

ENUM -- Telephone Number Mapping
Working Group
Internet-Draft
Expires: January 10, 2008

Bo. Chen
Hui. Chen
Xiaodong. Lee
Feng. Wang
CNNIC, China
July 9, 2007

**Telephone Number Mapping (ENUM) Service Registration for MGCP
draft-chenbo-enum-mgcp-01.txt**

Status of this Memo

By submitting this Internet-Draft, each author represents that any applicable patent or other IPR claims of which he or she is aware have been or will be disclosed, and any of which he or she becomes aware will be disclosed, in accordance with [Section 6 of BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at <http://www.ietf.org/ietf/1id-abstracts.txt>.

The list of Internet-Draft Shadow Directories can be accessed at <http://www.ietf.org/shadow.html>.

This Internet-Draft will expire on January 10, 2008.

Copyright Notice

Copyright (C) The IETF Trust (2007).

Abstract

MGCP decomposes a multimedia gateway into two parts, a call agent and a media gateway, thus brings greater extensibility and makes it easy to construct a large-scale VoIP network. This document registers the MGCP Enumservice according to the guidelines given in [RFC 3761](#). This kind of Enumservice is mainly applied in Carrier Networks.

Table of Contents

1.	Terminology	3
2.	Introduction	4
3.	ENUM Service Registration - MGCP	5
4.	Address of record in MGCP	6
5.	Examples	7
6.	The scenes for ENUM-MGCP application	8
7.	Security Considerations	10
8.	IANA Considerations	11
9.	DNS Considerations	12
10.	References	13
10.1.	Normative References	13
10.2.	Informative References	13
	Authors' Addresses	14
	Intellectual Property and Copyright Statements	15

1. 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](#)].

2. Introduction

E.164 Number Mapping (ENUM) [[RFC3761](#)] is a system that uses Domain Name System (DNS) [[RFC1035](#)] to translate telephone numbers into Uniform Resource Identifiers (URIs) [[RFC3986](#)]. By using DNS services like delegation through NS records and NAPTR records, one can look up what services are available for a specific E.164 numbers [[E164](#)].

As an improvement of H.323 [[H323](#)], MGCP [[RFC3435](#)] assumes a call control architecture where the call control "intelligence" is outside the gateways and handled by external call control elements MGC(Media Gateway Controller)known as Call Agents, while MG(Media Gateway) is just responsible for the media conversion. MGCP defines the interaction messages between them. Moreover, MGCP assumes that these call control elements, or Call Agents, will synchronize with each other to send coherent commands and responses to the gateways under their control because MGCP does not define a mechanism for synchronizing Call Agents.

This document registers the MGCP Enumservice according to the guidelines given in [RFC3761](#) [[RFC3761](#)]. The MGCP Enumservice is used in the services field of a NAPTR resource record which indicates what class of functionality a given end point offers. As shown in [Section 6](#), ENUM-MGCP is mainly used in carrier networks, making a unified addressing intra or inter MGCP system or even between other VoIP systems and MGCP systems.

3. ENUM Service Registration - MGCP

Enumservice Name: "MGCP"

Enumservice Type: "mgcp"

Enumservice Subtype: tel

URI Scheme: "tel:"

Functional Specification:

This document defines an 'E2U+mgcp:tel' Enumservice for MGCP. The scheme of the URI that will appear in the regexp field of a NAPTR record using the 'E2U+mgcp:tel' Enumservice is 'tel'.

Security Considerations: see [Section 7](#)

Intended Usage: COMMON

Authors: Bo. Chen, <chenbo@cnnic.cn> et al.

Any other information the authors deem interesting: None

4. Address of record in MGCP

The address of MGCP end-points includes two parts. One is the domain name of attributive gateway, the other is the local name of this terminal in the gateway. Local name uses the form of physical interface/circuit number. For example, MGCP address hrd4/56@gw23.example.net:5060 means that the attributive gateway is gw23.example.net, using port 5060, and the physical interface is hrd4, while the circuit number is 56.

