RealTracer V1.0 User Manual

1. Overview

RealTracer includes *RealTracker*, a customized player that can play streaming RealVideo clips and record system performance statistics as well as user ratings, along with *RealData*, a tool that helps analyze the statistical data collected by RealTracker. RealTracker and RealData are standalone programs that can run independently on Windows 98/95, NT and 2000.

With RealTracker, users can create their own *playlist* and specify the means of gathering statistics. RealTracker plays videos on the playlist, gathering system and RealVideo statistics.

With RealData, users can easily analyze the RealVideo statistics collected by RealTracker. RealData can sort the Real-Tracker statistics by various performance metrics, such as bandwidth, frame rate, jitter etc. RealData provides a tool that can generate cumulative density data for measured bandwidth, frame rate and jitter. RealData can also export the statistical data in a comma-delimited file suitable for most spreadsheet programs, such as Microsoft Excel, for further analysis.

This user manual provides you with detailed information on how to use RealTracker and RealData. It includes two parts. The first part is for RealTracker

and the second part is for RealData. At the end of this manual, you can also find

the contact information.

2. RealTracker

This section gives the detailed information on how to use RealTracker to conduct

RealVideo performance study. Section 2.1 is for the distributors who want to use

RealTracker to conduct some RealVideo performance studies and Section 2.2 for

those users who play the clips using RealTracker to help collect the RealVideo

statistics.

2.1   For the Distributor

To plan a RealVideo performance study using RealTracker, the distributor needs

to create a playlist and a configuration file.

2.1.1 Creating Playlist

The playlist is a text file that contains a list of RealVideo clips to be played by

each user. RealTracker randomizes the order of clips in the playlist. An example

of the playlist file is shown as follows:

```
US - Space 01
rtsp://sr-nyc-006.media.globix.net/space/b010511_sp_scram_2.rm
US - Space 02
rtsp://sr-nyc-
006.media.globix.net/space/realchannel/media/b010419_sp_sts100view_3.rm
US - Space 03
rtsp://sr-nyc-006.media.globix.net/space/b010411_sp_sts100lonchakov_2.rm
US - Space 04
rtsp://sr-nyc-006.media.globix.net/space/b000803_en_spacecowboys_2.rm
US - Space 05
rtsp://sr-nyc-006.media.globix.net/space/s001102_expd1_dock_1.rm
US - Space 06
```

Note that the each clip occupies two lines, the first line is the clip name and the

following line is its corresponding URL.

2.1.2 Creating Configure File

The configuration file lets the distributor specify two email addresses and two FTP sites to which the RealVideo statistics will be delivered. RealTracker will automatically save the configuration into a file called `RT.cfg`. To specify the above information, click on "File" in the main menu and choose "Make Configure File". You will see a pop-up window entitled "Advanced Option". For the email addresses, you are required to enter the SMTP server, the user name and email address. For the FTP sites, you are required to enter the server IP address, the user name, the password and the directory where you want to save the statistics data. When you click on the "OK" button, the information you entered will be saved to an encrypted configure file called RT.cfg. You can distribute RT.cfg with RealTracker to users who help you to conduct the performance study. Users running RealTracker must put `RT.cfg` into the same directory as the RealTracker executable: `Real-Tracker.exe`.

2.1.3 Saving Statistics Log

The statistics log for the RealVideo clips you distributed will be sent via email or FTP to the locations you specified. The users can also view and save the statistics. To view the statistics for a video clip that is displaying, click on "View" in the main menu and check "Statistics" or simply click on the "statistics" button in the tool bar. To save the statistics, click on "File" in the main menu and choose "Save Log Files …".

2.2   For the User

To help conducting the RealVideo study using RealTracker, users need to install the RealTracker in their computers. RealTracker provides several options to help conducting the study.

