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The ENUM Branch Location Record
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Abstract

This documents defines the ENUM Branch Location record (EBL) which is used to indicate where the ENUM tree for special ENUM application is located. The primary application for the EBL record is to provide a temporary solution for the infrastructure ENUM tree location.

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1. Introduction

ENUM as defined in RFC3761 [1] (User-ENUM) is not well suited for the purpose of interconnection by carriers, as can be seen by the use of various private tree arrangements based on ENUM mechanisms.

Using the same E.164 number to domain mapping technique for other application under a different apex (instead of e164.arpa) is straightforward on the technical side. Establishing the international agreements necessary to delegate the country-code level subdomains under the new apex is non-trivial and time-consuming. This process is under way [5].

ENUM Branch Location records as defined by this document can be used to quickly introduce new ENUM trees on a per-country opt-in basis by storing the location and layout of new trees in the User-ENUM tree.

While Infrastructure ENUM is the motivation for the introduction of the EBL record, its use it not limited to Infrastructure ENUM.

More information and motivation can be found in draft-ietf-enum-infrastructure-enum-reqs [3] and draft-haberler-carrier-enum [4].

2. ENUM Tree Referrals

To allow maximum flexibility, the following parameters will be used in ENUM tree referrals.

Application

indicating to what kind of application this EBL applies to. In the case of Infrastructure ENUM, this will be "infrastructure".

Separator

indicating what label should be inserted into the ENUM domain to branch off to the application-specific tree. This can be an empty (zero-length) string which means that no label will be inserted.

Position

indicating at what place this label should be inserted into the ENUM domain to branch off to the application-specific tree. A value of 0 means to the right of all digits.

Apex

indicating what domain should replace "e164.arpa" as the apex for this application.

The "application" acts as the selector and is stored as the label in the DNS. The other three parameters make up the content of the EBL.

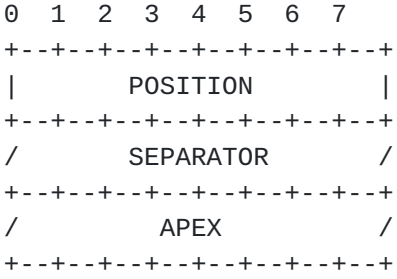
3. The EBL Resource Record

The EBL will reside within the country-code level in the User-ENUM tree under e164.arpa.

The RR type code for the EBL RR is /IANA-ACTION/.

3.1 The EBL RDATA Format

The RDATA for a EBL RR consists of a position number, separator string and an apex domain. <character-string> and <domain-name> refer to the definitions of RFC 1035 [2].



where POSITION is a single byte, SEPARATOR is a <character-string> and APEX is a <domain-name>. Name-compression is not to be used for the APEX field.

3.2 The EBL Presentation Format

The master file format follows the standard rules in RFC 1035. POSITION is represented as decimal integer. SEPARATOR is a quoted string, APEX is a domain name and thus does not require quoting.

4. Examples

```
infrastructure.3.4.e164.arpa.    IN EBL 2 "i" e164.arpa.
infrastructure.1.e164.arpa.      IN EBL 4 "i" example.com.
infrastructure.9.4.e164.arpa.    IN EBL 0 ""  ie164.arpa.
```

These records indicate how the transformation from E.164 number to

ENUM domains for the application "infrastructure" should be done for numbers in country code +43, +1, and +49. This leads to the following mappings:

```
+43 15056416          6.1.4.6.5.0.5.1.i.3.4.e164.arpa
+1 5551234567         7.6.5.4.3.2.1.i.5.5.5.1.example.com
+49 891234567         7.6.5.4.3.2.1.9.8.9.4.ie164.arpa
```

5. Security Considerations

EBLs are used to direct the ENUM resolvers to other places in the DNS for certain applications. As these EBLs are stored in the User-ENUM tree, these applications therefore depend on the security of the User-ENUM tree.

6. IANA Considerations

This documents allocates the Resource Records Type field for the EBL record.

7. Acknowledgements

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8. References

8.1 Normative References

[1] Faltstrom, P. and M. Mealling, "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)", RFC 3761, April 2004.

[2] Mockapetris, P., "Domain names - implementation and specification", STD 13, RFC 1035, November 1987.

8.2 Informative References

[3] Lind, S. and P. Pfautz, "Infrastrucure ENUM Requirements", draft-ietf-enum-infrastructure-enum-reqs-02 (work in progress), April 2006.

[4] Haberler, M. and R. Stastny, "Combined User and Infrastructure ENUM in the e164.arpa tree", draft-haberler-carrier-enum-03 (work in progress), June 2006.

[5] Livingood, J., "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application for Infrastructure ENUM", draft-ietf-enum-infrastructure-00 (work in progress), April 2006.

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