate file that in use shall route its audio stream only through the output device specified by *Monitoring Device*.

  (See Monitoring Device on page 175)

  Routing media's source audio stream with *Monitor Only (mute output)* allow to user to hear the sound through the output device specified by *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 *Monitoring Device* and through the mixing options specified by *Tracks* settings.

  (See Advanced Audio Properties on page 185)

- *Preview Transition* :

  when clicked, the transition effect will playback in the preview area of the properties window by changing test

image letter "A" (green) to letter "B" (blue).

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).

- *Preview Transition* :

    when clicked, the transition effect will playback in the preview area of the properties window by changing test image letter "A" (green) to letter "B" (blue).

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 95)

Maintain aspect ratio of the video

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

(See Filters for Special Effects on page 94)

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 176)

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.
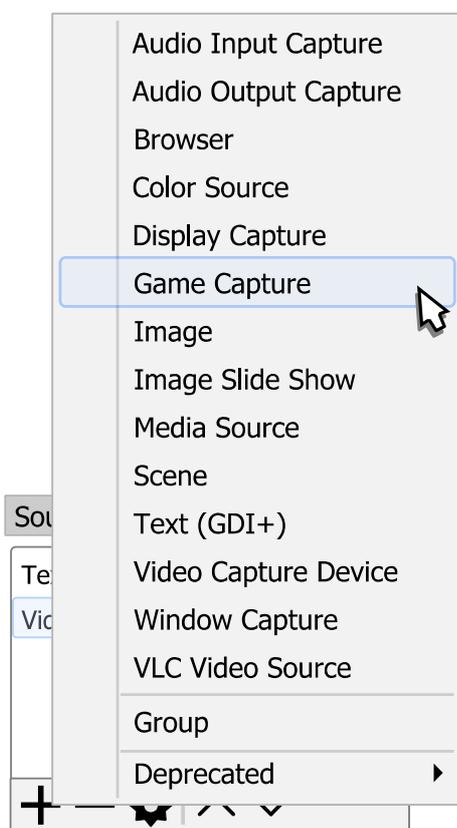
(See Audio on page 173).

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

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

Add new audio/video source to OBS Studio scene

To add new video/audio 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.

Audio Input Capture
Audio Output Capture
Browser
Color Source
Display Capture
Game Capture
Image
Image Slide Show
Media Source
Scene
Text (GDI+)
Video Capture Device
Window Capture
VLC Video Source
Group
Deprecated   ▶

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).

Create/Select Source   ?   X

◉ Create new

Game Capture 1

○ Add Existing

Game Capture

> Cloned sources has independent transform properties, but other settings are linked. Use *Add Existing* option, if you want to add the same source through the scenes.

☑ Make source visible

OK   Cancel
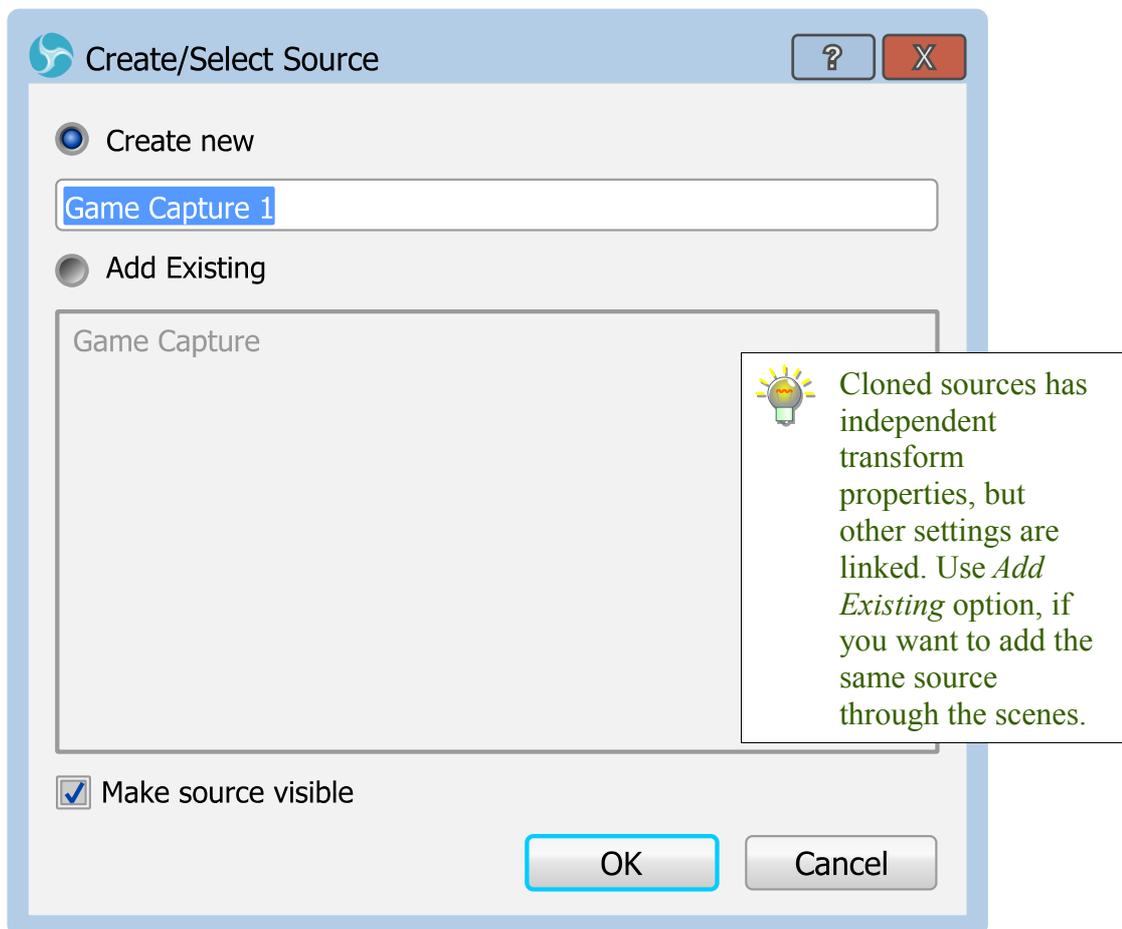
Make source visible

> 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 56)

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.
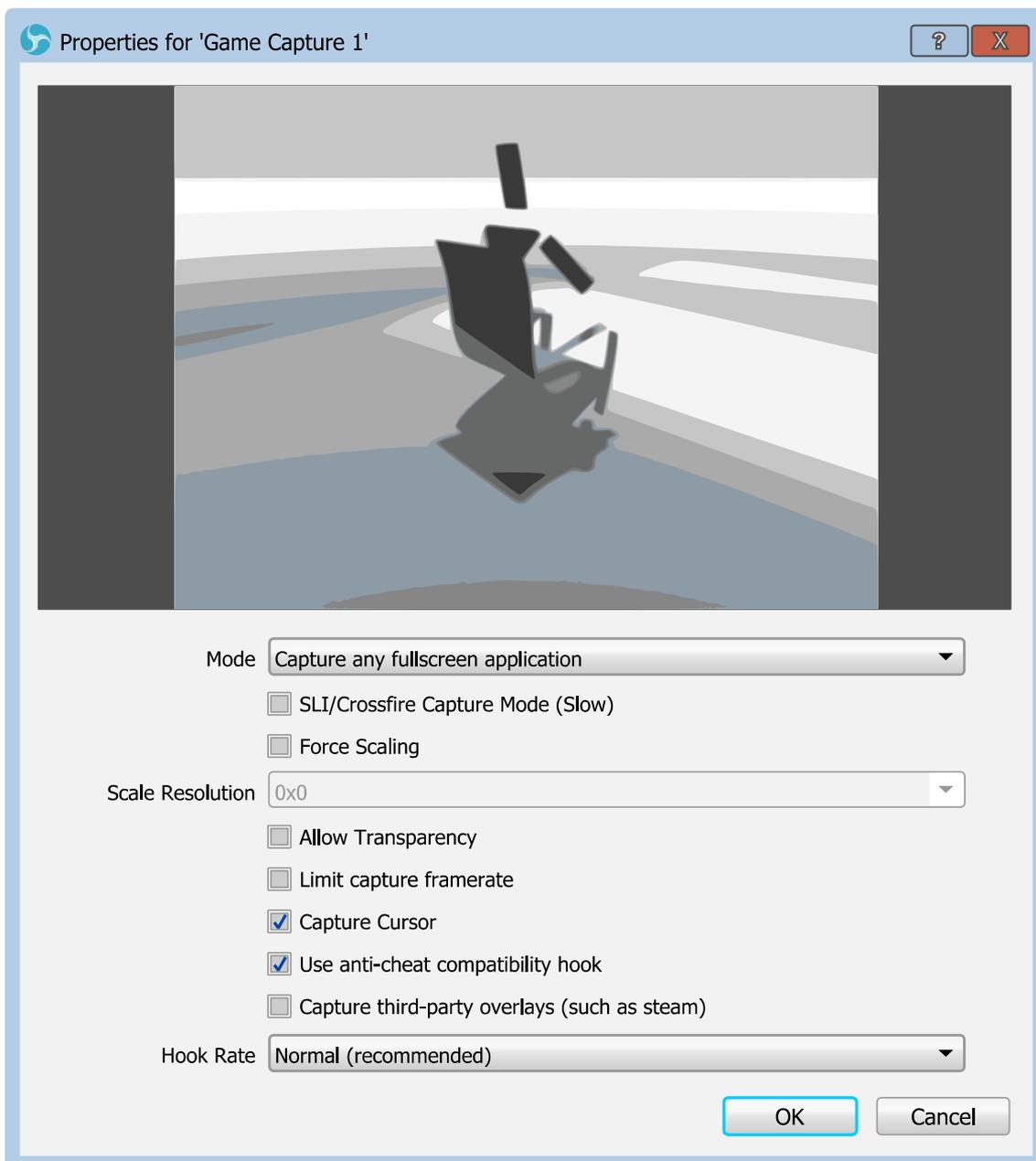
Source management

Sources has simple controls through application's user interface. You can disable, lock, group, remove, copy, transform, add filters and reconfigure your sources.

Temporary disable source

To temporary disable existing source or make it invisible:

click 👁 icon in the *Sources* list, right to the source you wish to disable.

The icon changes to 🚫 , source excluded from the rendered output (if source has audio it will be excluded from the mixer processing too).

Temporary enable source

To temporary enable existing source or make it visible:

click 🚫 icon in the *Sources* list, right to the source you wish to enable.

The icon changes to 👁 , source included in the rendering output (if source has audio it will be included to the mixer processing too).

Lock source from preview edit

To lock the source from accidental editing in preview:

click 🔓 icon in the *Sources* list, right to the source you wish to exclude from the edit.

The icon changes to 🔒 , source excluded from accidental edit in the preview.

Unlock source to preview edit

To unlock the source, to be able to edit it in preview:

click 🔒 icon in the *Sources* list, right 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 *Audio 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 *Audio 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 *Audio 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*.

💡 Sources names supports rich text, a subset of HTML 4 markup, for example:

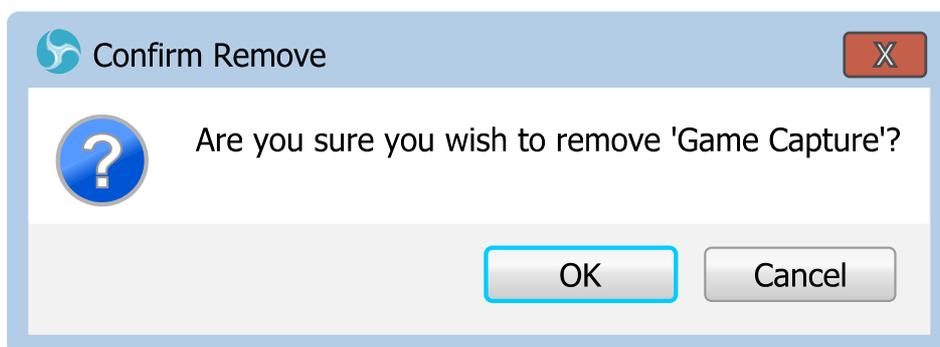|		
Front camera	⇨	**Front** camera
Side camera		Side camera

Remove source

To **completely remove selected source** from the current scene click ━ icon on the toolbar of the *Sources* list pane. And agree to the confirmation dialog.

⚙ Confirm Remove   X

❓ Are you sure you wish to remove 'Game Capture'?

OK   Cancel

Select multiply sources

To **select few sources in once**:
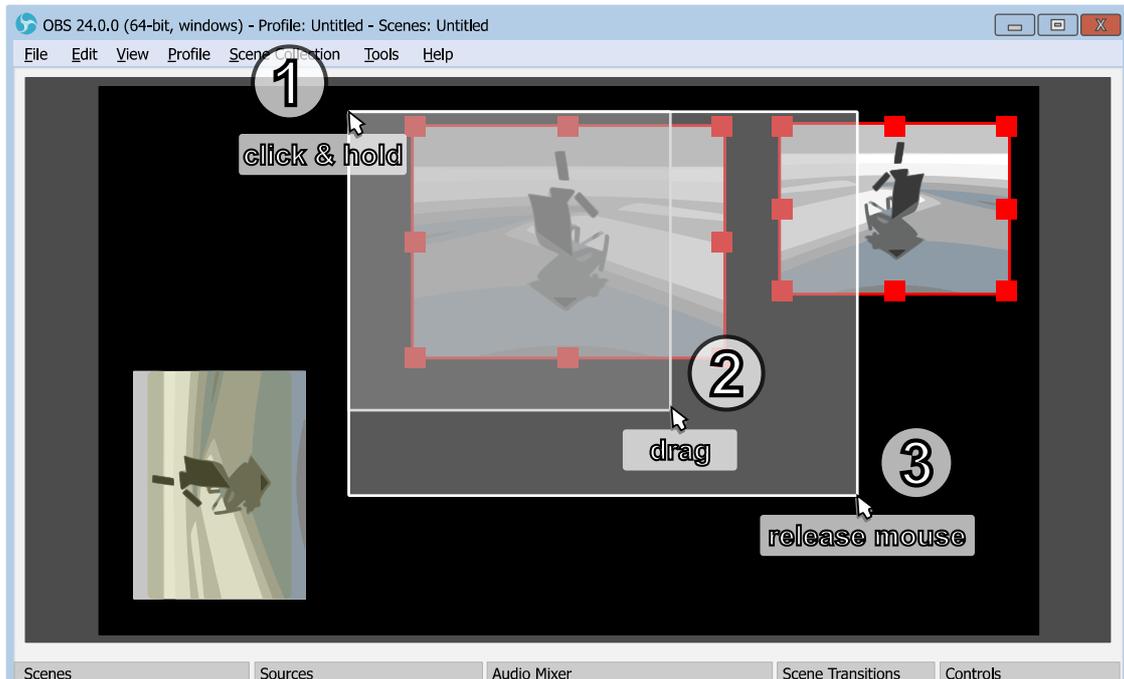
hold *Shift* key and click on the required source in the the *Sources* list pane.

or

in the canvas preview area click an empty space and perform drag-n-drop mouse move to cover all desirable for selection sources by the box selector.

The source will became highlighted – source added to the selection.

(See Illustration 4: Multiply selection. Box selector on page 59)

Illustration 4: Multiply selection. Box selector

To **remove few sources from the selection**:

hold *Shift* key and click on the required source in the the *Sources* list pane.

or

hold the *Alt* key and in the canvas preview area click an empty space and perform drag-n-drop mouse move to cover all unneeded sources by the box selector.

The source highlight disappears – source removed from the selection.

To **add multiply sources to the selection**:

hold the *Shift* key and in the canvas preview area click an empty space and perform drag-n-drop mouse move to cover all sources (that should be added to the selection) by

the box selector.

The sources becomes highlighted – sources added to the selection.

To **invert sources selection**:

hold the *Ctrl* key and in the canvas preview area click an empty space and perform drag-n-drop mouse move to cover all required sources by the box selector inside current selection.

The sources highlight inverts – sources that were selected under the box selector area now removed from the selection, all not selected sources – added to the selection.

Group Sources

Sources can be grouped into single item (technically, new source) that has its own properties. Grouping of the sources simplifies scene management. You can apply Transform, add filter, Temporary disable source and Lock source of this grouped sources at once, while sources inside the group will remain untouched.

(See)

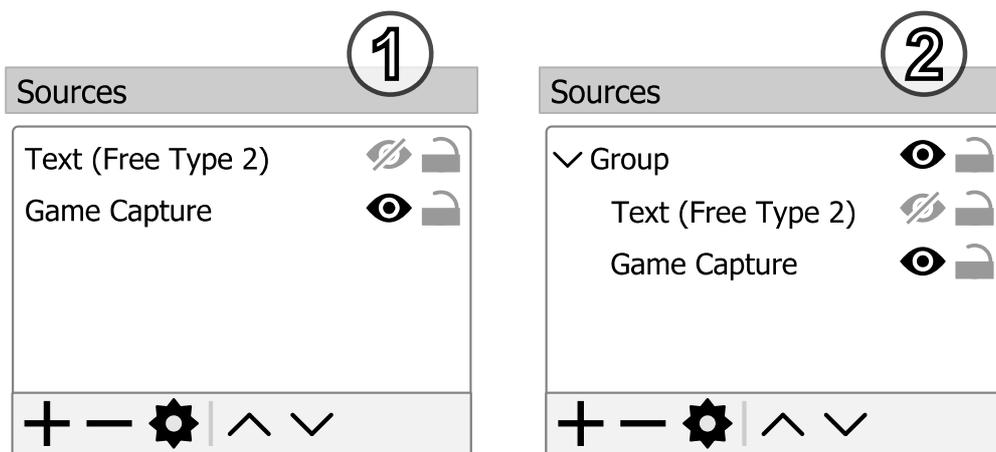Group of the sources very similar to special *Scene* source.

Illustration 5. Ungrouped (1) vs Grouped (2) sources in the Sources list

Each new group has name and may contain other Sources.

To **add new empty group** right-click over the empty space in the Sources list pane, choose context menu option *Add* and click option *Group*. New group will be created and prompt to rename the group will be shown, press the *Enter* key to confirm the new group's name.

To **add existing sources into the group** select the sources and drag-n-drop them via mouse move into the existing group.

To **gather several sources under the new group** right-click over the selected sources and click sub-menu option *Group Selected Items*. New group will be created and prompt to rename the group will be shown, press the *Enter* key to confirm the new group's name.

