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**EDNS Option Code for SIP and PSTN Source Reference Info  
draft-kaplan-dnsex-enum-sip-source-ref-opt-code-03**

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## Abstract

This document requests an IANA allocation for an EDNS0 Option-Code, per [\[RFC2671\]](#), for a UTF-8 encoded string field containing a URI for private use. The intended use of this field is for providing SIP and PSTN-type source information for ENUM-resolution DNS queries, in private DNS server environments such as Private ENUM.

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## [1. Introduction](#)

In many VoIP domains, private DNS servers are used to provide ENUM resolution for SIP request routing purposes. Devices in such domains, such as SIP Proxies and PSTN Gateways, which are the DNS clients set to use the private DNS servers for ENUM resolution, need to provide the server(s) with some additional private meta-data concerning the source of the SIP request that triggered the DNS query, which may aid the server(s) in providing an answer. The additional data is in the form of a URI-formatted UTF-8 string, which needs to be provided in the DNS query request. The Extension Mechanism for DNS (EDNS) defined in [\[RFC2671\]](#) provides a suitable means by which to encode such a string into the DNS request, using the OPT RR and a new EDNS0 Option-Code indicating this field use.

This document requests IANA for assignment of such an Option-Code, for providing SIP and PSTN-type source reference information in DNS requests used for ENUM, in private, controlled environments only. This is neither applicable to, nor appropriate for, the general public Internet DNS; the only reason this document exists is to



obtain a reserved option code number, for interoperability among vendors within private, restricted environments.

## 2. 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](#). The terminology in this document conforms to [RFC 2828](#), "Internet Security Glossary".

Private DNS server: a DNS server which does not use the IANA-base tree, nor the "e164.arpa" suffix, and is deployed for specific name resolution purposes in a controlled, restricted environment.

## 3. Applicability

This draft requests a new Option code value based on [EDNS0].

## 4. OPTION-DATA Format

The format of the OPTION-DATA contents is a UTF-8 [[RFC2279](#)] text string, with no character termination (the OPTION-LENGTH field identifies the length).

For the private use defined for this option code, the contents of the UTF-8 string are a URI, typically a SIP or TEL URI, including the "sip:" or "tel:" schemes. Non-UTF-8 characters, or characters not allowed in the ABNF rules for a SIP-URI or TEL-URI format per [[RFC3261](#)] or [[RFC3966](#)] MUST be escaped per those formats.

The usage and source of the URI content is outside the scope of this document, and are documented in [[draft-enum-sip-routing](#)].

The query option is of a multi-hop, transitive nature. As such, this mechanism will only work in restricted DNS server use cases where all the DNS servers (and intermediate caches) are known to support the extension. The primary use-case for this is in Private ENUM deployments.

## 5. Security Considerations

There are privacy concerns with regard to passing SIP/PSTN source reference information in a DNS query. The intent of this option is for a purely private use, in a controlled environment. Clients MUST NOT use this option mechanism if they do not know the DNS query will only be processed by private DNS servers in a controlled environment, for example through explicit configuration that such is the case.



## **6. IANA Considerations**

This document requests that IANA register in the "Domain Name System (DNS) Parameters" registry at <http://www.iana.org/assignments/dns-parameters> in sub-registry "DNS EDNS0 Options", a new option named "SIP/PSTN Source Reference Info".

## **7. Acknowledgments**

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## **8. References**

### **8.1. Normative References**

[RFC2279] Yergeau, F., "UTF-8, a transformation format of ISO 10646", [RFC 2279](#), January 1998.

[RFC2671] Vixie, P., "Extension Mechanisms for DNS (EDNS0)", [RFC 2671](#), August 1999.

[RFC3261] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M., and E. Schooler, "SIP: Session Initiation Protocol", [RFC 3261](#), June 2002.

[RFC3966] Schulzrinne, H., "The tel URI for Telephone Numbers", [RFC 3966](#), December 2004.

### **8.2. Informative References**

[[draft-enum-sip-routing](#)] Kaplan, H., Pons, C., Gorman, P., "Routing SIP Requests with ENUM", [draft-kaplan-enum-sip-routing-04](#), October 24, 2011.

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