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# Release Notes:

## RealProducer® 11.0

November 15, 2005

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RealProducer 11 converts a wide variety of audio and video files into the RealAudio and RealVideo format. RealProducer 11 also allows you to capture audio and video from live sources such as a camera or microphone and broadcast a live stream via a Helix Server. The software and documentation are provided to you in accordance with your license agreement.

For the latest information about RealProducer 11, visit the [RealProducer product page](#). Support and technical information is available at: <http://service.real.com>. Latest updates to this document can be viewed at the [Producer Release Notes Updates](#) page.

## **1 What's in this Release**

### **1.1 New Features in Producer 11**

- Live Low Latency
- Configurable Maximum Packet Size
- Improved Firewall Traversal
- .RA and .RV file extensions

See the RealProducer User's Guide or the included help files for more information about these new features.

### **1.2 Other Changes in RealProducer 11**

The following is a list of other changes and limitations with RealProducer 11:

1. In order to take advantage of the new Live Low Latency feature in RealProducer 11, you must be broadcasting to a Helix Server 11. If you are broadcasting to an older server with Latency Mode set to anything other than 0, the server will report Malformed Packet messages to the server logs, and clients will not be able to connect to the broadcast. See the user's guide for information about the new latency mode options in RealProducer 11.
2. The Legacy Push broadcast method has been removed from RealProducer 11. This means that you cannot broadcast to a Pre-8.0 RealServer from RealProducer 11.

### **1.3 New Features in Producer 11**

- RealVideo 10
- RealAudio 10
  - Improved Broadband Stereo Music
  - 5.1 Multi-Channel Audio Codec
  - Lossless Audio Codec
- Multiple Outputs for a single encoding job
- Parallel Input Support (separate audio and video source files)
- Enhanced Load Management
- Encoding Complexity

- File Rolling for large clips
- Audio Delay Compensation Prefilter
- Video Resize Prefilter
- New command line options
  - Video Codec (-vco)
  - Encoding Complexity (-eco)
- Extensible Job File Format
- ActiveX Control SDK Support
- Mach-O Macintosh OS X SDK Compiler Compatibility

## **2 Getting Started**

### **2.1 Running the Graphical User Interface**

RealProducer for Windows offers a graphical user interface for configuring, running and monitoring encoding sessions. This application can be launched from the Start Menu after installing the application. Refer to the User Guide in the Help menu for information.

Refer to the [Troubleshooting Tips](#) section below if you experience any problems.

### **2.2 Running the Command Line Application**

RealProducer for Windows and Linux offers a command line interface for running and monitoring encoding sessions. The installation program configures path information to allow the application to be run from the DOS prompt from any directory on your system. To run the command line application, open a DOS prompt and type 'producer' for short help or 'producer -m' for the complete Command Line Reference.

Refer to the [Troubleshooting Tips](#) section below if you experience any problems.

### **2.3 Working with Helix Producer 9.0 Job Files**

RealProducer 11 uses a new job file format, job file version 2.0. RealProducer 11 will automatically convert older job files to the new format when it opens them. Note that older versions of Producer can't open version 2.0 job files, so if you need to ensure compatibility with older Producers, remember to save a converted job file under a new name so that you do not overwrite the original.

## **3 System Requirements**

### **3.1 Application System Requirements**

- **Operating System**
  - Windows 2000, and XP<sup>1,2</sup>
  - Linux 2.4 with Glibc 2.1 or greater, Linux 2.6
    - Any distribution that meets the above requirements should work but the following are tested and supported:
      - RedHat 9
      - Suse 9

- **Hardware**

- Minimum<sup>3</sup>
  - 500 MHz CPU
  - 128 MB RAM
- Recommended<sup>4</sup>
  - 2.4 GHz or faster Pentium IV
  - 512 MB RAM

1. Windows XP recommended for Hyperthreading support.
2. Latest Windows Service Pack recommended for any Windows version.
3. Minimum system configuration can encode using the command line application into RealVideo 10 in High Complexity Mode from a live device at 240x180 @ 15fps to a 28 kbps and 56 kbps SureStream file (default settings) without any degradation in encoding complexity or frame rate.
4. Recommended system configuration can encode using the command line application into RealVideo 10 in High Complexity Mode from a live device at 320x240 @ 30fps to a 768 kbps file without any degradation in encoding complexity or frame rate.