To **break apart whole group of sources** right-click over the selected group's name and click option *Ungroup*.

To **remove selected Group and all of its contents** click ▬ icon on the toolbar of the Sources list pane. And agree to the confirmation dialog.

OBS	Confirm Remove	X
?	Are you sure you wish to remove 'Group'?	
	OK　　　Cancel	
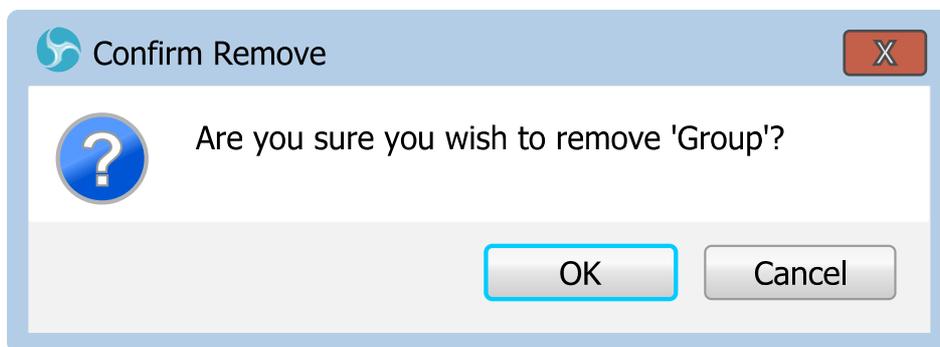
The *Group* of sources can be collapsed (the contents of the group becomes hidden from the sources list) or can be expanded (the hidden contents of the group becomes visible in the sources list).

To **collapse/expand the group** click on the group's icon (left to the group's name) in the Sources list pane or double-click over the desirable group's name.

Set Color (or mark source with a custom color)
It is possible to mark any source in the Sources list pane by the color. Selected color will be shown as background for source's name in the sources list only.

To **mark any source with the color** in the sources list right-click over the selected source and choose sub-menu option *Set Color*. Then click on the desirable color rectangle from the sub-menu to set the predefined color, or set custom color via

Custom Color option.
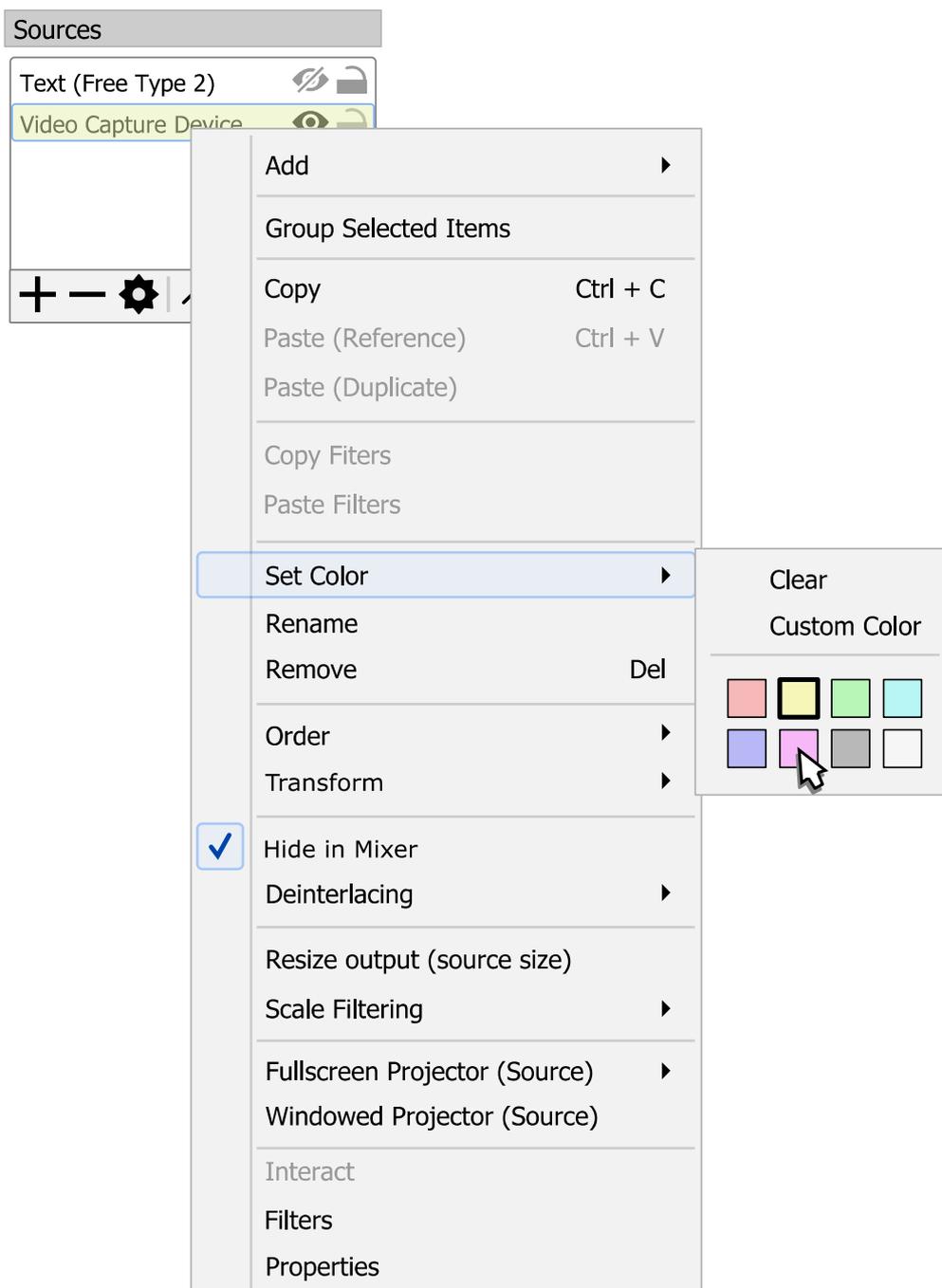
To **remove any color marking from the source** right-click over the selected source, choose sub-menu option *Set Color* and make option *Clear* checked with the ☑ icon.

Full screen preview (source)

To preview source in full screen:

    1) right-click on the selected source (layer) in *Sources* list pane;
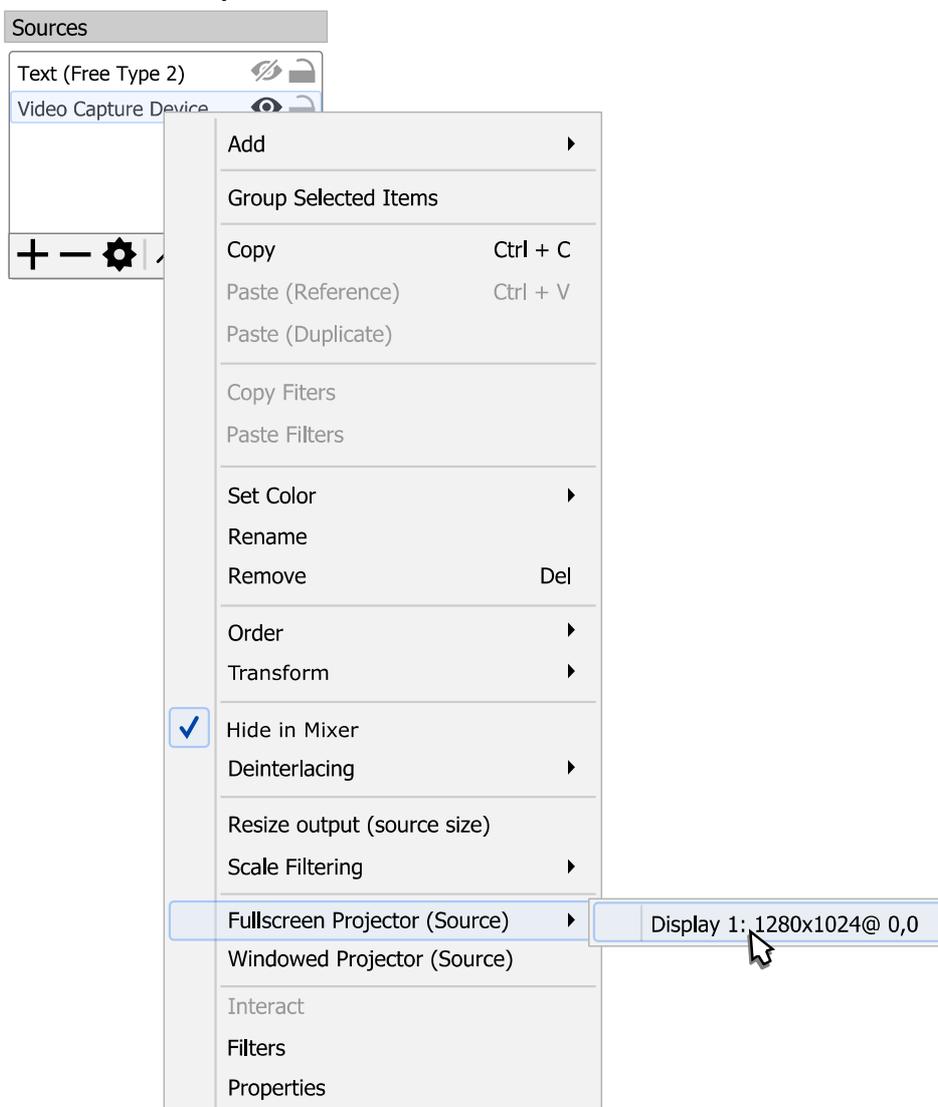
    2) choose sub-menu *Fullscreen Projector (Source)*;

    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 <u>Sources</u> list pane;

2) choose sub-menu *Windowed Projector (Source)*.

Sources types & 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]

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. Blackmagic Design devices from "UltraStudio", "DeckLink" and "Intensity" lines should work well.

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.

Deactivate when not showing :

if checked, device will be turned off when not

displaying. This also disables sound from the device.

Browser

Properties

Local file {check-box} :

> defines either web page will be downloaded from the internet or use local copy instead (if you have any). Next options available:

> • *Local file* :

>> path to the local resource.

URL :

> specifies internet address of the desirable web-page, like "https://obsproject.com/browser-source" or any else. Option available only if *Local file* is checked.

Width :

> defines width of the source in pixels.

Height :

> defines height of the source in pixels.

Use custom frame rate :

> defines either use own rendering frame rate for the web page or use global setting defined at Application Settings, Video section. Next options available:

> • *FPS* :

>> defines frame rate of the webpage rendering, in frames per second.

Custom CSS :

> specifies additional Custom Style Sheets to be used together with the loaded internet page.

> Default global style overriding is set as:
> *body { background-color: rgba(0, 0, 0, 0); margin: 0px auto; overflow: hidden; }*

Shutdown source when not visible :

> if checked, source rendering will stop. If web-page has any sound in it it will be muted too.

Refresh browser when scene becomes active :

> if checked, browser will refresh the page as soon as source becomes visible.

Refresh cache of current page {button} :

> when clicked, the cache of the current opened web page will be flushed.

> Browser's cache is stored at *plugin_config\obs-browser\Cache* folder of 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 27)

Reroute audio to OBS *{Control audio via OBS}* :

> if checked, the sounds of the browser source will appear in application as audio sources of the *Audio Mixer pane* (by default, the browser renders its sounds directly to the desktop audio device).

To click anything on the web page opened via the *Browser* source use right-click menu option interact.
(See Interactive windows on page 31)

To enable hardware acceleration of the plugin's internal drawing make checked Enable Browser Source Hardware Acceleration option.
(See Advanced Settings on page 181)

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 180)

    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 96)

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.

Hook Rate :

specifies how fast attempting to hook the process when trying to capture newly created window (if old one not valid anymore). In other words, how fast recently started game will appear in OBS Studio. Next options available:

- *Slow* :

    sets interval up to 4 sec.

- *Normal (recommended)* :

    sets interval up to 2 sec.

- *Fast* :

    sets interval up to 1 sec.

- *Fastest* :

    sets interval up to 0.2 sec.

Do not set it for too fast. Make sure that all other applications successfully loaded its own hooks, modules and graphics libraries (for example, Steam overlay uses same hook technology), otherwise result may become unpredictable.

Syphon Client

(source available for Mac PC)

Properties

Source :

    specifies source of Syphon frame sharing service.

Allow Transparency :

    if checked, alpha channel can be applied.

Launch SyphonInject :

    when clicked – Syphon capture started. Next options available:

- *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's license.

Image

Properties

Image file :

path to the local image.

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

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. Source will load images up to the 250 MBytes RAM limit (raw data) at a time to reduce memory usage. Images are loaded and deleted from RAM when necessary.

+ : 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.

Intel(R) RealSense(TM) 3D Camera GreenScreen

(video input devices/cameras from Intel)

Properties

Device :

specifies video device/camera installed in the system.

Supported devices: availability of the Intel's camera devices depends on OS installation and hardware.