5. Examples

An example ENUM record referencing to "MGCP" could look like:

```
$ORIGIN 9.2.1.3.1.8.8.5.0.1.6.8.e164.arpa.
```

```
@ IN NAPTR 10 100 "u" "E2U+mgcp:tel" "!^.*$!tel:hrd4/56@tst.cn!" .
```

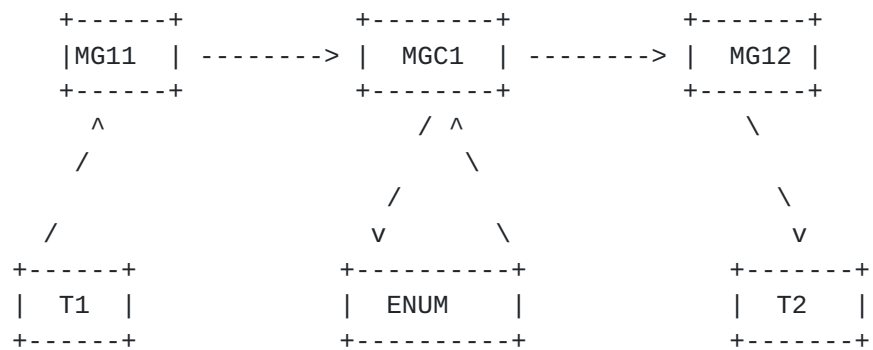
6. The scenes for ENUM-MGCP application

Part of MGCP's address of record is physical interface/circuit number which should be unknown to end-users, so ENUM-MGCP is not for one dedicated user but for carriers. With the help of ENUM-MGCP, the calls, no matter intra MGCP system, inter MGCP system, or from other VoIP systems, can have a unified addressing.

There are three scenes as below. In these scenes, T1 represents terminal1, while T2 represents terminal2, and arrows show the call signal.

Scene 1: the ENUM-based call procedure in the same MGCP system

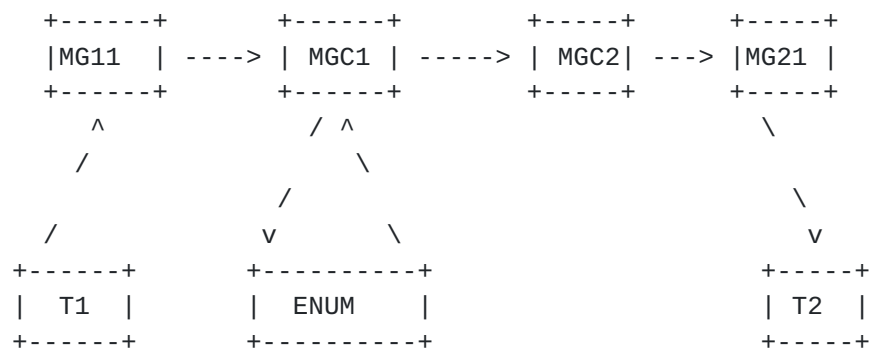
MGC1 receives a call request from T1. After querying ENUM system, MGC1 has found that the call would terminate in the same MGCP system, then it makes a direct connection to MGC2.



the ENUM-based call procedure in the same MGCP system

Scene 2: the ENUM-based call procedure among different MGCP systems

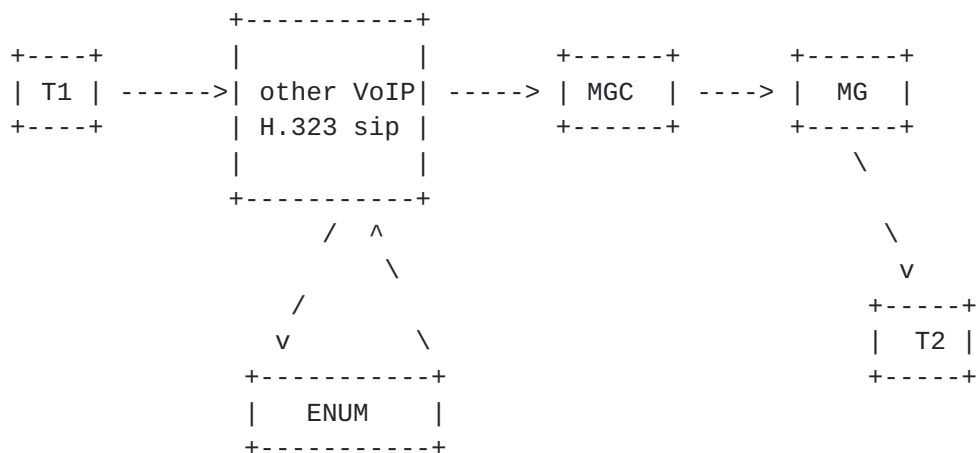
MGC1 receives a call request from T1. After querying from ENUM system, MGC1 has found that the call would terminate in another MGCP system, then it makes a connection to the relative call agent MGC2.



