Media Technology
Group Work 5

Streaming Media 1 (Preparation)
(Streaming technologies, Helix Producer, Encoding, Compatibility)
February 04, 2004

Group Work Report

Group Work Report

- Please prepare a 1 to 2 page report of your findings from this group work. Outline the important points from each exercise and your results.
- Everyone should hand in their own report (no group reports please).
- The report is due, in printed form, by the beginning of the next Media Technology lecture (February 11, 2004).

Overview for Today

1. Web-based media streaming overview
2. Intro to the Helix media server
3. Intro to SureStream technology
4. Intro to the Helix media encoder
5. Encode a video file into the RealMedia format
6. Experiment with file compatibility

Web-based Media Streaming

Media Delivery with Standard Web Server

Web Server Characteristics:

- HTTP streaming with progressive download
- Can use existing infrastructure
- Data rate does not match media content
- Uses standard TCP
  - Overdrives network connections
- No SureStream or file seek capability

Media Delivery with Specialized Media Server

Media Server Characteristics:

- HTTP streaming or Real-time streaming
- Requires special server technologies
- Data-rate exactly matches media content
- Can use lightweight UDP protocol
  - Fast & efficient
- Media adaptation with SureStream
- Can seek to any media time

The Helix Universal Server

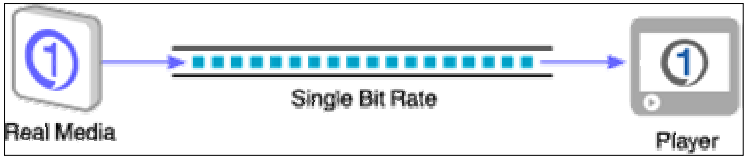
Features:

- HTTP & UDP streaming support
- Can deliver live events
- Fast start technology
- Can be fed by several encoders (WM9, Apple)
- Capable of streaming many formats (MP4, MP3, Real, more)
- Supports many operating systems
  (Windows, Solaris, Linux, more…)

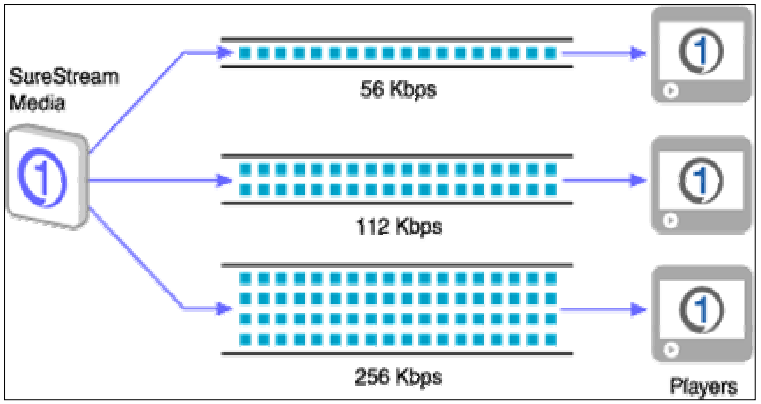
RealMedia SureStream

SureStream Details

- Method of media adaptation
- Can adjust stream to different connection types
- Can adapt stream during network problems
- Possible only with a Helix Server (not with web server)
- Possible to target multiple ‘Audiences’ within a single file.
- Helps maintain content location, media synchronization and server adaptation.

