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## Helix Mobile Producer 13.1.1 Release Notes

February 1, 2010

Thank you for choosing Helix Mobile Producer from RealNetworks.

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

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

- highly optimized MPEG-4, H.263, and H.264 video compression for both live and on-demand content
- 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 Helix Mobile Producer. (Please note that the GUI and CLI may be licensed separately.)

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## 1. What's New in this Release

Welcome to Helix Mobile Producer 13.1.1. This section summarizes new features in this and previous releases. For details, refer to the online help or the two user manuals, which are available in PDF format in the docs directory:

- Helix Mobile Producer User's Guide
- Helix Mobile Producer Command Line and Job File Reference

### 1.1. New with Helix Mobile Producer 13.1.1

#### 1.1.1. Major Bug Fixes

Following is a non-compressive list of bug fixes

- Exposed RTP Multicast support in CLI and GUI
- Installer warns when installing over previous installation
- Enable different versions or different product types to be installed
  - Install RealProducer and Helix Producer side-by-side on same machine
  - Install new version of Producer alongside old version for testing purposes
- Expose access to 64 and 96 kbps flavors of RealAudio AAC and clearly label all RealAudio AAC and RealAudio codecs to allow clear access to either for devices supporting only one or the other
- Fixed Licensing issue with Windows 2k8, Windows 7 and Windows Vista preventing certain licenses types from functioning after reboot
- Include mechanism for Product Feedback through the Help Menu
- Made the following functionality only available through applicable SKUs:
  - AV Signal Detection – Available on Professional and On-Demand SKUs
  - SNMP – Available on Professional and On-Demand SKUs
  - Live Archive – Ability to archive to file during broadcast (Professional SKUs)
  - Enable Multicast – Ability to multicast live streams (Professional SKUs)
- Issues found in Usability Testing
  - Change default audiences to single rate
  - Fix several Settings Advisor Messages
  - Fix issue and enable Input Start/End Position Fields
- Various Command Line Interface Fixes
  - Read default audience, metadata and server definition from Preferences File
  - Fixes issue with multirate audio - Allows multiple occurrences of –as or –ad
  - Fixes issue with multiple server destinations - Allows multiple occurrences of server destination
  - Resolve issue with Settings Advisor SA Validation not firing w/CLI Options
- Fix working directory for job files with relative paths
  - Enables content creators to more easily share job files with content
- Various Graphical User Interface Fixes

- Fix resize behavior in GUI
  - Defaults to input frame size
  - Can set width or height to 0 to maintain aspect ratio
- Fix ability to select different Outputs/Audiences in Monitoring Tab
- Fix Lock Width/Height checkbox in Resize pre-filter to correctly reflect its actual behavior

## 1.2. New with Helix Mobile Producer 13.1

### 1.2.1. MP4 Output Support

- Added new MP4 Output Type
- Supports File & Broadcast to an MP4 container format
- Define and update MP4 file brands

### 1.2.2. Add RTP Multicast Server Type

- Enables RTP broadcast to multiple servers via multicast address

### 1.2.3. Variable Substitution

- Added support for replaceable parameters in Output Filename and Metadata
  - E.g. Filename="%InputFileName%\_%VCodec%\_%ACodec%\_%VBitrate%.3gp"
- Replaceable parameters include a wide range of encoding settings, input and output properties in addition to Date and System Properties. See documentation for a complete list.
- Enables easy prototyping of different encoding settings and automated means of ensuring that different outputs have valid descriptive names when generating many output types from same source.

### 1.2.4. Other changes

- Generalize Audience names to better serve all output types (Named by codecs and not Output Type)

### 1.2.5. Major Bug Fixes

Following is a non-compressive list of bug fixes

- Fix 3GPP MPEG file brands for 3GPP Release 5 Output Files that was causing playback issues
- Fix licensing issue with multicore i7 bug which prevented program from running

## 1.3. New with Helix Mobile Producer 13.0

### 1.3.1. Supported Audio Encoding Formats

Helix Mobile Producer 13.1.1 can encode the following audio formats.

#### AAC in .3gp Format

- AAC-LC mono from 8 Kbps to 160 Kbps.
- AAC-LC stereo from 24 Kbps to 320 Kbps.
- AAC+ mono from 8 Kbps to 160 Kbps.
- AAC+ stereo from 24 Kbps to 256 Kbps.

#### AMR in .3gp Format

- AMR-NB mono from 4.75 Kbps to 12.2 Kbps.
- AMR-WB mono from 6.6 Kbps to 23.85 Kbps.

#### MP3 in .mp3 Format

- MP3 mono from 16 Kbps to 160 Kbps.
- MP3 stereo from 40 Kbps to 320 Kbps.

#### 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.

### **1.3.2. Supported Video Encoding Formats**

Helix Mobile Producer 13 can encode the following video formats in a .3gp file:

- H.263 levels 10, 20, 30, 40, 45, and 50.
- H.264 baseline profile at levels 1, 1b, 1.1, 1.2, 1.3, 2, 2.1, 2.2, 3, 3.1, and 3.2.
- MPEG-4 Simple Video Profile (SVP) at levels 0, 0b, 1, 2, and 3.

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

- RealVideo 8, 9, and 10.