### **3.2 Supported Chipset Optimizations**

Below is a list of CPU optimizations that are supported by RealProducer. Consult your hardware vendor's documentation to determine if your hardware supports these optimization instruction sets.

- PC (Intel, AMD, etc)
  - MMX (400% over non-MMX systems)
  - SSE1 (No performance increase)
  - SSE2 (20% speed-up on top of MMX)
  - SSE3 (6-7% speed-up on top of SSE2)
  - Hyperthreading (0-20% speed-up on top of MMX/SSE2/SSE3)<sup>[1]</sup>

#### 1. About Hyperthreading and RealProducer

- Hyperthreading can be run with most versions of Windows by only recommended for use with Windows XP.
  - Windows 2000 and NT do not distinguish between virtual and physical CPUs and thus will not guarantee that two CPU-intensive processes are not run on the same physical CPU. Older versions of Windows do not support multiple processors.
- Hyperthreading may not yield a significant improvement with cache-intensive processes like RealProducer unless the CPU cache is large enough.

- RealVideo codecs require large CPU caches. When hyperthreading is used, this doubles the cache size requirement. Generally only Intel "Prescott" or later have sufficiently large on-board caches to yield a performance improvement with cache-intensive processes like RealProducer. If the cache size is not large enough, enabling hyperthreading will not degrade performance but no improvement in performance will be observed either. With large enough CPU caches, a 20-25% performance improvement should be observed.

### **3.3 Supported Input File Formats**

File type support varies by platform. The following list describes the input file types supported and the platforms they are supported on:

- Linux
  - Uncompressed AVI
  - Uncompressed MOV
  - Uncompressed WAV
- Windows
  - All uncompressed file formats listed above
  - Any compressed and uncompressed file types supported by DirectShow (e.g. compressed AVI, MPEG1, MPEG2, MPEG4, AU and AIFF)
  - Any compressed and uncompressed file types supported by QuickTime (e.g. compressed QT, MPEG1, MPEG2, MPEG4, AU and AIFF)

#### *Notes:*

1. *For MPEG2 input support via DirectShow, an MPEG2 decoder, commonly installed by PC DVD Players, is required.*
2. DirectShow file reader supported only on Windows.
3. QuickTime file reader support requires QT 5 Player or later and is supported only on Windows.

### **3.4 Supported Input Capture Devices**

- General Requirements
  - Card must support one of the color formats supported by RealProducer (See below)
  - Card should support hardware scaling (if not, use RealProducer to resize - not hardware drivers)
- Windows
  - Audio: Wav or WDM-based capture device (WDM recommended)
  - Video: VFW or WDM capture device (WDM recommended)
- Linux
  - Audio: OSS-based capture device (ALSA may work in OSS-compatibility mode but not supported yet)

- Video: Video4Linux 1 capture device (Video4Linux 2 may work but not supported)

### 3.5 Supported Input Color Formats

- YUV12 (a.k.a. I420)
- RGB 15, 16, 24, 32<sup>2</sup>
- BGR 15, 16, 24, 32 (Macintosh versions of RGB)
- Windows YUV Formats: YUY2, YV12, YVU9, YVYU, CYUV, IYUV, UYNV, UYVY, V422, YUNV,
- Mac YUV Formats: 2VUY, YUVS, YVYU, YUVU, YVU9, YUV2, V210

*Note: I420 is the native color format required by RealVideo codecs. Using I420 as input will improve performance by removing the need to convert the color format prior to encoding.*

## 4 Troubleshooting

### 4.1 General

1. Do not use pnm:// in the playback URL for a live or on-demand stream generated with RealProducer 11. Files generated with Helix Producer 9 or later do not include the interleaved audio/video stream required by the PNM protocol.
2. For delivering RealAudio or RealVideo from a web server, use Single Rate encoding (one audience) only. Delivering SureStream files via a web server generated with Producer 9 or later will result in the player reporting "A general error has occurred."

### 4.2 Installation

1. On Linux, when installing, be sure that the installer's target directory for shortcuts (symbolic links) exists in your command path. For express installs, this location is /usr/local/bin. For custom installs, it is the location you designate. To check what directories are included in your command path, type "echo \$PATH". On Mandrake Linux the path does not include a reference to /usr/local/bin by default when logged in as root but does when logged as a user.

