

Adding a NAPTR Record in Network Registrar

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Introduction

This document provides information about adding Naming Authority Pointer (NAPTR) records to zones using Network Registrar and on several proposed standards that help standardize this process.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Network Registrar and NAPTR Record Information

Naming Authority Pointer (NAPTR) resource records are supported in Network Registrar Release 5.0. Add the NAPTR records using either the command line interface (CLI) or the graphical user interface (GUI). The records help with name resolution in a particular namespace and are processed to get to a resolution service.

Since NAPTR records are a proposed standard, RFC 2915, Cisco Network Registrar only validates numeric record fields. However, the proposed standard does require a value for each field, even if null (""), and there are no default values.

The syntax of a NAPTR record depends on its purpose. For example, the RFC suggests values for the flags field, but allows other values when the record is used in other ways. The following table describes the fields.

order preference	Two, 16-bit numeric fields used by the Domain Name System (DNS) client to affect the processing of multiple NAPTR records at the same domain name.
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flags	A string of single character, case-insensitive flags from the set [A–Z, 0–9], currently A, S, P, or U, with meanings assigned by RFC 2915. An A, S, or U flag indicates a terminal NAPTR. The absence of flags is indicated by the null string.
service	Coded text string.
regexp	Regular expression string that can be null if using the replacement field instead.
replacement	DNS domain name, not a URL or other string, and can be "." (root) when using the regexp field instead.

When you use the NAPTR record to locate a Session Initiation Protocol (SIP) proxy, refer to the proposed standard, RFC 2916, or the SIP standard, RFC 2543. When the ENUM working group of the Internet Engineering Task Force used NAPTR records to map E.164 addresses to Universal Resource Identifiers (URIs), it was nonstandard. Using the NAPTR record resolves a name in the E.164 international public telecommunication namespace to a URI instead of providing the name of a service to use as a resolver. The U flag was added to the NAPTR record for this purpose. Section 3.2.2 of RFC 2916 contains examples for SIP proxy.

For example, to specify a SIP proxy for the phone number +4689761234, add a NAPTR record at the name "4.3.2.1.6.7.9.8.6.4.e164.arpa." with the contents:

```
100 10 "u" "sip+E2U" "/^.*$/sip:info@tele2.se/" .
```

This sets the fields as shown:

```
order = 100
preference = 10
flags = "u"
service = "sip+E2U"
regexp = "/^.*$/sip:info@tele2.se/"
replacement = . (dot)
```

In the Network Registrar GUI, select the 8.6.4.e164.arpa zone, then open the Add Resource Record dialog box. For the 4.3.2.1.6.7.9 record name, select NAPTR in the type field, and enter the six-field value in the Data field. Use the CLI to enter:

```
nrcmd> zone 8.6.4.e164.arpa addRR 4.3.2.1.6.7.9 naptr 100 10 u sip+E2U
/^.*$/sip:info@tele2.se/ .
```

Reload the server. The DNS client dealing with phone number +4689761234 can now find a SIP service URI by replacing the number with the "sip:info@tele2.se" string. The E.164 zone mostly uses the NAPTR record for wholesale replacement of the "input" telephone number. However, section 3.2.3 of RFC 2916, includes an example of one transformation to a Lightweight Directory Access Protocol (LDAP) query that preserves some of the digits. One reason the E.164 zone does not map to server resource records (SRV) is to obtain a SIP URL that includes something humanly readable to the left of the "@" character.

Related Information

- [Cisco Network Registrar Tech Notes](#)
- [Cisco Network Registrar 3.5 Data Sheet](#)
- [Technical Support – Cisco Systems](#)

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