



BROADCASTER GETTING STARTED USER'S GUIDE



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OVERVIEW

RayV Broadcaster is a unique combination of a friendly UI and workflow with a robust software-based media server and encoder that allows you to create and broadcast on the fly live and linear TV channels at HD quality.

From taking in nearly every possible form of video and audio source, to the creation of playlists, and live switching between sources, the RayV Broadcaster is a sophisticated software-based broadcasting control room. Use it to broadcast live events, live channels, create new channels, time and place shift your content, record and instantly publish it.

The Broadcaster provides the following features:

- A variety of industry standard video quality presets. Sometimes, HD quality is desired; other times, limited bandwidth dictates lower screen resolution.
- User friendly interface. This lets you be a broadcaster without an engineering degree.
- "At a Glance" channel status panel. Your broadcast is always visible for monitoring and control.
- Pre-prepared programs (playlists) that enable you to broadcast a series of shows (i.e., sources) automatically playing sequentially.
- Time-shifting recording and playback. You can broadcast your channel to your target audience around the world at any time. Up to 12 hours of time-shifting playback for optimal global coverage.
- The ability to play remote streaming sources. You can broadcast streaming video from other servers.
- Preview in all production spaces. This lets you see what you are working on.
- Detailed system information. The data you need is available at the click of a mouse.

If you are ready to get started, this guide will lead you step-by-step from installing the RayV Broadcaster to managing your own channel.

GETTING STARTED

This guide covers the following topics:

- **Minimum System Requirements** – Lists the minimum hardware, software, and connectivity needs.
- **Installation Instructions** – How to install the broadcaster using the Setup Wizard.
- **Broadcaster Navigation** – Describes the main navigation screen of RayV Broadcaster.
- **Creating Live Broadcasts** – How to begin broadcasting.
- **Creating Programs** – How to create, edit, and delete programs.
- **Live Recording and Timeshifting Playback** – How to record your stream and play it in different time zones.
- **Settings** – How to edit your system information.
- **Contacting RayV for Support** – How to resolve various issues.



MINIMUM SYSTEM REQUIREMENTS

The following are the minimum software, hardware, and bandwidth requirements that are necessary to run the RayV Broadcaster.

SOFTWARE REQUIREMENTS

- Operating system – Windows 2003 SP2, Windows XP SP2 and Windows Vista/Windows 7.
- Microsoft .NET 3.5 SP1.

HARDWARE REQUIREMENTS

For normal quality preset with default encoding quality:

- PC with Intel® Core™ 2 Duo Processor running at a minimum of 2.4 GHz (E6600).
- 1024 MB memory.
- 50 MB available hard-disk space.

For high quality preset with default encoding quality:

- PC with Intel Core2 Quad CPU.

For high definition video quality:

- PC with Intel 8 Core Nehalem CPU.
- 4 GB memory.

BANDWIDTH REQUIREMENTS

The Broadcaster requires an upload bandwidth that is twice the channel bandwidth. The extra bandwidth is required for retransmissions and to ensure that the stream is always smoothly received by the RayV grid.

INSTALLATION INSTRUCTIONS

The RayV Broadcaster program is installed using a standard installation wizard.

Installing the Broadcaster

Make sure you have received the Broadcaster setup program from RayV.

To install the Broadcaster:

1. Double-click  **Setup.exe**.
2. Follow the Setup Wizard instructions.



Figure 1: Installation Screen

Note: By default, the setup program installs the Broadcaster under C:\Program Files\RayV\Broadcaster\.

3. At the end of the setup process, run the Broadcaster to start broadcasting.

BROADCASTER NAVIGATION

The Broadcaster offers an easy to use main screen for quick access to its primary functions.