### 4.3 Performance

1. When encoding a live broadcast or capture to file using the GUI, Producer may report quality level is medium when there is ample CPU to encode at high quality. For audio-only broadcasts this can be safely ignored since all but the lossless audio codec does not scale back quality at this level. For video, try running the encoding process as "High" priority by changing the process priority in the Windows Task Manager.
2. RealVideo requires an input color format of I420, aka IYUV (4:2:0). If needed, RealProducer will convert the video color format to I420. However, this conversion uses additional resources. If possible, make sure your source color format is I420. Color format can be controlled through your capture drivers or from the software you use to create your source files.
3. Resizing video can take a significant portion of CPU. For optimal performance, set the desired input size using your hardware capture device rather than resizing within Producer. Resizing within Producer is fastest when increasing in multiples of 2 or decreasing in decrements of 50% (e.g. 640x480 to 320x240).

## 4.4 Audio and Video Preview

1. The output video monitor cannot be enabled during encoding. To monitor output video during an encode, leave the output video display on when the encode is started or use the input video monitor to track progress instead.

## 4.5 File Input

1. Encoding DV-AVI files on Windows created with Windows MovieMaker may result in RealMedia files with distorted and out of sync audio. This is caused by the audio track being recorded at 48 kHz, but DirectShow reporting the audio as 32 kHz. DV-AVI files created by other applications do not exhibit this problem.
2. There are known issues with encoding uncompressed QuickTime files using the uncompressed QuickTime file reader. This is most significant for users on Linux (or Mac OS X in Helix Community builds). If you experience problem with uncompressed files on Windows, install the QuickTime 6 or later player. If you experience this problem on other platforms, try alternate formats like uncompressed AVI.
3. Upgrading to DirectShow 8.1 or later can correct the following known problems with earlier DirectShow versions.
  - o MP3 files do not encode with DirectShow 8.0a.
  - o Encoding Cinepak compressed AVI files can result in inverted images using DirectShow 7.
  - o Images become inverted in output video when encoding Cinepak compressed AVI files using Producer with DirectShow 7.
  - o Output video is solid black in when encoding DIVX files using Producer with DirectShow 7.
  - o Flickery video results from encoding YVU9 compressed video using Producer with DirectShow 7.
  - o Problems encoding from AVI using DIVX, HYUV or JPG2k color formats.

## 4.6 Capture Input

1. If you experience a problem with 1394 DV (Firewire) capture (i.e. audio sounds like it's going too fast or is garbled), try capturing audio through your sound card or line-in on your computer instead of via the DV cable. This problem is due to audio samples being dropped by one of the DirectShow filters before they reach Producer. RealNetworks is investigating this issue. To capture audio and video from your DV camera, do the following:
  - a. For video, connect the DV cable to the 1394 Firewire input on your computer.
  - b. For audio, connect the analog on the camera (Dual RCA Jacks or single 1/8" Stereo jack) to the sound card input on your computer.
  - c. Configure RealProducer by selecting the sound card for audio input and the DV input for video.
2. For capture devices with VFW (Video for Windows) drivers or OSS audio on Linux, some settings like video port and audio port can not be set via the command line application. These settings must be set in the driver-specific configuration dialog that is installed with your capture card.

