



RealProducer 13.0 Release Notes

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Thank you for choosing RealProducer from RealNetworks.

The next-generation RealProducer architecture combines industry-leading mobile video quality with the interoperability, performance, and reliability that customers worldwide expect from Helix Technology.

RealProducer teams up with Helix Server and Helix client technologies to form the definitive, end-to-end solution for future-proof audio and video delivery. Next generation encoding advancements include:

- multiple inputs
- multiple output profiles per input
- monitoring
- support for exciting delivery features such as Live Rate Adaptation

This document describes new features, provides troubleshooting tips, and explains known issues for both the graphical user interface (GUI) and command line interface (CLI) of RealProducer. (Please note that the GUI and CLI may be licensed separately.)

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1. What's New in this Release

Welcome to RealProducer 13. This section summarizes new features in this release. For details, refer to the online help or the two user manuals, which are available in PDF format in the application's docs directory:

- *RealProducer User's Guide*
- RealProducer Command Line and Job File Reference

1.1. Supported Audio Encoding Formats

RealProducer 13 can encode the following audio formats.

1.1.1. RealAudio in .rm or .ra Format

- RealAudio voice from 5 Kbps to 64 Kbps.
- RealAudio mono from 6 Kbps to 64 Kbps.
- RealAudio stereo from 12 Kbps to 320 Kbps.
- RealAudio stereo surround from 44 Kbps to 320 Kbps.
- RealAudio multichannel (5.1) from 96 Kbps to 268 Kbps.

1.2. Supported Video Encoding Formats

RealProducer 13 can encode the following in a .rm or .rv file:

- RealVideo 8, 9, and 10.

1.3. Interface Changes

The RealProducer 13 interface has been redesigned. It provides separate tabs for input selection, output settings, and monitoring.

1.3.1. Input Tab

The input tab allows you to select a file input or input from a capture card. Visual controls allow you to adjust the encoding start and stop times for video input files. You can crop the input video using visual controls as well as apply additional audio and video prefilters to the input.

1.3.2. Output Tab

You can set up multiple outputs (separate video clips encoded at different screen sizes, for example) that are encoded simultaneously. You can write each output stream to a file or deliver it to a broadcast server.

1.3.3. Monitoring Tab

As a job runs, the monitoring tab provides a visual rendering of any encoding audience of any output. It also lists errors, warnings, and informational messages written to the log file.

1.3.4. Settings Advisor

The settings advisor issues errors, warnings, and informational messages as you set encoding options. This notifies you of encoding settings that may cause the job to fail or that may prevent playback on certain devices.

1.3.5. Broadcasting

The broadcast settings on the output tab allow you to deliver outputs to Helix Server using Helix broadcast methods:

- Helix Push (formerly called "account-based")
- Helix Advanced Push (formerly called "password-only")
- Helix Multicast Push
- Helix Pull

1.4. Job File 3.0

RealProducer can save encoding settings in a 3.0 job file (file extension .rpjf). The 3.0 format has a simpler syntax than the 2.0 format, making it easier to change job settings manually. Audience files and server files also use the 3.0 format.

Both the graphical and the command-line application of RealProducer 13 can read older job files in the 2.0 job format, translating them automatically to the 3.0 format. If you then save the older job file, encoding settings are written to a 3.0 file using the .rpjf file extension.

1.5. RealProducer Command Line

The command-line application for RealProducer provides more flexibility than previous releases. You can run a job defined solely by a job file, or you can enter all encoding parameters directly on the command line. See the online help or *RealProducer Command Line and Job File Reference* for details about command-line changes.

2. Troubleshooting Tips

2.1. Performance

When encoding a live broadcast or capture to file using the GUI, RealProducer may consume more resources than running with the command-line interface (CLI). Please use the CLI for encoding if optimal performance is needed. (See Known Issues #244254 below for more information.)

2.1.1. Maintaining Quality Level

If your system is not able to maintain encoding at the desired quality level, try the following:

- Use a faster system.
- Reduce the number of audiences in a multi-rate output.
- Lower the video frame size.
- Lower the frame rate.
- Lower the bit rate.
- Use an older video codec (for example, RealVideo 8 for RealVideo and H.263 for 3GPP).