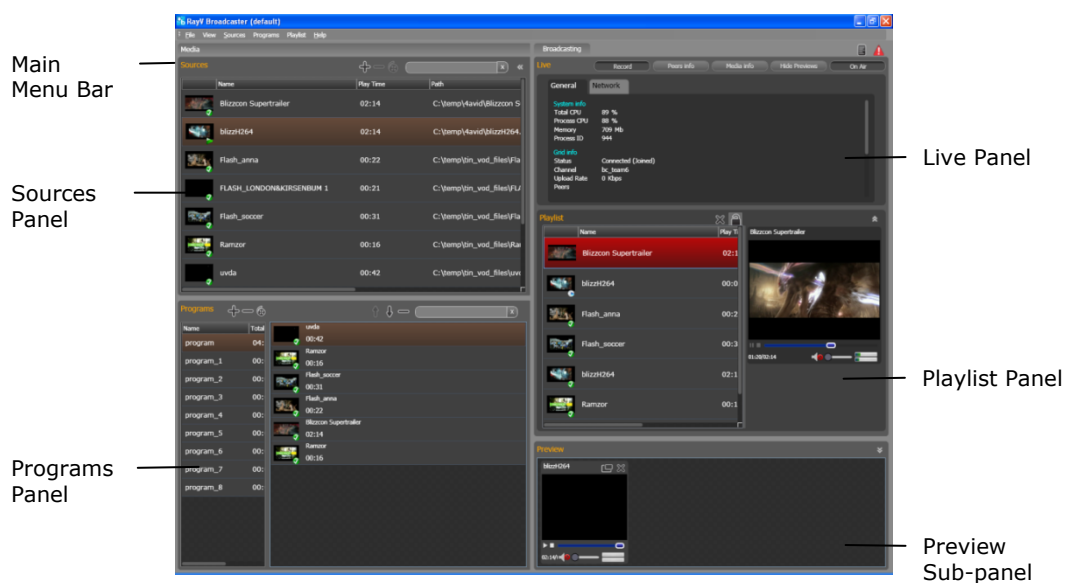


Figure 2: RayV Broadcaster Main Screen

The RayV Broadcaster main screen includes the following panels:

- **Sources** – Displays a list of your available media sources.
- **Programs** – Enables you to create and edit playlists.
- **Live** – Enables you to view information of the selected source from the Sources panel.
- **Playlist** – Enables you to view what is the current on air source.
- **Preview** – Enables you to preview your selected source.

MAIN MENU

The main menu includes the following functions:

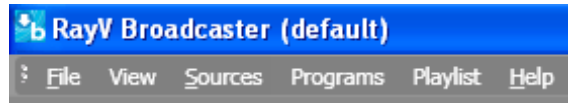


Figure 3: Main Menu Bar

FILE MENU

- Close – Close the user interface (UI) while the Broadcaster application continues running in the background.
- Restart – Restart the Broadcaster.
- Exit – Quit the Broadcaster.

VIEW MENU

- Playback – For working in remote desktop access:
 - Mute All – Mute all the audio previews.
 - Hide Previews – Hide all the video previews.
- Menu items related to support. These may include: Notification Dialog, Show Support Log, or Clear Ignore List.
- Preview – Show or hide the Preview sub-panel.
- Live Info – Show or hide the Live panel.
- Settings – For configuring the Broadcaster's advanced options.

SOURCES MENU

- Add/Delete – Add or delete a source.
- Preview – Display the preview of the selected source in the Preview sub-panel.
- Edit/Close – Show or hide the Edit panel for the selected source.
- Menu items related to the live or to a pre-prepared playlist. These may include: Set as the Playlist, Append to the Playlist, or Add to a New Program.

PROGRAMS MENU

- Add/Delete – Add or delete a program.
- Rename – Rename a program.
- Preview – Display the preview of the selected program item in the Preview sub-panel.
- Clear All Items – Remove all sources from a selected program.
- Menu items related to the live playlist. These may include: Set as the Playlist or Append to the Playlist.

PLAYLIST MENU

- Clear Playlist – Clear the selected live playlist.
- Delete Playlist Item – Delete a selected source from the live playlist.

HELP MENU

- Support – Send a support request.
- About RayV Broadcaster – Learn which version of Broadcaster you are using.

SOURCES PANEL

In the Sources panel, you can add or delete your media sources and organize them. This can include live cameras or video capture devices, video files or full media directories, remote streaming and time-shifting sources.

Once added to your library, the media source can be loaded for immediate broadcast. For more information on media sources, refer to *Adding a Media Source* on page 14.

