

Getting Started with RealPublisher™

Version 5.1

RealNetworks, Inc.

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1. Introducing RealPublisher

RealPublisher is a powerful tool that makes it possible for you to create RealAudio® and RealVideo® presentations. Now you can add the dimensions of sight and sound to your Web site or e-mail. It's easy and fun to use RealPublisher to demonstrate your company's products, broadcast your CEO's speech, or show home videos over the Web or through e-mail.

Your audio and video can be placed on your Web site for on-demand access by end users, broadcast live over a network, or simultaneously broadcast live and stored as a file for later use.

RealPublisher is a fast and easy way to put streaming RealAudio and RealVideo on your Web pages. With RealPublisher you can deliver streaming audio and video even without a RealServer by streaming from a standard Web server.

1.1. What RealPublisher does

The RealPublisher is the latest tool from RealNetworks to enable streaming media, allowing audio or video clips to play as soon as they are received by your computer and eliminating the wait for file downloads.

RealPublisher allows you to:

- create RealMedia™ files
- automatically create RealMedia-enabled Web pages
- publish your RealMedia-enabled Web pages to Web servers or RealServers
- send your RealMedia files via e-mail

1.2. Basic steps to adding streaming media to your Web site

1. Select audio and video content from a variety of sources:
 - existing audio and video files, including .wav, .avi, .au, and .mov file formats
 - media devices such as video cameras, microphones, audio tape, videotape, and satellite feeds
2. Record your source audio and video to create RealAudio and RealVideo files in several ways with:
 - wizards that automatically set audio and video bandwidth options for the connection delivering your content
 - pre-defined recording templates
 - or your own customized recording templates
3. Create Web pages that:
 - are linked to your RealAudio and RealVideo files and launch the RealPlayer™
 - or have the RealPlayer embedded within the page
4. Publish your RealMedia Web pages:
 - to a Web server
 - to a RealServer™
 - or via e-mail

1.3. About RealAudio and RealVideo

RealPublisher creates on-demand content that users can access whenever they choose and can be created in all screen sizes. It can be played from standard Web servers or from a RealNetworks RealServer for higher reliability. Live audio and video require a RealServer.

With RealPublisher you can choose to deliver a wide range of media quality and performance, from ordinary modem connections all the way to corporate LANs. You can also maximize the available bandwidth to meet the demands of the content, for example, a music video requires different emphasis than a simple speech.

1.4. About this guide

Chapter 1 introduces RealPublisher, explains what it does, and outlines the basic steps for adding streaming media to your Web site.

Chapter 2 explains installation procedures and provides information about system requirements for installing and using RealPublisher.

Chapter 3 explains bandwidth, recording existing files, recording from media devices, live broadcasting, and using Advanced Mode.

Chapter 4 discusses how to generate RealMedia-enabled Web pages, publish those Web pages to a server, and send RealMedia files via e-mail.

Chapter 5 provides tips for enhancing RealPublisher's performance, customizing recording templates, creating bandwidth-negotiated files, altering image size, controlling volume, monitoring audio levels and encoding statistics, and editing your media files.

1.5. For more information

For more information about any of the topics in this manual, refer to the *RealAudio and RealVideo Content Creation Guide*, available at RealNetworks Web site at **www.real.com**.

Other topics included in the *RealAudio and RealVideo Content Creation Guide* are:

- RealPublisher installed files and file extensions
- command-line encoding
- editing RealAudio and RealVideo
- synchronized multimedia
- simulating a live broadcast
- image maps
- command-line editing
- configuring your Web site

2. Installing RealPublisher

Installing RealPublisher is quick and easy. You can download RealPublisher from the RealNetworks Web site or install it from a CD-ROM. Before you begin, make sure your computer conforms with the necessary system requirements. See “System Requirements” below for more information.

To download and install the program from the RealNetworks Web site:

1. After purchasing the product online, click the **Save to Disk** button and specify a temporary directory for the installation program. Note where you saved it.
2. In File Manager or Explorer, double-click the installation icon in the temporary directory to activate the automated installation process.

To install RealPublisher setup program from CD-ROM:

1. Insert the CD-ROM into the drive.
2. Follow the prompts.

To complete the installation of RealPublisher:

1. Close any other applications that may be open and click **Next**.
2. To accept the terms and conditions for installing RealPublisher, click **Accept**.
3. Enter your name, company or organization name, and e-mail address. Then click **Next**.
4. Enter the serial number you received when you purchased RealPublisher, and click **Next**.
5. When prompted, select your Internet Service Provider. Select **Generic–No Defaults** if your Internet Service Provider is not listed. Then click **Next**.
6. To install RealPublisher into the default directory, click **Next**. If you wish to install RealPublisher in a different location, click **Browse** and select the directory into which you want it to be installed.

7. To finish the installation, click **Finish**.
8. Click **OK** when the installation is completed.

2.1. System Requirements

This section outlines the basic hardware and software requirements needed to use RealPublisher. Requirements are based upon the source of the recording (existing files or live capture and recording).

RealPublisher is currently available for the following operating systems:

- Microsoft Windows 95®
- Microsoft Windows NT® (3.5, 3.51, and 4.0)

2.1.1. Recording existing files to RealAudio or RealVideo

The following table lists the minimum and the recommended requirements for recording existing audio and video files into RealMedia files:

Requirement	Minimum	Recommended
CPU	486/66 DX	Pentium® 120
RAM	8 MB	16 MB
Hard Disk space (software)	4 MB	
Hard Disk space (data)	500 MB	1 GB
Color Display	16-bit	24-bit (TrueColor)
Sound Card	16-bit sound card or better	

2.1.2. Recording live video to RealAudio or RealVideo

In addition to normal hardware and software requirements, live capture and recording can use content from a variety of sources:

- VHS, S-VHS, or Beta-SP tape
- live video camera and microphones
- any other video or audio source

High-quality, live recording takes longer and requires greater computer power than recording existing files. The following table lists the minimum and recommended requirements for recording at low and high frame rates.

Requirement	Low Frame Rate (less than 3 fps)	Minimum for High Frame Rate (more than 3 fps)	Recommended for High Frame Rate or Large Screen Sizes
Operating System	Windows 95	Windows NT	
Computer	Pentium 166 MHz	Pentium 200 MHz	Dual Pentium 2
RAM	32 MB	64 MB	
Hard Drive	1 GB	1 GB	
Color Display	16-bit	24-bit (TrueColor)	
Video Capture Card	Any native Video for Windows capable capture card	Osprey 100®, Osprey 1000® (or equivalent)	
Sound Card	16-bit sound card or better	16-bit sound card or better	

Note: Slower machines also give reasonable results in Slide Show mode, at 1fps or less.

3. Creating RealAudio and RealVideo

This chapter describes how to use RealPublisher to convert your media into RealAudio and RealVideo. It provides instructions for recording existing media files, for recording from media devices, and for broadcasting your live content.

RealPublisher gives you two different methods for recording: Wizard Mode and Advanced Mode. Wizard Mode is the easiest method; it guides you step-by-step through the recording process. Advanced Mode is for more knowledgeable users—those who want to customize the recording process.

You can use RealPublisher in the following ways:

- Recording existing audio and video files
- Recording from media devices
- Broadcasting live content

Before you get started, however, the next section describes the most important aspect of streaming media files over the Internet or across a corporate LAN: bandwidth. Learning about and considering bandwidth allows you to get the most out of your RealMedia Web site.

3.1. About bandwidth

Bandwidth, also known as bit rate, is the amount of data that can be sent through an Internet or network connection during a set period of time. Bandwidth is measured in kilobits per second (Kbps). Standard modems are commonly referred to by the bit-rate they are able to receive, for example, 14.4, 28.8, and 56 Kbps. These designations may already be familiar to you.