3. On Linux, if an audio device is in use when opened by the command line application, the OSS audio driver will load the next available audio device instead of failing. 4Front Technologies has indicated that this behavior is scheduled to change in OSS version 3.99. The new drivers will fail when attempting to access any device except for /dev/dsp which will retain the behavior of finding the next available device.
4. If you have more than one sound card installed on Windows, the Recording Mixer button will always open the audio mixer for the first sound card. To change settings for other sound cards, change the sound mixer device by choosing Properties from the Options menu in the Recording Mixer.
5. If you experience a crash with WinTV-PVR-pci capture card, it may be due to a second invalid driver installed by the WinTV capture card. The WinTV-PVR-pci capture card driver installs an invalid capture device called 'Hauppauge PVR Capture (PCI)' in addition to the normal driver. This causes RealProducer to crash if you try to list the capture devices using either the command line application the GUI application. If you experience this problem, you can copy the following text to a file and name the file 'solocap\_off.reg'. Then double click this file in Windows and it will uninstall the invalid driver.

```
REGEDIT4
[-HKEY_CLASSES_ROOT\CLSID\{860BB310-5D01-11d0-BD3B-00A0C911CE86}\Instance\Solo
Capture]
```
6. The VFW (Video for Windows) driver for the Winnov Videum card saves individual settings for any software application that uses the card. Because of this, the command line application will retain settings for the Winnov Videum capture card that already existed before you run the command line application the first time. Before using the command line application, make sure to run the Video Configuration Utility, WnvConfig.exe, and set the proper source settings. If you have already run the command line application for capture with a Winnov Videum capture card, you must perform the following steps to re-configure the registry settings for the command line application.
  - a. Copy the following text to a file and name the file 'videum\_remove.reg'. Then double click this file in Windows and it will uninstall the invalid settings.

```
REGEDIT4
[-HKEY_CURRENT_USER\Software\Winnov\Videum\producer0.exe]
```
  - b. Run the Winnov's Video Configuration Utility, WnvConfig.exe. In this utility set the desired source settings defaults.
  - c. Run producer.exe and video capture should now retain the settings specified in the previous step.
7. Some sound cards do not work with Winnov Videum AV card. This problem occurs with applications using DirectShow capture. Such applications include AmCap and RealProducer. Winnov offers a patch to resolve this problem. For more information see: [http://support.winnov.com/general\\_info/videum%20vo/sound\\_conflits\\_vo.htm](http://support.winnov.com/general_info/videum%20vo/sound_conflits_vo.htm) in the Winnov Troubleshooting Database.
8. Capture from the WinTV capture cards using specific frame sizes may result in corrupted video as follows:
  - o For capture frame sizes of 322x240, 330x240 and 350x240, encoded video may appear slanted
  - o For capture frame sizes of 360x240 and 680x480, encoded video may appear green

- For capture frame size of 720x480, encoded video may contain sporadic green lines
- Switching from a frame size of 512x384 to a smaller frame size may freeze Producer.

If you experience any of these problems, please try different frame sizes or install the VFW driver for the WinTV card. The VFW driver does not exhibit these problems. You may also check for any updated drivers from WinTV that might address these problems.

9. If you are using an nVidia-based capture device, and you are unable to capture video from the device, check for updated drivers from your card manufacturer. At the time of this RealProducer release, capture devices based on the nVidia chips and RealProducer were incompatible.
10. Frame rate with Hauppauge WinTV WDM beta release drivers is lower than Vfw. Uninstalling the Hauppauge WDM beta release drivers and install the VFW drivers is recommended. Using the RGB555 color format setting in the WinTV driver dialog may also improve frame rate.

## 4.7 Codecs

1. If you are encoding more than 2 channels of audio (Multichannel) you will need to use the command-line producer interface, and specify a job file with the audioGainPrefilter disabled. The audio gain prefilter is always used when encoding from the GUI, and will down-sample Multichannel source audio to stereo.
2. If you are encoding to Ogg Vorbis audio format, see [Ogg Vorbis Encoding Support](#) for configuration information.

## 4.8 Broadcast Output

1. If you need to perform server-side archiving of a SureStream broadcast, use RealServer 9 or later. SureStream broadcasts created with RealProducer 11 cannot be archived on RealServer 8 or earlier. Single Rate streams however, can be archived on RealServer 8.
2. If you are unable to establish a player connection to a live broadcast, and you want to determine whether the problem is a configuration problem in RealProducer, try the following:
  - a. To confirm that the stream has reached the server, check that the stream appears in the Server Monitor's connections tab. You should see an entry of Type 'encoder' along with the proper filename.
  - b. If you are using the Legacy Server broadcast method, ensure that you have the correct Server mount point ("/encoder/" by default) in your player URL. For example, `rtsp://yourserver.yourcompany.com:554/encoder/live.rm`
  - c. If you are using any of the Server 9 Push broadcast methods, ensure that you have the correct Server mount point ("/broadcast/" by default) in your player URL. For example, `rtsp://yourserver.yourcompany.com:554/broadcast/live.rm`
  - d. If you are using the Pull broadcast method, ensure that you have the correct Server mount point ("/broadcast/pull/" by default) in your player URL. For example, `rtsp://yourserver.yourcompany.com:554/broadcast/pull/live.rm`
3. You must use a password when using the Pull broadcast method from the command line application (-si). If you wish to broadcast using the Pull broadcast method and not require a password, use a server file with the server definition option (-sd).