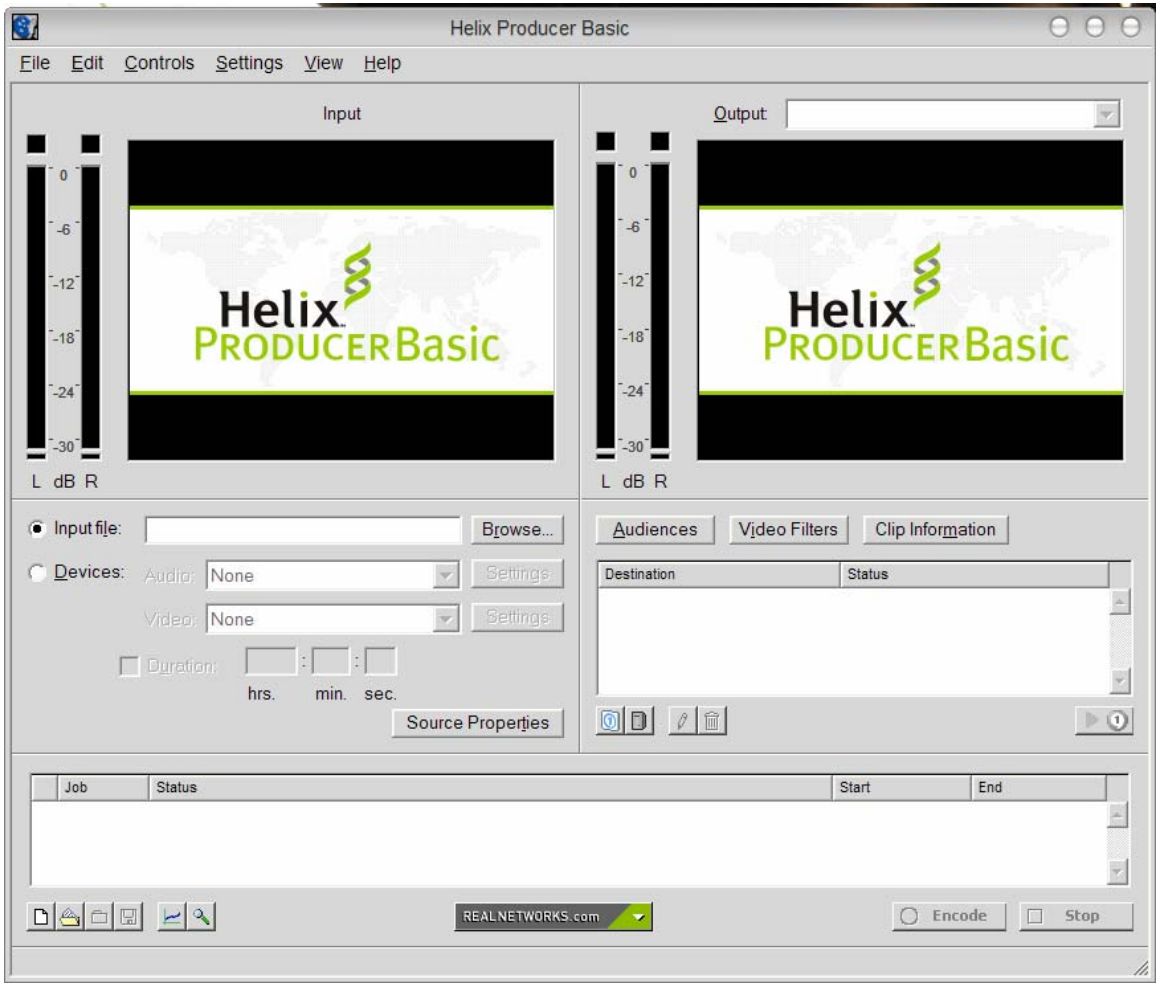


Encoding RealMedia with a single Audience



Encoding RealMedia with a multiple Audiences

Helix Media Producer Overview



An introduction to the Helix Producer interface will be given in class

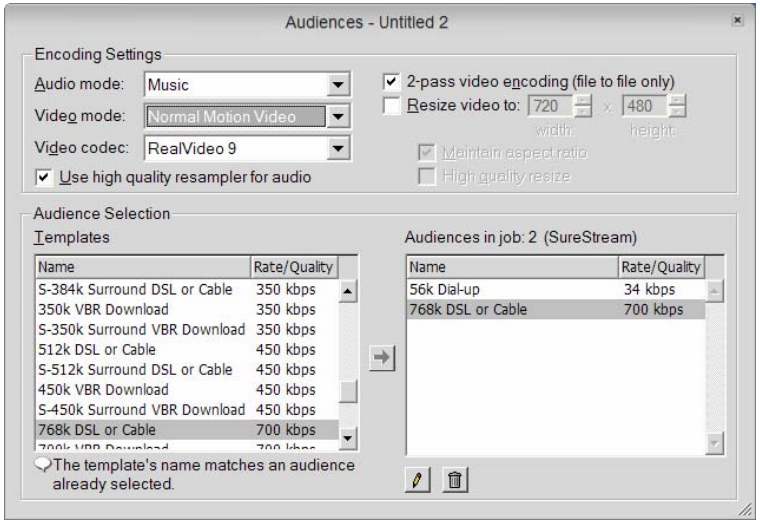
Encoding RealMedia with Helix

Compress the source file for two audiences

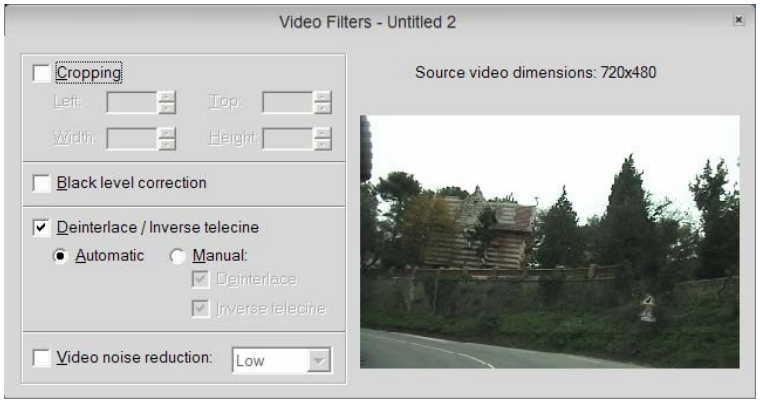
- Audience 1: 56k Dial-up
- Audience 2: 768k DSL or Cable

Procedure

1. Start Helix Producer Basic
2. Select an input file by clicking “Browse”. Locate the source file (name & location given in class)
3. Click “Source Properties” to see file information
4. Click the “Audiences Button” – the Audience dialog appears.
5. Remove the current audiences by selecting them and pressing the “Delete Key”.
6. Add two audiences by clicking the arrow button
   - Audience 1: 56k Dial-up
   - Audience 2: 768k DSL or Cable
7. Add clip information by clicking “Clip Information”
8. Add video filters if desired by clicking “Video Filters”
9. Finally, click the ‘Encode” button to start processing
10. **Repeat with a single audience at 128k Dual ISDN.**



Helix Producer Audiences Dialog Box



Helix Producer Video Filters Dialog Box

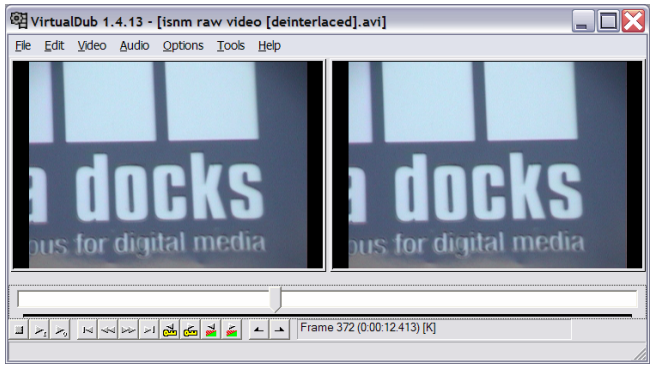