In addition to these standard bandwidths, you can record clips for bit-rates up to 100 Kbps, 200 Kbps, or higher. These higher bandwidths, however, are generally more typical of corporate LANs or entertainment-based Web sites.

Keep in mind that the bandwidth a connection is capable of is greater than the average bandwidth carried across it. For that reason, the templates for 28 Kbps connections actually only use approximately 20 Kbps, while a 56 Kbps connection template actually uses about 34 Kbps.

These constraints can affect your recording in many ways. You sometimes have to compromise between reaching the largest audience (with the lowest-speed connections) and the quality of your work. Fortunately, RealPublisher comes equipped with a Recording Wizard that helps you maximize the quality of your content.

3.2. Recording existing media files

RealAudio and RealVideo clips may be created from previously-captured digital audio or video files.

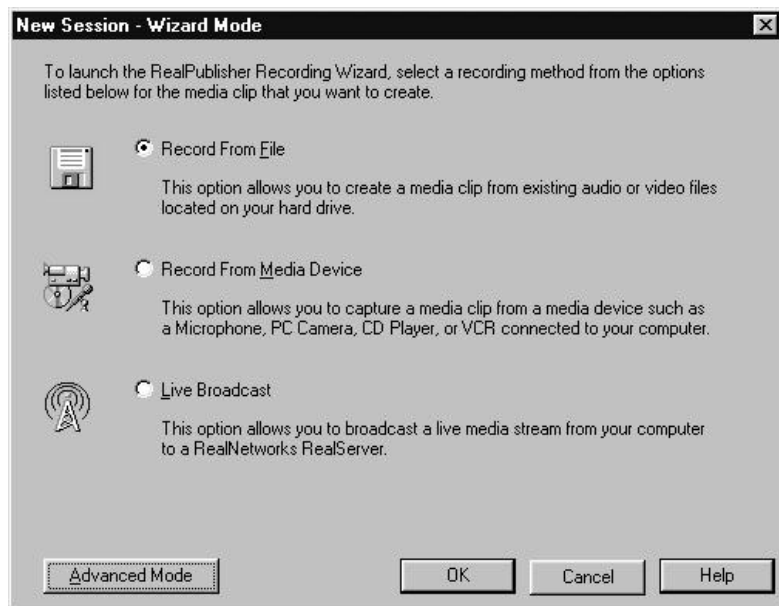
The following audio and video formats are supported by RealPublisher. It is recommended that you use uncompressed files whenever possible:

- Audio (.au)
- Waveform (.wav)
- Uncompressed Video for Windows (.avi)
- Uncompressed QuickTime® for Windows (.mov)

To create RealAudio or RealVideo from an existing file using the Recording Wizard:

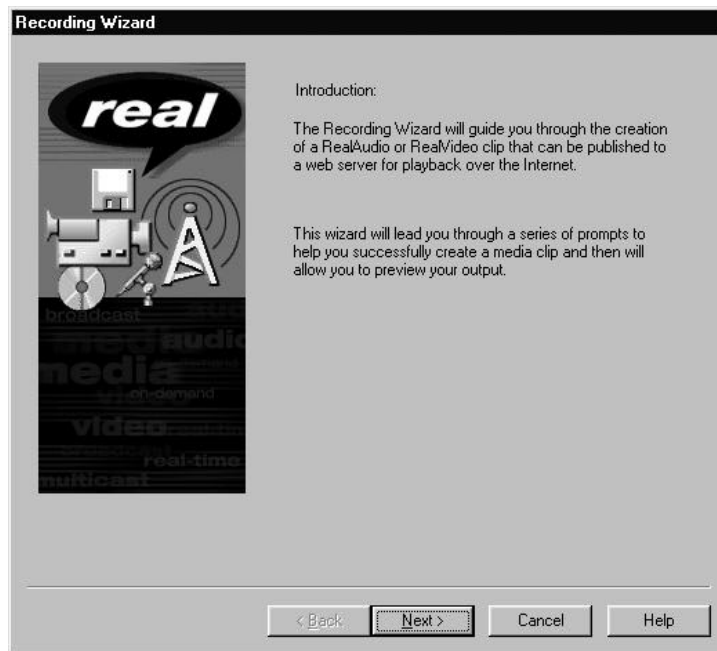
1. Start RealPublisher. If RealPublisher is already open, select **New Session** from the **File** menu.
2. If RealPublisher opens in Advanced Mode, click the **Wizard Mode** button.

The New Session dialog box opens:



3. Select **Record from File** and click **OK**.

The Recording Wizard opens:

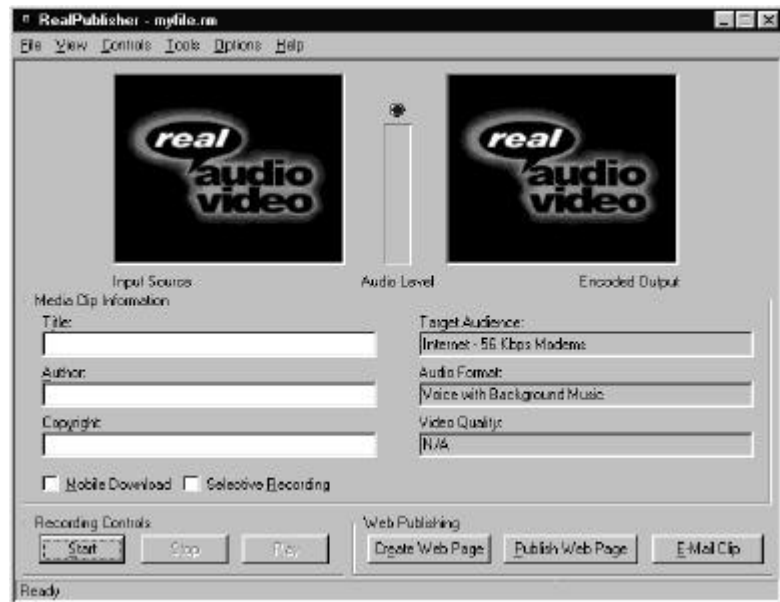


4. Click **Next**.
5. Use the **Browse** button to locate the audio or video file that you will use as the source for your recording.
6. Click **Next**.
7. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.

This information will appear in the viewer's RealPlayer when your clip is played. This step is optional.
8. Click **Next**.
9. Select the **Target Audience**—the connection speed for most of your viewers.
10. Click **Next**.

11. Select the type of audio that your file consists of, and click **Next**.
12. Select the video quality for your output file (if applicable), and click **Next**.
13. Enter the name and directory of your final, recorded RealMedia file, and click **Next**.
14. Review all information regarding your file. If it is correct, click **Finish**.

You are returned to the main RealPublisher window:



15. Click **Start** to begin recording.
16. When the recording is completed, click **OK** to return to the main window.
17. To experience your recording, click **Play**.

You must have RealPlayer installed to play your recording.

3.3. Recording audio or video from a media device

With RealPublisher, you can record RealAudio and RealVideo from many types of media devices: live microphone input, live video camera input, audio tape, video tape, or satellite feeds.