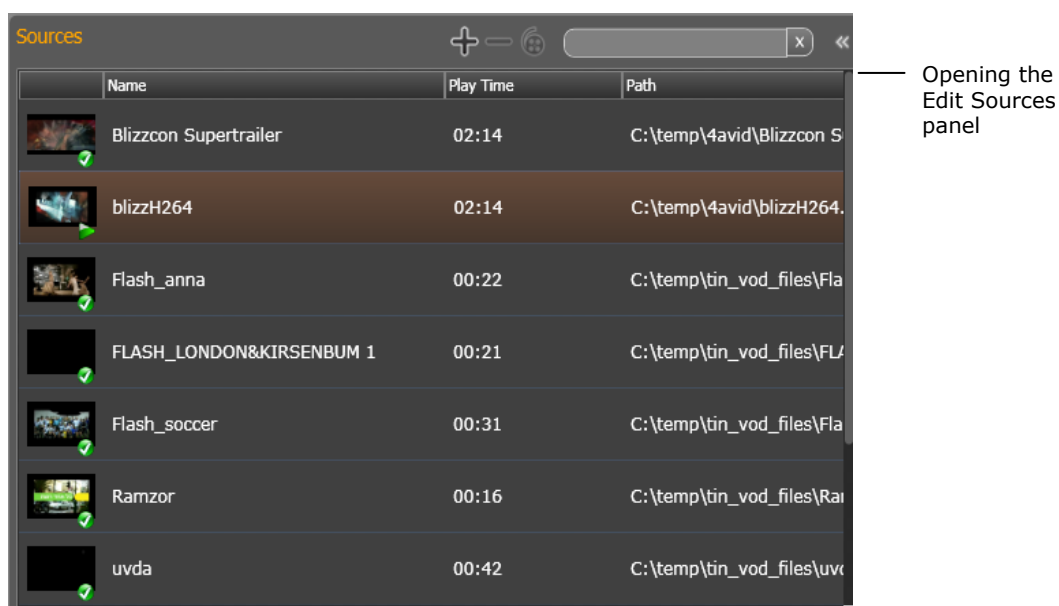


Figure 4: Sources Panel


The RayV Broadcaster enables the following types of media sources:

- **File or Folder** – Pre-recorded digital video files or a complete media directory.
- **Device** – Camcorders, webcams and other video-capture devices.
- **Timeshift** – Playback of your original recorded live video, shifted by time, for broadcasting in different time zones.
- **Stream** – Remote Windows Media Streaming video (MMS).



- **Image** – A .jpg format of an image that can be used as a preview image, or a fixed slide that is shown during idle broadcasting time.

EDIT SOURCES PANEL

In the Edit Sources panel, you can edit the broadcasting properties of the current source (i.e., the source that is selected in the Source panel).

You can allow or prevent changes to the source properties by clicking  at the top right hand corner of the Edit Sources panel.

To show/hide the Edit Sources panel:

1. Click  at the right of the Sources panel to show the Edit Sources panel.
2. Click  at the right of the Sources panel to hide the Edit Sources panel.

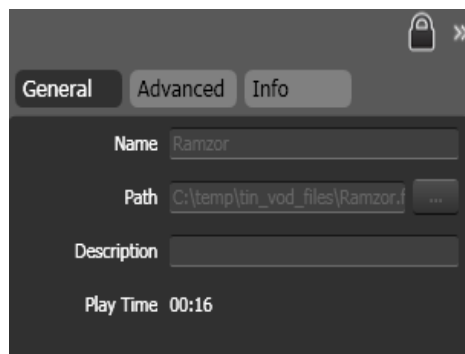


Figure 5: Edit Sources Panel - General Tab Dialog box

General Tab

The *General* tab (Figure 5) enables you to change the following properties of the selected media source:

- **Name** – The source name.
- **Path** – The path name (where the file is stored on the disk).
- **Description** – Brief description of the source (optional).
- **Play Time** – Displays the source's duration time (view only).

Advanced Tab

The *Advanced* tab enables you to adjust the following properties of the selected media source:

- **Aspect Ratio** – The aspect ratio of the source.

- **Deinterlace** – Turn this option on/off or use the default auto mode if you notice a deinterlace distortion in the original source. It is not recommended that this option be modified.
- **Video Scale** – The scaling algorithm of the video. It is not recommended to modify this property.
- **Codec** – This option cannot be changed.
- **Sync Audio** – Correct any lip-sync problems in the original source.

For more information on setting these properties, refer to the *RayV Broadcaster Troubleshooting Guide*.

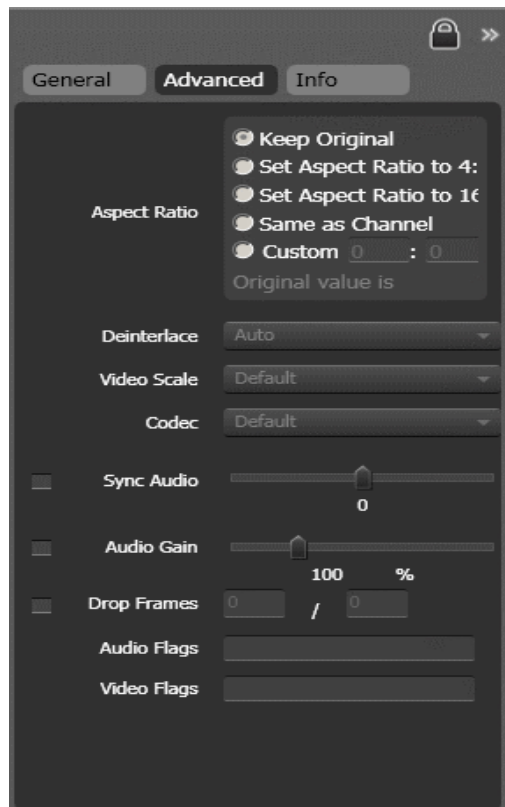


Figure 6: Advanced Tab Screen

Info Tab

The *Info* tab enables you to view the following information about the source:

- Total Bitrate (Audio and Video) in Kbits per sec.
- Video
 - Video Codec
 - Video width in pixels
 - Video height in pixels
 - Video FPS (frames per second)

- Audio
 - Audio Codec
 - Audio FPS (frames per second)
 - Number of audio channels
 - Buffer Rate