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
duration 1
file myfile-02.flv
duration 1
file myfile.flv
duration 1
```

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); "duration 1" is optional parameter, the list is read at once, so if reading one of the files fails – whole list wouldn't playback. 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 180)

Network Buffering :

specifies amount of the data buffered when reading media source over a network, in Mbytes.

Use hardware decoding when available :

if checked, OBS Studio will try to use hardware acceleration to playback the source.

Show nothing 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).

Speed (percent) :

specifies the playback speed of the media source, in percentage.

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 :

if checked, last **N** number of lines of the input file will be used as text source. **N** determined via:

- *Chat log lines* :

    number of the lines shown in the *Chat log mode*. Option available only if *Chat log mode* is checked.

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.

Text transform :

specifies text capitalization, next options available:
- *None* : text appears without changes.
- *Uppercase* : all letters becomes capitalized.
- *Lowercase* : all letters becomes non-capitalized.

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 :

in 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.

   For IP cameras use Media Source or VLC Video Source.

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.

Color Space :

specifies color space of the input video.

Color Range :

specifies type of the input video color range – Full (PC) or Partial (TV). In other words, how to decode it before it appears in OBS. Default – will select Full for RGB format and Partial for the YUV stored videos.

Regular mp4 video files keeps its video data in YUV compressed format and has Partial (TV) color range.

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 173)

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 v3.0.6); 64bit player for obs64 and 32bit player for obs32. 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"
Win x64 and VLC x86 installed (special case, to use it in obs32)
by registry path and key
[HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\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) :

defines duration of the caching for network-based

media files.

Audio Track :

defines which sound track (number) to use during playback of the media file.

Subtitles Enabled :

if checked enables embedded subtitles rendering over the video footage.

Subtitle Track :

defines subtitles track's number to display them over the video. Option available only if *Subtitles Enabled* is checked.

+ : 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 180)

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 or recorded.
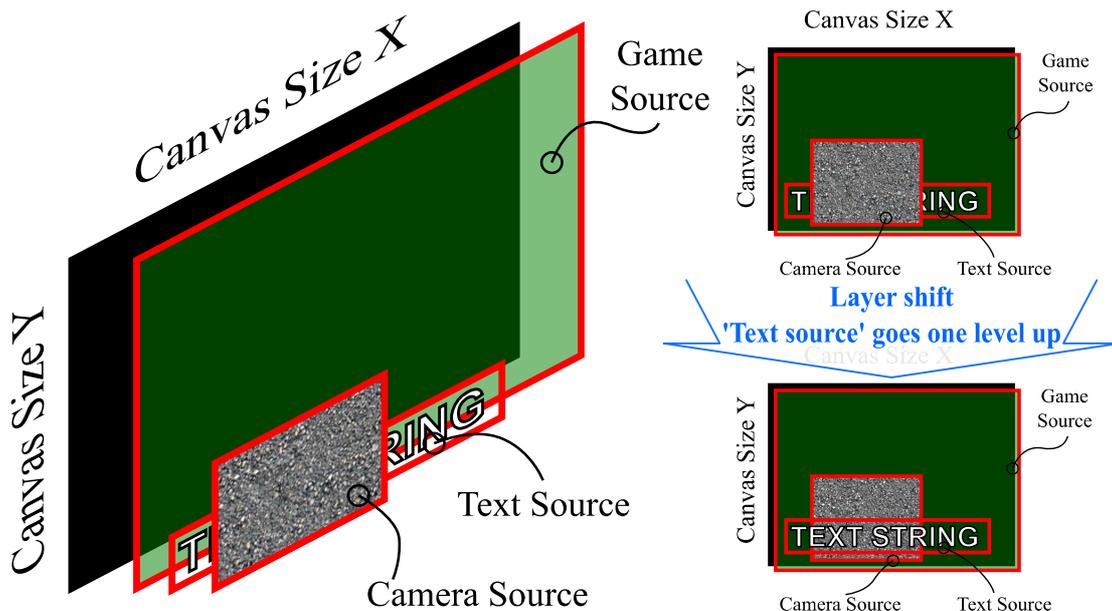
Layers can has different properties: size, transparency, color
overlay etc. Top layer is the highest in the *Sources* list pane. All
layers in the list can be shifted by mouse drag-and-drop.
The top layer can cover content of the bottom one – arrange the
layers with caution and check it appearance in the 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 53)

Rename layer

To rename layer use *Rename* source option.

(See Rename source on page 57)

Remove layer

Existing layer can be deleted via remove existing source option.

(See Remove source on page 58)

Temporary disable layer

Layer can be disabled via temporary disable source option.

(See Temporary disable source on page 56)

Temporary enable layer

Layer can be enabled via temporary enable source option.

(See Temporary enable source on page 56)

Transform layer

Layer can be changed via *Filters*.

(See Transform on page 95)

Preview layer Fullscreen

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

(See Full screen preview (source) on page 64)

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.
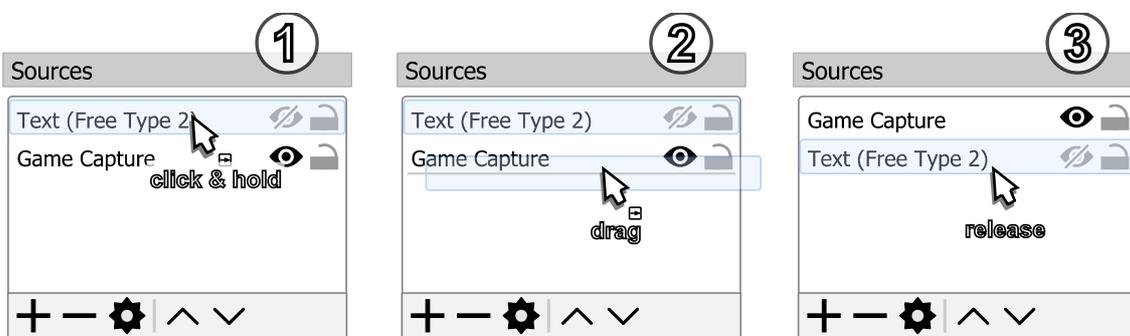
Or: select a layer from the *Sources* list, click icon ∧ on the toolbar of the *Sources* list to shift the layer one level up; click icon ∨ to shift selected layer one level down.

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.
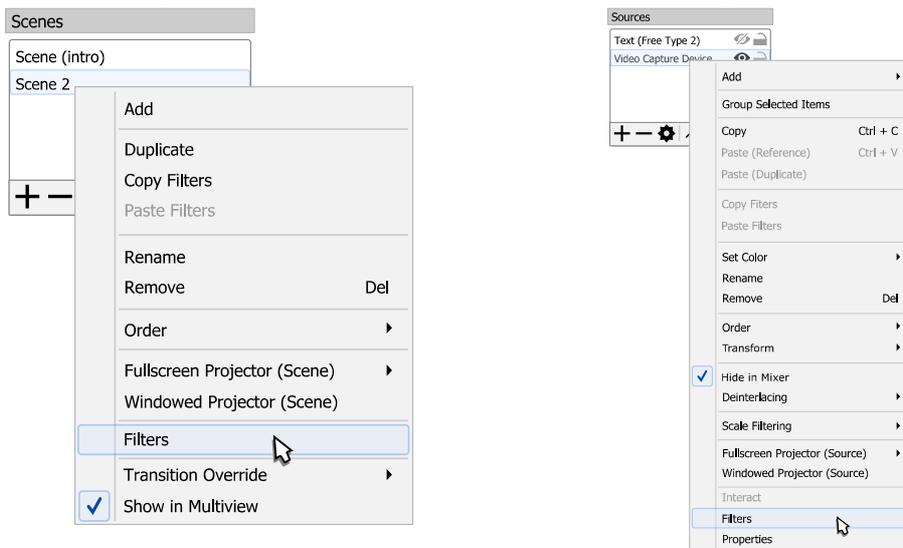
To access filters on audio source, click ✱ icon in Audio Mixer pane.
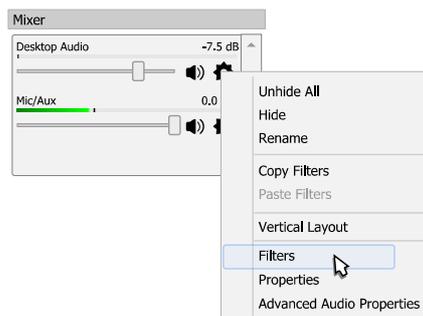
Also accessible via simple right-click menu over the source in Audio Mixer pane.

General Filters: Transform, Deintarlacing, Cropping.

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...*

Add	▶
Group Selected Items	
Copy	Ctrl + C
Paste (Reference)	Ctrl + V
Paste (Duplicate)	
Copy Fiters	
Paste Filters	
Set Color	▶
Rename	
Remove	Del
Order	▶
Transform	▶
✔ Hide in Mixer	
Deinterlacing	▶
Resize output (source size)	
Scale Filtering	▶
Fullscreen Projector (Source)	▶
Windowed Projector (Source)	
Interact	
Filters	
Properties	

Edit Transform...	Ctrl+E
Copy Transform	
Paste Transform	
Reset Transform	Ctrl+R
Rotate 90 degrees CW	
Rotate 90 degrees CCW	
Rotate 180 degrees	
Flip Horizontal	
Flip Vertical	
Fit to screen	Ctrl+F
Stretch to screen	Ctrl+S
Center to screen	Ctrl+D
Center Vertically	
Center Horizontally	

Sources

Text (Free

Video Capture Device

＋ − ⚙ | ∧ ∨

4) Transform settings dialog will appear. Make changes to the desirable fields and click close window button to complete changes.
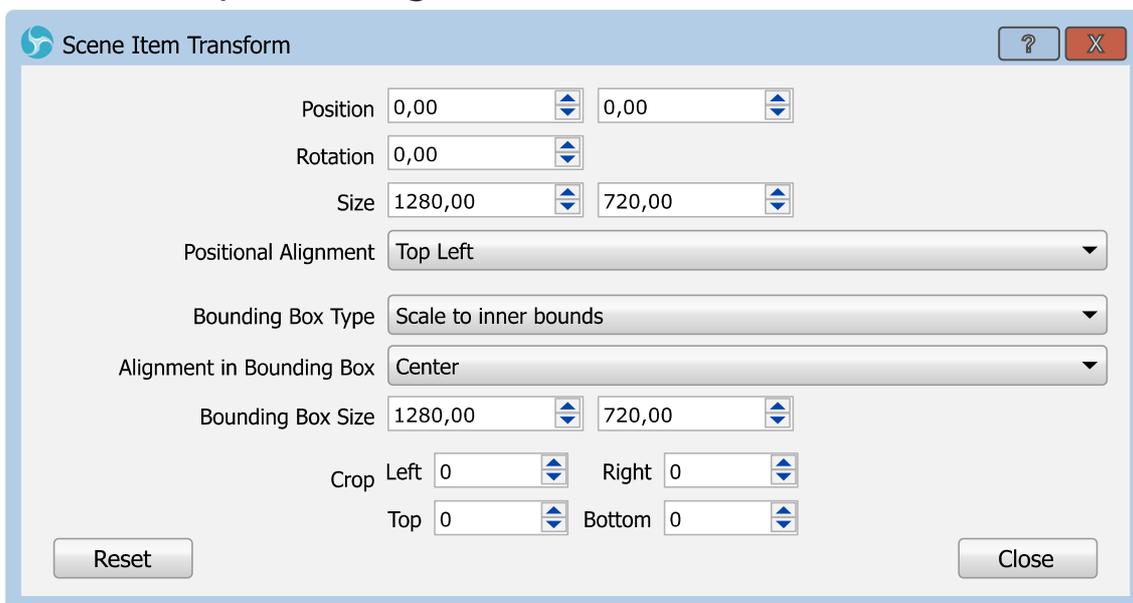
Illustration 6. Transform dialog window

To get best result from transform filter use Transform options (dependencies) table on page 96.

All coordinates measured in pixels and starts at 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 small **red** square 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 7. Transform with mouse move on page 98)
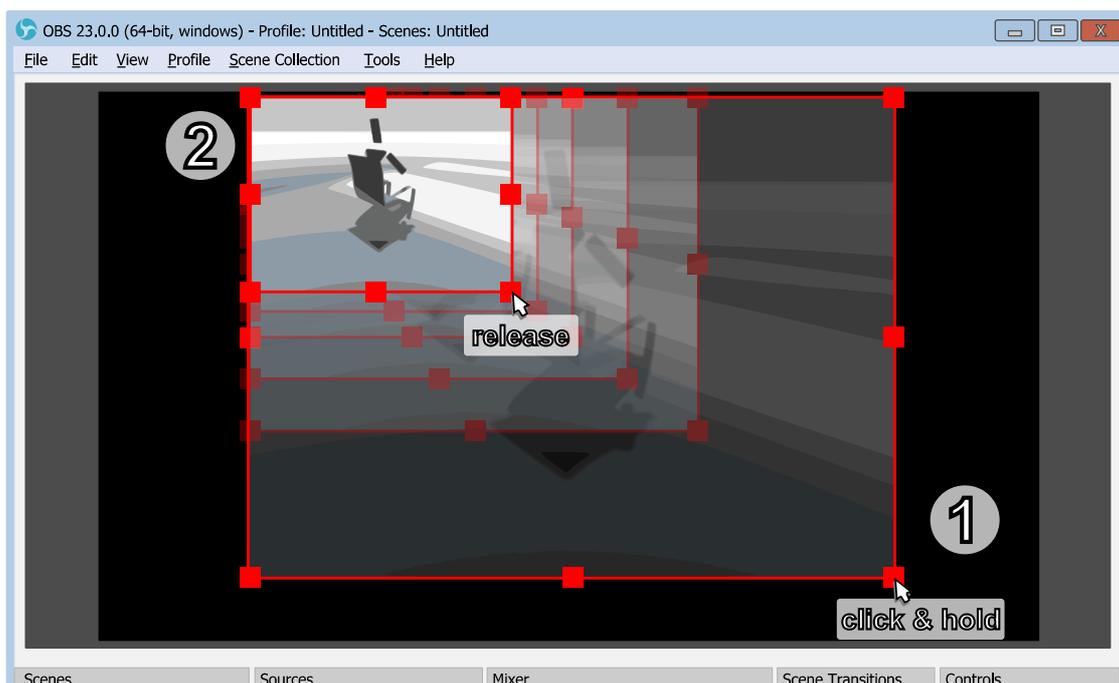
Illustration 7. Transform with mouse move

You can temporary disable snapping by holding down the *Ctrl* key while re-sizing. (See General settings on page 151)

You can stretch the source to any new size by holding down *Shift* key while re-sizing. This sets *Size* parameter of the source to the new custom value.

(See Table 1.Transform options (dependencies) on page 96)

Make sure that *Lock Preview* option unchecked.
(See Lock Preview on page 28)

Make sure that source not locked.
(See Lock source at page 56)
(See Unlock source at page 56)

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 95)

   Since v22.0.0 of the application you may ignore this step and leave *Bounding Box Type* of the source unchanged.

2) press and hold *Alt* key;

3) click and hold mouse button over any small red square 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 8. Easy cropping with mouse move on page 100)

   Cropping values stored in relative coordinates under the *Crop* section of the *Scene Item Transform* window.
   (See Illustration 6. Transform dialog window on page 96)

   Make sure that *Lock Preview* option unchecked.
   (See Lock Preview on page 28)

   Make sure that source not locked.
   (See Lock source at page 56)
   (See Unlock source at page 56)

   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.

On Mac use *Option + Mouse* key combination.
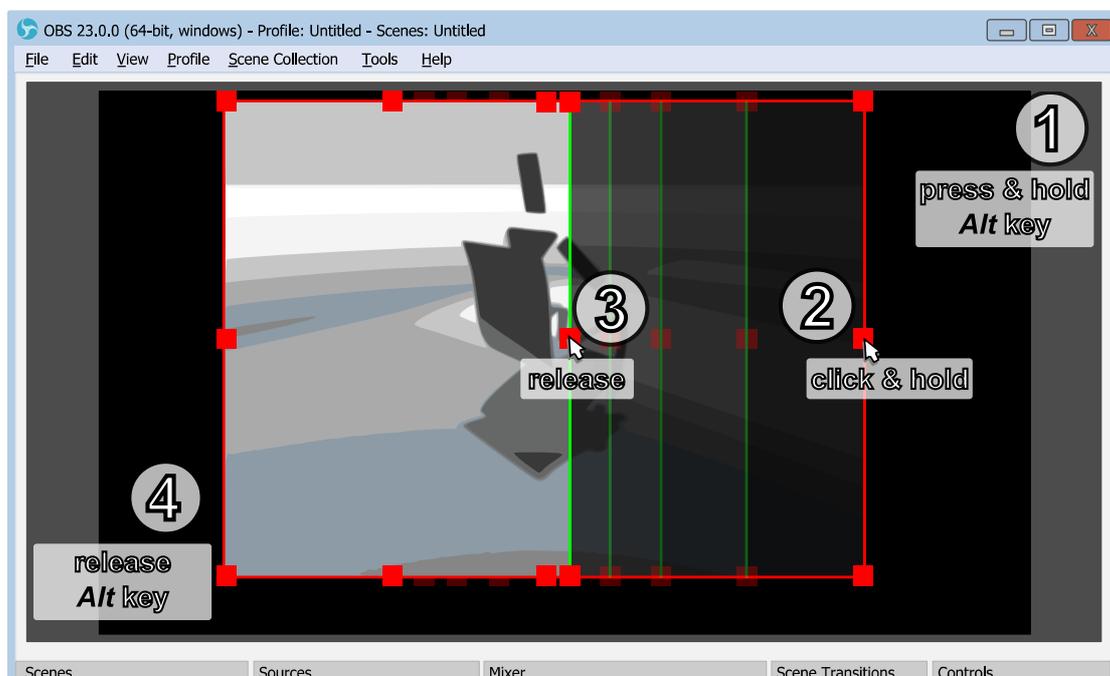
Illustration 8. Easy cropping with mouse move

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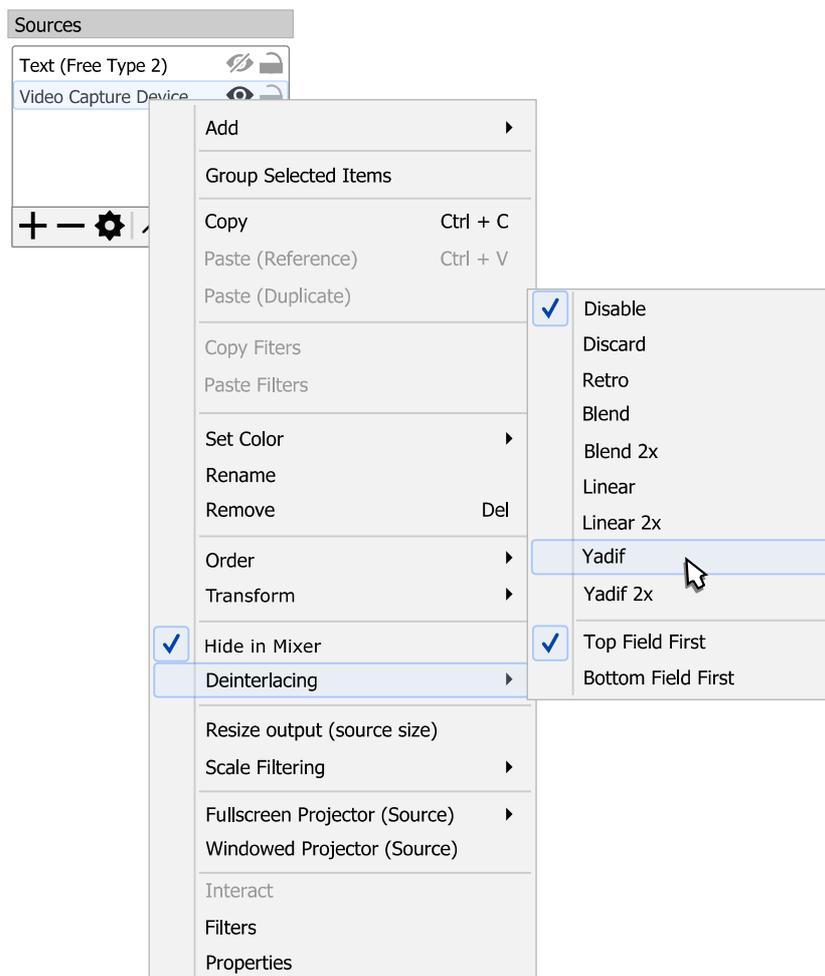
To remove deinterlacing filter, apply deinterlacing filter *Disable.*

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.

Sources

| Text (Free Type 2) |
| Video Capture Device |

Add ▶

Group Selected Items

Copy   Ctrl + C

Paste (Reference)   Ctrl + V

Paste (Duplicate)

Copy Fiters

Paste Filters

Set Color ▶

