PREPARING A REALAUDIO PRESENTATION

Introduction

Streaming audio and video technologies allow large sound and video files to be delivered via the World Wide Web. The term "streaming" means the file can be played in real time as it's received, as opposed to waiting for the entire file to be downloaded before playing. Several commercial products are available to encode, serve, and play streaming audio and video. One of the most popular product suites is developed by RealNetworks, formerly known by the company name Progressive Networks. This guide will exlain how to create and serve a streaming audio presentation using free software available from RealNetworks. For the latest RealNetworks product information, visit their Web site at:

http://www.real.com/

I. HARDWARE/SOFTWARE REQUIREMENTS

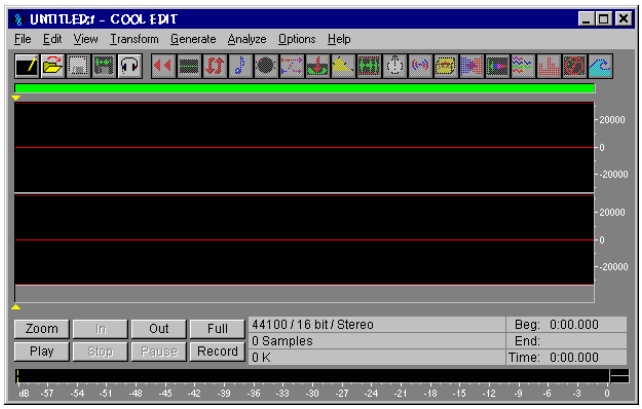
Preparing a streaming audio presentation is a multi-stage process and each phase requires a different software tool. In addition, you must have a server running one of the RealNetworks server products. Here's a list of what you'll need to get started:

- **A Windows 95 or NT PC with sound in/out capabilities and a microphone.** If you don't want to record directly to your PC, you'll also need a high quality analog or digital tape recorder.
- **Sound capture and editing software** capable of storing sound input in WAV format. We recommend the shareware product, **CoolEdit 96**, available for download from: http://www.syntrillium.com/cool96.htm
- **RealEncoder 5.*x* from RealNetworks**, available for download from: http://www.real.com/products/creation/index.html
- **A networked UNIX, Windows NT, or Windows 95 computer running the Real Networks Basic Server 5.*x*** (free) or one of RealNetworks commercial server products, available for download from: http://www.real.com/products/index.html
- **RealPlayer or RealPlayer Plus from RealNetworks**, available for download from: http://www.real.com/products/player/index.html
- **An FTP client** to upload your files to the computer running the RealServer software. Netscape 3.0 or 4.0 can be used for this purpose. Or, you can download **WS_FTP LE**, a very powerful, free ftp client from: http://www.ipswitch.com/downloads/ws_ftp_LE.html

II. RECORDING THE PRESENTATION

The first task in creating a streaming audio presentation is recording the presentation. You can record the presentation using a tape recorder, or record directly to a PC outfitted with sound card and microphone. In either case, you will need a sound recording/editing program to digitize the presentation and save it to a standard digital audio format. The following instructions explain how to record a presentation with CoolEdit 96:

1. If you are recording from a tape player, tape your presentation and then connect the tape player to your sound input port. If you are recording directly to your PC, make sure your microphone is connected to the appropriate port in your sound card, usually labeled "mic".
2. Start CoolEdit 96 either by selecting it from the Windows **Start** menu or by double-clicking on the **Cool96.exe** icon. You should a window similar to the one shown below:



3. Open the **File** menu and select **New**. You will be asked to select the **Sample Rate** and **Resolution**. The higher the value, the higher the recording quality and the larger the resulting file. For recording voice, we recommend 22,050 Hz at 16-bit resolution. Select the desired settings and click **OK**.
4. When you are ready to start recording, click the **Record** button in the lower left-hand region of the window.

   Begin speaking into the microphone or turn on your tape recorder and hit the play button. You may wish to record only a few seconds at several volume levels to determine the optimal input volume and then start again, recording the presentation from beginning to end.
5. When you wish to stop recording, click the **Stop** button.

6. To listen to your recording, click the **Play** button.
7. Save the recording as a file in WAV format by opening the **File** menu and choosing **Save As**. Enter a file name with a ".wav" extension in the **File name** field and select **Windows PCM (*.wav)** as the file type.

