

IANA Registry for Special Labels in the DNS
draft-hoffman-dns-special-labels-00

Abstract

This document defines an new IANA registry for special labels in the DNS. The registry is useful because the labels cause special handling in DNS entities such as stub resolvers, recursive resolvers, and applications that use DNS, and developers of software for those entities should be aware of the many types of special labels in use.

[[A GitHub repo for this document is at
<https://github.com/paulehoffman/dns-special-labels>]]

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <https://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on April 4, 2019.

Copyright Notice

Copyright (c) 2018 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must

include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
1.1.	Terminology	2
2.	Definition of the New IANA Registry	3
3.	Existing Special Labels	3
3.1.	The Root Label	3
3.2.	Underscore Labels	3
3.3.	IDNA	3
3.4.	Sentinel	3
3.5.	MTA-STS	4
4.	IANA Considerations	4
5.	Security Considerations	4
6.	References	4
6.1.	Normative References	4
6.2.	Informative References	5
Appendix A.	Acknowledgements	5
	Author's Address	5

[1.](#) Introduction

Some DNS-related RFCs define labels that are treated specially by stub resolvers, by recursive resolvers, and by applications. It would be useful for DNS software developers to know what the entire set of such special labels are so they can determine if their software needs to handle those labels different than other labels. This document defines an IANA registry for special labels and lists the initial entries for that registry.

The special labels defined in the various RFCs were developed after extensive IETF evaluation of alternative patterns and approaches in light of the desired behavior of the associated protocols. The group designing each protocol looked at the many different ways that the protocol might be best deployed.

[1.1.](#) Terminology

In this document, "left-most label" means the label that appears at the left of a domain name when it is wire format or presentation format, as defined in [[I-D.ietf-dnsop-terminology-bis](#)]. In an application that uses IDNA [[RFC5891](#)] with one or more right-to-left labels, the order of the labels might appear different in the application.

2. Definition of the New IANA Registry

The creation of the registry is defined in [Section 4](#).

@@ Proposed rule for getting in the registry: @@

A label or label-type can be added to the registry only by IESG approval. This approval will likely come when an Internet Draft is progressed toward publication by the RFC Editor, but can come at any time. The reason to require IESG approval as compared to something less onerous such as "expert review" is that developers who rely on the registry will expect it to contain labels and label types that are relatively stable.

The columns of the registry are as follows:

@@ Define the columns here @@

3. Existing Special Labels

The following describes the labels that are the initial contents of the registry described in [Section 4](#).

3.1. The Root Label

According to [\[RFC1035\]](#), a zero-length label always indicates the root label in a domain name.

3.2. Underscore Labels

In many protocols, one or more of the left-most labels might be a label that starts with an underscore (_) character. Those labels are considered special within the context of those protocols.

The use of underscore labels is described in [\[I-D.ietf-dnsop-attrleaf\]](#) and [\[I-D.ietf-dnsop-attrleaf-fix\]](#).

3.3. IDNA

[\[RFC5891\]](#) defines "A-labels" as labels that begin with the characters "xn-". These labels can appear at any position in a domain name.

3.4. Sentinel

[\[I-D.ietf-dnsop-kskroll-sentinel\]](#) (if approved as an RFC) defines root-key-sentinel-is-ta-<key-tag> and root-key-sentinel-not-ta-<key-tag> as special labels when they are the left-most label. In these

labels, "<key-tag>" is an unsigned decimal integer that is zero-padded to five digits.

3.5. MTA-STS

[RFC8461] defines "mta-sts" as a special label when it is the left-most label.

4. IANA Considerations

@@@ Formally define the new registry here @@@

5. Security Considerations

This document doesn't introduce any new security considerations.

6. References

6.1. Normative References

- [I-D.ietf-dnsop-attrleaf]
Crocker, D., "DNS Scoped Data Through "Underscore" Naming of Attribute Leaves", [draft-ietf-dnsop-attrleaf-13](#) (work in progress), August 2018.
- [I-D.ietf-dnsop-attrleaf-fix]
Crocker, D., "DNS Attrleaf Changes: Fixing Specifications with Underscored Node Name Use", [draft-ietf-dnsop-attrleaf-fix-04](#) (work in progress), August 2018.
- [I-D.ietf-dnsop-kskroll-sentinel]
Huston, G., Damas, J., and W. Kumari, "A Root Key Trust Anchor Sentinel for DNSSEC", [draft-ietf-dnsop-kskroll-sentinel-15](#) (work in progress), July 2018.
- [RFC1035] Mockapetris, P., "Domain names - implementation and specification", STD 13, [RFC 1035](#), DOI 10.17487/RFC1035, November 1987, <<https://www.rfc-editor.org/info/rfc1035>>.
- [RFC5891] Klensin, J., "Internationalized Domain Names in Applications (IDNA): Protocol", [RFC 5891](#), DOI 10.17487/RFC5891, August 2010, <<https://www.rfc-editor.org/info/rfc5891>>.
- [RFC8461] Margolis, D., Risher, M., Ramakrishnan, B., Brotman, A., and J. Jones, "SMTP MTA Strict Transport Security (MTA-STS)", [RFC 8461](#), DOI 10.17487/RFC8461, September 2018, <<https://www.rfc-editor.org/info/rfc8461>>.

6.2. Informative References

[I-D.ietf-dnsop-terminology-bis]
Hoffman, P., Sullivan, A., and K. Fujiwara, "DNS Terminology", [draft-ietf-dnsop-terminology-bis-14](#) (work in progress), September 2018.

Appendix A. Acknowledgements

@@@ List folks who think of other new labels to add or come up with additional wording for the document @@@

Author's Address

Paul Hoffman
ICANN

Email: paul.hoffman@icann.org