Rename

Remove   Del

Order ▶

Transform ▶

✓ Hide in Mixer

Deinterlacing ▶

Resize output (source size)

Scale Filtering ▶

Fullscreen Projector (Source) ▶

Windowed Projector (Source)

Interact

Filters

Properties

✓ Disable
Point
Bilinear
Bicubic
Lanczos
Area

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 samples.

- *Area* (weighted sum of pixel areas) :

  uses 4, 6 or 9 pixels samples.

- *Bicubic* :

  uses 16 pixels samples.

- *Lanczos* :

  uses 36 pixels samples.

Visual Effect 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 9. Filters dialog window

New dialog will appear where you can specify the name of the new filter.
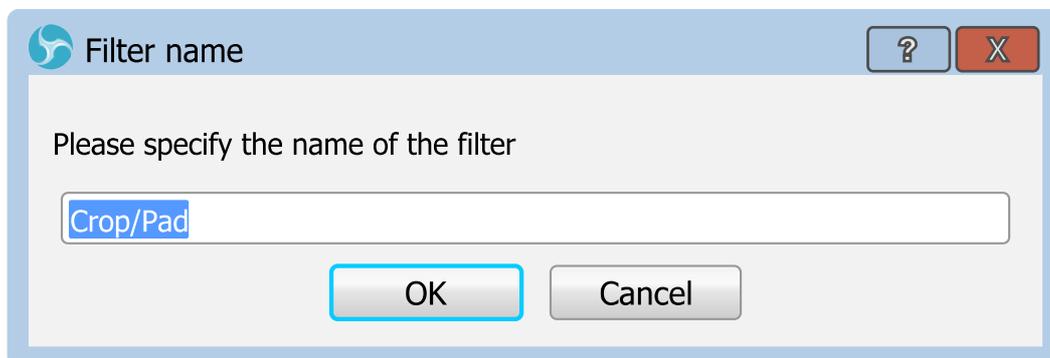
Crop/Pad filter properties accessible right to the *Effects Filters*

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.
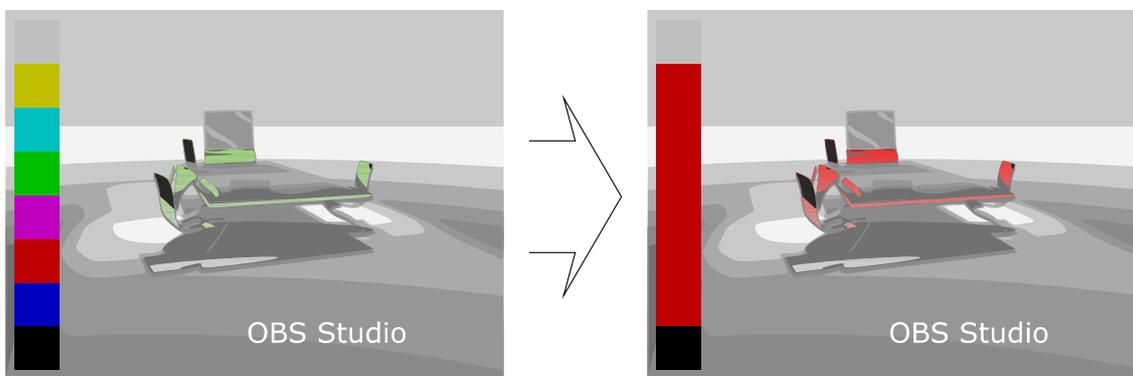
Properties

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.
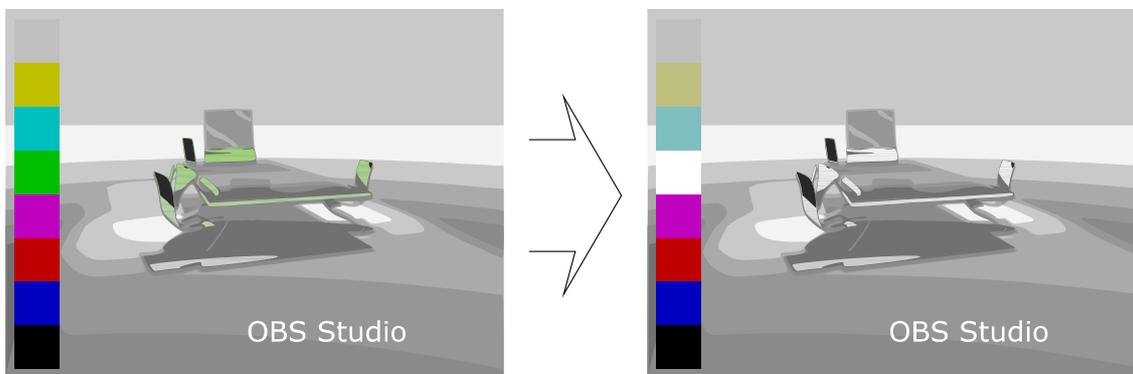
Properties

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 specials effects.
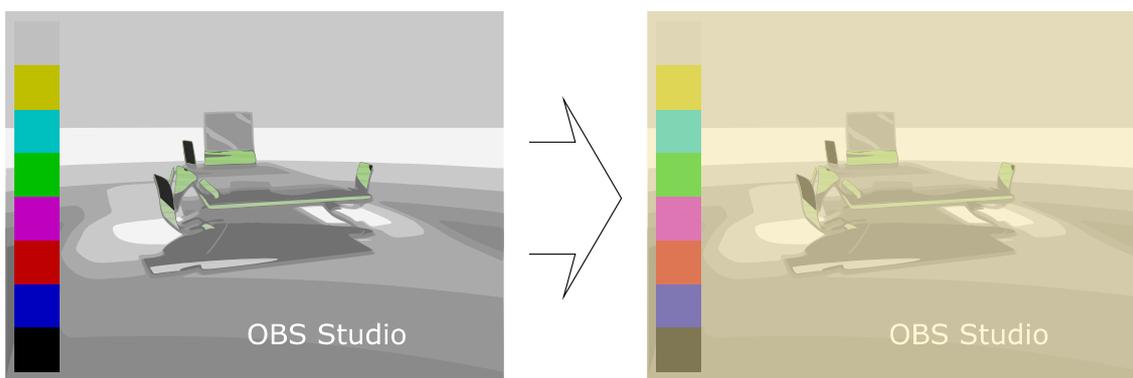
Properties

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.
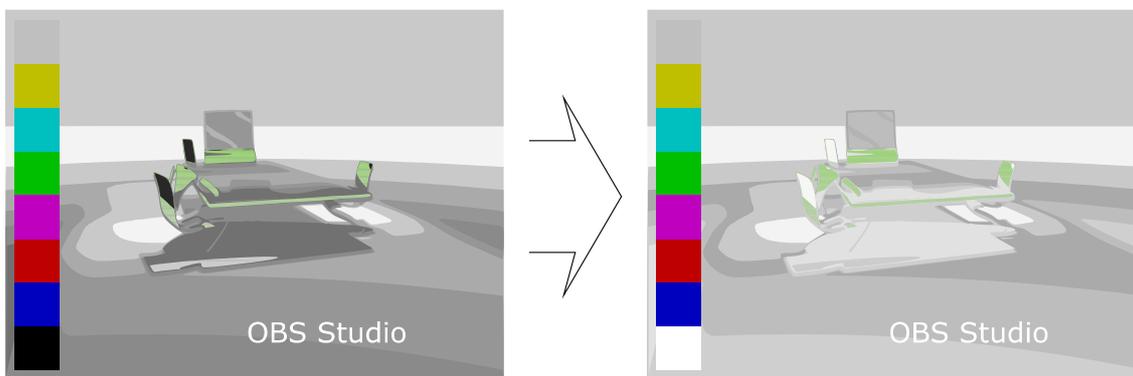
Properties

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)
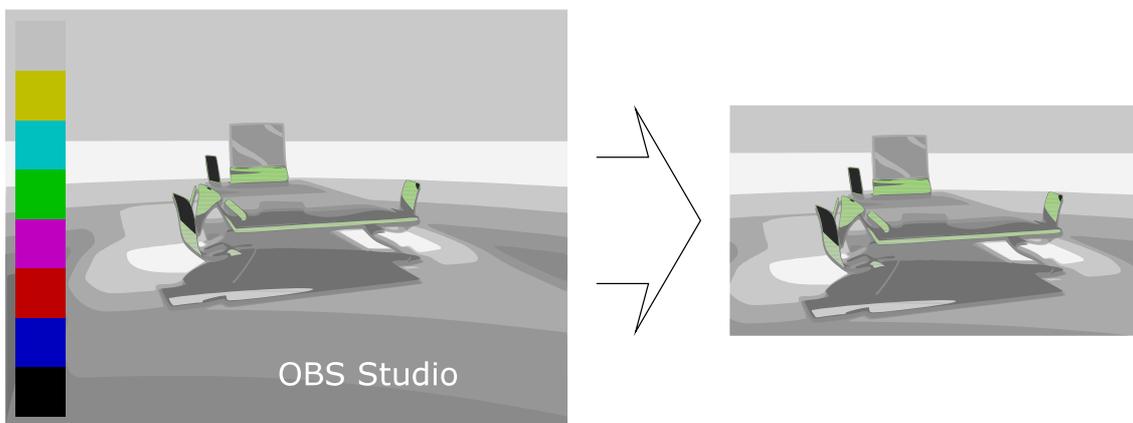
Properties

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.

Luma Key

Luma Key filter cuts video's background using information based on a specified luminance of the source (ignoring color value).
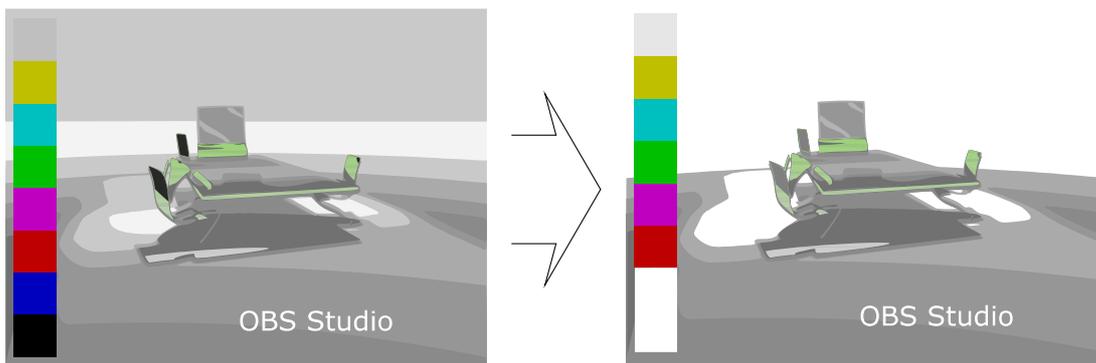
Properties

Luma Max :

> defines maximum luminance that will be treated as upper value to make the pixel transparent.

Luma Min :

> defines minimum luminance that will be treated as lowest value to make the pixel transparent.

Luma Max Smooth :

> defines smooth of the pixels selection at the maximum luminance.

Luma Min Smooth :

> defines smooth of the pixels selection at the minimum luminance.

Render Delay

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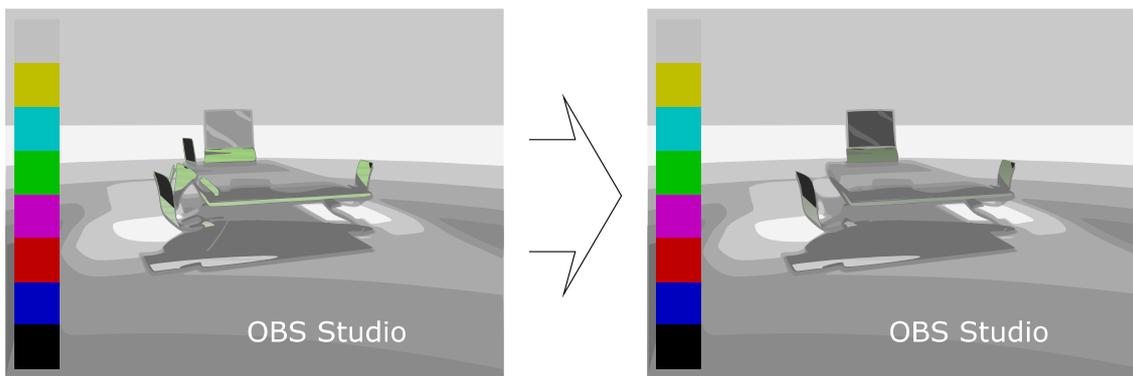
Properties

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.
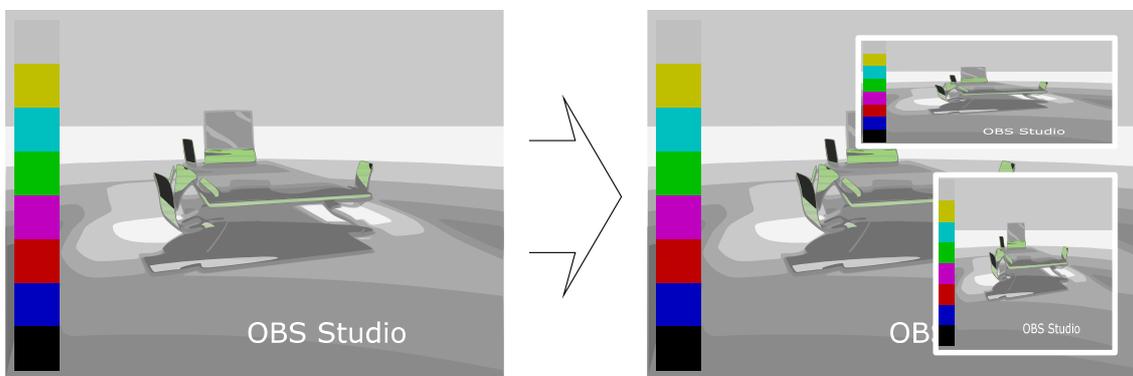
Properties

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 Width x Height 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.
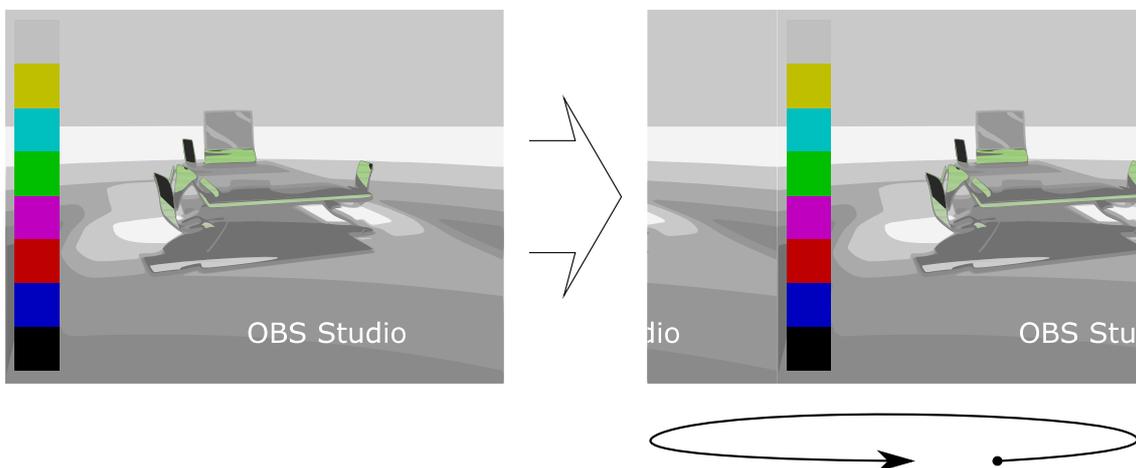
Properties

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.
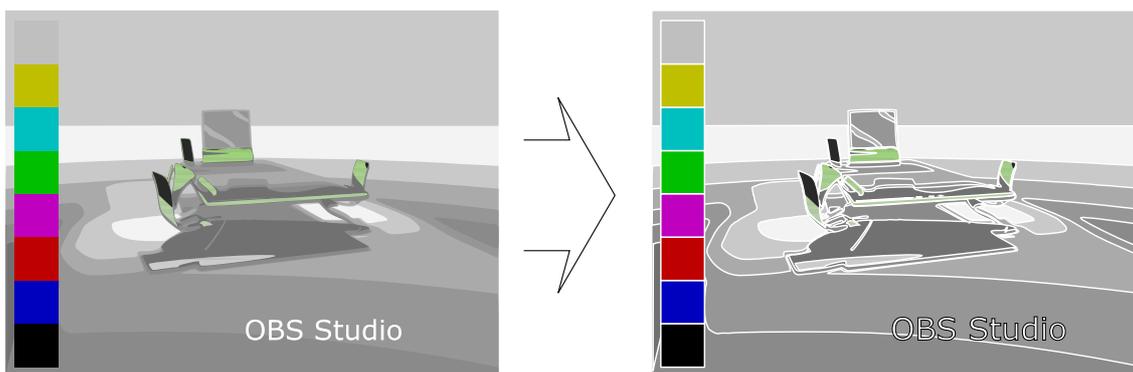
Properties

Sharpness :

> defines strength of sharpness enhancement.

Sound Effect Filters (Audio/Video)

Compressor

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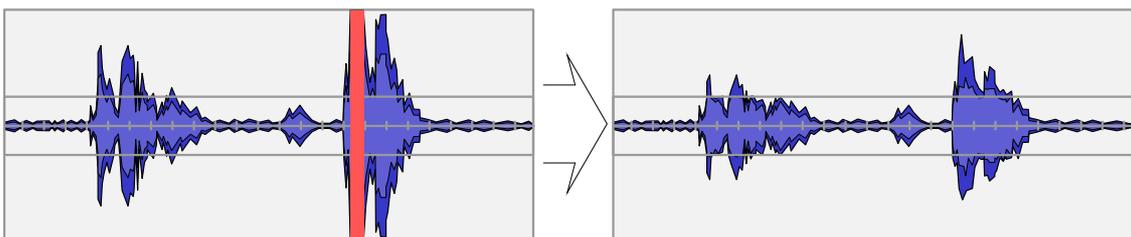
Properties

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 signal 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 source, 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 <u>Windows audio ducking</u> on page <u>175</u>

Expander

Expander filter uppers dynamic range of the audio. Can be used as smooth noise floor filter.
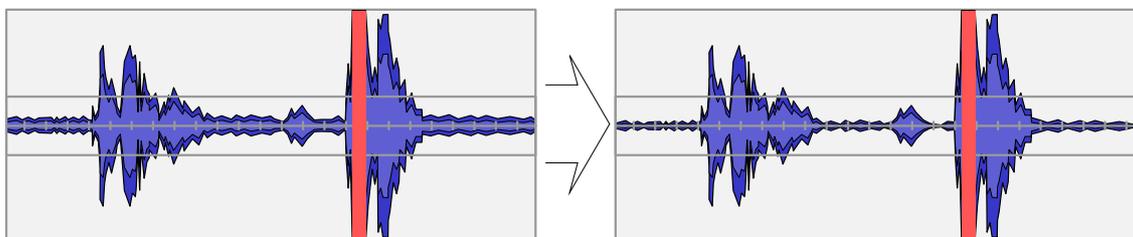
Properties

Presets :

specifies used preset. Next options available:

- *Expander* :

sets filter's values for common use.

- *Gate* :

sets filter's values for aggressive processing below specified threshold.

Ratio (X:1) :

defines expansion ratio of the input signal.

Threshold (dB) :

defines minimum level below 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 signal 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.

Detection :

specifies detector of the signal change. Next options
available:

- *RMS* :

   uses Root-Mean-Square for calculation
   (10 milliseconds window).

- *Peak* :

   uses signal spikes detector (instantaneous values of
   the signal).

Gain

Gain filter makes audio source louder.
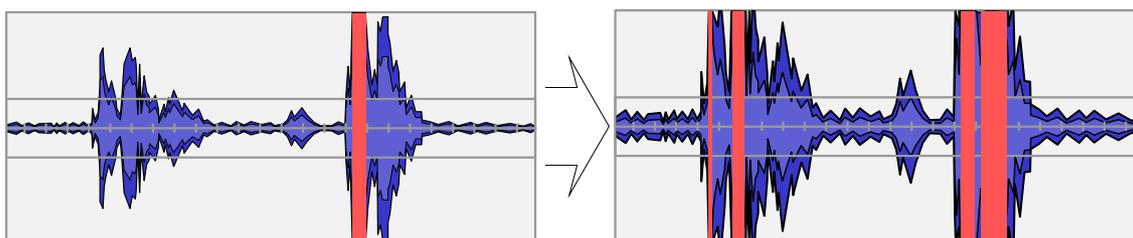
Properties

Gain (dB) :

defines gain of the audio, in decibels.

Invert Polarity

Invert Polarity filter inverts amplitude of each audio signal, making each source's channel complementary to the original.
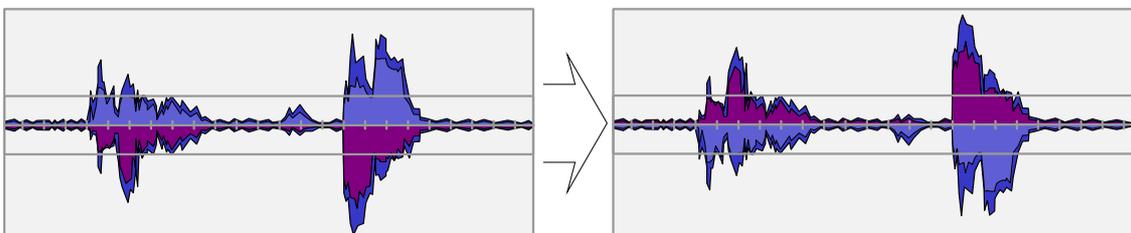
Properties

No configurable properties available.

Limiter

Limiter filter sets hard limits on sound amplitude. Can lower possible distortion effects for very loud sounds.
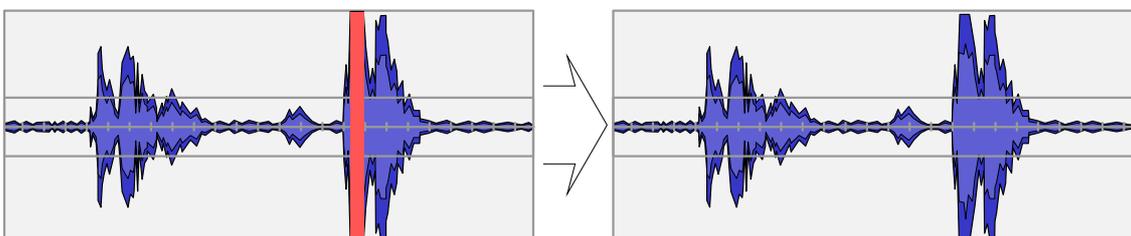
Properties

Threshold (dB) :

defines the max level at which all sounds will be hard limited, in decibels.

Release (ms) :

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

The attack of the filter is hard-coded to 1 microsecond.

Noise Gate

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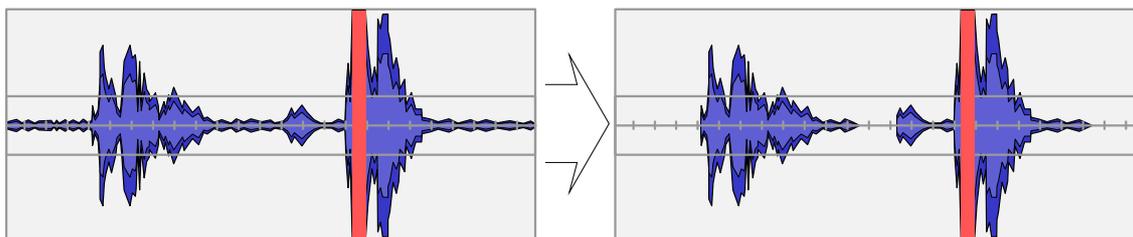
Properties

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 *Audio 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,
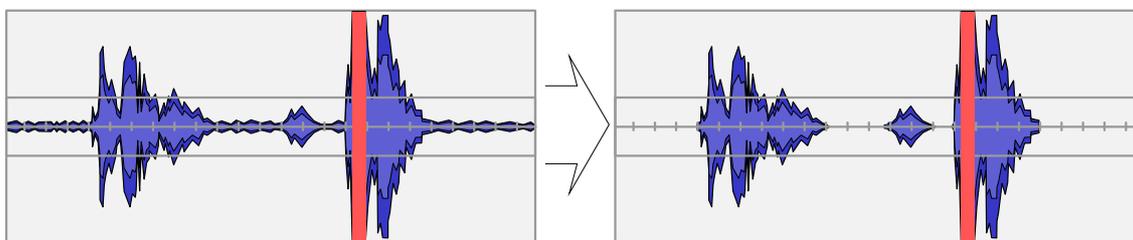
when *Close Threshold* level already reached, i.e. time hysteresis for 'close').

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.
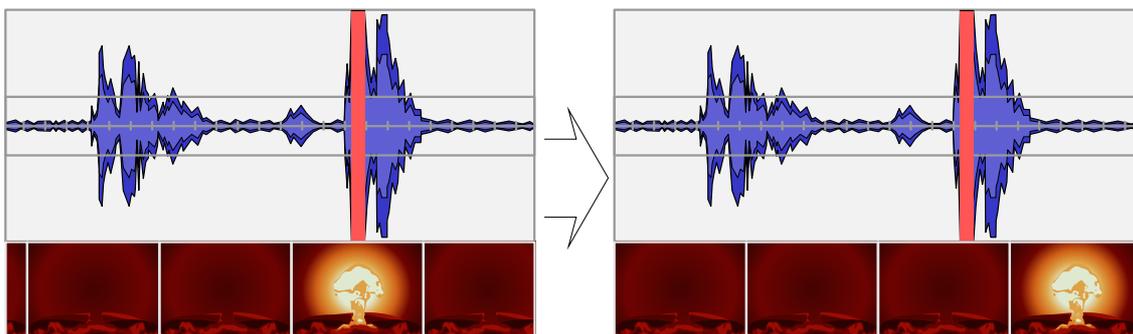

Properties

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, special case only: VST is 32-bit, and obs32.exe in use
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

All program tools are optional if other not mentioned.

Auto-Configuration Wizard

Auto-Configuration Wizard tool designated to automatically optimize application's main settings for streaming and recording.

Auto-Configuration Wizard (Beta)   ?   X

Usage Information
    Specify what you want to use the program for

⦿ Optimize for streming, recording is secondary

◯ Optimize just for recording, I will not be streaming

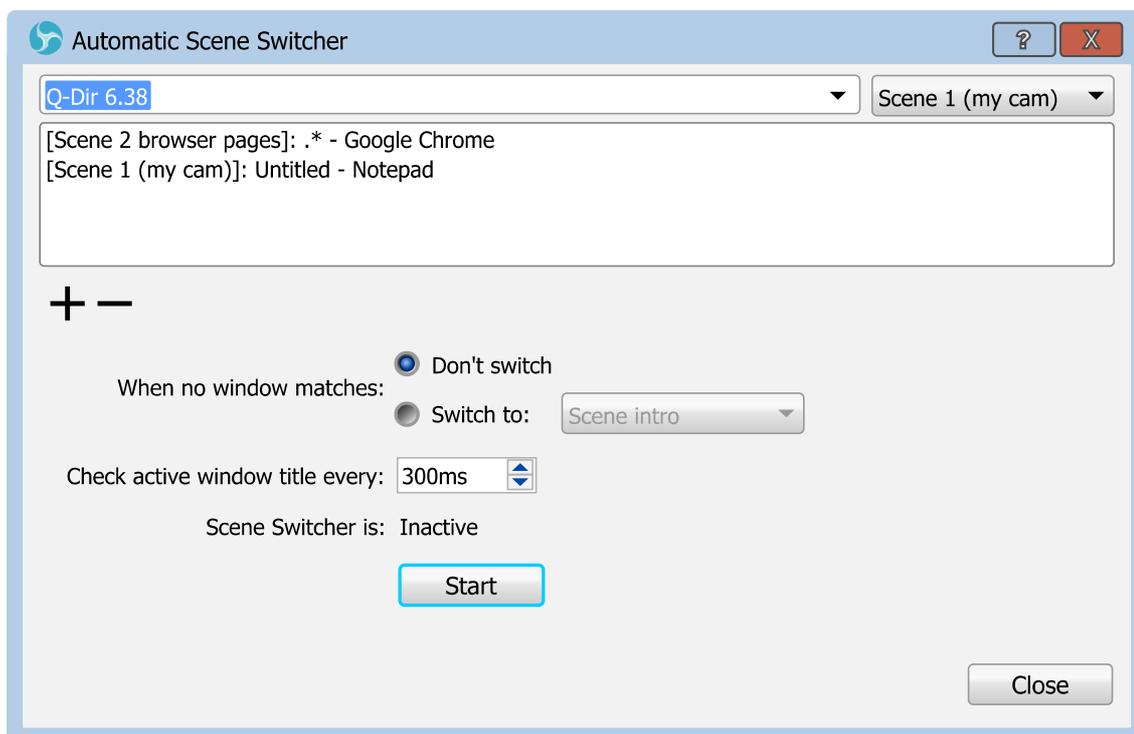< Back   Next >   Cancel
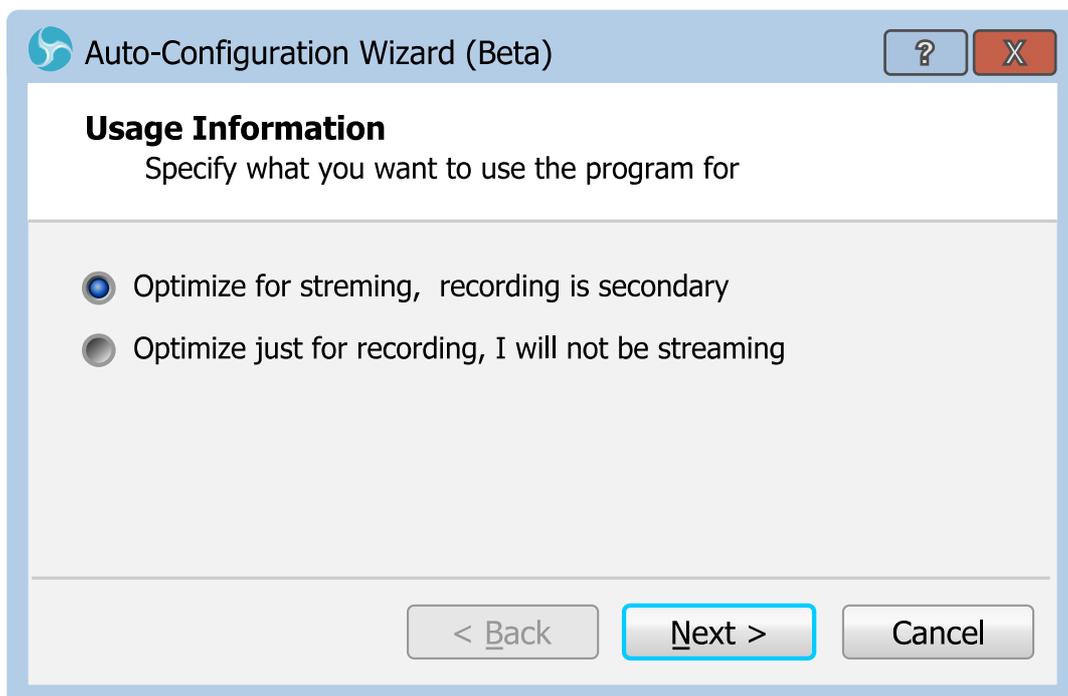
Wizard will run few performance tests of the PC and suggest to apply new optimized settings at the end.

Only single audio track setups supported by this wizard.
(See Output Mode: Simple on page 158)

Automatic Scene Switcher

    Automatic Scene Switcher tool 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)

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 tool's window check trigger, in milliseconds.
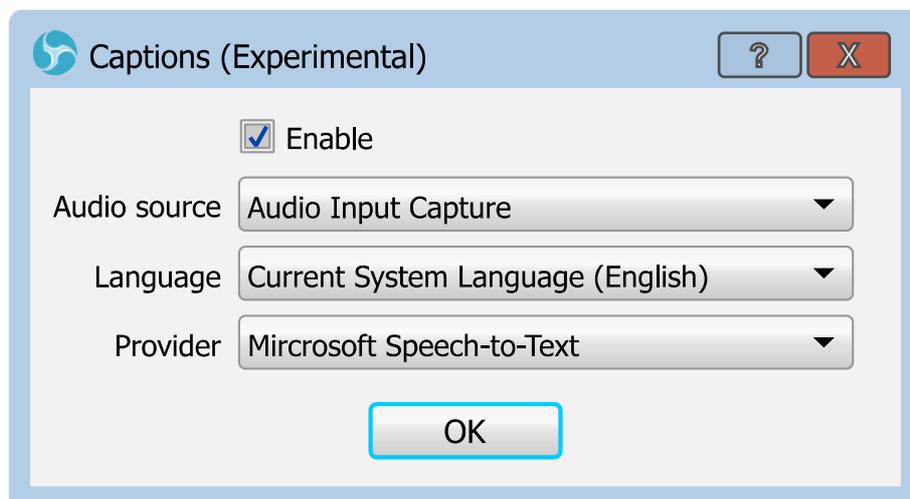>
> Lower value – faster response on program window change.

Scene Switcher is :

> info string, showing current state of the tool (Active, Inactive etc.).

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

Captions (Experimental)

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

Captions (Experimental)   [?] [X]

☑ Enable

Audio source   Audio Input Capture   ▼

Language   Current System Language (English)   ▼

Provider   Mircrosoft Speech-to-Text   ▼

OK

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 their 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.

Decklink Output

> Decklink Output tool designed to control Blackmagic Design

video capture devices directly from OBS Studio.
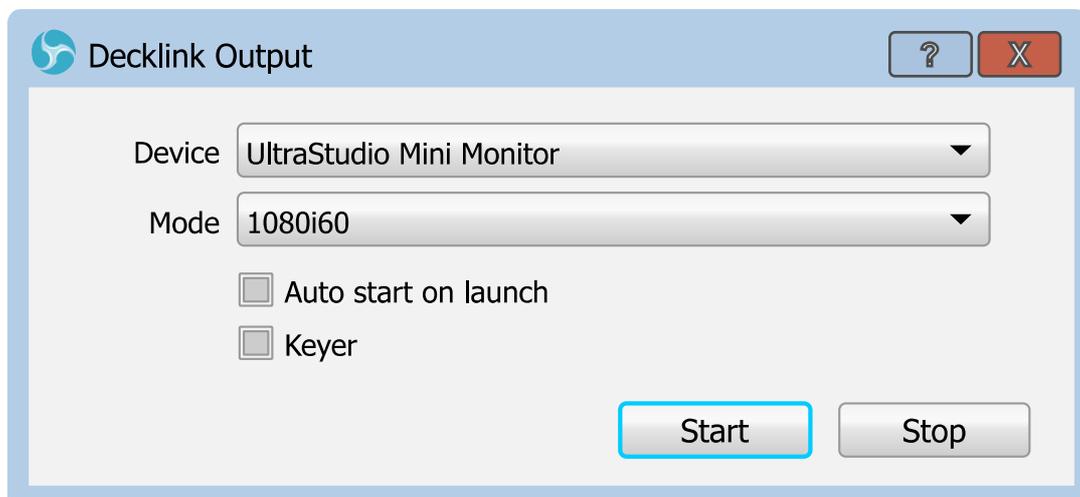
Decklink Output window showing Device: UltraStudio Mini Monitor, Mode: 1080i60, with Auto start on launch and Keyer checkboxes unchecked, and Start and Stop buttons.

Properties

Device :

specifies video device installed in the system.

Supported devices: availability of the Blackmagic Design devices depends on OS installation and hardware. Blackmagic Design devices from "UltraStudio", "DeckLink" and "Intensity" lines should work well.

Mode :

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

Autostart on launch :

if checked device's output will be started with the launch of OBS Studio.

Keyer :

if checked, enables special use of the output that uses alpha channel information to acts like a "keyer" over all footage. This option needs RGB color format to be set in OBS Studio for output.

(See)

To **start selected capture device for output** – click *Start* button.