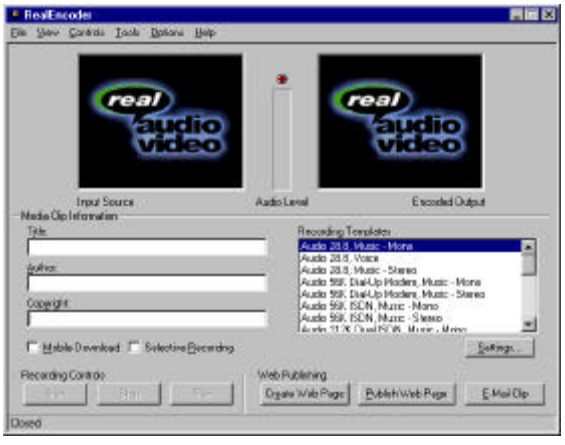
   You can also save the file directly to RealAudio 3.0 format by choosing **RealAudio 3.0 (*.ra)** as the file type instead. The **Options** button in the **Save** window allows you to optimize the file for voice and music at various delivery speeds (e.g., 28.8 Kbps, ISDN, etc.), but does not offer as many options as the RealEncoder software. If you choose to use this feature in CoolEdit, you can skip section III of this document entirely.
8. If you are satisfied with your recording, quit CoolEdit 96 by opening the **File** menu and choosing **Exit**.

Note: CoolEdit 96 is a very powerful sound editing utility. Once you've created your file, you can insert or delete sections, filter out undesirable noise, add special effects, etc.

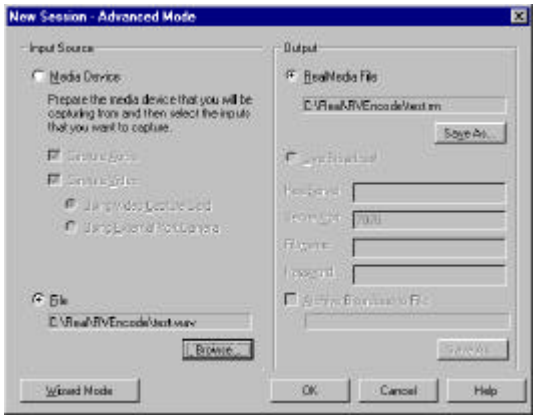
III. CONVERTING THE FILE TO REALAUDIO FORMAT WITH REALENCODER

Once the presentation has been saved as a file in WAV format, it must be converted to the RealAudio format with RealEncoder 5.x. The following instructions explain how:

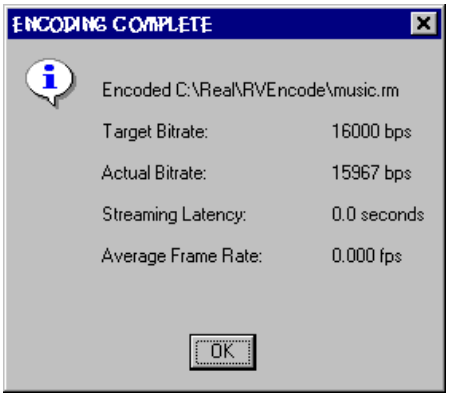
1. Start RealEncoder either by selecting it from the Windows **Start** menu or by double-clicking on the **rvencode.exe** icon. You should a window similar to the one shown below:



Open the **File** menu and choose **New Session.** You will see an **Open Session** window similar to the one below:



2. Make sure the **File** radio button is selected. Then click **Browse**. An **Add Source File** window will prompt you to select the file you want to convert. Locate the file on your hard disk and either double-click on it, or select it with the mouse and click **Open**. The name of your file should appear in the **Input Source:File** field within the **New Session** window.
3. Now, click on the **Save As** button in the **New Session** window. You'll be prompted to enter a name for the file. Enter a file name with a ".rm" extension in the **File name** field. (**Note**: If you plan to encode the file for multiple bandwidths, it's a good idea to incorporate the bandwidth speed into the filename; e.g., **lecture_288.rm**).
4. Click on **OK** to close the **New Session** window.
5. In the lower left quadrant of the main RealEncoder window, enter the **Title**, **Author**, and **Copyright** information for the presentation in the fields with those names.
6. In the lower right quadrant, select a predefined template for encoding your file. The higher the bandwidth, the higher the fidelity to the original (and the larger the resulting file). Similarly, the templates defined for "music" produce larger files of higher fidelity than the templates for "voice."
7. Click the **Start** button in the bottom left corner to start the encoding process. A progress bar in the lower right corner will show how much of the file has been encoded. When the process is complete, a pop-up window similar to the one below will appear:

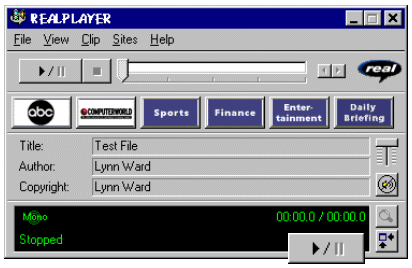


8. Click the **OK** button.
9. To listen to the encoded file, click the **Play** button.
10. When you are finished encoding, open the **File** menu and choose **Exit**.

