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**IANA registrations of SDP 'proto' attribute for transporting RTP Media
over TCP under various RTP profiles.
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Abstract

The Real-time Transport Protocol (RTP) specification establishes a registry of profile names for use by higher-level control protocols, such as the Session Description Protocol (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'.

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[1.](#) Overview

Real-time Transport Protocol (RTP) provides end-to-end network transport functions suitable for applications transmitting real-time data such as audio, video over multicast or unicast network services. The data transport is augmented by RTP 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.

Session Description Protocol (SDP) [[RFC4566](#)], provides a general-purpose format for describing multimedia sessions in announcements or invitations. TCP-Based Media Transport in the SDP [[RFC4145](#)], specifies a general mechanism for describing media transport over Transmission Control Protocol (TCP) using SDP with [[RFC4571](#)] defining a method for framing RTP and RTCP packets [[RFC3550](#)] onto a connection-oriented transport (such as TCP). Connection-Oriented Media Transport over the Transport Layer Security (TLS) Protocol in the SDP [[RFC4572](#)], extends [[RFC4145](#)] for describing TCP-based media streams that are protected using Transport Layer Security (TLS) [[RFC5246](#)].

This specification describes additional SDP transport protocol identifiers for transporting RTP Media over TCP as defined in [Section 3](#).

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 (identified via the 'proto' field) to be used for the media in the session. See the "MediaDescriptions" 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 transport describes RTP Media with RTCP-based Feedback [[RFC4585](#)] over TCP.

It is realized as described below:

- o 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 transport describes Secure RTP (SRTP) Media [[RFC3711](#)] over TCP.

It is realized as described below:

- o 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 transport describes Secure RTP Media with RTCP-based Feedback [[RFC5124](#)] over TCP.

It is realized as described below:

- o 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 transport describes Secure RTP Media [\[RFC3711\]](#) using Datagram Transport Layer Security (DTLS) SRTP (DTLS-SRTP) [\[RFC5764\]](#) over TCP.

It is realized as described below:

- o RTP/SAVP using DTLS-based key establishment is realized according to the procedures defined in [\[RFC5764\]](#); and
- o [\[RFC4571\]](#) framing is used to transport DTLS-SRTP packets over TCP.

3.5. TCP/DTLS/RTP/SAVPF Transport Realization

The TCP/DTLS/RTP/SAVPF transport describes Secure RTP Media with RTCP-based Feedback [\[RFC5124\]](#) using DTLS-SRTP over TCP.

It is realized as described below:

- o RTP/SAVPF using DTLS-based key establishment is realized according to the procedures defined in [\[RFC5764\]](#); and
- o [\[RFC4571\]](#) framing is used to transport DTLS-SRTP packets over TCP.

3.6. TCP/TLS/RTP/AVP Transport Realization

The TCP/TLS/RTP/AVP transport describes RTP Media on top of TLS over TCP.

It is realized as described below:

- o RTP/AVP packets are framed using the procedures from [\[RFC4571\]](#); and
- o [\[RFC4571\]](#) 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 transport describes RTP Media with RTCP-based Feedback [\[RFC5124\]](#) on top of TLS over TCP.

It is realized as described below:

- o RTP/AVPF packets are framed using the procedures from [RFC4571]; and
- o [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 Interactive Connectivity Establishment (ICE) [RFC5245] candidates for a TCP transport, the framing mechanism from [RFC4571] MUST be used for framing Session Traversal Utilities for NAT (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 [Section 3](#). These proto values should be registered by the IANA under the "proto" subregistry in the "Session Description Protocol (SDP) Parameters" registry.

[To RFC Editor: Remove this note prior to publication. This registration should take place at the following location: <http://www.iana.org/assignments/sdp-parameters/sdp-parameters.xhtml#sdp-parameters-2>. Replace XXXX in the table below with the assigned number of this RFC]

Type	SDP Name	Reference
proto	TCP/RTP/AVPF	RFCXXXX
proto	TCP/RTP/SAVP	RFCXXXX
proto	TCP/RTP/SAVPF	RFCXXXX
proto	TCP/DTLS/RTP/SAVP	RFCXXXX
proto	TCP/DTLS/RTP/SAVPF	RFCXXXX
proto	TCP/TLS/RTP/AVP	RFCXXXX
proto	TCP/TLS/RTP/AVPF	RFCXXXX

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. This specification doesn't introduce any additional security considerations beyond those specified by the individual transport protocols identified in the "proto" identifiers and those detailed in [Section 7 of \[RFC4566\]](#).

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