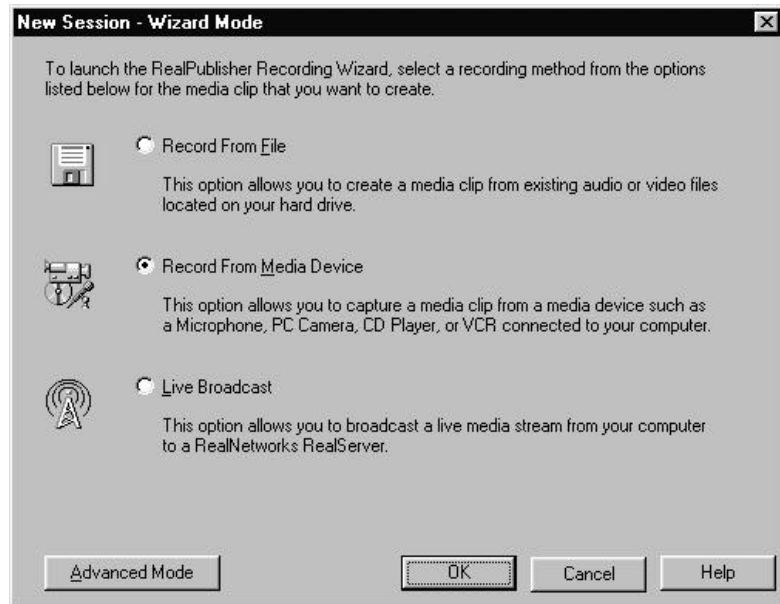
You can use either RealPublisher's Wizard Mode or Advanced Mode to record RealMedia files.

Before you begin, make sure that your media device is properly connected and is working correctly.

To create RealAudio or RealVideo from media devices using the Recording Wizard:

1. Start RealPublisher. If RealPublisher is already open, select **New Session** from the **File** menu.
2. If RealPublisher opens in Advanced Mode, click the **Wizard Mode** button.

The New Session dialog box opens:



3. Select **Record from Media Device** and click **OK**.

The Recording Wizard opens.

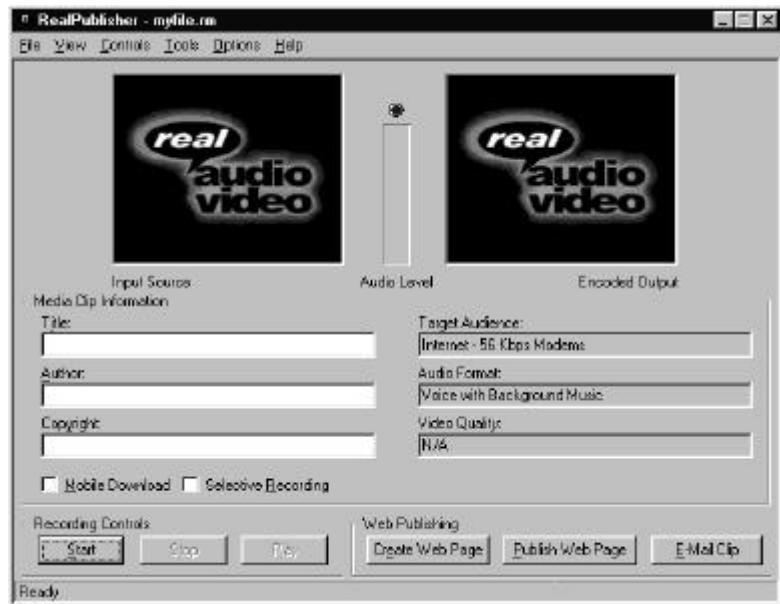
4. Click **Next**.
5. Select the Input Source(s): audio or video.
6. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.
7. Click **Next**.
8. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.

This information will appear in the viewer's RealPlayer when your clip is played. This step is optional.

9. Click **Next**.

10. Select the **Target Audience**—the connection speed that you believe your viewers will have.
11. Click **Next**.
12. Select the type of audio that your content consists of.
13. Click **Next**.
14. Select video quality for your output file (if applicable), and click **Next**.
15. Enter the name and directory of your final, recorded RealMedia file, and click **Next**.
16. Review all information regarding your file. If it is correct, click **Finish**.

You are returned to the main RealPublisher window:



17. Click **Start** to begin recording.
18. Monitor your live audio and/or video input, and click **Stop** to finish recording.

19. When the recording is completed, click **OK** to return to the main window.
20. To experience your recording, click **Play**.

You must have RealPlayer installed to play your recording.

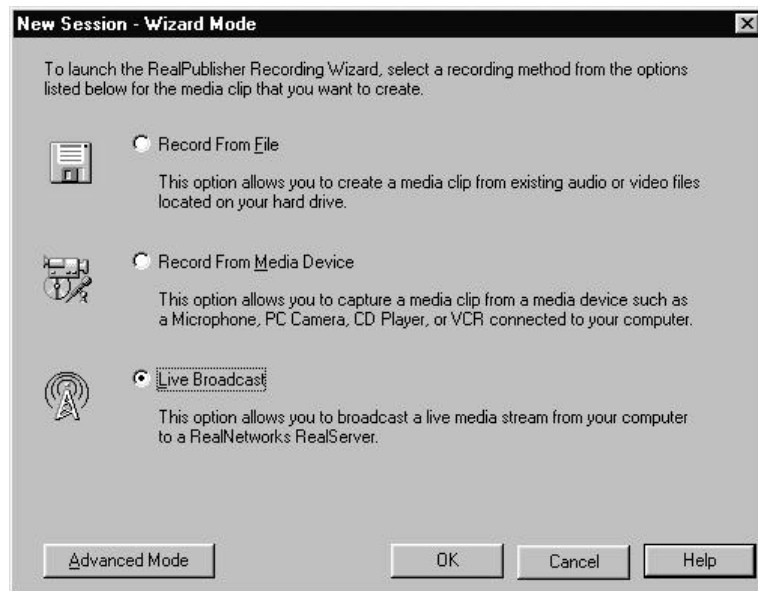
3.4. Broadcasting live content

In addition to creating RealAudio and RealVideo files from your media sources, you can use RealPublisher to broadcast your live content over the Internet or a corporate LAN. You must have access to a RealServer in order to use this feature.

To broadcast live content using the Recording Wizard:

1. Start RealPublisher. If RealPublisher is already open, select **New Session** from the **File** menu.
2. If RealPublisher opens in Advanced Mode, click the **Wizard Mode** button.

The New Session dialog box opens:



3. Select **Live Broadcast** and click **OK**.

The Recording Wizard opens.

4. Click **Next**.
5. Select the Input Source(s): audio or video.
6. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.
7. Click **Next**.
8. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.

This information will appear in the viewer's RealPlayer when your clip is played. This step is optional.

9. Click **Next**.

10. Select the **Target Audience**—the connection speed that you believe your viewers will have.
11. Click **Next**.
12. Select the type of audio that your content consists of.
13. Click **Next**.
14. Select the video quality for your output file (if applicable), and click **Next**.
15. Enter the name, port, and password of the RealServer that you will use for your broadcast. Plus, you must enter a filename that users will use to access the broadcast.

You may also specify a filename and location for an archive of your broadcast. Select **Archive Broadcast to File**, then enter a file name.

16. Click **Next**.
17. Review all information regarding the broadcast. If it is correct, click **Finish**.

You are returned to the main RealPublisher window.

18. Click **Start** to begin broadcasting, and click **Stop** to end it.

3.5. Using Advanced Mode

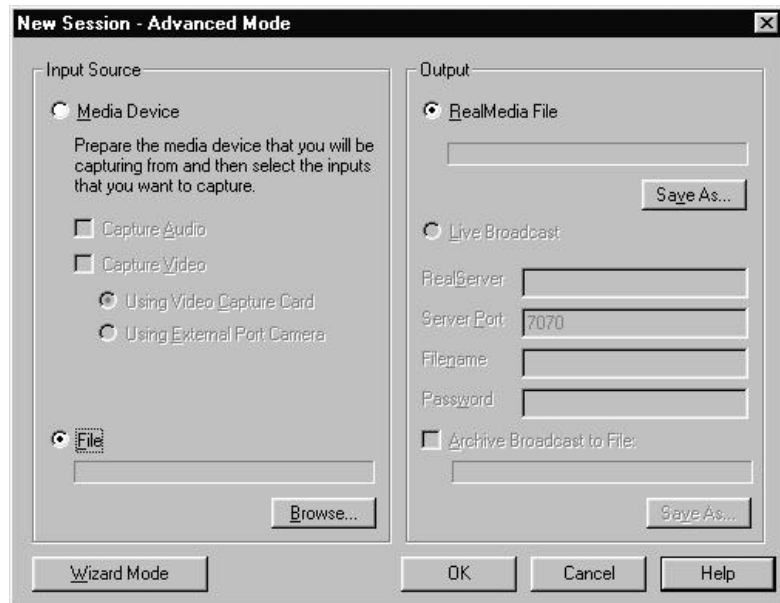
Advanced Mode allows you to more closely control your recording. Whether you are recording from a file, recording from media devices, or live broadcasting, Advanced Mode gives you more control over your output. You can select the exact recording template, including custom templates. Only experienced users with advanced knowledge of bandwidth and recording templates should use Advanced Mode.