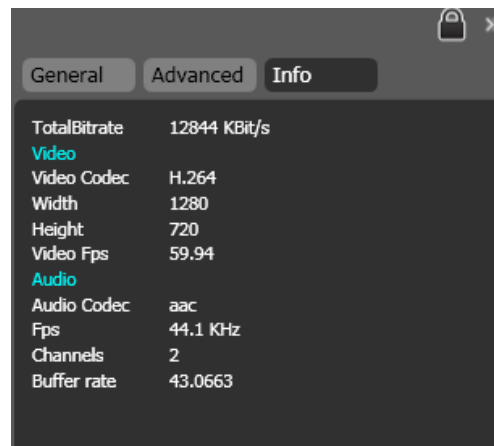


Figure 7: Info Tab Dialog box

PREVIEW SUB-PANEL

The Preview Sub-panel displays the current source before it is loaded to the Playlist.



Figure 8: Preview Sub-panel

PROGRAMS PANEL

The Programs panel displays your list of programs. Each program includes a list of sources which you can add to the Playlist panel to be scheduled for live broadcasting. You can add sources from the Sources panel to the Programs panel, or you can create new programs. For more information, see *Creating Programs* on page 18.



Figure 9: Programs Panel

LIVE PANEL

The Live panel displays information about the current status of the Broadcaster.

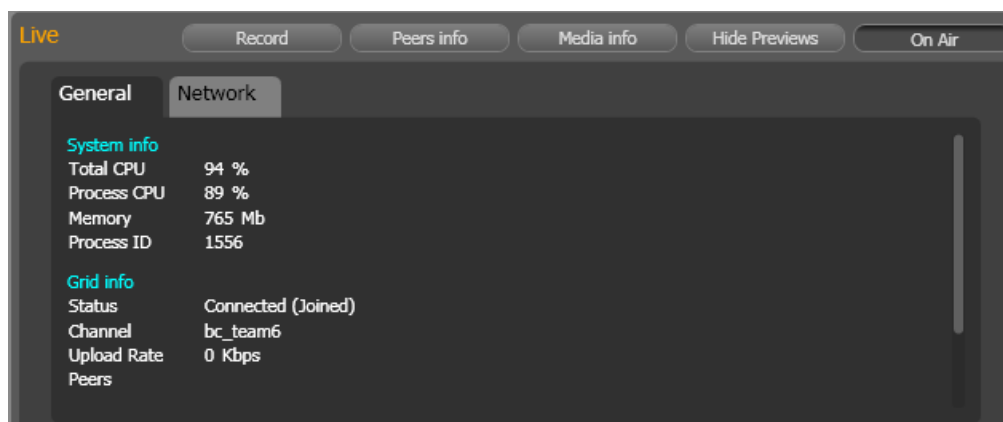


Figure 10: Live Panel

The Live Menu buttons can be used to:

- **Record** – Records the live stream. Refer to *Live Recording and Timeshifting Playback* on page 20.
- **Peers info/Media info** – Displays the live stream advanced information.
- **Hide Previews** – Hides the Preview sub-panel (when working with remote desktop access to the broadcaster).
- **On Air** – Loads the source on air.

GENERAL TAB

The *General* tab displays information about:

- CPU/memory usage of the Broadcaster machine.
- Grid status.
- Video/Audit stream.

ADVANCED TAB

The *Advanced* tab displays information about:

- The Broadcaster's IP network.

This information is provided for technical support and on-going monitoring of the Broadcaster status. For more information on how to analyze the information presented in the Live panel, refer to the *RayV Broadcaster Troubleshooting Guide*.

PLAYLIST PANEL

The Playlist panel shows the current playing source/program or the source/program that will be played once the **On Air** button is pressed. Refer to *Creating Programs* on page 18.

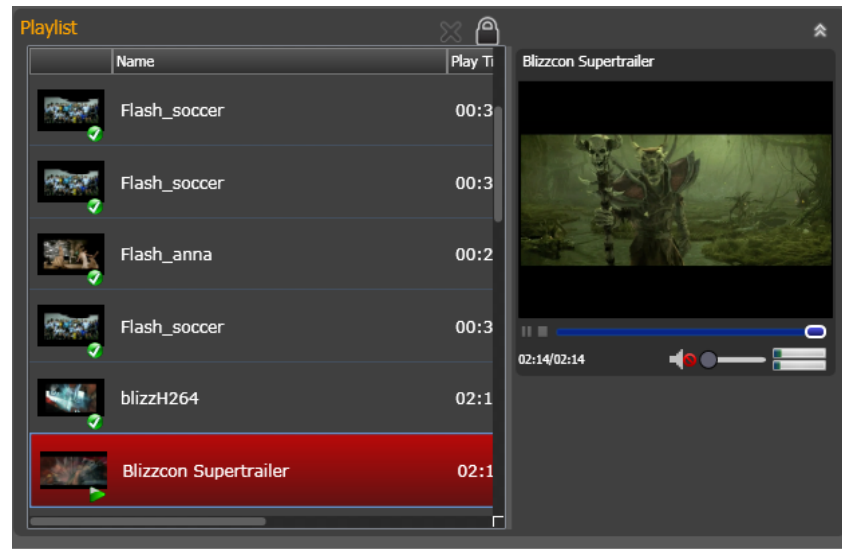


Figure 11: Playlist Panel



CREATING LIVE BROADCASTS

To launch the Broadcaster:



From your desktop, double-click

OR

From your Windows menu, click **Programs > RayV Broadcaster**.

