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IANA registrations of SDP 'proto' attribute for transporting RTP Media over TCP under various RTP profiles. draft-ietf-mmusic-proto-iana-registration-02

Abstract

RTP provides end-to-end network transport functions suitable for applications transmitting real-time data such as audio, video or simulation data, over multicast or unicast network services. The data transport is augmented by a control protocol (RTCP) to allow monitoring of the data delivery in a manner scalable to large multicast networks, and to provide minimal control and identification functionality.

The RTP specification [RFC3550] establishes a registry of profile names for use by higher-level control protocols, such as the SDP, to refer to the transport methods. This specification describes the following new SDP transport protocol identifiers for transporting RTP Media over TCP: 'TCP/RTP/AVPF', 'TCP/RTP/SAVP', 'TCP/RTP/SAVPF', 'TCP/DTLS/RTP/SAVP', 'TCP/DTLS/RTP/SAVPF', 'TCP/TLS/RTP/AVP', 'TCP/TLS/RTP/AVPF'.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on April 10, 2016.

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1. Overview

SDP [RFC4566] provides a general-purpose format for describing multimedia sessions in announcements or invitations. [RFC4145] specifies a general mechanism for describing media transport over TCP using SDP with [RFC4571] defining a method for framing Real-time Transport Protocol (RTP) and RTP Control Protocol (RTCP) packets onto a connection-oriented transport (such as TCP) . [RFC4572] extends [RFC4145] for describing TCP-based media streams that are protected using TLS [RFC5246].

This specification describes the following new SDP transport protocol identifiers for transporting RTP Media over TCP:

TCP/RTP/AVPF: to describe RTP Media with RTCP-based Feedback [RFC4585] over TCP, as defined in Section 3.1.

TCP/RTP/SAVP: to describe Secure RTP Media [RFC3711] over TCP, as defined in Section 3.2.

TCP/RTP/SAVPF: to describe Secure RTP Media with RTCP-based Feedback [RFC5124] over TCP, as defined in Section 3.3.

TCP/DTLS/RTP/SAVP: to describe Secure RTP Media [RFC3711] using DTLS-SRTP [RFC5764] over TCP, as defined in Section 3.4.

TCP/DTLS/RTP/SAVPF: to describe Secure RTP Media with RTCP-based Feedback [RFC5124] using DTLS-SRTP over TCP, as defined in Section 3.5.

TCP/TLS/RTP/AVP: to describe RTP Media on top of TLS over TCP, as defined in Section 3.6.

TCP/TLS/RTP/AVPF: to describe RTP Media with RTCP-based Feedback [RFC5124] on top of TLS over TCP, as defined in Section 3.7.

2. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

3. Protocol Identifiers

The 'm=' line in SDP specifies, among other items, the transport protocol to be used for the media in the session. See the "Media Descriptions" section of SDP [RFC4566] for a discussion on transport protocol identifiers.

The following is the format for an 'm=' line, as specified in [RFC4566]:

```
m=<media> <port> <proto> <fmt> ...
```

3.1. TCP/RTP/AVPF Transport Realization

The TCP/RTP/AVPF is realized as described below:

- RTP/AVPF stream over the TCP transport is realized using the framing method defined in [RFC4571].

3.2. TCP/RTP/SAVP Transport Realization

The TCP/RTP/SAVP is realized as described below:

- RTP/SAVP stream over the TCP transport is realized using the framing method defined in [RFC4571].

3.3. TCP/RTP/SAVPF Transport Realization

The TCP/RTP/SAVPF is realized as described below:

- RTP/SAVPF stream over the TCP transport is realized using the framing method defined in [RFC4571].

3.4. TCP/DTLS/RTP/SAVP Transport Realization

The TCP/DTLS/RTP/SAVP is realized as described below:

- RTP/SAVP using DTLS-based key establishment is realized according to the procedures defined in [RFC5764]; and

- [RFC4571] framing is used to transport DTLS-SRTP packets over TCP.

3.5. TCP/DTLS/RTP/SAVPF Transport Realization

The TCP/DTLS/RTP/SAVPF is realized as described below:

- RTP/SAVPF using DTLS-based key establishment is realized according to the procedures defined in [RFC5764]; and

- [RFC4571] framing is used to transport DTLS-SRTP packets over TCP.

3.6. TCP/TLS/RTP/AVP Transport Realization

The TCP/TLS/RTP/AVP is realized as described below:

- RTP/AVP packets are framed using the procedures from [RFC4571]; and
- [RFC4571] framed RTP/AVP packets are transported as Application data messages over the TLS association setup using the procedures from [RFC4572].

3.7. TCP/TLS/RTP/AVPF Transport Realization

The TCP/TLS/RTP/AVPF is realized as described below:

- RTP/AVPF packets are framed using the procedures from [RFC4571]; and
- [RFC4571] framed RTP/AVPF packets are transported as Application data messages over the TLS association setup using the procedures from [RFC4572].

4. ICE Considerations

When procedures from [RFC6544] are used to setup ICE [RFC5245] candidates for a TCP transport, the framing mechanism from [RFC4571] MUST be used for framing STUN packets (for keep-alives, consent checks), as defined in section 3 of [RFC6544].

5. IANA Considerations

This specification describes the following new SDP transport protocol identifiers :'TCP/RTP/AVPF', 'TCP/RTP/SAVP', 'TCP/RTP/SAVPF', 'TCP/DTLS/RTP/SAVP', 'TCP/DTLS/RTP/SAVPF', 'TCP/TLS/RTP/AVP', 'TCP/TLS/RTP/AVPF', as defined in the Section 3. These proto values should be registered by the IANA under the:

- "proto" subregistry in the "Session Description Protocol (SDP) Parameters" registry;

6. Security Considerations

The new "proto" identifiers registered by this document in the SDP parameters registry maintained by IANA is primarily for use by the offer/answer model of the Session Description Protocol [RFC3264] for the negotiation and establishment of RTP based Media over the TCP transport. These additional SDP "proto" identifiers does not

introduce any security considerations beyond those detailed in Section 7 of [RFC4566].

7. Acknowledgements

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