2.2.1 Installing RealTracker

Before you can run RealTracker, you need to have RealPlayer or RealOne installed on your computer. If you do not already have it, download and install RealPlayer or RealOne Basic (it's free) from:

http://www.real.com/player/index.html

Then, download RealTracker and the RealTracker support file. If you are running Windows 95/98, download:

http://perform.wpi.edu/real-tracer/Aux98.dll

http://perform.wpi.edu/real-tracer/RealTracker.exe

If you are running Windows NT/2000, download:

http://perform.wpi.edu/real-tracer/AuxNT.dll

http://perform.wpi.edu/real-tracer/RealTracker.exe

2.2.2 Specifying the User Information

When you run RealTracker for the first time, you will be asked to enter the information about you and your computer. After completing the input, click on the "OK" button.

To modify the user information, click on "File" in the main menu and choose "User". You will see a pop-up window for user information. After you modify the user information, click on the "OK" button.

2.2.3 Controlling Displaying

RealTracker provides two display controls, namely "Play" and "Stop". To start playing the clips from the playlist, click on the "Control" in the main menu and choose "Play". RealTracker will play all the clips in the playlist sequentially from the selected clips. To stop playing, choose "Stop". These two control buttons can also be found in the tool bar.

2.2.4 Rating Clips

After a clip is displayed, RealTracker will pop-up a window to ask the user to rate the clip. The pop-up window will remain for 10 seconds.

If you click on "Yes", another pop-up window will show up, which allows you to enter your rating for the displayed clip. The rating is between 0 and 10. After you click on "OK" button in the rating window, the next clip will be played automatically.

If you click on the "Skip" button, RealTracker will automatically go to the next clip. RealTracker provides three options for clip rating, namely "Never", "Always" and "By Choice". By choosing "Never", you can skip all the ratings for all the clips in the playlist; and "Always", you must supply the ratings for all the clips; and "By Choice", you can have choice whether you want to rate a

displayed clip as described above. You can specify your choice by clicking on "Control" in the main menu and choosing "Option".

3. RealData

This section gives detailed information on how to use RealData to analyze the statistical data collected by RealTracker.

3.1   Real Folder

RealData provides a file management structure called a *Real Folder* that is used to manage statistics gathered by RealTracker. To create a RealFolder, users click on "RealFolder" in the main menu and choose "New Folder". A pop-up window lets users enter a new folder's name. After clicking on the "OK" button, the new folder shows up in the left window under "RealTracer". To add files into this folder, users select the folder in the left window and click on "RealFolder" in the main menu and then choose "Add Files". RealData can only process the files collected by RealTracker, so only files collected by RealTracker should be added into a RealFolder. Real-Data allows users to save the Real-Folders created. To save the created RealFolders, users click on "File" in the main menu and choose "Save" or "Save As" and then enter the name for the RealFolders. To open a previously saved RealFolder, users click on "File" and choose "Open".

3.2   RealData Files

Each RealData file is associated with a RealVideo clip that was played by RealTracker. After adding a file into a RealFolder, the statistics data associated with a RealVideo clip show up in the right window. If a RealFolder is selected, all the RealData files within that folder show up in the right window. To view

more details about a particular RealData file, a user can double click on the file selected in the right window. Another window pops up, in which the upper window shows the basic information regarding the user and the corresponding RealVideo clip, such as user name, location, IP address, RealVideo clip's URL etc, and the lower window shows the statistics data, recorded per second, for that particular RealVideo clip. All the RealData files and corresponding statistics data within one RealFolder can be exported to a comma delimited file, suitable for import into most spreadsheet programs, such as Microsoft Excel, for further analysis. To do so, a user clicks on "Tool" in the main window and chooses "ExportToExcel".

3.3 Cumulative Density Data (CDF)

RealData provides a tool that can generate cumulative density data (used for drawing CDF graphs) for measured bandwidth, frame rate and jitter. To generate a CDF for the recorded bandwidth, for example, a user clicks on "Tool" in the main window and chooses "CDF" and then chooses "BANDWIDTH_ALL" or "BANDWIDTH_SELEC-TED". If a user wants to generate cumulative density data for all the files within a RealFolder, s/he chooses "BAND-WIDTH_ALL", while choosing "BAND-WIDTH_SELECTED" generates cumulative density data for the selected RealVideo clips. The cumulative density data is then saved as a comma-separated text file for further analysis or graphing.

4. Contact Information

For further information, please contact:

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Or you can visit our web site at:

http://perform.wpi.edu/real-tracer.