To start broadcasting, you need to:

1. Upload a Media Source.
2. Add the media source to the Playlist.
3. Begin Broadcasting.

When you complete the process your channel will be broadcasting live on-air.

ADDING A MEDIA SOURCE

Before you can broadcast, you need to upload a media source for broadcasting. You can add a complete media library of video files to your source list.

To upload a media source:

1. From the Main menu bar, select **Sources > Add**.

OR

Click **+** in the Sources panel.



OR

Drag and drop files or folders from anywhere on your PC to your Sources panel.

A dropdown list of possible media sources appears.

2. To add a file:

- a. From the media sources dropdown list, click **File**.
The *Import Video File* dialog box appears.
- b. Navigate to the file you want.
- c. Click **Open**.
The file appears in the Sources panel.
You can use any video file stored on the broadcaster machine or on a remote network drive. For a list of supported video file formats, refer to the *RayV Pre-production Guide*.
3. To add a device:
 - a. From the media sources dropdown list, click **Device**.
The *Edit Device* dialog box appears.
 - b. In the *Model* dropdown list, select **Capture**.
The video capture cards that are installed on your broadcaster machine are displayed.
 - c. Select the relevant device for audio and video input.
For more advanced information on devices and device configuration for broadcasting, refer to the *RayV Pre-production Guide* and the *RayV Broadcaster Troubleshooting Guide*.
4. To add a URI stream:
 - a. From the media sources dropdown list, click **Stream**.
The *Edit Stream* dialog box appears.
 - b. In the URI field, type the URI.
5. To add a source in timeshift:
 - a. From the media sources dropdown list, click **Timeshift**.
The *Edit Timeshift* dialog box appears.
 - b. Select the *Timeshift* folder.
 - c. From the *Filler Source* dropdown list, select the Filler Source file. The filler file is played while waiting for the timeshift playback to start.
 - d. Enter the *Shift Value*.
 - e. Select **minutes** or **hours**.
Refer to *Live Recording and Timeshifting Playback* on page 20 for more information on timeshift playback.
6. To add an image:
 - a. From the media sources dropdown list, click **Image**.

The *Import Image File* dialog box appears.

- b. Navigate to the file you want.
 - c. Click **Open**.
7. To add a folder:
- a. From the media sources dropdown list, click **Folder**.
The *Browse For Folder* dialog box appears.
 - b. Select a folder.
 - c. Click **OK**.

Note: The *Edit* panel changes to display your selected source.

ADDING A SOURCE TO THE PLAYLIST

To make a media source live:

From the Sources panel, select a media source and drag and drop it into the Playlist panel.

To preview the source video:

Double-click any source in the Playlist panel.

The source video appears in the Preview sub-panel.

BROADCASTING

Once a source is live, it can be broadcasted on air.

To broadcast the live source on air:

1. At the top of the Live panel, click **On Air**.

The *Channel Information* dialog box appears.

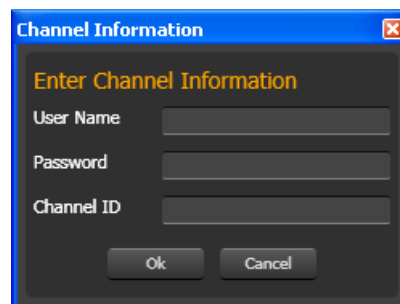


Figure 12: Channel Information Dialog Box

2. Enter your RayV grid login information:
 - **User Name:** The user name provided to you by RayV..
 - **Password:** The password provided to you by RayV.
 - **Channel ID:** The channel name provided by RayV.
3. Click **OK**.

Your source is on air and streamed through the RayV grid.

CREATING PROGRAMS

You can create a program, which consists of a group of sources, at any time, even during broadcasting.

To create programs:

Click **+** in the middle of the Programs panel.

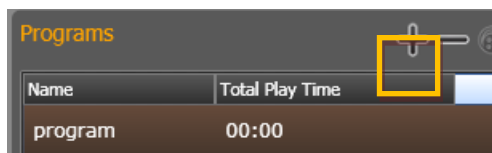


Figure 13: Adding Programs in the Programs Panel

A new program is created.

