Network Working Group
Request for Comments: 5341
Updates: 3966
Category: Standards Track

C. Jennings
Cisco Systems
V. Gurbani
Bell Laboratories, Alcatel-Lucent

September 2008

The Internet Assigned Number Authority (IANA) tel Uniform Resource Identifier (URI) Parameter Registry

Status of This Memo

Abstract

This document creates an Internet Assigned Number Authority (IANA) registry for tel Uniform Resource Identifier (URI) parameters and their values. It populates the registry with the parameters defined in the tel URI specification, along with the parameters in tel URI extensions defined for number portability and trunk groups.

Table of Contents

1. Introduction

The tel URI (RFC 3966 [1]), defines a URI that can be used to represent resources identified by telephone numbers. The tel URI, like many other URIs, provides extensibility through the definition of new URI parameters and new values for existing parameters. However, RFC 3966 did not specify an IANA registry where such parameters and values can be listed and standardized. This specification creates such a registry.

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 [2].

3. Use of the Registry

The tel URI parameters and values for these parameters MUST be documented in a RFC or other permanent and readily available public specification in order to be registered by IANA. This documentation MUST fully explain the syntax, intended usage, and semantics of the parameter. The intent of this requirement is to assure interoperability between independent implementations, and to prevent accidental namespace collisions between implementations of dissimilar features.

Documents defining tel URI parameters or parameter values MUST register them with IANA, as described in Section 4. The IANA registration policy for such parameters is "Specification Required, Designated Expert," and is further discussed in Section 4.2.

Some tel URI parameters only accept a set of predefined parameter values while others can take any value. There are also parameters that do not have any value; they are used as flags.

Those URI parameters that take on predefined values typically take on a large number of values. Registering each of those values, or creating a sub-registry for each such parameter is not appropriate. Instead, we have chosen to register URI parameter values by reference. That is, the entry in the URI parameter registry for a given URI parameter contains references to the RFCs defining new values of that parameter.

Accordingly, the tel URI parameter registry contains a column that indicates whether or not each parameter accepts a value. The column may contain "No value" or "Constrained". A "Constrained" in the column implies that certain predefined values exist for this

parameter and the accompanying RFC or other permanent and readily available public specification should be consulted to find out the accepted set of values. A "No Value" in the column implies that the parameter is used either as a flag, or does not have a set of predefined values. The accompanying RFC or other permanent and readily available public specification should provide more information on the semantics of the parameter.

4. IANA Considerations

The specification creates a new IANA registry named "tel URI Parameters".

4.1. tel URI Parameters Registry

New tel URI parameters and new values for existing tel URI parameters MUST be registered with IANA.

When registering a new tel URI parameter, the following information MUST be provided:

- Name of the parameter.
- Whether the parameter only accepts a set of predefined values.
- Reference to the RFC or other permanent and readily available public specification defining the parameter and new values.

When registering a new value for an existing tel URI parameter, the following information MUST be provided:

- Name of the parameter.
- Reference to the RFC or other permanent and readily available public specification providing the new value.

Table 1 contains the initial values for this registry.

Parameter Name	Predefined Values	Reference
isub	Constrained	[RFC3966]
isub-encoding	Constrained	[RFC4715]
ext	Constrained	[RFC3966]
phone-context	Constrained	[RFC3966]
enumdi	No value	[RFC4759]
npdi	No value	[RFC4694]
rn	Constrained	[RFC4694]
rn-context	Constrained	[RFC4694]
cic	Constrained	[RFC4694]
cic-context	Constrained	[RFC4694]
tgrp	Constrained	[RFC4904]
trunk-context	Constrained	[RFC4904]

Table 1: IANA tel URI parameter registry

4.2. Registration Policy for tel URI Parameters

As per the terminology in [3] and actions accorded to such a role, the registration policy for tel URI parameters shall be "Specification Required, Designated Expert" (the former implicitly implies the latter).

The Designated Expert, when deliberating on whether to include a new parameter in the tel URI registry, may use the criteria provided below to reach a decision (this is not an exhaustive list but representative of the issues to consider when rendering an equitable decision):

- If the tel URI -- with the parameter under consideration -- will be converted to a URI used by other signaling protocols such as the Session Initiation Protocol (SIP [5]) or H.323 [7], then the expert must consider whether this parameter merely encapsulates signaling information that is not meaningful to the processing of requests in the domain of the converted URI. For example, certain Integrated Services Digital Network (ISDN) User Part (ISUP, [8]) parameters have no equivalent corollary in SIP; thus, their presence or absence in a SIP URI will not hinder the normal rules for processing that URI. Other parameters may affect the normal processing rules associated with the URI; in such cases, the expert must carefully consider the ramifications, if any, of the presence of such parameters.

- Certain parameters of a tel URI can be optional. These parameters act as metadata about the identifier in the tel URI. Optional parameters should provide additional information to a service for which they apply instead of acting as enablers of that service in

the first place. The service must continue to be invoked and operate normally even in the absence of these parameters.

5. Security Considerations

The registry in this document does not in itself have security considerations. However, as mentioned in [4], an important reason for the IETF to manage the extensions of SIP is to ensure that all extensions and parameters are able to provide secure usage. The supporting RFC publications for parameter registrations described in this specification MUST provide detailed security considerations for them.

6. Acknowledgments

The structure of this document comes from [6], which is the equivalent work done in the SIP domain to establish a registry. Ted Hardie, Alfred Hoenes, Jon Peterson, and Jonathan Rosenberg provided substantive comments that have improved this document.

Brian Carpenter, Lars Eggert, Pasi Eronen, Chris Newman, and Glen Zorn provided feedback during IESG review and Gen-ART review.

7. References

7.1. Normative References

[1] Schulzrinne, H., "The tel URI for Telephone Numbers", RFC 3966, December 2004.

[2] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[3] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 5226, May 2008.

7.2. Informative References

[4] Mankin, A., Bradner, S., Mahy, R., Willis, D., Ott, J., and B. Rosen, "Change Process for the Session Initiation Protocol (SIP)", BCP 67, RFC 3427, December 2002.

[5] 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.

[6] Camarillo, G., "The Internet Assigned Number Authority (IANA) Uniform Resource Identifier (URI) Parameter Registry for the Session Initiation Protocol (SIP)", BCP 99, RFC 3969, December 2004.

[7] ITU-T H.323, "H.323: Packet-based multimedia communications systems", June 2006.

[8] ITU-T Q.764, "Signaling System No. 7: ISDN User Part Signaling Procedures", December 1999.

Authors' Addresses

Cullen Jennings
Cisco Systems
170 West Tasman Drive
Mailstop SJC-21/2
San Jose, CA 95134
USA

Phone: +1 408 902-3341
EMail: fluffy@cisco.com

Vijay K. Gurbani
Bell Laboratories, Alcatel-Lucent
2701 Lucent Lane
Room 9F-546
Lisle, IL 60532
USA

Phone: +1 630 224-0216
EMail: vkg@alcatel-lucent.com

Full Copyright Statement

Intellectual Property