To **stop selected capture device from output** – click *Stop* button.

Output Timer

Output Timer tool 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.

Tool 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.
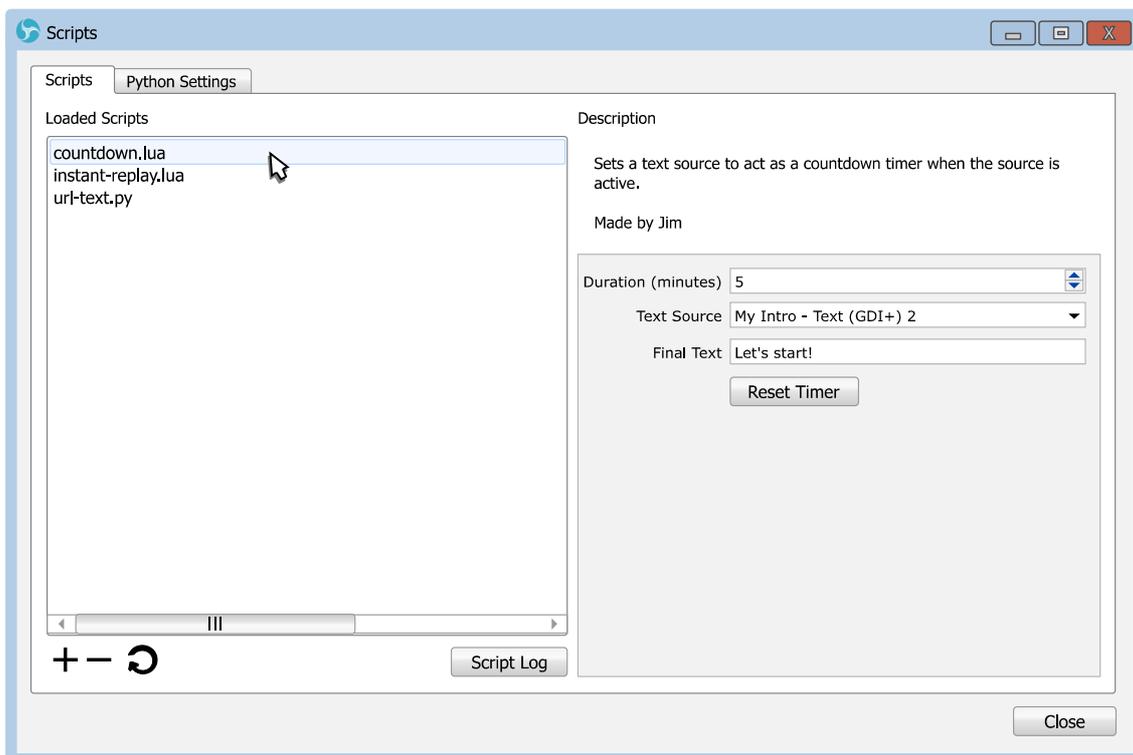(See Recording on page 138)
(See Streaming on page 141)

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

Scripts

Scripts tool 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.

- *pause-scene.lua* :

when switching to specified scene – pauses current recording, when switching from the specified scene – continues current recording.

- *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 51)
2) open *Scripts* tool;
   (See Tools menu on page 17)
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)
- or switch to scene that has source affected by this script.
  (See)

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.
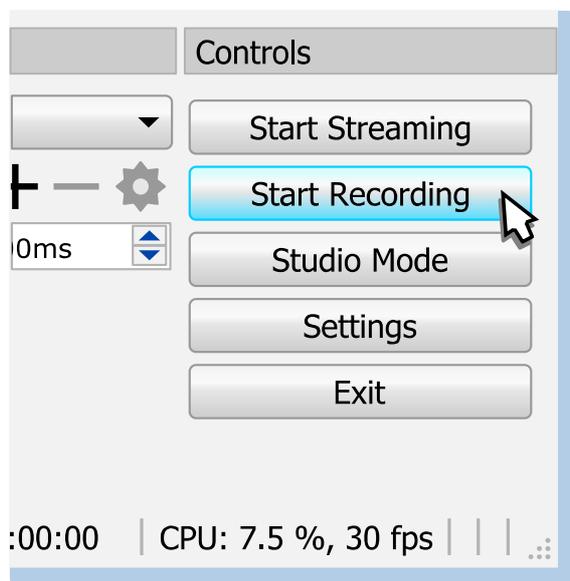
The button's name changes to *Stop Recording*. Right to it will

appear new pause (▐▐) button.

For some custom recording settings (*Use stream encoder* , *Custom Output (FFmpeg)* etc.) pause feature not available, thus the button to pause recording simply not appear.

Click the ▐▐ button **to pause/continue recording.**

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

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

Currently recording will stop automatically when disk free space is below 500 MBytes.

For **fast access to your recordings**, use File menu *Show Recordings*. (See Show Recordings on page 26)

To **change** default **path where recordings stored** in Output Mode: Simple, see *Recording path* on page 159.

To **change** default **path where recordings stored** in Output Mode: Advanced, see Recording path on page 166.

You may **define hotkeys** (shortcuts) **to start and stop recording.** (See Hotkeys on page 180)

For **fine tuning** Recording in Output Mode: Simple, see Recording on page 159.

For **fine tuning** Recording in Output Mode: Advanced, see Recording tab on page 165.

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 158)
(See Output Mode: Advanced on page 161)
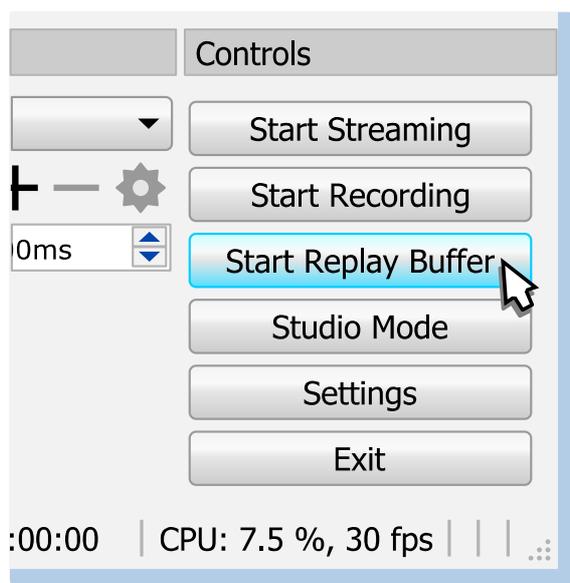
If enabled, new button *Start Replay Buffer* added to the Controls pane.

To save last fragment of the recorded video **from the RAM to the disk** – use hotkey *Save Replay*.
(See Hotkeys on page 180)

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 160 {*Output Mode: Simple*}

See Enable Replay Buffer on page 172 {*Output Mode: Advanced*}

Streaming

User may start and stop stream at any time. Click the button *Start Streaming* to begin streaming current scene.
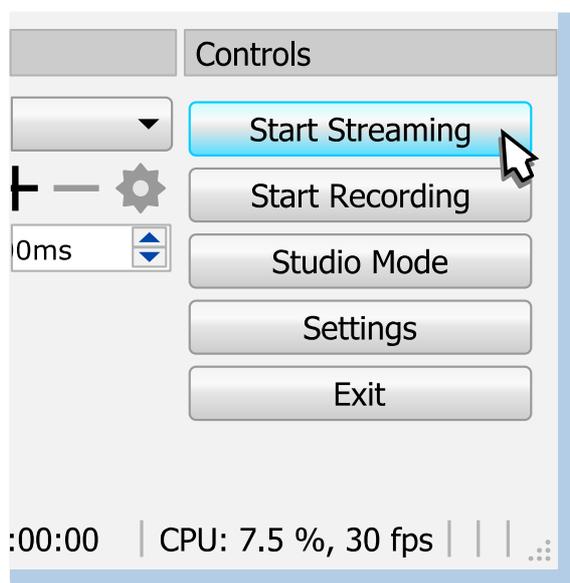
The button's name changes to *Stop Streaming*.

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 181)

💡 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 155.

You may **define hotkeys** (shortcuts) **to start and stop streaming**. (See Hotkeys on page 180)

For **fine tuning** Streaming in Output Mode: Simple, see Streaming on page 158.
For **fine tuning** Streaming in Output Mode: Advanced, see Streaming tab on page 161.

Studio Mode

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

To **enter the Studio Mode**: click the *Studio Mode* button (main window).
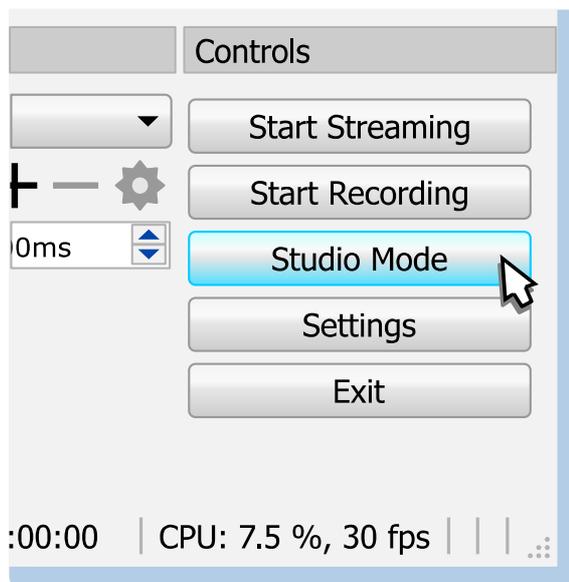
The button's color changes to 'selected' state (blue).

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 10. Studio Mode view on page 145)

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 154)

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 151.

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 Sources types & 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.
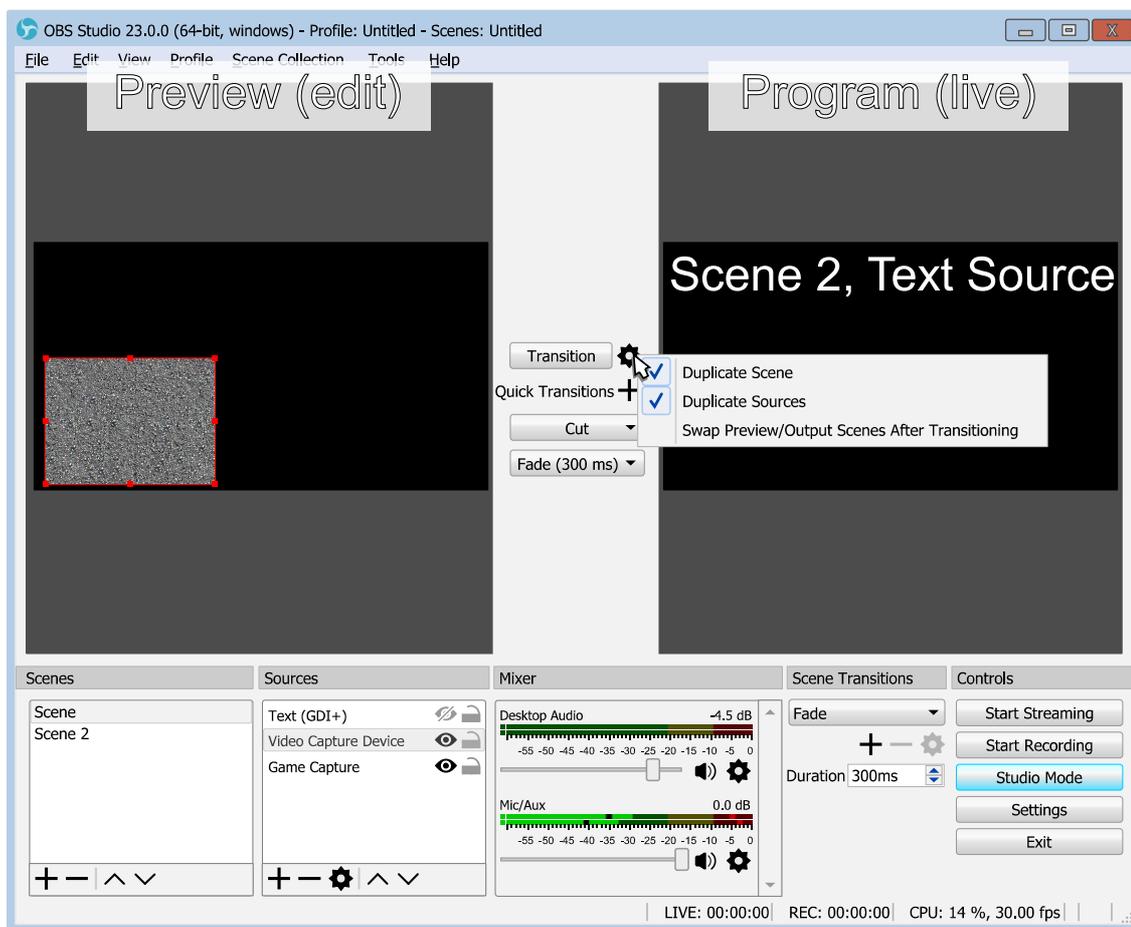
Illustration 10. Studio Mode view

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 151)
- double-click previews in Multi-view of scenes window.
  (See Multi-view of scenes on page 39)
- click Quick Transitions buttons (at the center of the main window – between left and right previews).

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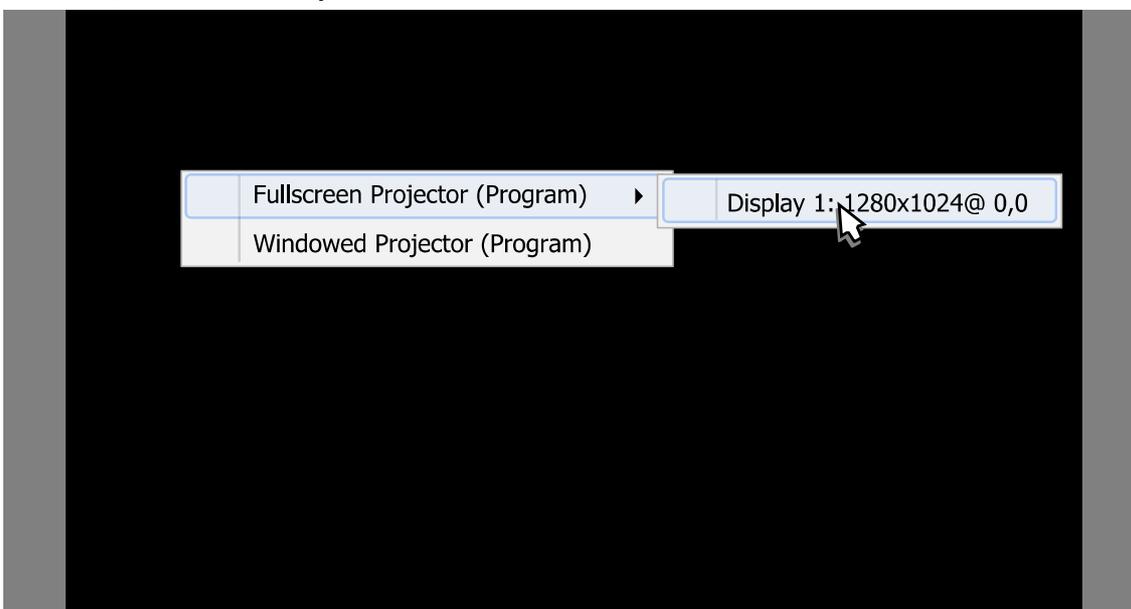
To exit full screen preview mode: press *Esc* button.

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 39)

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 (Default)' theme suitable for evening time streaming, while 'System' 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.
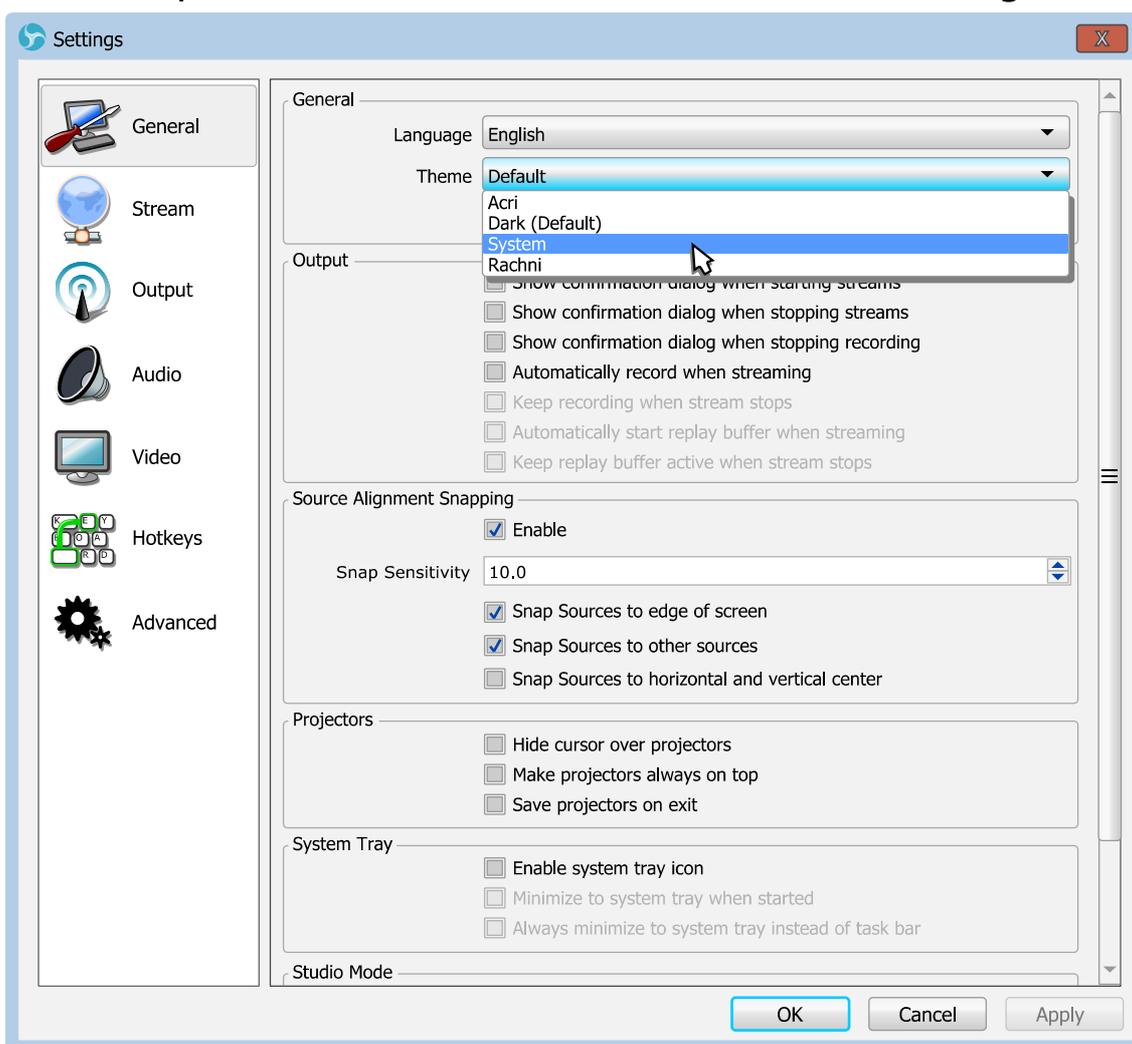
Custom themes

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 27)

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 151)

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.

Open Broadcaster Software Studio
Multiplatform

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 use main menu *Profile*.

(See Profile menu on page 20)

More likely path for output and encoder settings will be stored in the profile.

Any information related to *Sources* stored in *Scene Collections*.

(See Scene Collections menu on page 18)

Hotkeys, Push-to-talk keys etc. stored in Scene Collections, so it is good practice to change Profile and Scene Collections simultaneously.

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 148)

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.

Show confirmation dialog when stopping recording :

if checked, confirmation dialog will appear when recording is about to stop.

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 140)

- *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 the 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.

Preview

Hide overflow :

    if checked, drawing of the bounding box area of the source outside the canvas will be disabled.

Overflow always visible :

    if checked, for all sources but hidden will be drawn its bounding box areas that lies outside the canvas (no matter if these sources selected or not).

Show overflow even when source is invisible :

    if checked, the drawing of the bounding box area of the source that lies outside the canvas will be enabled for hidden sources too.

Projectors

Hide cursor over projectors :

   if checked, cursor shouldn't appear over projector's screen
   until right-click action not performed by user.
   (See <u>Full screen preview (canvas)</u> on page <u>29)</u>

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 : 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* to the system tray 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* to the system tray is checked.

Studio Mode

Transition to scene when double-clicked :

   if checked, enables transition to scene by double-click over
   any scene in *<u>Scenes</u>* list pane when in *<u>Studio Mode</u>*.

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

Click to switch between scenes :

if checked, allows mouse clicks over the *Multi-view of scenes* previews to switch between *Scenes.*

Show scene names :

if checked, shows in previews the labels of the scene names.

Draw safe areas (EBU R 95) :

if checked, shows camera safe areas over Preview window according to EBU R 95 recommendations.

Multiview Layout :

specifies Multi-view of scenes previews placement.

Stream

There is options to specify streaming Web service, streaming server, individual stream key or link your account from the web service to the current OBS Studio setup.

Stream settings

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

Service :

• specifies a Web service you want to stream to by selecting

it from the list of available services.

Some services can add its own docking panes to the user interface of OBS Studio for convenience.
(See View menu on page 21)

- Select *Show All...* from the list to show full list of available services.
- Select *Custom...* from the list to configure your own target server.