This section gives you the basic procedures for using Advanced Mode to record your content. See the “Tips and Tricks” chapter for more detailed information about custom templates, bandwidth negotiation, and more.

To create RealAudio or RealVideo from an existing file using Advanced Mode:

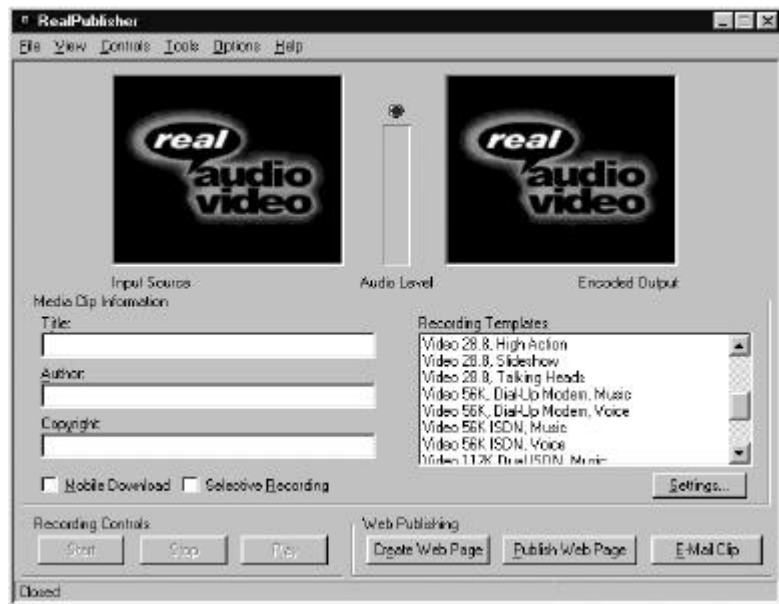
1. From the RealPublisher main window, choose **Advanced Mode** from the Options menu.
2. Click **New Session** from the File menu.

The New Session dialog opens:



3. In the Input Source section, select **File**.
4. Click the **Browse** button to locate the audio or video file that you will use as the source for your recording.
5. In the Output section, select **RealMedia File**.
6. Click the **Save As** button to choose a directory and filename for the recorded file.
7. Click **Save**.
8. Click **OK**.

The New Session dialog closes, returning to the RealPublisher main window:



9. Enter the **Title**, **Author**, and **Copyright** information for your output file. These fields are optional.
10. Select **Mobile Download** if you wish to create content that can be downloaded by a RealPlayer and transferred to Mobile Players such as the Audible Player for deferred playback.
11. Select **Selective Recording** if you wish users to be able to save your RealVideo or RealAudio file to their computer.
12. In the **Recording Templates** list box, select the template for the target audience you want to encode your file for.

You may select more than one template, see “Multiple-template recording” below for more information.

13. Click **Start** to begin the recording process.

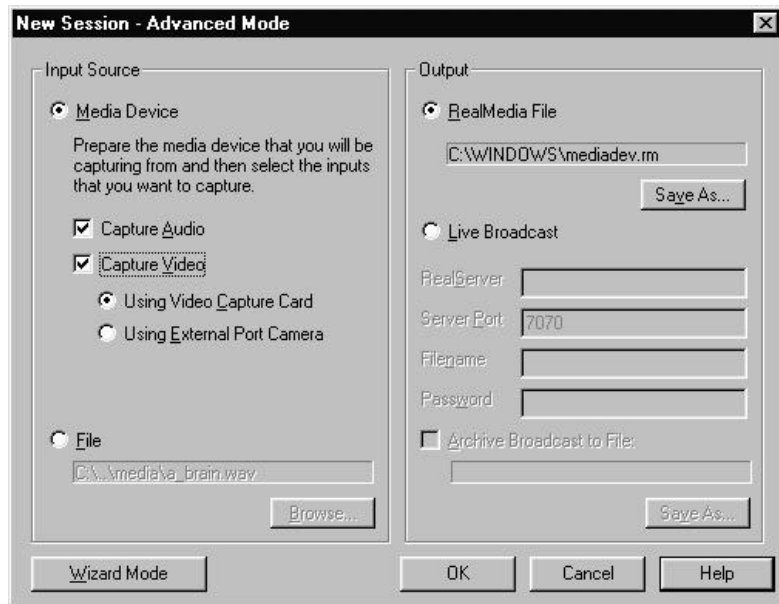
When recording is complete, a message appears indicating the actual bit rate of the RealMedia file.

If RealPublisher is unable to record the file at the selected bit rate, you may need to re-record the file with a different template.

To create RealAudio or RealVideo from a media device using Advanced Mode:

1. From the RealPublisher main window, choose **Advanced Mode** from the Options menu.
2. Click **New Session** from the File menu.

The New Session dialog opens:



3. In the Input Source section, select **Media Device**
4. Select the media devices that you will record from: audio and/or video.
5. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.
6. In the Output section, select **RealMedia File**.

7. Click the **Save As** button to choose a directory and filename for the recorded file.
8. Click **Save**.
9. Click **OK**.

The New Session dialog closes, returning to the RealPublisher main window.

10. Enter the **Title**, **Author**, and **Copyright** information for your output file. This step is optional.
11. Select **Mobile Download** if you wish to create content that can be downloaded by a RealPlayer and transferred to Mobile Players such as the Audible Player for deferred playback.
12. Select **Selective Recording** if you wish users to be able to save your RealVideo or RealAudio file to their computer.
13. In the **Recording Templates** list box, select the template for the target audience you want to encode your file for.
14. Click **Start** to begin the recording process.

When recording is complete, a message appears indicating the actual bit rate of the RealMedia file.

If RealPublisher is unable to record the file at the selected bit rate, you may need to re-record the file with a different template.

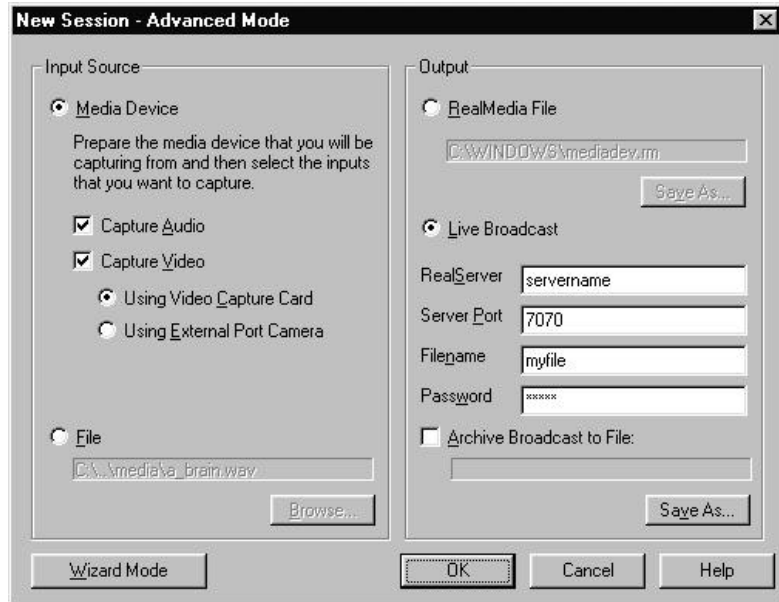
15. Click **OK** to close the encoding complete message.