### **1.3.3. Interface Changes**

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

#### 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.

#### Output Tab

The output tab allows you to define one of four output types:

- 3GPP Release 5 (single rate)
- 3GPP Release 6 (single rate or multi-rate)
- MP4 (single rate or multi-rate)
- RealMedia (single rate or multi-rate)
- MP3 (single rate)

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.

### 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.

### 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.

### Broadcasting

The broadcast settings on the output tab allow you to deliver both RealMedia, MP4 and 3GPP outputs to Helix Mobile Server using Helix broadcast methods:

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

### SDP Files

When you deliver 3GPP broadcast types using one of the Helix methods, an SDP file is not necessary for Helix Mobile Server to acquire the stream. Media players requiring an SDP file can receive one using the /sdpgen/ mount point on Helix Mobile Server.

### Generic RTP Broadcast Method

Helix Mobile Producer also provides a generic, RTP push broadcast method for delivering 3GPP and MP4 streams to RTP-based servers other than Helix Mobile Server. For these servers, Producer generates an SDP file that allows the server to acquire the encoded stream. This release includes support for Multicast RTP Push broadcast.

#### **1.3.4. Job File 3.0**

Helix Mobile Producer can save encoding settings in a 3.0 job file (file extension .rjpf). 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 Helix Mobile Producer 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 .rjpf file extension.

#### **1.3.5. Helix Mobile Producer Command Line**

The command-line application for Helix Mobile Producer 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.

If you are familiar with Helix Mobile Producer version 11 or 12, note the following differences in the use of the Helix Mobile Producer 13 command-line application:

- The name of the executable program is producer rather than hmprod.
- The 3.0 job file format uses an .rjpf extension rather than .xml.
- Batch encoding using a job file is not supported.

- You cannot specify inputs, outputs, metadata values, or destination values on the command line when using a job file. These values must be contained within the job file.
- You can specify any of the broadcast methods using new command-line parameters.

## 2. Troubleshooting Tips

### 2.1. Performance

When encoding a live broadcast or capture to file using the GUI, Producer 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, Producer 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 Producer. Resizing within Producer 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 Producer).

### 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 Producer, 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
- If you are using the RTP Push broadcast method, ensure that you have placed the SDP file generated by Producer in the RTP Encoder directory on the streaming server (/rtpenodersdp/ by default) and that the correct server mount point ("/rtpenoder/ " by default) is in your player URL. For example:  
rtsp://yourserver.yourcompany.com:554/rtpenoder/live.rm
- Ensure that all SDP Files in the server's SDP file directory have unique port number ranges. Duplication in port number will result in the second SDP broadcast to fail.

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]

Producer 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]

Producer 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 Producer to crash. [239041]

Producer 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 2008, Vista and 7. [251916]

Due to User Account Control, 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." In the 13.1.1 release, the application automatically attempts to run in elevated mode.

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.

When using QuickTime player, video may appear as a solid green region. [H251519]

If video playback using the QuickTime Player appears as a solid green video region, you may need to disable hardware acceleration for the QuickTime Player as follows:

1. Open the QuickTime Preferences.
2. Go to the Video section of the Advanced tab.
3. Switch to "Safe mode (GDI only)."
4. Click "OK."

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

If Producer 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").

Encoding Complexity is not supported in 3GPP Codecs. [H252569]

In this release, the encoding complexity setting does not change behavior with H.264, MPEG-4, and H.263 video codecs.

SNMP Trap Interval setting not being applied. [H250356]

The SNMP Trap Interval setting is not applied. Trap conditions will repeat at the default interval of every 5 seconds until they are resolved.

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.

Replaceable parameters VWidth, VHeight and VFPS are not supported in this release [256589]

The parameters VWidth, VHeight and VFPS are not supported. They will be exposed in a future release.

## 3.2. Installer

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

The Producer 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.

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

If Producer 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 Producer 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.

Evaluation logo appears as if it will be "cropped out" when in fact it won't. [H251487]

The evaluation logo size and position is not updated while editing in preview mode before encoding. When encoding starts, the logo is positioned and resized to be 10% from the top and bottom and 20% of the overall width and height.

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 Producer 2.0 job file import. [252299]

When importing Helix Mobile Producer 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 input file to a local drive and encode that copy.

GUI corrects port number for RTP Broadcast types without reporting correction. [256793]

If the port number is not an even number for an RTP Broadcast Destination, the GUI makes the necessary correction to the port number by changing it to the next higher even number without issuing a Settings Advisor Alert message.

Cannot use Variable Substitution in the path portion of the output filename field in the GUI. [257438]

The GUI does not allow variable substitution in the path portion of the output filename. Using these variables results in an SA802 error (invalid output path) and encoding is not allowed. This will be modified in the future.

### 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.

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.

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.

### 3.5. File Input

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

Producer 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.

Encoding multichannel MPEG source file to 3GPP fails. [H248549]

Encoding from an MPEG file with AAC multichannel content may fail to generate a valid 3GPP file. Content should be downsampled to 2 channels 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]

Producer 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 (3GPP Release 5 or 6 outputs) 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

### RBS Broadcast of H.263 + AMR-NB can cause RealPlayer over RTP to buffer indefinitely. [H239000]

RealPlayer occasionally buffers indefinitely at startup during a broadcast using H.263+AMR-NB over RTP. Pressing Play again typically results in successful playback. Setting RealPlayer to use the RDP packet format resolves the issue. This issue does not occur in Helix Mobile Server version 12.1 or later.

### 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 Producer 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 Producer 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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