

**Connection-Establishment Preconditions in the Session Initiation  
Protocol (SIP)**

**draft-camarillo-mmusic-connection-precon-00.txt**

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Abstract

This document defines the connection-establishment precondition type for the SIP preconditions framework. Connection-establishment preconditions are met when a transport connection (e.g., a TCP connection) is successfully established between two endpoints.

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## **1. Introduction**

[RFC 3312](#) [3] defines a framework for preconditions for SIP [2], which is updated by [4]. This document defines a new precondition type for that framework: connection-establishment preconditions.

UAs (User Agents) use connection-establishment preconditions when they need to know whether a transport connection (e.g., a TCP connection) has been established successfully and is ready to carry user data.

We define the connection-establishment precondition type following the guidelines provided in [4] to extend the SIP preconditions framework.

## **2. Terminology**

In this document, the key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in [BCP 14](#), [RFC 2119](#) [1] and indicate requirement levels for compliant implementations.

## **3. Precondition Tag**

The precondition tag associated with the connection-establishment preconditions is "conn". This precondition tag is registered with the IANA in [Section 10](#).

## **4. Status Type**

[RFC 3312](#) [3] defines two status types, end-to-end and segmented, but only the end-to-end status type applies to connection-establishment preconditions. So, connection-establishment preconditions MUST use the end-to-end status type and MUST NOT use the segmented status type.

## **5. Direction Tag**

[RFC 3312](#) [3] defines four direction tags: none, send, recv, and sendrecv. Once a transport connection is established, they indicate in which directions the connection can carry user data. For example, a successfully-established TCP connection would have an associated direction tag of sendrecv because it can carry data in both directions.



## **6. Precondition Strength**

[RFC 3312](#) [3] defines optional and mandatory preconditions, but only mandatory preconditions apply to connection-establishment preconditions. So, connection-establishment preconditions MUST NOT use optional preconditions.

## **7. Suspending and Resuming Session Establishment**

According to [4], documents defining new precondition types need to describe the behavior of UAs from the moment session establishment is suspended due to a set of preconditions until is resumed when these preconditions are met.

While session establishment is suspended due to connection-establishment preconditions, user agents SHOULD not send any user data over any media stream. Additionally, the UAS (User Agent Server) SHOULD NOT alert the called user.

Offers with connection-establishment preconditions in re-INVITES or UPDATES follow the rules given in [Section 6 of RFC 3312](#) [3].

Both user agents SHOULD continue using the old session parameters until all the mandatory preconditions are met. At that moment, the user agents can begin using the new session parameters.

## **8. Examples**

TBD

```
m=audio 20000 RTP/AVP 0
a=curr:conn e2e none
a=des:conn mandatory e2e sendrecv
```

## **9. Security Considerations**

TBD.

## **10. IANA Considerations**

TBD.

## **11. References**



### **11.1 Normative References**

- [1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [2] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M. and E. Schooler, "SIP: Session Initiation Protocol", [RFC 3261](#), June 2002.
- [3] Camarillo, G., Marshall, W. and J. Rosenberg, "Integration of Resource Management and Session Initiation Protocol (SIP)", [RFC 3312](#), October 2002.
- [4] Camarillo, G., "Interactions of Preconditions with Session Mobility in the Session Initiation Protocol (SIP)", [draft-ietf-sip-rfc3312-update-00](#) (work in progress), November 2003.

### **11.2 Informational References**

#### Author's Address

Gonzalo Camarillo  
Ericsson  
Hirsalantie 11  
Jorvas 02420  
Finland

EMail: [Gonzalo.Camarillo@ericsson.com](mailto:Gonzalo.Camarillo@ericsson.com)





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