Connect Account (recommended) {button} :

when clicked opens build-in browser login window to log in to the selected Service.

Use Stream Key {button} :

when clicked next options becomes available:

- *Server* :

specifies the server from the list of the available servers for the selected Service.

- *Stream Key (Link*)* :

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.

* Link – shown to the right to the option's name (if any) when clicked opens in default browser web page of the Service, where you can get your individual Stream Key.

- ○ *Show* {button} :

when clicked, *Stream Key* showed normally (no wildcards).

Service: Custom...

When selected, next options becomes available:

Server :

specifies URL to streaming server.

Stream Key :

specifies individual user's stream key to the selected server. By security reasons key shown wildcards.

- *Show* {button} :

when clicked, *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* {button} :

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 depends on hardware configuration, versatile one 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* :

        presets that increases scanning deep of the encoder algorithm for motion detection. Highest value is

ultrafast (no scan) for x264 encoder. Lowest value is *slower* (deep scan) for x264 encoder.

Set *Encoder Presets* to *veryfast* or *superfast* – most modern CPUs unable to encode high resolution video in real-time with x264 encoder 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 recover 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 183.

Output Mode: Advanced

Streaming tab	Recording tab	Audio tab	Replay Buffer tab
161	165	171	172

Streaming tab

Streaming tab available only in *Output Mode: Advanced*
(See Output Mode on page 157)

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.
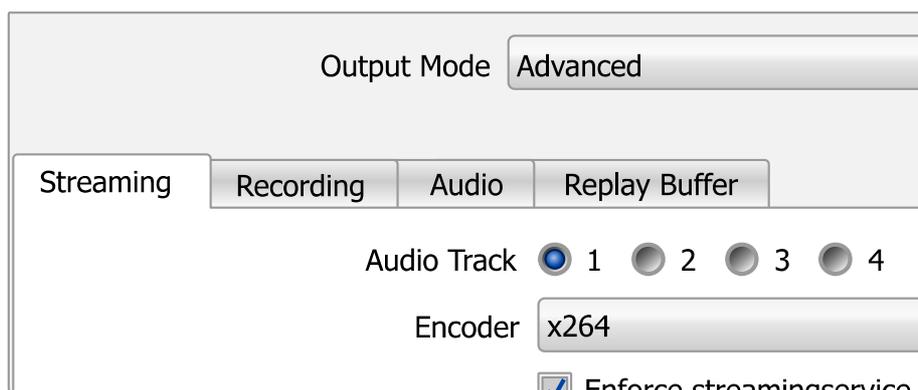
Only one track is selectable for streaming. Multi-track is available in recordings. (See Recording tab on page 165)

Check what sources goes to this selected track in Advanced Audio Properties on page 185.

- *Encoder* :

    encoder type. Default value depends on hardware
    configuration, versatile one is 'x264'.

    Availability of encoders depends on PC configuration.

    Next options descriptions is for x264 encoder selected.

- *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 pudding. 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).
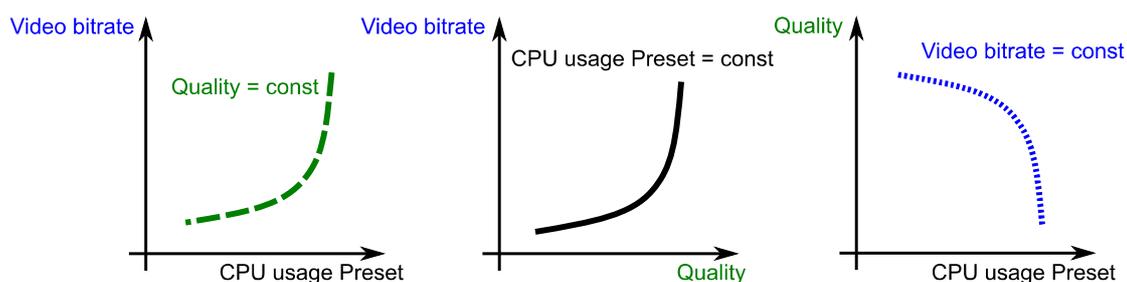
Set *CPU usage Preset (higher = less CPU)* to *veryfast* or *superfast* – most modern CPUs unable to encode high resolution video in real-time under lower presets without frames drop. Lower presets generates video with higher quality at the same bitrate.

- *Profile* :

   defines compatibility with hardware players, sets some restrictions to maximum output bitrate.

   Use the Table 2.H264 profiles and levels provided on page 164 and recommendations from your streaming Web service.

- *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)

level	Base & Main max kbps	High max kbps	Max Resolution@Frequency (reference frames)
			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) 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)

Recording tab

Recording tab available only in *Output Mode: Advanced*.

(See Output Mode on page 157)

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/NVENC/Quick Sync/AMD AMF 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 recover 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.

Output Mode	Advanced

Streaming	Recording	Audio	Replay Buffer
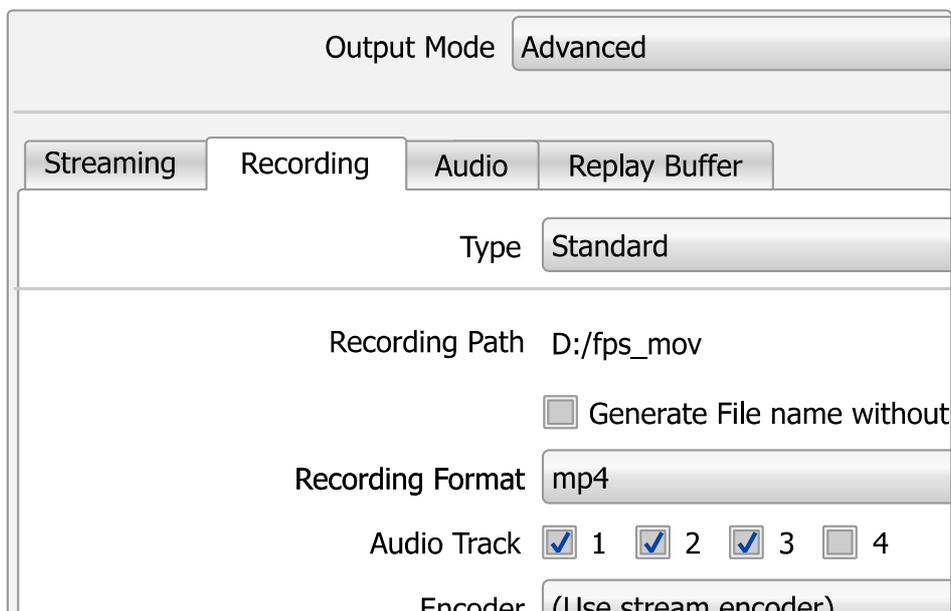
Type	Standard

Recording Path D:/fps_mov

☐ Generate File name without

Recording Format mp4

Audio Track ☑ 1 ☑ 2 ☑ 3 ☐ 4

Encoder (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 what sources goes to the selected tracks in Advanced Audio Properties on page 185.

- *Encoder* :

    switches between available encoders. Next options available:

    ○ *Use stream encoder* :

        when selected, reuses streaming encoder settings defined on Streaming tab.

        (See Streaming tab on page 161)

💡 When *Encoder: Use stream encoder* is selected, the recorded video will be the same quality as during streaming (no additional processing applied).

    ○ *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 161.

- *Rate Control* :

  same as for Streaming tab on page 161.

- *Bitrate* :

  same as for Streaming tab on page 161.

- *Use Custom Buffer Size* :

  same as for Streaming tab on page 161.

  - *Buffer Size* :

    same as for Streaming tab on page 161.

- *CRF* :

  same as for Streaming tab on page 161.

- *Keyframe Interval (seconds, 0 = auto)* :

  same as for Streaming tab on page 161.

- *CPU usage Preset (higher = less CPU)* :

  same as for Streaming tab on page 161.

- *Profile* :

  same as for Streaming tab on page 161.

- *Tune* :

  same as for Streaming tab on page 161.

- *x264 Options (separated by space)* :

  same as for Streaming tab on page 161.

- *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 the 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 requires additional parameter *x264-params* to override the preset settings, thus use it like this (2 parameters overriden for the 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 track and quantity of the audio tracks that will be encoded during recording. Maximum 6 audio tracks available for encode.

- *Audio Encoder* :

    specifies audio encoder for selected container.

- *Audio Encoder Settings (if any)* :

    specifies custom audio encoder settings string for FFmpeg output.

Streaming tab	Recording tab	Audio tab	Replay Buffer tab
161	165	171	172

Audio tab

Audio tab available only in *Output Mode: Advanced*.
(See Output Mode on page 157)

Encoding settings available only per track. To adjust mixing options for both recording and streaming, see Advanced Audio Properties on page 185.

Six audio 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	Recording tab	Audio tab	Replay Buffer tab
161	165	171	172

Replay Buffer tab

Replay Buffer tab available in *Output Mode: Advanced*.

(See Output Mode on page 157)

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 166]. 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 183.

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, volume meter type, push-to-mute/push-to-talk delays.

General

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 at the same quality as Stereo sound (2.0).

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. Look for external plugins that can change channel position/mix if your mic outputs to LEFT and RIGHT channels only.

Devices

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 device. If you want to mute it per scene individually – use per scene Audio Input Capture source instead and set this to Disable.

Mic/Auxiliary Audio Device 2...4 :

specifies device available as default for audio source named 'Mic/Auxiliary Audio Device 2' (and up to 'Mic/Auxiliary Audio Device 4') that will be placed in all scenes.

Use *Desktop Audio Device 2, Mic/Auxiliary Audio Device 2...4* in special cases only, other way set it to Disable.

Meters

Audio Meter Decay Rate :

specifies falloff speed for volume meters of the Audio 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.

Peak Meter Type :

specifies meter type to show the audio levels for volume meters of the Audio Mixer pane. Next options available:

- *Sample Peak* :

  standard meter, –3 dB accepted tolerance.

- *True Peak (Higher CPU usage)* :

  complex meter, lower than –0.5 dB accepted tolerance. Uses slightly more CPU power.

  Here the "True Peak" in meaning of ITU-R BS.1770, Annex 2.

Advanced