Note: By default, the new program is named 'program'. The following programs that you create are named 'program_n' sequentially (i.e., program_1, program_2 etc.).

ADDING SOURCES TO YOUR PROGRAM

You can create various types of programs (such as, kids programs, sports programs, music programs, etc.) and use them according to your broadcasting preferences.

Once you create a program, you need to add sources.

To add sources to your program:

1. From the Sources panel, drag and drop sources to the Programs panel.
2. Select and broadcast the program on air. Refer to *Broadcasting* on page 16.

Once the program is on air, the Broadcaster will continuously broadcast the live playlist without interruptions.

DELETING SOURCES FROM YOUR PROGRAM

To delete a source from your program:

1. From the Programs panel, select the source.
2. Click — next to the arrows on the right hand side of the Programs panel.

The source is deleted.

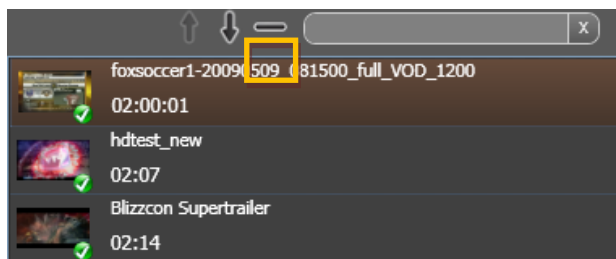


Figure 14: Deleting Sources from the Programs Panel

Note: You cannot delete a live program that is loaded into the Playlist panel. In order to delete a live program, first clear it from the playlist, and then delete the program.

EDITING A PROGRAM

To edit a program:

1. From the Programs panel, select the program.
2. Add or remove sources.

To re-order items in a program:

1. Select the source to be moved.
2. Click the up/down arrows.

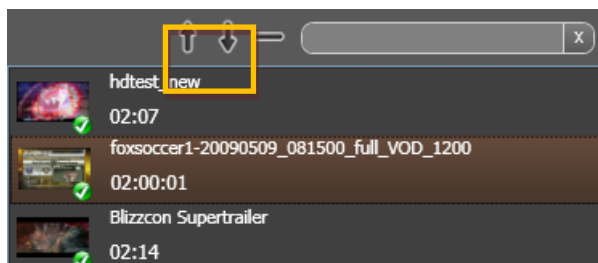


Figure 15: Editing a Program Panel



LIVE RECORDING AND TIMESHIFTING PLAYBACK

You can record a live source in real-time, making it ready for timeshift playback. Timeshift playback enables you to broadcast your channel to your target audience around the world at any time.

The recordings of the live streaming source are stored in a directory specified by the Broadcaster.

To playback recorded, stored files at a different time, another Broadcaster instance must be installed on the same machine. Refer to *Installing a Broadcaster Instance for Timeshift Playback* on page 22 for more information.

Note: *If you are using the recording Broadcaster only for timeshift playback (i.e., not for live streaming), it is recommended that the recording Broadcaster not be connected to the RayV grid to save bandwidth costs.*

RECORDING

By default, the Broadcaster stores the recorded files under C:\Documents and Settings\[user]\My Documents\RayvRecordings.

To change the output folder:

1. From the Main menu, select **View > Settings**.

The *Settings* dialog box appears.

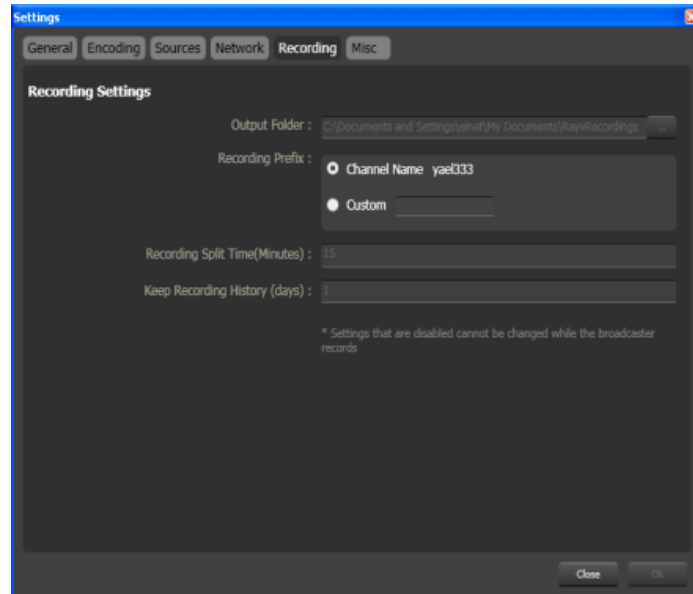


Figure 16: Settings Dialog box

- Click the *Recording* tab and select a new output folder.

To change the recording prefix:

In the *Recording Prefix* field, select the channel name as the file name prefix.