2.1.2. RealVideo Input Color Format

RealVideo requires an input color format of I420, which is also known as 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.

2.1.3. Video Resizing

Resizing video can consume a significant portion of CPU. For optimal performance, set the desired input size using your hardware capture device rather than resizing within RealProducer. Resizing within RealProducer is fastest when increasing in multiples of 2 or decreasing in decrements of 50% (for example, 640x480 to 320x240).

2.2. File Input

If you are experiencing problems reading source files, make sure you have the latest versions of DirectShow and QuickTime Player installed. These SDKs are used to read compressed audio and video formats on Windows.

2.3. Capture Input

If you are experiencing issues with capture, ensure that you have the latest supported drivers from the manufacturer for your platform.

If you experience a problem with capture, you can confirm that the capture device supports the requested frame size by trying to capture with an alternate utility installed with your capture drivers at the same frame size using the I420 color format (which is the default format requested by RealProducer).

2.4. Broadcast Output

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:

- To confirm that the stream has reached the server, check that the stream appears in the Server Monitor Connections Tab. You should see an entry of type 'encoder' along with the proper filename.
- Check the Helix Server error logs to see if any issues have been reported about the connection.
- If you are using any of the Helix 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
- If you are using the Helix 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

When using the Helix Push ("account-based") broadcast method, be sure the username and password are added to the correct realm of the Helix Server authentication system. For Helix Push, users should be added to the SecureRBSEncoder realm.

3. Known Issues

3.1. General

Multibyte characters not supported with filenames in GUI or CLI with input job file. [240283]

RealProducer fails to encode when using 3- or 4-byte characters in file names when running a job file from the command line or the GUI. When encoding files with multibyte characters, use the command line using the input file (-i) and output file (-o) options on an local version of Windows that supports multibyte characters at the DOS prompt. This issue will be corrected in the next release.

Multibyte characters not supported as metadata in GUI or CLI with input job file. [240283]

RealProducer will strip off 3- or 4-byte characters in metadata when running a job file from the command line or the GUI. When encoding metadata with multibyte characters, use the command line using the metadata input options (-t, -a, -c, -k, -d) on an local version of Windows that supports multibyte characters at the DOS prompt. This issue will be corrected in the next release.

Resizing to a width above the source width can cause RealProducer to crash. [239041]

RealProducer will fail with an error if video resize settings create to a width larger than the source video width. To prevent this, generate the source at the required width or resize it to a larger width using a video editing tool before encoding.

Unable to encode with users in the Administrator group on Windows 7. [251916]

In preliminary testing on Windows 7 pre-release builds, users in the Administrators group are not allowed to create global objects despite the settings in the User Rights Management console. In this case, run the application as a user that is not in the Administrators group granted permission to create global objects. Or right-click and choose "Run as administrator."

Audio input at 24 bits will not encode unless the audio meter is disabled. [252116]

When encoding with the command line, source files with 24-bit audio will not encode, giving the error "Audio bits per sample 24 not supported in audio meter. Unable to proceed." To correct this, include the -daw option on the command line. This turns off the audio meter.

Main Profile H.264 source files result in poor quality when encoded. [252146]

If RealProducer uses the QuickTime reader for High Profile H.264, the result will be of low quality, regardless of the encoding settings used. This is because the QuickTime SDK advertises support for these files but does a poor job of decoding High Profile. It may be possible to resolve the issue by forcing a specific file reader in the job file (for example, DirectShow xsi:type="rn-avfile-directshow").

QuickTime player 7.6.4 and 7.6.5 crash when starting to play multi-rate rel6 files [254186]

Multirate files with AAC audio codec crash with latest versions of QuickTime Player on Windows. If you observe this issue, please use a QuickTime 7.6.2 or earlier.

3.2. Installer

Uninstaller removes some files that should be left behind. [250860]

The RealProducer uninstaller removes the license file and the producer.pref file if they are detected as unmodified. If needed, make copies of these files before running the uninstaller.

Installer on Windows with User Account Control disabled fails to register Producer. [252145]

If you install RealProducer as a standard user on Windows Vista, Windows 2008, or Windows 7 with User Account Control disabled, the installer will not be able to correctly register RealProducer. The installer warns of this situation, which you can correct by registering RealProducer manually. Do this by typing "regsvr32.dll" at the command prompt.

