



Helix Mobile Server and Proxy

3GPP Compliance Statement

The 3rd Generation Partnership Project (3GPP) is a partnership of several international standards bodies that share the common goal of defining global standards for 3G networks. RealNetworks, Nokia, Ericsson, Vodafone, Siemens, Apple, NEC, Panasonic, Sony Ericsson, Motorola, and Qualcomm are few of the companies who participate in 3GPP. The 3GPP SA4 working group is responsible for standards pertaining to codecs, packet switched streaming and conversational multimedia. This responsibility also includes defining the set of codecs to be used for services such as MMS, IMS and MBMS. The important technical specifications for packet switched streaming (PSS) are TS22.233, TS26.233, TS26.234 and TS 26.244.

- Release 4 supported basic transparent streaming of audio and video and had support for static delivery via HTTP of images and SMIL.
- Release 5 introduced timed text, scalable vector graphics (SVG-T), MIDI, and capability exchange.
- Release 6 focuses on QoS, rate adaptation, H.264 and multi rate file format definitions.

RealNetworks introduced 3GPP Release 5 compliance with the launch of Helix Mobile Server and Proxy v10 and remains committed to standards compliance and interoperability. In addition to being a key participant in the 3GPP SA4 working group, RealNetworks is represented on the board of directors of the International Multimedia Teleconferencing Consortium (IMTC), a global consortium whose charter is advancing open standards and interoperability between applications and devices.

The 3GPP PSS Release 6 specifications cover a wide range of features related to mobile networks. The Helix Mobile Server and Proxy provide features related to Protocols and Codecs (3GPP TS 26.234, "Transparent end-to-end Packet-switched Streaming Service {PSS}; Protocols and codecs") and File Format (3GPP TS 26.244, "Transparent end-to-end packet switched streaming service {PSS}; 3GPP file format {3GP}"). Some of the features defined in these two documents are considered Mandatory and some are Optional or Conditional. Feature areas specified include:

- Streaming profile (multi-rate file) 3GPP format support
- 3GPP stream adaptation support
- QoS based on mobile link characteristics

The features provided in Helix Mobile Server and Proxy support multimedia players on the widest range of computers, devices and handsets. Helix Mobile Server and Proxy support playback to:

- Release 6 compliant Helix DNA-based clients
- Release 6 compliant third-party clients
- Release 5 compliant RealPlayer-based clients
- Release 5 compliant Helix DNA-based clients
- Release 5 compliant third-party clients
- Legacy (Pre-Release 5) 3GPP compliant desktop and mobile clients
- Legacy and Release 6 compliant RealPlayer clients (Wireline)



Helix Mobile Server and Proxy comply with all Mandatory specifications in 3GPP TS 26.234 v6.10 and TS 26.244 v6.1.0 except as noted below. Additionally, highly desirable optional features such as Signaling for Client Buffer Feedback (a.k.a. "NADU"), the 3GPP Link Char Header and Streaming Server Profile, are also supported.

Known Issues

Where Helix Mobile Server and Proxy are not compliant, this is considered to be a software defect to be addressed in a subsequent software release determined according to the priority and severity of the issue. Currently recognized 3GPP Release 6 compliance issues:

Bug 171150: Server does not conform to mandatory 3GPP allowed RTCP bandwidth levels

Description: From 26.234 v6.6.0 Section 5.3.3.1: "There shall be a limit on the allowed RTCP bandwidth for senders and receivers in a session. This limit is defined as follows: "4000 bps for the RS field (at media level); 5000 bps for the RR field (at media level)."

Impact: Functionality impact is low as it only affects fairly high bitrate (>320 kbps) content not likely to cause problems even then. Effect is that at higher bitrates, if the 3GPP max values are followed, the frequency of sender and receiver reports decreases as the bitrate increases. Makes rate control/rate adaptation less responsive, but leaves more bandwidth available for media data.

This issue is to be addressed in the next major release if not sooner.

Bug 170996: Server does not support mandatory "b=TIAS:" and "a=maxprate"fields at media level in SDP

Description: From 26.234 v6.6.0 Section 5.3.3.1: "A PSS server shall include the 'b=AS:' and 'b=TIAS:' and 'a=maxprate' [93] fields at the media level for each media stream in SDP and should include "b=TIAS" and "a=maxprate" at session level, and a PSS client shall interpret these fields."

As compliant with 3GPP Release 6 TS 26.234 version 6.1.0, Helix Mobile Server and Proxy support b=AS. These latter requirements (b=TIAS: and a=maxprate) were added in a later revision to 3GPP Release 6 TS 26.234.

Impact: Functionality impact is relatively low. Presence of these values potentially improves user experience/QoS because it gives clients (those that support it) a more accurate picture of the media bandwidth and related properties.

This issue is to be addressed in the next major release.