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 use.

Hotkeys

Mic/Aux *{it's just a name of your Audio Input Capture source}*

- *Enable Push-to-mute* :

  if checked, push-to-mute and delay is enabled for Mic/Aux device. For hotkey set, see Hotkeys on page 180.

  - *Push-to-mute* :

    defines push-to-mute delay length in milliseconds for Mic/Aux device.

- *Enable Push-to-talk* :

    if checked, push-to-talk and delay is enabled for Mic/Aux device. For hotkey set, see <u>Hotkeys</u> on page <u>180</u>.

    ○ *Push-to-talk* :

    defines push-to-talk delay length in milliseconds for Mic/Aux device.

Desktop Audio *{it's just a name of your Audio Output Capture source}*

- *Enable Push-to-mute* :

    if checked, push-to-mute and delay is enabled for Desktop Audio device.

    ○ *Push-to-mute* :

    defines push-to-mute delay length in milliseconds for Desktop Audio device.

- *Enable Push-to-talk* :

    if checked, push-to-talk and delay is enabled for Desktop Audio device.

    ○ *Push-to-talk* :

    defines push-to-talk delay length in milliseconds for Desktop Audio device.

 Video

Video options adjusts the size of the canvas and output, specifies filter for scaling, defines frame rate of the output.

<u>Output</u> options can override settings defined here, keep that in mind when selecting aspect ratio for the main output. There are

two possible situations shown in the pictures:

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.*
This can be done in one click via context menu option *Resize output (source size)* over the desirable source. *Resize output (source size)* option not available if source has 0 size.

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 hardware optimizations. Special encoding functions of FFmpeg that is used in OBS Studio, 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, Area, 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.
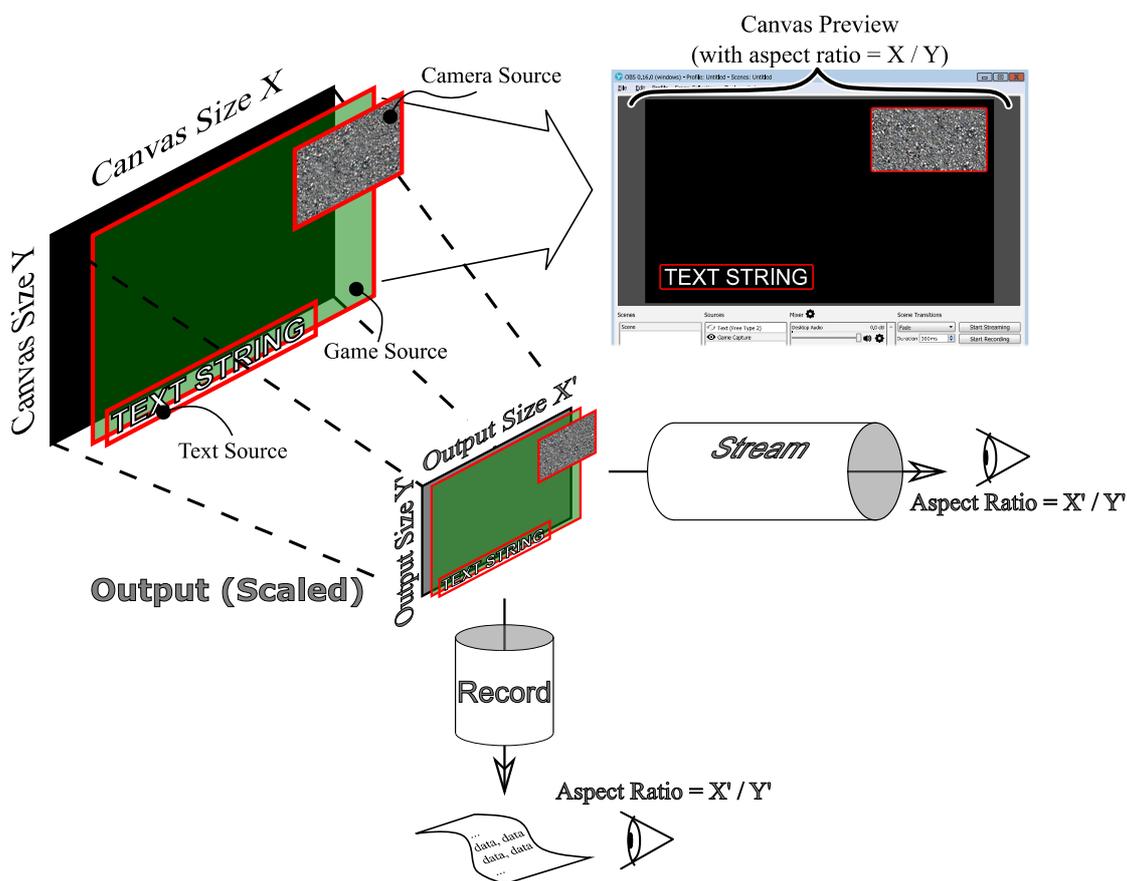
Illustration 11. Output at the same size

> 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 157)
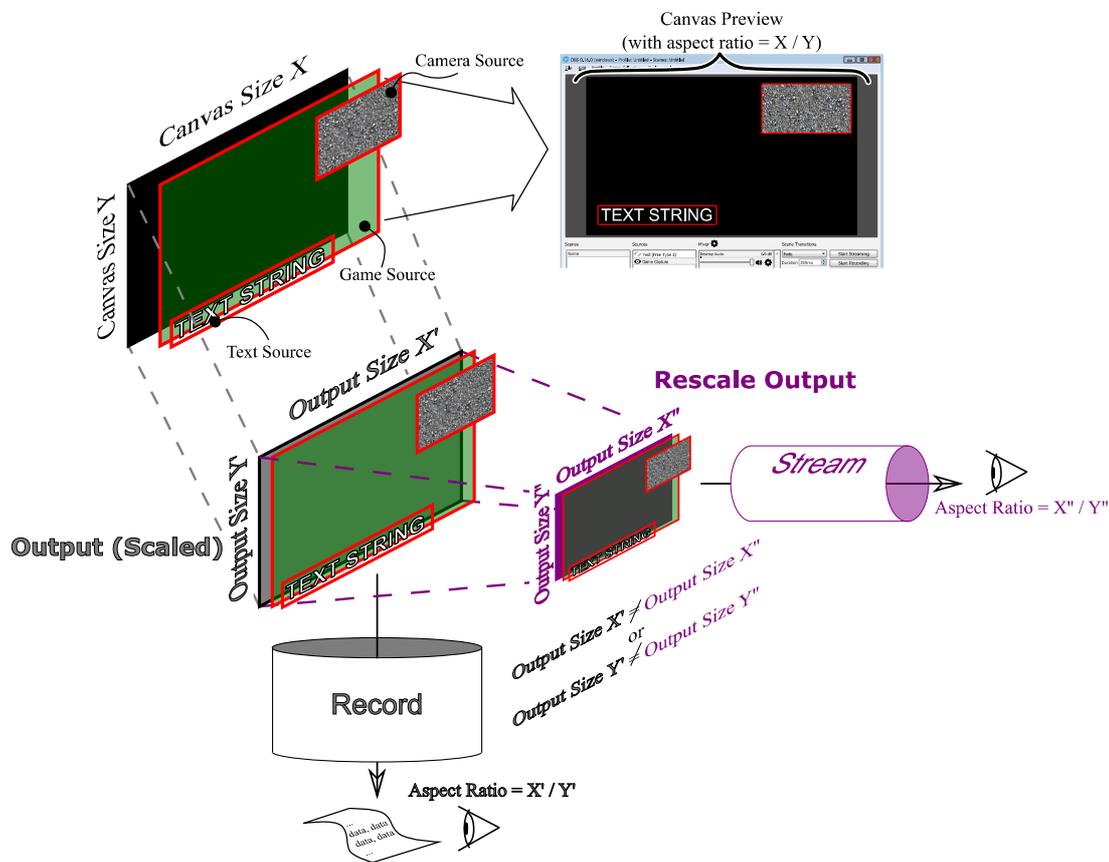
Illustration 12. Output at different sizes

If two resize tasks 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*.

If encoder don't uses FFmpeg (for example, native NVENC SDK implementation) then *Rescale Output* option may be unavailable.

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 180)
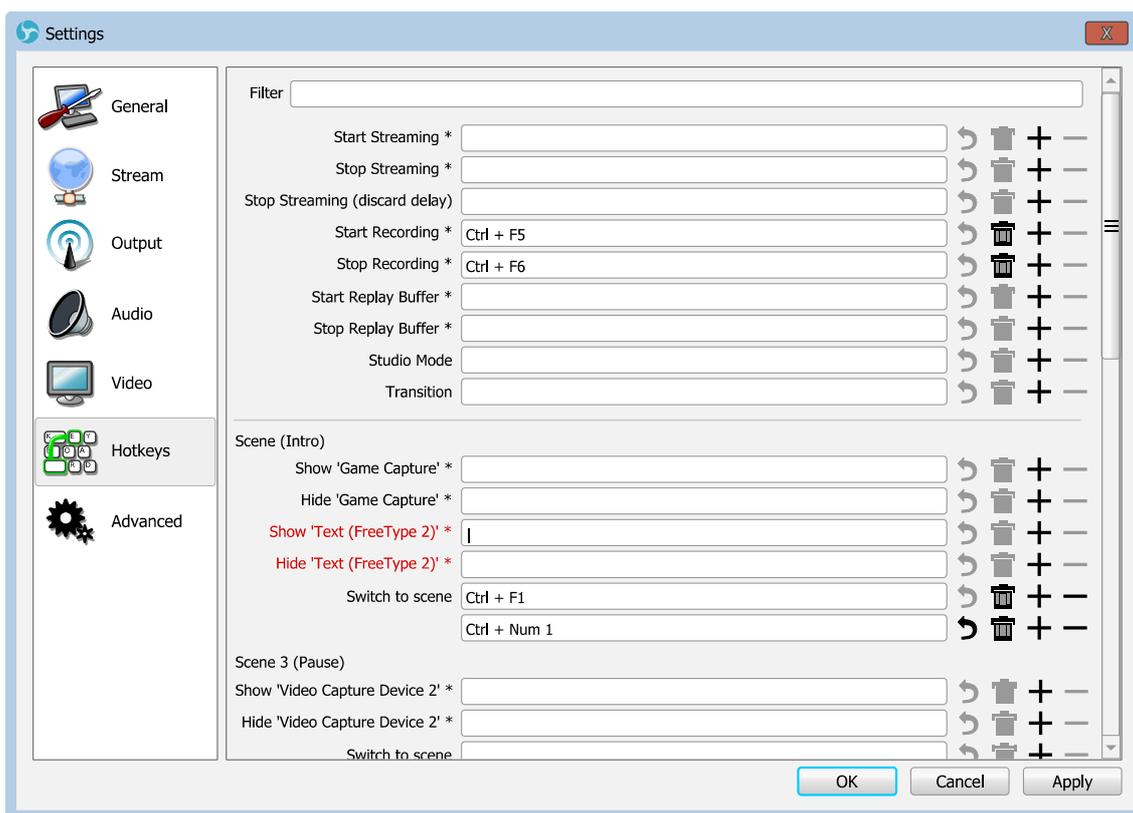
Illustration 13. Define hotkeys (shortcuts)

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 the ➕ button.

To **remove additional** shortcut: click ➖ button.

You can **remove shortcut linking** by clicking 🗑 button.

To **revert recently changed hotkey** to previous setting just click the ↩ button.

Click *OK* button to save changes and exit.

To **filter out** by source name **the hotkeys list** use *Filter* field.

⚙ 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. Depends on system and configuration.

(See Command Line Options on page 191)

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 27)

- *Color Format* :

  specifies color format for encoder's output (common value is *NV12*).

- *Color Space* :

  specifies color space for encoder's output (common value is *601*).

  Specify *Color Space: 709* for modern hardware, for HD setups (i.e. 720p and larger outputs). Leave this setting unchanged for SD videos that aims at old hardware targets or for all videos that aims at old target servers.

  To select right setting – use color test charts and view result on target device.

- *Color Range* :

  specifies color range for encoder's output, i.e. how to encode video (common value is Partial).

  To select right setting – use color test charts and view result on target device.

- *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 it state after OBS Studio close (option available for Mac PC).

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.

- *Automatically remux to mp4* *(record as mkv)* :

    if checked, automatically starts remuxing process to convert file to mp4, as soon as the recording complete. Overrides output format to MKV if MP4 was set at

    Output.

    You can bring up same remuxing dialog manually, see Remux Recordings on page 26.

    Take a look at self-contained fragmented *.mp4* format writing if you wish to recover your aborted *.mp4/.mov* recordings. It is possible to write such file through the Custom Muxer Settings

- *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 reconnect automatically feature. Next option available:

    ○ *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.

- *Dynamically change bitrate to manage congestion (Beta)* :

    if checked will reduce bitrate of the streaming output in case of network failures instead of dropping frames. RTMP connections only.

    Experimental feature. Restores streaming bitrate if network is OK just in few minutes after the last drop. For bitrate limit tests enables Numpad 0–6 keys to

switch between 0 (no limit), 1000–6000 Kbit/s upper limit presets.

- *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.

Browser

- *Enable Browser Source Hardware Acceleration* :
  if checked, will try to use hardware acceleration for the Browser source drawing. When unchecked, sends additional command line keys to the plugin to disable acceleration.
  (See Command Line Options on page 191)

Hotkeys

- *Disable hotkeys when main window is in focus* :
  if checked, all specified Hotkeys will be ignored when main program window is in focus.

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 14. Advanced Audio Properties on page 186)

This advanced audio settings (or "Mixer") accessible through:
- application's *Edit menu*, sub-menu *Advanced Audio Properties*;
- by right-click over the *Audio Mixer pane* and choose *Advanced Audio Properties* option;
- by click ⚙ icon at *Audio Mixer pane* (main window) right to any available audio source and select appropriate option.
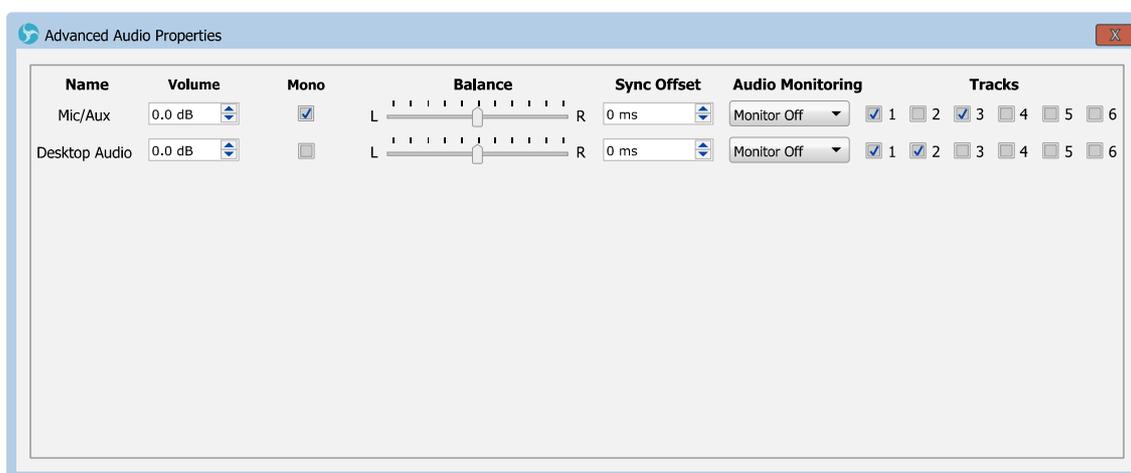
Illustration 14. Advanced Audio Properties

Name :

shows name of the input.

Volume :

defines volume of the input in dB (decibels), about −96dB is silent.

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).

Balance :

defines channel balance, volume level between Right (R) and Left (L) channels. Available only for Stereo outputs.

Sync Offset :

defines synchronization offset of the audio source when mixing it into *Tracks*, in milliseconds (negative values are accepted). It is like offset applied to the source's track (right before it mixed to other tracks), thus it not available in *filters* (always 0 ms for any source).

> Set *Sync Offset* to negative value, if your microphone's sound appears too late. Set *Sync Offset* 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 950 ms).

> All offsets applied on encoding, thus *Audio Monitoring* not affected by offsets – always check the output file or stream.

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 *Monitoring Device*. (See Monitoring Device on page 175)

> Routing media's source audio stream with *Monitor Only (mute output)* allow to

user to hear the sound through the output device specified by *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 <u>*Monitoring Device*</u> and through the mixing options specified by *Tracks* settings (see <u>below</u>).

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 <u>Illustration 14. Advanced Audio Properties</u> on page <u>186</u>, 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 <u>Streaming tab</u> *Audio Track* #1;
2) on <u>Recording tab</u> *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 *Audio Mixer* pane (list):
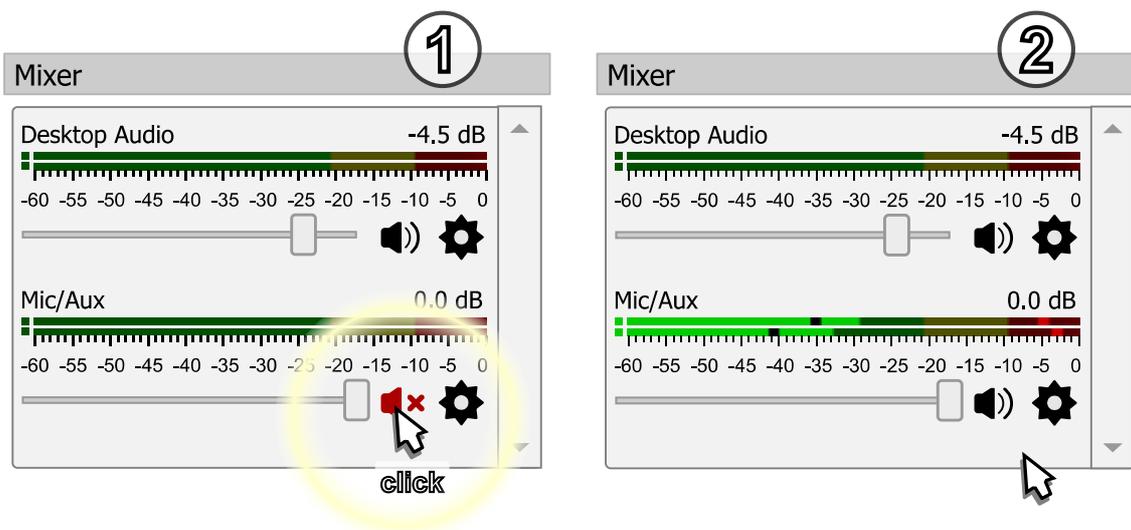
See Enable audio source on page 57.

Level meter description