To change the recording split time:

In the *Recording Split Time* field, type the amount of minutes desired.

Note: By default, a file is created every 15 minutes of recording.

To change the recording history:

In the *Keep History Recording* field, enter the number of days you want the system to keep the recording before the Broadcaster deletes the files.

To record a live source:

- Verify that the source is in the Playlist panel.
- At the top of the Live panel, click **Record**.

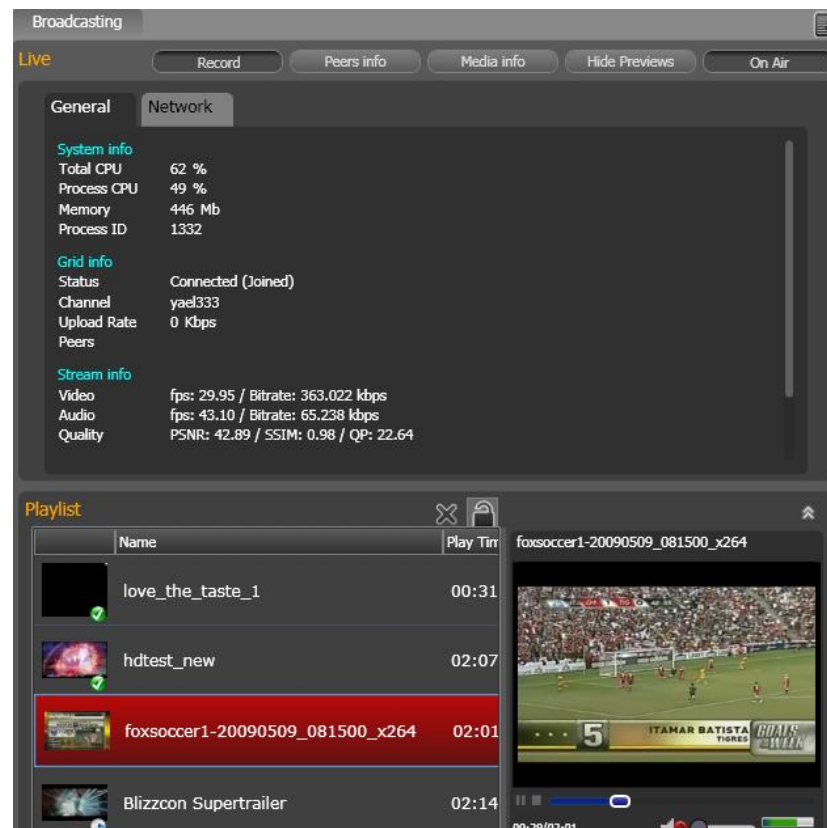


Figure 17: Recording Tab on the Live Panel

TIMESHIFTING PLAYBACK

You can play back a media source at a different time. To use timeshift playback, first install a second Broadcaster instance on your broadcasting machine. Then define the timeshift source under the new Broadcaster instance.

INSTALLING A BROADCASTER INSTANCE FOR TIMESHIFT PLAYBACK

You need to install a second instance of Broadcaster in order to playback a recorded source in timeshift.

To install another instance of the RayV Broadcaster:

1. Copy and paste the existing desktop shortcut of the RayV Broadcaster you have already installed.
2. Right-click the new shortcut icon and select **Properties**. The *Properties* dialog box appears.

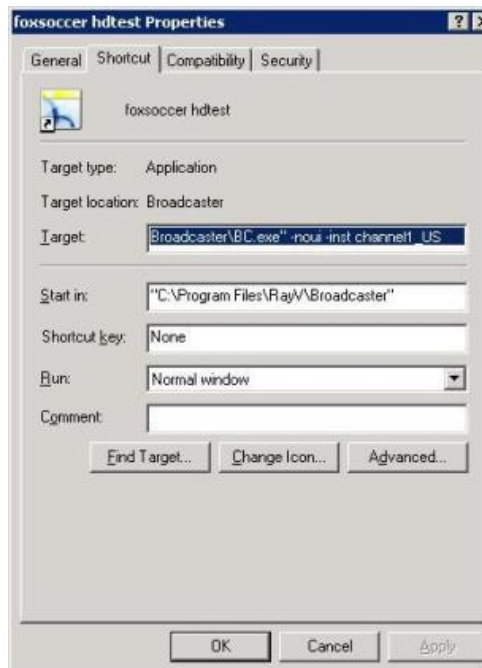


Figure 18: Properties Dialog box

3. Edit the *Target* line as follows: "
C:\Program Files\RayV\Broadcaster\BC.exe" -noui -inst *new-instance-name*.

NOTE: *New-instance-name* is the name you select for the new instance of the RayV Broadcaster. This name must be different than the original instance name. For example, if the original recording broadcaster instance name is 'channel1', the new instance name can be 'channel1_US' (to represent a US time zone timeshift channel).