Command Path setting added by installer does not take effect until logout/login or restart. [252401]

If RealProducer is installed with the option of adding its location to the command path, the new Path property does not take effect until you log out or restart the computer. You may also force the path to take effect if you go

to System Control Panel>Advanced>Environment Variables. Click on the Path variable to display it. Then close the dialog without making any changes to the value.

3.3. Graphical User Interface (GUI)

Producer GUI crashes on startup if .NET 2.0 or later not installed. CLI runs OK.

To run the RealProducer GUI, the system must have .NET 2.0 or later installed. Usually, the installer detects the lack of .NET 2.0 or later and offers to install it during installation. If .NET 2.0 had earlier been installed and removed, however, the installer will assume it is still present due to system settings left by the .NET uninstaller. To resolve this issue, reinstall .NET 2.0 or later on the machine.

GUI only reports first change in ripple correction to the job. [251404]

If the GUI opens a job that has a setting that needs to be changed, and subsequent ripple changes are also needed, only the first change is reported. All changes are actually made, however. For example, if the audio codec was changed to match the current output type, the audio channels and bit rate may also be changed but not reported. This will be corrected in a future release.

Odd input frame sizes cause input to display incorrectly. [251917]

When loading an input file with a nonstandard frame size (for example, 320x179, 320x181, or 320x241), the input monitor displays signs of bad color conversion. You can ignore this because it does not affect the encoded output.

Input tab preview displays at wrong aspect ratio when encoding with crop and resize. [252042]

If both crop and resize are used, the input monitor shrinks on the resize. Most of the time, the aspect ratio also displays incorrectly. When you switch to the Monitors tab, the size of the video frames is correct. This display error does not affect the encoded output.

Resize prefilter settings are lost during RealProducer 2.0 job file import. [252299]

When importing RealProducer 10 and 11 job files using the GUI, video resize settings are lost. Either reapply the settings manually or convert the job file using the command line.

GUI is sluggish when accessing input files over a slow network connection. [253112]

The GUI becomes unresponsive for a short period when using an input from a slow network location or making changes to input file prefilter settings. If you are working with source files on a network share and the connection is slow, copy the file to a local drive and encode that copy.

3.4. Command Line Interface (CLI)

CLI will exit with failure if running a job file that includes disabled resize settings. [252804]

Using the CLI to encode a job file that includes a disabled resize prefilter results in an error. To correct this, remove the resize prefilter syntax from the job file before encoding.

Setting the resize prefilter in a job file to 0 results in output encoded at 2048x2048. [252803]

Setting ResizeWidth and ResizeHeight in a job file to 0 results in the video being resized to 2048x2048 (expected result is no resizing). To prevent inadvertent resizing, remove the filter from the job file before encoding.

Multicast does not work with multiple outputs or a single output using curly braces to group the output [254161]

Cannot perform a multicast broadcast when using multiple outputs on the command line. Instead, create a job file from command line options and run the job in Producer to perform multicast with a multiple output job.

In a multiple output job, CLI will not exit if any one of its outputs is valid [254177]

This is expected behavior but may result in unexpected results if user does not pay close attention to errors printed on the command line. In the future, this behavior may change such that any one failure results in the entire job failing.

Producer may crash if invalid settings passed to the `-as` option [254180]

Producer may crash if encoding settings are invalid. If this occurs, check settings and retry the encode.

3.5. File Input

Producer fails to read files with AAC audio if QuickTime 7.6.4 or 7.6.5 are installed [253755]

With the 7.6.4 release of QuickTime Producer is unable to read MP4 or MOV files that contain AAC audio. If suitable DirectShow plug-ins are available on the system, then Producer is able to read these files thru DirectShow. The issue appeared with QuickTime Player 7.6.4. If possible, use an older version of QuickTime until this issue can be resolved.

Encoding files that have a frame rate greater than 60 fps fails. [247261]

RealProducer supports a maximum input frame rate of 60 frames per second (fps). Input files at a higher frame rates will fail to encode as expected. This is not clearly indicated in an error message. To encode sources higher than 60 fps, downsample the content to 60 fps before encoding.

