RFC 9409
The 'sip-trunking-capability' Link Relation Type

Abstract

This Informational document defines the 'sip-trunking-capability' link relation type that may be used by an enterprise telephony Session Initiation Protocol (SIP) network to retrieve a SIP trunking capability set document, which contains the capabilities and configuration requirements of an Internet Telephony Service Provider (ITSP). These technical requirements allow for seamless peering between SIP-based enterprise telephony networks and the ITSP.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for informational purposes.

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1. Introduction

RFC 8288 [RFC8288] defines a way to indicate relationships between resources on the Web. This document specifies the 'sip-trunking-capability' link relation type according to the rules of RFC 8288. Links with this relationship type can be used to exchange capability information between potential peer devices. In the event that systems require additional parameters and configuration to negotiate communication, a well-known URI can be utilized to deliver information to potential peers, including machine-readable instructions and parameters needed for peering.

The 'sip-trunking-capability' link relation type may be used on web resources hosted by ITSPs to provide a structured and detailed capability set document. The capability set document [SIP-AUTO-PEER] encapsulates a set of characteristics of an ITSP, which when retrieved by enterprise telephony network devices allows for automated establishment of SIP [RFC3261] trunking between the two telephony networks.

2. The 'sip-trunking-capability' Link Relation Type

A capability set document is hosted via web resources by the ITSP. A unique location of the document can be preconfigured and provided to each peer by the ITSP, or a centrally published resource can be used that dynamically generates the capability set document based on one or more Uniform Resource Identifiers (URIs) [RFC3986] determined by the peering device. The capability set document describes the configuration parameters required to successfully establish SIP trunking between an enterprise and an ITSP network. The capability set document

is composed of structured and machine-readable parameters that can be converted into configuration data to meet the communication requirements of the ITSP. The need for an enterprise telephony network to obtain a capability set document from an ITSP is documented in "Automatic Peering for SIP Trunks" [SIP-AUTO-PEER].

3. Example Usage

This section provides an example of possible use of the 'sip-trunking-capability' relation type. The enterprise network device solicits the location of the capability set document from the well-known URI hosted by the ITSP using the WebFinger protocol [RFC7033]. The following examples include line breaks and indentation for clarity.

```
GET /.well-known/webfinger?
    resource=acct%3Atrunkent1456%40example.com&
    rel=sip-trunking-capability
    HTTP/1.1
Host: ssp1.example.com
```

The location of the capability set document is returned to the network device in the "href" attribute.

```
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
Content-Type: application/jrd+json
{
    "subject" : "acct:trunkent1456@example.com",
    "links" :
    [
        {
            "rel" : "sip-trunking-capability",
            "href" : "https://capserver.ssp1.example.com/capdoc.json"
        }
    ]
}
```

The ITSP may use an authentication framework such as OAuth 2.0 [RFC6749] to determine the identity of the enterprise telephony network to provide the appropriate capability set document.

4. IANA Considerations

IANA has registered the 'sip-trunking-capability' link relation under the "Link Relation Types" registry as follows:

Relation Name: sip-trunking-capability

Description: Refers to a capability set document that defines parameters or configuration requirements for automated peering and communication-channel negotiation of the Session Initiation Protocol (SIP).

Reference: RFC 9409

5. Security Considerations

The 'sip-trunking-capability' relation type is not known to introduce any new security issues not already discussed in RFC 8288 for generic use of web-linking mechanisms. However, it is recommended to exercise caution when publishing potentially sensitive capability information over unencrypted or unauthenticated channels. Additional security recommendations are outlined in the capability set document definition. See the Security Considerations section in "Automatic Peering for SIP Trunks" [SIP-AUTO-PEER].

6. References

6.1. Normative References

[RFC8288]   Nottingham, M., "Web Linking", RFC 8288, DOI 10.17487/RFC8288, October 2017, <https://www.rfc-editor.org/info/rfc8288>.

6.2. Informative References

[RFC3261]   Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M., and E. Schooler, "SIP: Session Initiation Protocol", RFC 3261, DOI 10.17487/RFC3261, June 2002, <https://www.rfc-editor.org/info/rfc3261>.

[RFC3986]   Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, RFC 3986, DOI 10.17487/RFC3986, January 2005, <https://www.rfc-editor.org/info/rfc3986>.

[RFC6749]   Hardt, D., Ed., "The OAuth 2.0 Authorization Framework", RFC 6749, DOI 10.17487/RFC6749, October 2012, <https://www.rfc-editor.org/info/rfc6749>.

[RFC7033]   Jones, P., Salgueiro, G., Jones, M., and J. Smarr, "WebFinger", RFC 7033, DOI 10.17487/RFC7033, September 2013, <https://www.rfc-editor.org/info/rfc7033>.

[SIP-AUTO-PEER]   Inamdar, K., Narayanan, S., and C. F. Jennings, "Automatic Peering for SIP Trunks", Work in Progress, Internet-Draft, draft-ietf-asap-sip-auto-peer-07, 13 January 2023, <https://datatracker.ietf.org/doc/html/draft-ietf-asap-sip-auto-peer-07>.

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