To broadcast live content using Advanced Mode:

1. From the RealPublisher main window, choose **Advanced Mode** from the Options menu.

2. Click **New Session** from the File menu.

The New Session dialog opens:



3. In the Input Source section, select **Media Device**.
4. Select the media device(s) that you will broadcast from: audio and/or video.
5. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.
6. In the Output section, select **Live Broadcast**.
7. Enter the name, port, and password of the RealServer that you will use for your broadcast. Plus, you must enter a filename that users will use to access the broadcast.

You may also specify a filename and location for an archive of your broadcast. Select **Archive Broadcast to File**, then enter a file name.

8. Click **OK**.

The New Session dialog closes, returning to the RealPublisher main window.

9. Enter the **Title**, **Author**, and **Copyright** information. This step is optional.
10. Select **Mobile Download** if you wish to create content that can be downloaded by a RealPlayer and transferred to Mobile Players such as the Audible Player for deferred playback.
11. Select **Selective Recording** if you wish users to be able to save your broadcast to their computer.
12. In the **Recording Templates** list box, select the template for the target audience you want to broadcast for.
13. Click **Start** to begin broadcasting, and click **Stop** to end the broadcast.

When your broadcast is complete, a message appears indicating the actual bit rate of the RealMedia file.

14. Click **OK** to close the encoding complete message.

4. Publishing to the Internet

Along with its powerful RealAudio and RealVideo recording features, RealPublisher allows you to publish your streaming content to the Internet. You can:

- automatically create a Web page with RealAudio or RealVideo
- upload a Web page to either a standard HTTP Web server or a RealNetworks RealServer
- send RealMedia files via e-mail

4.1. Creating Web pages

A primary feature of RealPublisher is the Web Page Wizard. With the Web Page Wizard, you can automatically create a Web page that contains your recorded RealMedia file and play back the media file through any Web browser.

The wizard leads you a series of prompts to help you create the Web page and choose how it will stream your RealMedia file: either with a RealPlayer in a separate window, or with a RealPlayer embedded within the page. The wizard then allows you to preview the finished page with your Web browser and RealPlayer.

To create a Web page with a Pop-up RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.
The Web Page Wizard opens.
2. Click **Next** to begin the Wizard.
3. Select a file name.

The name of the last RealMedia file created by RealPublisher appears by default. Click the **Browse** button to locate another RealMedia file.

4. If you are using Advanced Mode, you can create a Web page for bandwidth-negotiated files by choosing **Bandwidth Negotiation** and locating the directory where the files are located.

5. Click **Next**.

The Playback Method page appears.

6. Choose **Pop-Up Player** and click **Next**.

The Web Page Caption page opens. This name will appear in the Web page as a link to the Pop-up RealPlayer.

7. Enter the caption name and click **Next**.

The Web Page Filename page opens.

8. Enter the name and directory of the Web page you want to create and click **Next**.

Note: avoid choosing your computer's temporary directory (such as C:\TEMP) to save your files into.

The Web page is created in the specified directory, with an associated metafile containing information about your media file.

9. If you wish to preview your Web page with a browser, click **Preview** on the Results page.

You must have RealPlayer installed to view your page properly.

10. When preview is completed, click **Finish**.

To create a Web page with an embedded RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.

The Web Page Wizard opens.

2. Click **Next** to begin the Wizard.

3. Select a file name.

The name of the last RealMedia file created by RealPublisher appears by default. Click the **Browse** button to locate another RealMedia file.

4. If you are using Advanced Mode, you can create a Web page for bandwidth-negotiated files by choosing **Bandwidth Negotiation** and locating the directory where the files are located.
5. Click **Next**.

The Playback Method page appears.

6. Click **Embedded RealPlayer** and click **Next**.

The Player Control Layout page appears. In this page, you can decide what components of the RealPlayer to embed within the Web page.

7. Choose a layout from the available templates.

A preview of the selected layout appears.

8. Select **Auto Start** if you wish the RealAudio or RealVideo file to play automatically when the Web page is displayed.
9. Click **Next**.

The Web Page Caption page appears. This name will appear as a title for the embedded RealPlayer controls.

10. Enter a caption name and select either **Place Caption Above Embedded Player** button or **Place Caption Below Embedded Player**.
11. Click **Next**.

The Filename page appears.

12. Enter the name and directory of the Web page you want to create and click **Next**.

Note: avoid choosing your computer's temporary directory (such as C:\TEMP) to save your files into.

The Web page is created in the specified directory, with an associated metafile containing information about your media file.

13. If you wish to preview your Web page with a browser, click **Preview** on the Results page.

You must have RealPlayer installed to view your page properly.

14. When preview is completed, click **Finish**.

Note: Keep in mind that the Web pages you create with the Web Page Wizard will initially point to media files located on your local hard drive. When you upload your pages to a remote Web server, these local file references will automatically be updated. You should avoid making manual changes to any HTML files created by the wizard. Alterations to these files or any file references contained in the associated .ram/.rpm metafile may cause errors when publishing Web pages to a remote server.

4.1.1. About metafiles

A metafile connects a Web page to one or more RealAudio or RealVideo clips located on a remote server. The function of a metafile is to point to the location where your media file actually resides and is required for your file to stream, rather than simply download and play. Typically, a metafile is located on a server and contains the URL where the RealAudio or RealVideo clips can be found.

Metafiles created by the RealPublisher Web Page Wizard reside on your local hard drive and point to files on your local file system. When you publish your files to a server, the metafiles are automatically updated to include information about the server where your media files are sent.

4.2. Publishing your files to a server

Another primary feature of RealPublisher is the Publish to Server Wizard. This wizard allows you to publish your RealAudio and RealVideo-enabled Web page to a remote server. The server can be either a RealNetworks RealServer or a standard HTTP Web server.

The wizard leads you through a series of prompts to help you specify the type of server and the directory where you will upload your page. You can also specify the name of the Web server and the URL path where your Web page will be located. The wizard then allows you to preview the finished page.

Remember that when you upload your Web pages to a remote server, RealPublisher automatically updates your Web page and .ram/.rpm metafile to point to the appropriate server addresses, directories and files.

To avoid confusion during the publishing process, two worksheets have been provided for you: one for simple HTTP streaming and the other for streaming your media files from a RealServer. You should complete the appropriate worksheet before you begin.

4.2.1. Publishing a file to stream from a standard HTTP Web server

If you are using a standard HTTP Web server to stream RealAudio or RealVideo, you should obtain the following information from your system administrator or ISP. For simple HTTP streaming, your Web page and media file will be copied to the same location.

Worksheet 1: Publishing to an HTTP server

1. **File Server:** Name or IP address of the file server where your Web page will be uploaded. For example: *ftp.server.com*.

2. **Directory:** Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *htmlpages*, enter HTMLPAGES as the directory name. This may be left blank.

3. **Web Server:** Name or IP address of the Web server users will use to locate your Web page. For example, if the full URL users will use is *http://www.server.com/htmlpages/file.htm*, enter WWW.SERVER.COM as the Web server name.

4. **URL Path:** The URL path on the Web server that users will use to locate your Web page. For example, if the full URL is *http://www.server.com/htmlpages/file.htm*, enter HTMLPAGES as the URL path.

The following publishing instructions (both standard HTTP Web server and RealServer) are for users who selected the **Generic - No Defaults** setting when installing RealPublisher. Otherwise, if you selected a specific Internet Service Provider during installation, you should follow the simple steps provided by the Publish to Server Wizard. You may choose a service provider from the publishing wizard other than what was chosen during installation.