4. When using the **Account-Based Push** broadcast method, be sure the username and password are added to the correct realm on the Helix Server. For the **Account-based Push** broadcast method, users should be added to the Helix Server **SecureRBSEncoder** realm.
5. When using the **Account-based Push** broadcast method with Helix Server 9, you may experience problems making new Account-based Push connections if the Helix Server Administrator is used to reconfigure the Helix Server while existing Account-based Push encodes are running. To avoid this problem, do not reconfigure the Helix Server while Account-based Push encodes are active. You can identify Account-based Push encodes by looking for pairs of entries as follows in the Helix Server Monitor:

IP ADDRESS	TYPE	DURATION	FILENAME
	encoder	00:02:27	live.rm
172.23.104.111	player	00:02:27	encfs/servvar.set

6. Each of these entries represent a single Account-based Push broadcast session.
7. If your system is not able to maintain the desired quality level, RealProducer will automatically adjust the quality level by reducing the encoding complexity to medium or low. However, if RealProducer reports that it is dropping video frames in order to maintain a live encode, try the following:
  - o Use a faster system
  - o Reduce the number of SureStream™ target audiences
  - o Lower the video frame size
  - o Lower the bit rate
  - o Lower the frame rate (where applicable)
  - o Use an older video codec

## 4.9 File Output

1. If you are trying to encode VBR files for playback on mobile devices, change your extension to .rm (normally .rmvb). Most mobile device players do not recognize the .rmvb file extension.

## 4.10 RealMedia Editing

1. If you are editing RealMedia files crated with Producer 9 or later, you must use the RealMedia Editor that ships with Producer 9 or later. RealMedia Editor 8.5 cannot edit files generated with Producer 9 or later.
2. When cutting RealMedia files the last few packets are dropped from the end of the file. If your RealMedia files were created with RealSystem Producer 8.51 or earlier then use RealMedia Editor 8.51 to edit your files. Otherwise, you may want to use SMIL to play only the desired segments instead of physically cutting the file. See below for examples of SMIL as alternatives to cutting and pasting.
3. If you need to combine two or more RealMedia files that are larger than 2 gigabytes in total, use SMIL. RealMedia Editor can not work with files larger than 2 gigabytes. An example SMIL 1.0 file for such a case is:

- <smil>
- <head>
- <layout>

- `<region id="vid" left="0" top="0"/>`
- `</layout>`
- `</head>`
- `<body>`
- `<par>`
- `<seq>`
- `<video region="vid" src="real8video.rm"/>`
- `<video re`
- `gion="vid" src="real8video.rm"/>`
- `</seq>`
- `</par>`
- `</body>`
- `</smil>`

4. If you need to combine Audio/Video rolled files (files created as a result of the file rolling functionality of the RealProducer) use SMIL as shown above. Combining rolled files in RMEditor may result in an error, or cause the audio to loose sync with the video.
5. If you need to cut a RealMedia file that is larger than 2 gigabytes, use SMIL. RealMedia Editor cannot work with files larger than 2 gigabytes. An example SMIL 1.0 file for such a case is:

- `<smil>`
- `<head>`
- `<layout>`
- `<region id="vid" left="0" top="0"/>`
- `</layout>`
- `</head>`
- `<body>`
- `<par>`
- `<video region="vid" src="real8video.rm" clip-begin="0:10" clip-`
- `end="0:40"/>`
- `</par>`
- `</body>`
- `</smil>`

6. Cutting the end of a single rate file may leave a short amount of silence and frozen video before the file finishes.
7. When cutting video files with the RealMedia Editor, it is normal for the video to display the first video key frame following the cut point but for audio to begin playback exactly at the requested point. To achieve a more accurate cut, cut the source video before encoding.
8. If you need to merge two RealMedia files with image maps in both, do the following:
  - a. Export the image maps from both input files using the RealMedia Editor command line application -d option.
  - b. Get the duration of the first input file as reported by the RealPlayer.
  - c. Use the RealMedia Editor and merge the two RealMedia files into one.

- d. Add the duration reported by the RealPlayer to the times in the image map text dump from the 2nd input file.
- e. Use a text editor and combine the two image map files into one.
- f. Use the RealMedia Editor and merge the combined image map file into the merged RealMedia file.

Otherwise, RealMedia Editor will drop the image maps from the second file.

9. Playback of Multichannel audio files at 1/2 speed in RealMedia editor can be safely ignored. If needed, use RealPlayer 10 to preview the file. The files can still be safely edited in RealMedia Editor.

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