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Real Time Streaming Protocol (RTSP)

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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Abstract

The Real Time Streaming Protocol, or RTSP, is an application-level protocol for control over the delivery of data with real-time properties. RTSP provides an extensible framework to enable controlled, on-demand delivery of real-time data, such as audio and video. Sources of data can include both live data feeds and stored clips. This protocol is intended to control multiple data delivery sessions, provide a means for choosing delivery channels such as UDP, multicast UDP and TCP, and provide a means for choosing delivery mechanisms based upon RTP (RFC 1889).

Table of Contents

1 Introduction

1.1 Purpose

The Real-Time Streaming Protocol (RTSP) establishes and controls either a single or several time-synchronized streams of continuous media such as audio and video. It does not typically deliver the continuous streams itself, although interleaving of the continuous media stream with the control stream is possible (see Section 10.12). In other words, RTSP acts as a "network remote control" for multimedia servers.

The set of streams to be controlled is defined by a presentation description. This memorandum does not define a format for a presentation description.

There is no notion of an RTSP connection; instead, a server maintains a session labeled by an identifier. An RTSP session is in no way tied to a transport-level connection such as a TCP connection. During an RTSP session, an RTSP client may open and close many reliable transport connections to the server to issue RTSP requests. Alternatively, it may use a connectionless transport protocol such as UDP.

The streams controlled by RTSP may use RTP [1], but the operation of RTSP does not depend on the transport mechanism used to carry continuous media. The protocol is intentionally similar in syntax and operation to HTTP/1.1 [2] so that extension mechanisms to HTTP can in most cases also be added to RTSP. However, RTSP differs in a number of important aspects from HTTP:

* RTSP introduces a number of new methods and has a different protocol identifier.
* An RTSP server needs to maintain state by default in almost all cases, as opposed to the stateless nature of HTTP.
* Both an RTSP server and client can issue requests.
* Data is carried out-of-band by a different protocol. (There is an exception to this.)
* RTSP is defined to use ISO 10646 (UTF-8) rather than ISO 8859-1, consistent with current HTML internationalization efforts [3].
* The Request-URI always contains the absolute URI. Because of backward compatibility with a historical blunder, HTTP/1.1 [2] carries only the absolute path in the request and puts the host name in a separate header field.

This makes "virtual hosting" easier, where a single host with one IP address hosts several document trees.

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