To publish a file to stream directly from a standard HTTP Web server:

1. Click the **Publish Web Page** button.

The Publishing Wizard opens.

2. Click **Next** to begin.

3. Enter the name of the file you wish to publish and click **Next**.

The Publishing Profile page opens.

4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.

The Streaming Method page opens.

5. Click **Stream media clip from a standard Web server** and click **Next**.

The FTP Server Information page opens.

6. Type in the name or IP address of the FTP server where you are uploading your files and the directory on the FTP server where your page will be sent. Then type in your user name and password, and click **Next**.

The Web Page URL page opens.

7. Type in the name or IP address of the Web server and URL directory that users will use to locate your page on the Internet.

8. Click **Next**.

The Upload Progress page appears.

9. Click **Next** to begin uploading your files.

Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive an error message describing the problem and potential solutions.

10. Click **View Now!** to view your published Web page.
11. Click **Finish** when you are done viewing your published Web page.

4.2.2. Publishing a file to stream directly from a RealServer

If you are using a RealServer to stream RealAudio or RealVideo, you will need to obtain the following information from your system administration or ISP. Please note that for streaming from a RealServer your Web page will be copied to a standard HTTP Web server, while your RealMedia file may be copied to a separate RealServer.

Worksheet 2: Publishing to a RealServer

1. **File Server:** Name or IP address of the file server where your Web page will be uploaded. For example: *ftp.server.com*.

2. **Directory:** Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *htmlpages*, enter HTMLPAGES as the directory name. This may be left blank.

3. **RealServer:** Name or IP address of the RealServer where your encoded media file will be uploaded. For example: *ftp.server.com*.

4. **Media Directory:** Name of the media directory on the RealServer where your RealMedia file will be uploaded. For example, if the media directory assigned to you by your system administrator is *myvideo*, you would enter MYVIDEO as the directory name.

5. **RealServer Location:** Name or IP address of the RealServer that users will use to locate your media file. For example, if the full URL users will use to locate your media file on the Internet is *pnm://pnm.server.com/myvideo/file.rm* you would enter PNM.SERVER.COM as the RealServer name.

6. **URL Path:** The URL path on the RealServer that users will use to locate your media file. For example if the full URL that users will use to locate your media file is *pnm://pnm.server.com/myvideo/file.rm* you would enter MYVIDEO as the URL path.

To publish a file to stream directly from a RealNetworks RealServer:

1. Click the **Publish Web Page** button.
The Publishing Wizard opens.
2. Click **Next** to begin.
3. Enter the name of the file you wish to publish and click **Next**.
The Publishing Profile page opens.
4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.
The Streaming Method page opens.
5. Click **Stream media clip from a RealServer** and click **Next**.
The FTP Server Information page opens.
6. Type in the name or IP address of the FTP server where you are uploading your files and the directory on the FTP server where your page will be sent. Then type in your user name and password, and click **Next**.
The Web Page URL page opens.
7. Type in the name or IP address of the Web server and URL directory that users will use to locate your page on the Internet, and click **Next**.
The RealServer Information page opens.
8. Enter the name or IP address of the RealServer where your media file will be sent. Enter the directory where your media file will be sent, plus your user name and password, and click **Next**.
The Media Clip URL page opens.
9. Type in the name or IP address of the RealServer and URL directory that users will use to locate your media file on the Internet.
10. Click **Next** to begin uploading your files.

Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive an error message describing the problem and potential solutions.

11. Click **View Now!** to view your published Web page.
12. Click **Finish** when you are done viewing your published Web page.

4.3. Sending your files via e-mail

This section describes how you can send your recorded RealMedia files to other people using your default e-mail application. Your recipients must have the RealPlayer installed on their machine in order to play the file.

Your e-mail application must be configured to work with RealPublisher. Refer to the online Help for more information.

To send your RealMedia file via e-mail:

1. Click the **E-Mail Clip** button.

The Select RealMedia File dialog box opens.
2. Browse for the file you want to send, select it, and click on **Open**.

A new e-mail message opens with the RealMedia file attached.
3. Specify a recipient, type in a subject, and add any other text, as you would for a regular e-mail.
4. Send the e-mail.

5. Tips and Tricks

RealPublisher comes with a variety of options that allow you to create the highest-quality streaming media.

Because there is no single best process for delivering all types of streaming audio and video, RealPublisher provides several ways in which you can customize and streamline your recording.

This chapter discusses how to:

- choose and modify recording templates
- record for multiple bandwidths
- run RealPublisher more efficiently
- produce high-quality audio and video
- alter the image and sound during recording
- monitor the recording process

5.1. Recording templates

This section describes how to choose the recording template that best suits your needs and how to customize a template if necessary.

The primary reason RealPublisher comes with a variety of templates is that every audio or video clip has different content and bandwidth considerations. For example, you would use one template to deliver a speech over a 28.8 Kbps modem, and another to deliver a music video over an ISDN connection.

Before you begin recording, you must make decisions about the appropriate settings for different types of audio and video input. RealPublisher supplies several pre-defined templates to assist users in making those decisions without having to know how to use the advanced settings. You can also adjust these templates or define a new template for the type of content you are encoding.

5.1.1. Pre-defined templates

Each pre-defined recording template is optimized for a particular type of audio and video content as well as for bandwidth. Select a template that best suits your needs. RealPublisher also allows you to encode files using more than one template. See “Multiple-template recording” on page 44 for more information.

It is recommended that if you want to change some of the settings, save the template as a new template to avoid overwriting the pre-defined template.

The following table lists all templates included with RealPublisher:

Template Name	Audio Codec	Video Bit Rate (Kbps)	Total Bit Rate (Kbps)	Video Frame Rate
Audio 28.8, Music – Mono	16 Kbps Music - High Response	n/a	16	n/a
Audio 28.8, Voice	16 Kbps Voice - Wideband	n/a	16	n/a
Audio 28.8, Music – Stereo	20 Kbps Music Stereo	n/a	20	n/a
Audio 56K Dial-Up Modem, Music - Mono	32Kbps Music Mono	n/a	32	n/a
Audio 56K Dial-Up Modem, Music - Stereo	32 Kbps Music Stereo	n/a	32	n/a
Audio 56K ISDN, Music – Mono	40 Kbps Music Mono	n/a	40	n/a
Audio 56K ISDN, Music – Stereo	40 Kbps Music - Stereo	n/a	40	n/a
Audio 112K, Dual ISDN, Music - Mono	80 Kbps Music Mono	n/a	80	n/a
Audio 112K, Dual ISDN, Music - Stereo	80 Kbps Music - Stereo	n/a	80	n/a

Template Name	Audio Codec	Video Bit Rate (Kbps)	Total Bit Rate (Kbps)	Video Frame Rate
Video 28.8, High Action	6.5 Kbps Voice	13.5	20	Optimal Sharp
Video 28.8, Slide Show *	12 Kbps Music	8.0	20	.25 fps
Video 28.8, Talking Heads	5 Kbps Voice	15	20	Optimal Smooth
Video 56K Dial-Up Modem, Music	12 Kbps Music	22.0	34	Optimal Smooth
Video 56K Dial-Up Modem, Voice	6.5 Kbps Voice	27.5	34	Optimal Smooth
Video 56K ISDN, Music	16 Kbps Music - High Response	29.0	45	Optimal Smooth
Video 56K ISDN, Voice	8.5 Kbps Voice	36.5	45	Optimal Smooth
Video 112K Dual ISDN, Music	16 Kbps Music - High Response	64.0	80	Optimal Normal
Video 112K Dual ISDN, Voice	16 Kbps Voice - Wideband	64.0	80	Optimal Normal
Video High-Bite Rate 200K, Music	16 Kbps Music - High Response	184.0	200	Optimal Normal
Video High-Bite Rate 200K, Voice	16 Kbps Voice - Wideband	184.0	200	Optimal Normal
Video High-Bite Rate 300K, Music	16 Kbps Music - High Response	284.0	300	Optimal Normal
Video High-Bite Rate 300K, Voice	16 Kbps Voice - Wideband	284.0	300	Optimal Normal

Note: the total bit rate is a combination of the audio codec and the video bit rate. The total bit rate for each template is slightly less than the total bit rate of the bandwidth of the connection.

