Configuring ENUM dialing

How to Use ENUM Dialing with sipXecs

Introduction

The purpose of ENUM, IETF RFC 2916, is to facilitate the smooth convergence of global communications services between the Public Switched Telephone Network (PSTN) and the Internet by allowing telephone numbers to be used as a common addressing mechanism for both PSTN and Internet services.

The ENUM dialing system enables SIP calls to be made between organizations based on ordinary PSTN phone numbers (also called "E.164 numbers"). A set of records in DNS, informally referred to as "ENUM", provides a translation from a phone number to a SIP URI to reach that phone. The ENUM system is nowhere near fully implemented, but is in experimental use in a number of organizations.

Starting with sipXecs **release 3.7** includes an ENUM implementation that allows organizations and individuals to participate in ENUM trials and benefit from the resulting leas-cost routing of calls over the Internet.

Public vs. Private ENUM

The original idea was to establish a global public ENUM system based on the "e164.arpa" domain. The "e164.arpa" implementation delegates control over ENUM services to 200+ national PSTN regulatory entities. Within this vision, every country is being given the power to define if, how and when ENUM services will be deployed within their given country-code under the "e164.arpa" domain.

Austria is cited most often as the country that was first to adopt this vision and implement a national registry. However, speed of implementation or even willingness to push this vision varies significantly from country to country. Afterall, one of the side effects of ENUM is the ability to route calls around the PSTN and over IP in a fully transparent way to the end-user, which is not in the interest of most national PTTs and carriers.

As an alternative, private ENUM can be implemented based on a different root domain. Many Internet Service Providers (ITSPs) and private Enterprises start implementing ENUM directories of their own. The most noteworth is e164.org, a not-for-profit ENUM registry that offers free ENUM registrations of phone numbers.

Configuring ENUM Dialing

Configuring ENUM dialing in sipX is simple as shown in the screenshot below. Essentially all you have to do is enter a root domain into the provided field, which enables ENUM routing in the sipX dialplan. The current implementation does not offer full integration of ENUM into the dialplan - however, we are working on it. The current implementation requires the use of a prefix for ENUM calls.

Related Links

- ENUM lookups
- Neustar's ENUM service
- e164.org free ENUM registry

Troubleshooting

Looking up an existing NAPTR record in an ENUM registry

The **host** command can be used to resolve ENUM domains in a DNS registry as follows:

```
host -t NAPTR 7.7.7.7.7.0.0.9.5.1.6.e164.arpa
```

```
host -t NAPTR 1.2.4.0.3.2.2.3.6.9.1.e164.org
```

Where the first one looks up a number in the Australian official e164.arpa registry (country code 61), and the second one looks up a US numbner (country code 1) in the e164.org registry. The first one exists and the second one is a fictive number. If you are registered at e164.org take your phone number, reverse the order of the digits and puts dots in between.