ENUM -- Telephone Number Mapping
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Telephone Number Mapping (ENUM) Service Registration for MGCP
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Status of this Memo

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

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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.

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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

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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!" .
```

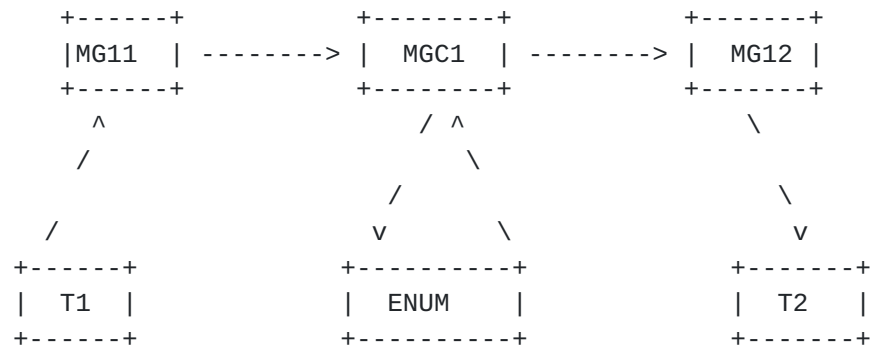
6. The scenes for ENUM-MGCP application

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

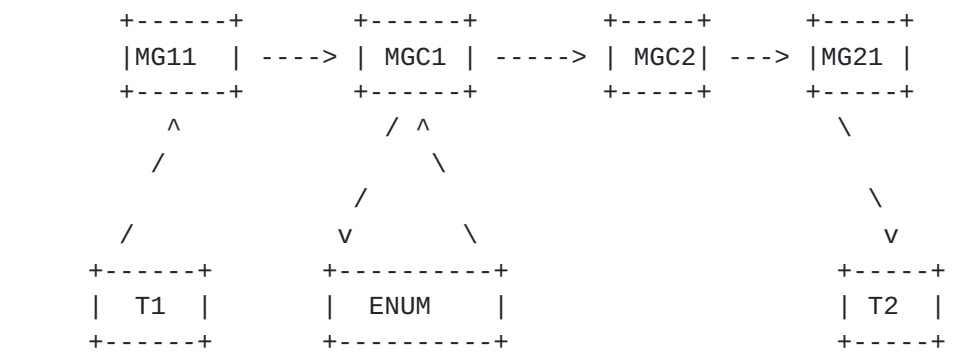
MGC1 receives a call request from T1. After querying ENUM system, MGC1 has found that the call would terminate in the same MGCP system, then it makes a direct connection to MG12.



the ENUM-based call procedure in the same MGCP system

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

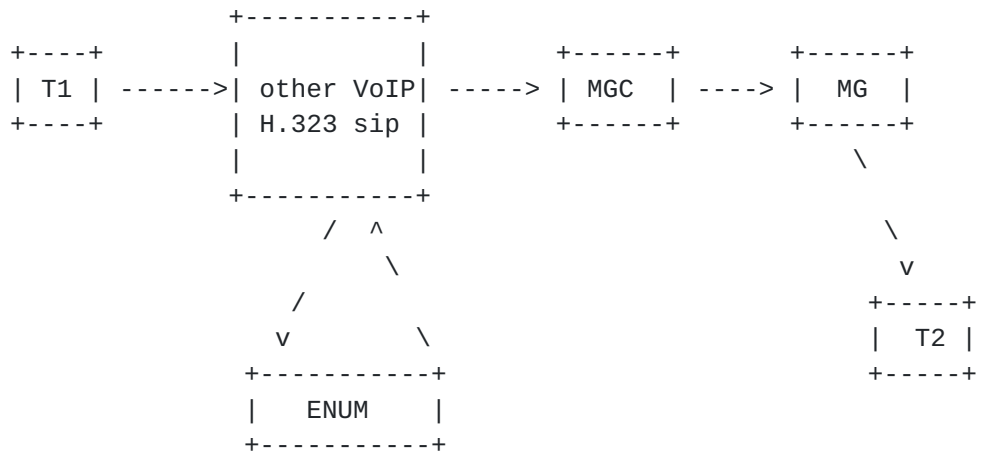
MGC1 receives a call request from T1. After querying from ENUM system, MGC1 has found that the call would terminate in another MGCP system, then it makes a connection to the relative call agent MGC2.



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

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[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.

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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.

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