5.1.2. Creating new templates

Each template is a mix of various codecs (compression/decompression algorithms) and settings. Audio-only templates consist of only an audio codec. Video templates consist of an audio codec, video codec, video bit rate, total bit rate, frame rate, and recording speed.

The quality of the recorded output is effected by these settings and by the actual content. Fixed camera shots, amount of motion, and multiple camera shots can all determine the quality of your output. If one of the pre-defined templates does not achieve what you are looking for, try creating a new template.

To modify a recording template:

1. Choose **Advanced Mode** from the Options menu.
2. Select a template from the Recording Templates list and click **Settings**.

The Template Settings dialog box opens.

3. Enter the name of the new template in the Template Name field and click **Save**.

Warning: You should always save a template under a new name if you plan on modifying its settings. Otherwise, you will overwrite the existing template, deleting it permanently.

4. Select an audio codec. They are arranged by data rate and type of content.
5. Select a Video codec. RealPublisher has two video codecs available, RealVideo (Standard) and RealVideo (Fractal).
6. Select the total bit rate for the entire encoded file. The video bit rate will be total bit rate less the audio bit rate.

Generally, you should reduce the expected total bit rate by 25% to compensate for connection and packet overhead. For example, choose 20 Kbps for a 28.8 Kbps modem.

7. Choose a Frame Rate setting:

- **Optimized Frame Rate** lets RealPublisher automatically adjust the frame rate according to the content. You can specify whether you want sharper images, smoother motion, or somewhere in between.

For example, if you chose **Sharpest Image**, and a person who is talking begins to gesture or move around quickly, the frame rate decreases as the motion speeds up and increases as the motion slows down. The image sharpness remains constant throughout.

- **Fixed Frame Rate** gives you the option of forcing the output to emphasize image clarity or motion smoothness, and is adjusted by moving the slider.

For example, if your content contains a lot of motion and you set the slider closer to the 15 fps setting, the resulting video image will be less clear but will exhibit smoother motion.

8. Choose an **Encoding Speed** by moving the slider.

It is recommended that you leave the slider at Normal Encoding if you are recording existing files. The faster you encode (record a RealMedia file), the more your output quality will suffer.

The encoding speed slider will be disabled if you do not have a recording session open to record a file. Encoding speed only affects file recording, and is disabled during live recording.

9. Click **Save** to save the template with the new settings.

10. Click **Close** to close the Template Settings dialog.

5.1.3. Creating bandwidth-negotiated files

Bandwidth negotiated files allow you to provide the user with the best quality a connection can handle without the user having to explicitly choose from separate clips recorded for different speeds. The process is transparent to users, and you can configure your site to automatically serve the appropriate file.

When you create bandwidth negotiated files, you record using multiple templates and each recorded file is placed in a directory. You then link your Web page to the directory where the files are located, a RealServer chooses a file based on the user's connection speed, and automatically streams the correct file. You can only use bandwidth negotiation with a RealServer.

To provide content in multiple formats without bandwidth negotiation, your Web site must have a separate hypertext link and page for each format or template.

Refer to the *RealAudio and RealVideo Content Creation Guide* for more information.

5.1.4. Multiple-template recording

With multiple-templates, you can reach the widest possible audience while still providing high-bandwidth users with the best listening and viewing experience. Multiple templates will create several copies of your recording, optimized for different connection speeds.

For example, you can provide optimal sound for both 28 Kbps and 56 Kbps connections, and RealPlayer will automatically use the correct stream. The 56 Kbps connection will sound better than the 28 Kbps, because of the higher bandwidth.

Multiple-template recording is available only using Advanced Mode.

To encode multiple templates:

1. Using Advanced Mode, set up a recording session.
2. Select templates by pressing the Ctrl key and clicking on as many templates as you need.
3. Click **Start**.

The Multiple Template Encoding dialog box appears.

Each template should be a different bit rate, for example a 28 Kbps template, a 56 Kbps template and a 200 Kbps template.

4. If you are creating bandwidth negotiated files select **Bandwidth Negotiation**, otherwise leave this box unselected.
5. Click **Begin**. The recording process starts.

The Multiple Templates dialog box will remain visible during recording, and you will be able to monitor audio levels and video output.

6. Click **OK** when the “Recording Complete” message appears.
7. You will not be able to preview the bandwidth negotiated files until the directory containing the files is posted on a RealNetworks RealServer. If you recorded them as individual files, you may now view them with the RealPlayer.
8. Click **Close** to close the Multiple Template Encoding dialog.

5.2. Performance improvement tips

RealPublisher has several features that allow you to improve performance and increase efficiency while recording your media clips.

5.2.1. Disabling viewers

By disabling the input source window, the output source window, and the audio level meter during live recording, you can increase the frame rate of your recorded file and decrease the time it takes to record your clip.

To disable viewers during recording:

1. Open the View menu.

A checkmark is placed next to the viewers that are currently active:

- **Input Source**
- **Encoded Output**

- **Audio Meter**

2. Select a viewer to disable it.

5.2.2. Live capture-to-file

If you have a real-time capture station, you can use it to capture and compress directly into RealMedia format. The output of a video player or audio player can be recorded by RealPublisher to a RealMedia file instead of a Live Broadcast.

This process eliminates the need to create and store intermediate audio or video files, which are very large and can take considerable disk space. It is also the fastest way to capture content like breaking news clips when time-to-post is important.

5.2.3. Drag-and-drop recording

RealPublisher supports drag-and-drop recording. You must be in Advanced Mode to use this feature.

To use drag-and-drop with RealPublisher:

1. Click an input file icon and drag it onto an open RealPublisher window.

This opens a new session with path and file name information entered appropriately.

2. Enter any descriptive information (title, author, and copyright) and customize recording settings before clicking **Start**.

5.3. Producing high-quality audio

This section describes how to successfully create good, quality sound for your RealAudio or RealVideo clips. Follow these tips in order to get the best quality from the audio in your recorded files:

- Use high-quality source files or a recording input device.
- If you are not doing a live broadcast, capture or “digitize” the sound to a supported file format such as a .wav or .mov whenever possible.

This allows you to use a sound editor to adjust the amplitude of your signal to maximize the available dynamic range. If you do not adjust the signal, the resulting RealMedia file may sound flat.

- If your original audio file signal exceeds the acceptable amplitude range, the file may be “clipped.” Clipping can give rise to clicks or pops on playback. If your source file contains a clipped signal, your final RealMedia file will have high-frequency background noise or static. Lowering the input volume will help reduce clipping.
- Eliminate any DC offset either while recording or later with an audio editor. This removes low frequency noise.
- When encoding live-source audio, you have less opportunity to manipulate your input signal. Be sure that volume levels are prepared and tested before encoding.
- Cut any unnecessarily long silences from the beginning or end of the output file to conserve space.

5.3.1. Recording with multiple codecs

Use a CD-quality sampling rate (44.1 kHz), sampling width (16-bit), and two channels when creating an input file that you intend to record using multiple audio codecs. Stereo audio codecs will not encode mono audio input, but mono audio codecs will accept stereo audio input.

5.3.2. Synchronizing audio and video

The following sampling rates for your source audio will ensure that the audio remains synchronized with video or other time-critical media. Sampling rates are lower than the default input rates. For fuller sound, use the higher sampling rates.