the ENUM-based call procedure among different MGCP systems

Scene 3: the ENUM-based call procedure between other VoIP systems and MGCP systems

The call agent of other VoIP systems, such as sip or H.323 based systems, receives a call request from T1. After ENUM query, it would find that the caller is MGCP-based. It then makes a connection to the attributive MGC using a MGCP-based signal.



the ENUM-based call procedure between other VoIP systems and MGCP systems

7. Security Considerations

As with any Enumservice, the security considerations of ENUM itself ([Section 6 of RFC 3761](#)) apply. The security issues associated with this Enumservice have not been assessed.

8. IANA Considerations

This memo requests registration of the "MGCP" Enumservice with the subtype "tel" according to the template [Section 3](#) of this document and [RFC3761](#) [[RFC3761](#)]

9. DNS Considerations

This Enumservices does not introduce any new considerations for the DNS.

10. References

10.1. Normative References

- [RFC1035] Mockapetris, P., "Domain names - implementation and specification", STD 13, [RFC 1035](#), November 1987.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC3435] Andreassen, F. and B. Foster, "Media Gateway Control Protocol (MGCP) Version 1.0", [RFC 3435](#), January 2003.
- [RFC3660] Foster, B. and F. Andreassen, "Basic Media Gateway Control Protocol (MGCP) Packages", [RFC 3660](#), December 2003.
- [RFC3661] Foster, B. and C. Sivachelvan, "Media Gateway Control Protocol (MGCP) Return Code Usage", [RFC 3661](#), December 2003.
- [RFC3761] Faltstrom, P. and M. Mealling, "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)", [RFC 3761](#), April 2004.
- [RFC3986] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, [RFC 3986](#), January 2005.

10.2. Informative References

- [E164] ITU-T, "The international public telecommunication numbering plan", Recommendation E.164 (02/05), Feb 2005.
- [H323] ITU-T, "Packet-based multimedia communications systems", Recommendation H.323, 2003.
- [RFC2705] Arango, M., Dugan, A., Elliott, I., Huitema, C., and S. Pickett, "Media Gateway Control Protocol (MGCP) Version 1.0", [RFC 2705](#), October 1999.

Authors' Addresses

Bo, Chen
CNNIC, China
4 South 4th Street, Zhongguancun, Haidian District
Beijing 100080
China

Email: chenbo@cnnic.cn

Hui, Chen
CNNIC, China
4 South 4th Street, Zhongguancun, Haidian District
Beijing 100080
China

Email: chenhui@cnnic.cn

Xiaodong, Lee
CNNIC, China
4 South 4th Street, Zhongguancun, Haidian District
Beijing 100080
China

Email: lee@cnnic.cn

Feng, Wang
CNNIC, China
4 South 4th Street, Zhongguancun, Haidian District
Beijing 100080
China

Email: fengw@cnnic.cn

Full Copyright Statement

Copyright (C) The IETF Trust (2007).

This document is subject to the rights, licenses and restrictions contained in [BCP 78](#), and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY, THE IETF TRUST AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Intellectual Property

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in [BCP 78](#) and [BCP 79](#).

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at ietf-ipr@ietf.org.

Acknowledgment

Funding for the RFC Editor function is provided by the IETF Administrative Support Activity (IASA).