Test Quality & Compatibility

Procedure (Test in RealPlayer)

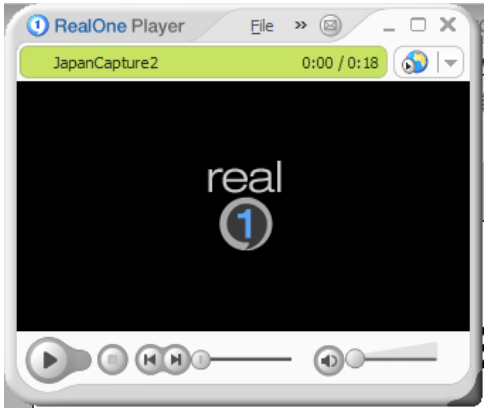
- Locate the media file(s) you produced in Helix Producer
- Open the file(s) in RealPlayer
  - Experiment with the RealPlayer interface
  - Check the video quality at different times in the video

Procedure (Test file Compatibility)

- Try to open the RealMedia file in VirtualDub – did it work?
- Next try to open the RealMedia file in Windows Media Player – did it work?



Microsoft Windows Media Player



RealPlayer

Microsoft Windows Media Player

Questions

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- When testing your encoded files, did you notice any quality problems in the final video – what did they look like?
- Did you think that your encoded file looked better or worse than the DiVX files we produced last time?
- Why would there be a visual difference between DiVX and RealMedia encoded files?
- After encoding your media with multiple ‘Audiences’, how many output files were produced?
  - Why do you think RealMedia produces files in this way?
- Could you open your RealMedia files in VirtualDub or Windows Media Player?
  - Why or why not?
- In general, why would file compatibility be important?