IV. TESTING THE FILE

Before you upload your file to the streaming audio/video server, it's a good idea to play it to make sure you are satisfied with the quality after the encoding process. Follow these instructions to play the file using the RealPlayer utility:

1. Start RealPlayer either by selecting it from the Windows **Start** menu or by double-clicking on the **rvplayer.exe** icon. You should a window similar to the one shown below:



2. Open the **File** menu and choose **Open File**. You will see an **Open** window. Locate your newly encoded file (it should have an ".rm" extension) in the window and either double-click on it or select it and click the **Open** button.
3. Your file will start playing almost immediately. To listen to it again, click the button.
4. To quit the RealPlayer, open the **File** menu and choose **Exit**.

V. UPLOADING THE FILE TO A SERVER

In order to make your presentation available to other Web users, you must upload it to a server running the RealServer software. You may need to ask the server's administrator to create an account for you. Before you can upload your files, you will need to know the following information:

- The name of the server
- The name of the directory where RealAudio data files are stored.
- Your login and password for the server

The method and protocol you use for uploading your file(s) to the server will vary depending on the server operating system and installed applications. The most common method is *FTP*, or *File Transfer Protocol*. In order to use FTP, the server must be running an FTP server and you need an FTP client. The following two sections describe the upload process using Netscape and WS_FTP respectively.

A. USING NETSCAPE 3 OR 4 TO UPLOAD A FILE

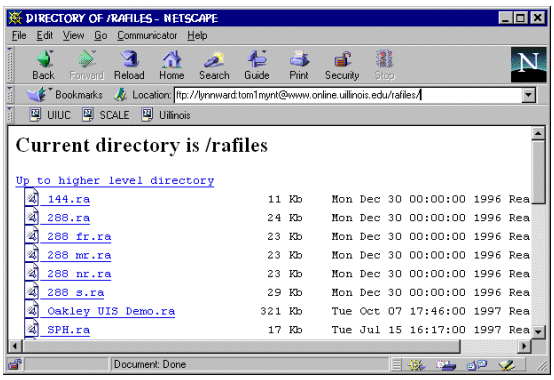
Follow these instructions to upload a file to the server with Netscape:

1. Start Netscape either by selecting it from the Windows **Start** menu or by double-clicking on the **netscape.exe** icon.
2. Open the **File** menu and choose **Open Page** (Netscape 4.x) or **Open Location** (Netscape 3.x).
3. In the blank location field, enter a URL in the following form:

   ftp://*your_login*:*your_password*@*your.realaudio.server.name*/*realaudio_directory*

   where ***your_login*** and ***your_password*** are replaced with your actual login and password, ***your.realaudio.server.name*** is replaced with the full Internet name of your server, and ***realaudio_directory*** is replaced with the name of the directory used for storing RealAudio data files. For example:

   ftp://lynnward:sec3ret@www.online.uillinois.edu/rafiles
4. You should see a directory listing containing RealAudio files, similar to the one shown below:

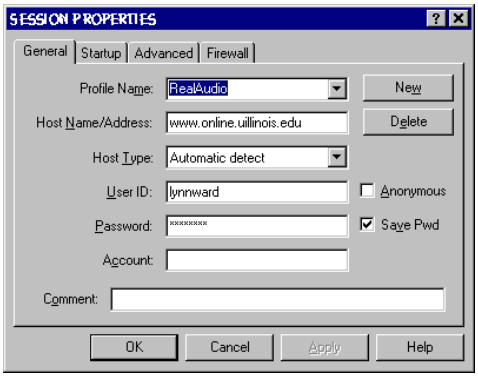


5. Open the Netscape **File** menu and chose **Upload File**. You will see an **Open** window. Locate your newly encoded file (it should have an ".rm" or ."ra" extension) in the window and either double-click on it or select it and click the **Open** button. Alternatively, you can drag the icon of your RealAudio file into the Netscape window. In either case, your file will be uploaded to the RealAudio data directory.
6. Click the Netscape **Reload** button to make sure your file appears in the server's directory listing.
7. To quit Netscape, open the **File** menu and choose **Exit**.

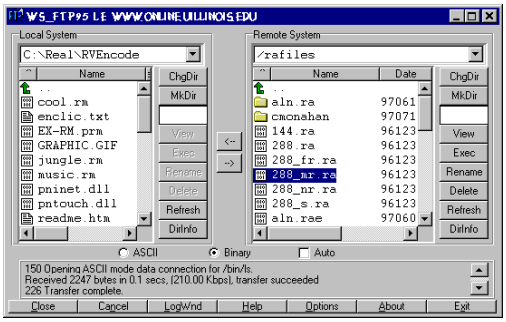
B. USING WS_FTP TO UPLOAD A FILE

Follow these instructions to upload a file to the server with WS_FTP:

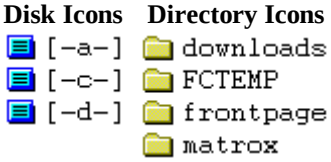
1. Start WS_FTP either by selecting it from the Windows **Start** menu or by double-clicking on the **WS_FTP95.exe** icon.
2. A **Session Properties** window similar to the one below will appear:



3. If you have not yet created a profile for uploading files to the RealAudio server, click the **New** button. If you already have set up a profile for this purpose, select it, click **OK** to connect, and skip to step 7.
4. Note that there are four tabs at the top of the window, **General**, **Startup**, **Advanced**, and **Firewall**. Fill out the blank fields on the **General** tab with the following information:
   - **Profile Name:** RealAudio (or something similar)
   - **Host Name/Address:** the full Internet name of your server
   - **Host_Type:** Automatic detect (or, if you know the specific OS and FTP server, choose that instead)
   - **User ID:** your server login name
   - **Password:** your server password
   - **Save Password:** check this box if you are the only person who has access to this copy of WS_FTP and your password will be saved.
5. Click the **Startup** tab. Then place your cursor into the **Initial Remote Host Directory** and enter the name of the directory where RealAudio files are stored on the server.
6. Click the **OK** button. If you are prompted to enter a password, enter your server password.
7. You should see a window similar to the one shown below. Your local files will be displayed in the scrolling region on the left side of the window and the contents of the remote RealAudio data directory will be shown on the right.



8. Make sure the **Binary** radio button is filled in. If not, click it to set the transfer mode to binary.
9. Locate your newly encoded files on your local hard disk within the Local System area of the WS_FTP window. To move up from the current directory, click the icon at the top of the local file listing that looks like this: . .
   To move to another disk or directory, click the appropriate disk or directory icon.



10. Once you've located the correct file, double-click on its name, or select it and click the <-- button. In either case, the file will be transferred to the server.
11. Scroll through the remote directory listing to make sure your file is there. If you can't find it, try clicking the **Refresh** button.

12. **FOR UNIX SERVERS ONLY:** If your server is a UNIX system, you may need to change the permissions on the files you uploaded. To do so, click the name of the file within the remote file system area of the WS_FTP window and hold down the **right** mouse button. A pop-up menu will appear. Select **chmod (UNIX)**. You will see a window similar to the following:

Make sure the **Read** box is checked for **Owner**, **Group**, and **Other**. **Write** should be checked for **Owner** as well. Then click **OK**.

13. To quit WS_FTP, click the **Exit** button in the bottom right of the main WS_FTP window.

VI. LINKING TO THE PRESENTATION

Once the RealAudio file has been uploaded to the server, you can create a link to it in any HTML file. However, you cannot link to the RealAudio file directly. Instead, you must create an intermediary file called a *RealAudio Meta file* (RAM). Your Web page will point to the RealAudio Meta file and the RAM file will point to the RealAudio sound file. The following instructions explain how to create the RAM file and how to link to it.

A. CREATING AND UPLOADING THE RAM FILE

In order to create and upload the RAM file, you will need the following:

- A plain text editor or a text-based HTML editor
- An account on a Web server and write access to a directory where Web pages are stored
- An FTP client such as Netscape or WS_FTP

Once you have all of the above items, follow these steps:

1. Start your text/HTML editor and create a new file.
2. Type a URL following the format below:

   pnm://*your.realaudio.server.name/your_filename*

   where ***your.realaudio.server.name*** is replaced with your RealAudio server's full Internet name and ***your_filename*** is replaced with the name of your RealAudio file. For example:

   pnm://www.online.uillinois.edu/lecture1.rm

3. Save the file with a name that has a "**.ram**" extension; e.g., **lecture1.ram**.
4. Quit your editor.
5. Upload the file to your Web server with Netscape or WS_FTP using roughly the same procedures described in section V. Note, however, that the name of the Web server may be different from the name of the RealAudio server. In addition, the upload directory on the server should be one intended for Web pages, not the RealAudio data directory. Adjust the location URL under Netscape or the profile under WS_FTP to accommodate these differences.

B. CREATING A LINK TO THE RAM FILE

The final stage of the publication process is linking to the RAM file from within a Web page. The Web page may be on a different server than the RAM file, but more typically they are on the same server and in the same directory. To link to the file, simply create a standard hypertext link in your Web page that points to the RAM file.

If the RAM file is in the same directory as the Web page, you need only give the file name of the RAM file. For example:

Lecture 1

If the .RAM file is on a different server, you will need to provide the full URL for the file. For example:

Lecture 1

Once you've created the link, test it by loading the page in your Web browser and clicking the link.

VII. For More Information

For more information about creating and managing RealAudio and RealVideo files, download the **RealAudio and RealVideo Content Creation Guide** (in Adobe Acrobat PDF format) from:

http://service.real.com/help/library/encoders.html

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