Frames not updated always when stepping frames with the Inverse-Telecine prefilter. [249568]

If the Inverse-Telecine filter is on while you preview source content on the Input Tab, video updates may not represent actual frame. This is because Inverse-Telecine is a temporal filter that is not always represented well when frames are not processed sequentially. To get an accurate representation of the effects of this filter, encode the content and preview the results either while encoding or after encoding.

Preview does not display the last frame for some content. [246856]

In some cases, the video preview on the Input Tab does not display the last video frame, and the timeline shows a time earlier than the last frame. However, if the End Position Marker is all the way to the right (the end of the timeline), the content will encode to the end properly.

Start/End Position Encoding snaps to closest frame. [246856]

RealProducer will adjust the value provided for Start Position and End Position if they do not coincide exactly with a video frame. As a result, it may encode to a slightly different Start Position and End Position than what was specified.

Start/End Position of encoded output may differ for some sources or scenarios. [246856]

For a small number of sources, due to differences in how the filter graph is assembled for preview and encoding, the output start and end positions may differ from that specified by as much as 10 seconds. In these cases, trim content prior to encoding with a video editing tool.

Start/End Position of encoded output may differ if encoded on different systems. [246856]

If moving a job from one system to another, the Start Position and End Position values should be checked visually in the GUI and adjusted if needed. This is because the video filters used on one system may differ from those on another system, resulting in differences in how a given media position is interpreted.

Multichannel audio fails to encode with QuickTime libraries. [252309]

Depending on the file extension, encoding may fail when a source has multichannel audio. If this happens, try changing the file extension to get DirectShow to read the file. Or modify the job file to force DirectShow to read the file by setting the PluginName to "rn-avfile-directshow" in the input file element. Depending on the output, attempting to encode multichannel with the QuickTime file reader may result in a crash or an error about being unable to connect filters.

3.6. Capture Input

In some cases, frame rate may be incorrectly reported as zero with video capture. [243182]

With some input capture devices, producer may report an input frame rate of zero. This can be safely ignored.

Proper error message is not displayed when a capture devices is already in use. [252083]

If you attempt to use a capture device that is already in use, the exact cause is not described. In the GUI, you may see a blank video screen. In the CLI, you may see the following error:

Error: Could not set up DirectShow video capture filter graph (RenderStream).

If this occurs, ensure the device is not in use.

DV capture fails if DV audio input is the first device [252989]

When capturing from a digital video device, the capture fails if the DV audio device is listed as the first audio device (device 0). This problem generally occurs only if there are no other audio devices on the system. To resolve this issue, add at least one additional audio capture device to the system. On Windows 7, the audio device may not register if it is not producing a signal, so ensure that the device is functioning.

Note: To determine the audio device numbers, run the CLI using the -pd option. The first device is listed as device 0, the second device as device 1, and so on.

3.7. Broadcast

CLI throws ignorable stats errors during pull broadcasting. [251574]

The following errors may be observed during a pull broadcast:

- Error getting id for BroadcastDistribution.Statistics.Receiver.Entry1.TotalPackets
- Error getting id for BroadcastDistribution.Statistics.Receiver.Entry1.PacketsLost
- Error getting id for BroadcastDistribution.Statistics.Receiver.Entry1.LatePackets

These errors do not affect the quality or reliability of the broadcast and can be safely ignored.

Connections to a Pull broadcast will fail if ListenAddress on the encoder is not set to 0 [254170]

If the Listen Address on the encoder is set to a specific IP Address, Players will disconnect from a Pull broadcast due to timeout after a short connection time. This is due to the encoder not properly binding to the correct interfaces. Use 0 for ListenAddress to avoid this issue.

3.8. Performance

Use the CLI for optimal performance. [252013]

Because it provides a video preview, the GUI uses significantly more resources than the CLI on some hardware. The performance difference may not be as apparent with some graphics cards due to decoding optimizations. This issue will be addressed in a future release. For this release, please use the CLI if you need to optimize performance.

Load Management is not enabled in this release. [244254]

Load Management allows RealProducer to scale back encoding settings if the system becomes overloaded during a real-time encode (capture input or broadcast output). In this release, the load management feature is disabled. Because of this, ensure that RealProducer does not become overloaded during a live broadcast. An overload results in excessive buffering inside the encoder, which causes high latencies in live streams. This latency appears as packet loss to clients.

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