4. To run the new Broadcaster instance, double-click the new desktop shortcut.
5. The new Broadcaster instance is now ready to include a timeshift source.

DEFINING A TIMESHIFT SOURCE

You need to add a timeshift source to the second Broadcaster instance in order to use it for timeshift playback.

To define a timeshift source:

1. Add a timeshift source to your source list. Refer to *Adding a Media Source* on page 14 for more information.

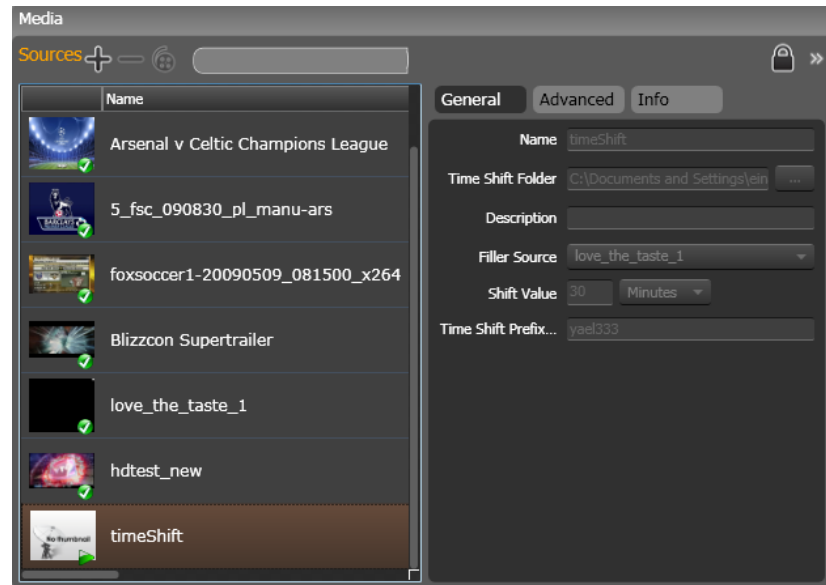


Figure 19: Defining the Timeshift Source

2. Define the *Time Shift Folder* – This is the folder that was used to store the recorded files. Refer to *Recording* on page 20 for more information.
3. Define the *Filler Source* – The filler file that is played while waiting for the timeshift playback to start.
4. Define the *Shift Value* in minutes – The time interval after which the playback starts compared to the original live time.

Once the timeshift source is defined, broadcast it on air as any other source. Refer to *Broadcasting* on page 16.

The Broadcaster broadcasts the recorded files in the timeshift folder continuously, without interruptions. When the recording stops, the Broadcaster plays the filler source until the recording resumes.

SETTINGS

The *Settings* screen provides options to modify the default values of the broadcaster.

To access the Settings screen:

From the Main menu bar, select **View > Settings**. The *Settings* screen includes the following tabs:

- **General** – Includes the RayV grid login information that can be changed and the option to launch the Broadcaster at Windows startup.
- **Encoding** – Includes default, advanced channel encoding settings. Refer to the *RayV Broadcaster Troubleshooting Guide* for more information.
- **Sources** – Includes default, advanced source broadcasting settings. Refer to the *RayV Broadcaster Troubleshooting Guide* for more information.
- **Network** – Includes advanced networking settings. Refer to the *RayV Broadcaster Troubleshooting Guide* for more information.
- **Recording** – Includes the recording settings. Refer to *Recording* on page 20.

CONTACTING RAYV FOR SUPPORT

If you are having a problem watching the live stream, contact RayV for further assistance.

To send a support request to RayV:

1. From the Main menu bar click **Help > Support**.

This generates a file with critical diagnostic data that is sent to RayV's technical support together with the support request. The diagnostic data helps the technicians analyze your case.

2. Enter the case description in the *Support* dialog box.

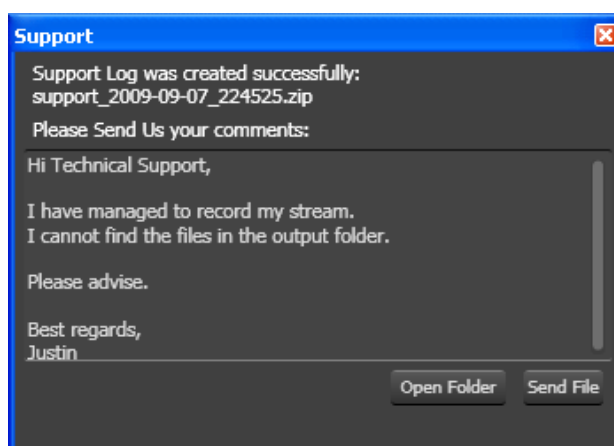


Figure 20: Support Dialog Box

3. To send the problem description and the diagnostic data to our technical support, Click **Send File**.

For more information and troubleshooting options, refer to the *RayV Broadcaster Troubleshooting Guide*.