Level meter of the source temporary turns red when signal clipping occur. **Black** marks on meter shows average loudness of the source. Color dots at the beginning of the meter shows audio levels before the fader (volume slider) and before mute control. Color marks on the meter shows peak of the signal, the max value holds for a few seconds. The scale is in dB (decibels).

If *Audio Mixer pane* list is empty – either you scene lack any audio sources (See Add new audio/video source to OBS Studio scene on page 53) or some sources were hidden from the list:

to **show all** previously hidden **audio sources** from the *Audio Mixer pane*: right-click over the *Audio Mixer pane* and select *Unhide All* option. Now all audio sources shown;

to **hide any audio source** in the *Audio Mixer pane* :

- right-click over the source in *Audio 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 *Audio Mixer pane* , not from the tracks *"Mixer"* processing [page 186];

to **show in** Audio 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;

to **copy into buffer any filter** from the audio source of the Audio Mixer pane right-click over the source and select context menu entry *Copy Filters*;

to paste **from the buffer any copied earlier filter** into the audio source of the Audio Mixer pane right-click over the source and select context menu entry *Paste Filters*.

If *Vertical Layout* option of the right-click menu over the *Audio Mixer pane* is ✓ marked by icon, then mixer's level meters will be drawn vertically.

Basic level meter settings available at the *Settings->Audio* section of the application. (See Audio on page 173)

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 191. 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)
--allow-opengl		
Enables Open GL Renderer for selection in *Advanced Settings*. Windows only.		obs32.exe --allow-opengl obs64.exe --allow-opengl
--always-on-top		
Start application with *Always On Top* checked.		obs32.exe --always-on-top obs64.exe --always-on-top
--collection [scene_collection_name]		
Scene Collection with name scene_collection_name will be loaded instead of last used.		obs32.exe --collection MyNewScenes1

Command line key	Description	Example (Windows)
--help **-h**	Prints list of available command line keys to standard output (terminal).	obs32.exe --help obs64.exe -h
--minimize-to-tray	Application starts minimized to tray icon (starts hidden to tray). The setting _Enable_ should be enabled in application's settings before use this key.	obs32.exe --minimize-to-tray obs64.exe --minimize-to-tray
--multi **-m**	Skips multi-instance warning when more than one application started from home or from any portable folder.	obs32.exe --multi obs64.exe --multi obs32.exe -m
--portable **-p**	Runs OBS Studio in portable mode (profiles stored in application's home folder).	obs32.exe --portable obs64.exe --portable obs32.exe -p
--profile [profile_name]	Profile with name profile_name will be loaded instead of last used.	obs32.exe --profile MyProfileForRec1
--scene [scene_name]	Scene with name scene_name will be specified as current instead of last used in current Scene Collection.	obs32.exe --scene MyBlankScene1 "obs64.exe --startrecording --profile Rec1 --collection SkypeCall1 --scene SkypeFullscreen1"

Command line key	Description	Example (Windows)
--startrecording OBS Studio starts [Recording](#) immediately.		obs32.exe --startrecording obs64.exe --portable --startrecording
--startreplaybuffer OBS Studio starts [Replay Buffer](#) immediately.		obs32.exe --startreplaybuffer obs64.exe -p --startreplaybuffer
--startstreaming OBS Studio starts [Streaming](#) immediately		obs32.exe --startstreaming obs64.exe --portable --startstreaming
--studio-mode OBS Studio starts [Studio Mode](#) immediately		obs32.exe --studio-mode obs64.exe --portable --studio-mode
--unfiltered_log Repeated log file lines doesn't shortened to the first line.		obs32.exe --unfiltered_log
--verbose Messages and LOG_INFO will be added to the log file.		obs32.exe --verbose
--version **-V** *{this is capital letter}* Prints current version to standard output (terminal)		obs64.exe --version

💡 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
/config {creates automatically}
/bin
/data
/data
/obs-plugins
/obs-plugins
portable_mode.txt
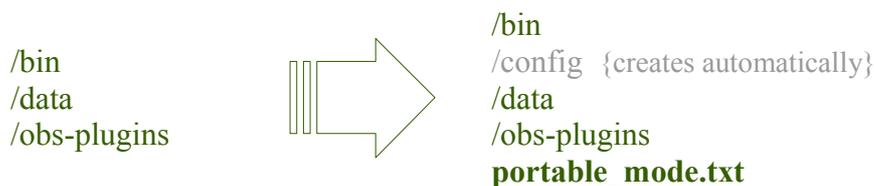
Full list of the command line keys available for the Browser source is huge and depends on third–party software used in the plugin. Please, look for the List of Chromium Command Line Switches online.

Depending on available configuration (Enable Browser Source Hardware Acceleration setting) OBS Studio overrides next Chromium keys of the Browser plugin:

> *--disable-gpu*
>
> *--disable-gpu-compositing*

By default, next additional keys applied for the Browser source:

> *--enable-system-flash*
>
> *--autoplay-policy=no-user-gesture-required*

Shortcuts Linux

Positioning sources

Result	Action
Center to canvas	*Ctrl + D*

Transform sources

Result	Action
Open Transform dialog window	*Ctrl + E*
Fit to canvas (screen)	*Ctrl + F*
Stretch to canvas (screen)	*Ctrl + S*
Reset Transform	*Ctrl + R*

Copying sources

Result	Action
Copy source to clipboard	*Ctrl + C*
Paste source as ref. from clipboard	*Ctrl + V*

Layers shift

Result	Action
Move one level Up	*Ctrl + Up*
Move one level Down	*Ctrl + Down*

Raise to Top	*Ctrl + Home*
Lower to Bottom	*Ctrl + End*

Navigate Preview*

Result	Action
Drag Preview window	*Spacebar + Mouse*
Zoom Preview window	*Spacebar + Mouse Wheel*

* See Preview Scaling on page 28

User interface

Result	Action
Switch windowed / borderless–fullscreen	*F11*

Use *Delete* key to completely remove, *F2* key to rename scene or source.

Default actions not global. Works only when OBS Studio main window in focus (active).

Shortcuts Mac

Positioning sources

Result	Action
Center to canvas	*Ctrl + D*

Transform sources

Result	Action
Open Transform dialog window	*Ctrl + E*
Fit to canvas (screen)	*Ctrl + F*
Stretch to canvas (screen)	*Ctrl + S*
Reset Transform	*Ctrl + R*

Copying sources

Result	Action
Copy source to clipboard	*Ctrl + C*
Paste source as ref. from clipboard	*Ctrl + V*

Layers shift

Result	Action
Move one level Up	*Ctrl + Up*
Move one level Down	*Ctrl + Down*

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Raise to Top	*Ctrl + Home*
Lower to Bottom	*Ctrl + End*

Navigate Preview*

Result	Action
Drag Preview window	*Spacebar + Mouse*
Zoom Preview window	*Spacebar + Mouse Wheel*

* See Preview Scaling on page 28

User interface

Result	Action
Switch windowed / borderless–fullscreen	*F11*

Use *Backspace* key to completely remove, *Return* key to rename scene or source.

Default actions not global. Works only when OBS Studio main window in focus (active).

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Shortcuts Windows

Positioning sources

Result	Action
Center to canvas	*Ctrl + D*

Transform sources

Result	Action
Open Transform dialog window	*Ctrl + E*
Fit to canvas (screen)	*Ctrl + F*
Stretch to canvas (screen)	*Ctrl + S*
Reset Transform	*Ctrl + R*

Copying sources

Result	Action
Copy source to clipboard	*Ctrl + C*
Paste source as ref. from clipboard	*Ctrl + V*

Layers shift

Result	Action
Move one level Up	*Ctrl + Up*
Move one level Down	*Ctrl + Down*

Raise to Top	*Ctrl + Home*
Lower to Bottom	*Ctrl + End*

Navigate Preview*

Result	Action
Drag Preview window	*Spacebar + Mouse*
Zoom Preview window	*Spacebar + Mouse Wheel*

* See Preview Scaling on page 28

User interface

Result	Action
Switch windowed / borderless–fullscreen	*F11*

Use *Delete* key to completely remove, *F2* key to rename scene or source.

Default actions not global. Works only when OBS Studio main window in focus (active).

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