Codec	Sampling Rate
14.4	8, 16, or 32 kHz
5 Kbps voice	8, 16, or 32 kHz
6.5 Kbps voice	8, 16, or 32 kHz
8.5 Kbps voice	8, 16, or 32 kHz
15.2 Kbps voice	8, 16, or 32 kHz
16 Kbps voice	16 or 32 kHz
8 Kbps music	8, 16, or 32 kHz
12 Kbps music	8, 16, or 32 kHz
16 Kbps music High response	11.025, 22.05, or 44.1 kHz
16 Kbps music Med response	11.025, 22.05, or 44.1 kHz
16 Kbps music Low response	8, 16, or 32 kHz
20 Kbps music stereo	8, 16, or 32 kHz
40 Kbps music mono	11.025, 22.05, or 44.1 kHz
40 Kbps music stereo	8, 16, or 32 kHz
80 Kbps music mono	11.025, 22.05, or 44.1 kHz
80 Kbps music stereo	8, 16, or 32 kHz

5.3.3. Using the Audio Level meter

While you record RealAudio or RealVideo clips, you can monitor the Audio Level to be sure you are encoding the optimal dynamic range. Green indicates a normal reading. Red warns that you are close to an over-modulated input. The best sound quality will occur when the top red bar is often lit but the clipping indicator (the red light above the meter) is never lit.

Clear the clipping indicator during recording by clicking on it. This allows you to track if audio clipping is occurring without watching the audio level constantly.

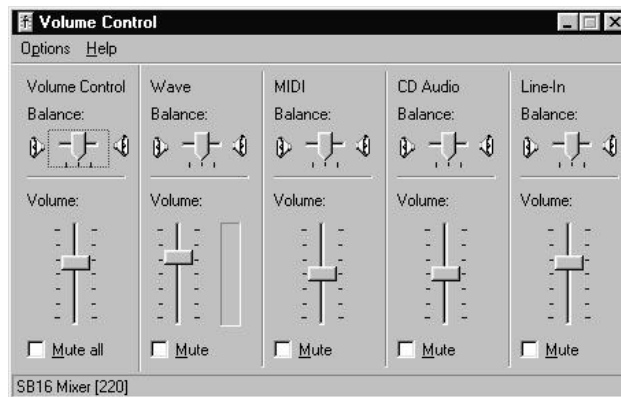
5.3.4. Volume control

While recording, you can adjust or monitor the volume using the Windows Volume Control window.

To adjust the recording volume:

1. Select **Volume Control** from the Options menu.

The Volume Control window opens:



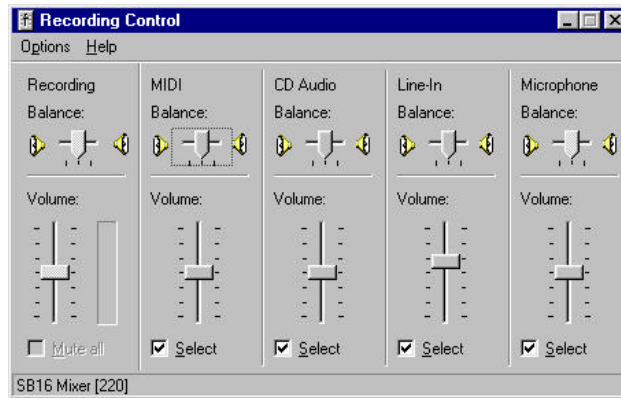
2. In the Volume Control window, select **Properties** from the Options menu.

The Properties window displays:



3. Select **Recording** to adjust the input recording volume. (Playback adjusts the level of the volume you hear while you are recording, not the volume RealPublisher uses.)
4. Select from the list of volume controls the type of inputs you will be using and click **OK**.

The Recording Control window opens:



5. Select which recording inputs to use by choosing the Select box for each input.
6. Adjust the sound level by moving the sliders up or down.

Remember, if the volume is too high, the recorded sound may be clipped and appear distorted. If the volume is too low, it will be difficult to hear. Use the audio level meter in the RealPublisher window to monitor the level during encoding.

7. Close the Recording Control window and return to the RealPublisher.

5.4. Producing high-quality video

This section describes the type of video input needed to successfully create quality RealVideo clips. Tips are given for recording existing files and for recording from external media devices.

5.4.1. Existing files

In order to get high quality output, your existing files should meet the following requirements. You can use any size image, but the height and width of the video will be automatically cropped to a multiple of 16.

AVI files:

- AVI files should have a 24-bit color depth.
- The standard video frame size for the Internet is 176 x 144.
- The file should be uncompressed for best results.
- Indeo drivers must be installed on your machine for the encoder to be able to open .avi files created with the YUV9 format. The Indeo drivers are available from the Intel Web site (www.indeo.com). However, if you captured an AVI file on the same machine as RealPublisher, the encoder typically has no problem opening it.

QuickTime files:

- 24-bit RGB QuickTime video files
- 8-bit or 16-bit mono and stereo audio
- Files must be uncompressed

5.4.2. External audio and video sources

When using external audio and video sources, you must start with the best possible quality. In particular, different video formats yield different qualities when captured (digitized). Additionally, video playback devices commonly have two types of video outputs, S-video and composite. S-video produces better results.

The common video formats in order of quality are:

- Betacam-SP, also known simply as Beta. This format is common among video production professionals.
- Laserdisc
- S-VHS or Super-VHS
- VHS

5.4.3. Image Size

RealPublisher supports any size image, but will automatically crop the height and width to multiples of 16. If you use any size image, the video will be automatically cropped to a multiple of 16. The most common sizes are 176 x 144 pixels or 320 x 240 pixels. An image size of 160 x 120 is also supported. Live capture image size is controlled through **Set Video Format** under the Options menu, and is dependent upon the video capture hardware installed.

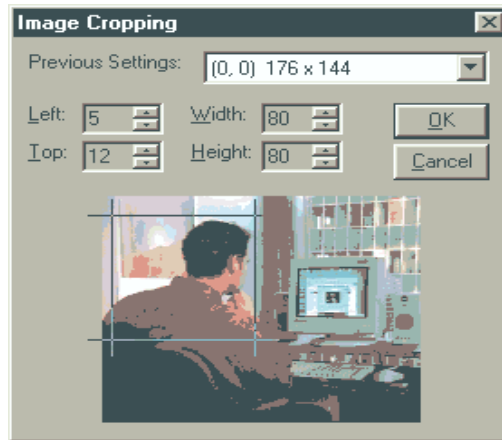
5.4.4. Image cropping

The cropping feature allows you to record any section of a video image that you wish. By cropping an image, you can reduce the overall bitrate of your recorded clip.

To crop a video image:

1. To edit the image cropping settings, select **Crop Settings** from the Options menu.

The Image Cropping window displays a sample image from the session input. Notice the crop lines around part of the image. These lines show the portion of the image that will be recorded.



2. Use **Left**, **Top**, **Width**, and **Height** buttons to adjust the size and location of crop lines.
3. Click **OK** to return to the RealPublisher window.
4. Select **Crop Enabled** from the Options menu.
5. Click the **Start** button to start the recording process using the crop settings.

The cropped image appears in the Encoded Output viewer.

5.5. Monitoring recording statistics

You can monitor a variety of statistics while your RealAudio or RealVideo clip records. These include start and stop points, as well as audio and video bit rates, frame rates, motion quality and encoding speed settings. You can also monitor the output results of average bit rate, buffer time, frame rate, audio loss, and duration.

To monitor recording statistics:

- Choose Statistics from the View menu.

The Statistics window opens. You can return to the RealPublisher window without closing the Statistics window.

5.6. Editing your media files

Once created, RealMedia files (.rm) can be edited using the RealMedia Tools utility (rmtools.exe) installed with RealPublisher. Operations include stream cutting, copying, and pasting. You can also edit Title, Author, and Copyright information. Refer to the *RealAudio and RealVideo Content Creation Guide* for more information.