                 Special-Use Domain Names Registry

Abstract

   This document obsoletes RFC 6761 that created the Special-Use Domain
   Names registry at IANA for domain names that are reserved for
   special use. The registry has proved to be useful. RFC 6761 also has
   a description for when reserving such a name is appropriate, and the
   procedure for doing so; those descriptions have turned out to cause
   many problems in the IETF. Because of those problems, this document
   obsoletes RFC 6761 while retaining the registry and greatly reducing
   the rest of the discussion and requirements in RFC 6761. It places
   the responsibility for accepting Special-Use Domain Names entries
   with the IESG.

   [A repository for this draft can be found here.]

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1. Introduction

There is a long history of RFCs that reserve some domain names for
private use. [RFC2606] reserved ".test", ".example", ".invalid",
".localhost", "example.com", "example.net", and "example.org", as
well as all names below those names. It also created a registry at
IANA called "special-use domain names" for those names and for
future names assigned by the IETF.

This document obsoletes [RFC6761]. It keeps the IANA registry and
all its contents, but removes some of the requirements from RFC 6761
that were sometimes ignored after RFC 6761 was published. It also
has a brief discussion of what has happened since RFC 6761 was
published. The intentions for these changes to RFC 6761 are to make
it easier for the IESG to analyze proposals for inclusion in the
registry, and to make the requirements match what the IESG is
already doing.

In this document, "domain name" means a name in the global DNS as
defined in [RFC8499].

2. Requirements for the Special-Use Domain Names Registry

In order to be added to the Special-Use Domain Names registry, a
domain name needs to be specified in an IETF "Standards Action" RFC
or an "IESG Approval" specification. These terms are defined in
[RFC8126] as:

Standards Action:
For the Standards Action policy, values are
assigned only through Standards Track or Best Current Practice
RFCs in the IETF Stream.

IESG Approval: New assignments may be approved by the IESG.
Although there is no requirement that the request be documented
in an RFC, the IESG has the discretion to request documents or
other supporting materials on a case-by-case basis.

A specification for this registry does not need to be an RFC.

RFC 6761 said that its process applied when a name required special
handling in order to implement some desired new functionality. This
document drops that requirement and the associated requirements for
documenting all the types of special handling required.

Of course, the IESG should require that all use case assumptions and
requirements for the names added to the registry be wholly contained
in the RFC or specification defining that name. However, the level
of that requirement is controlled by the IESG for each name, not by
this document. It is the IESG that decide whether to add new names
that are top-level names (such as ".example"), or names at the
second level of existing Special Domains (such as "example.arpa").

3. History of the Special-Use Domain Names Registry

RFC 6761 contained the initial entries for the registry. Those were
the names from [RFC2606] as well as "in-addr.arpa" names for the
private IPv4 addresses in [RFC1918]: 10/8, 172.16/12, and
192.168/16.

Immediately after RFC 6761 was published, [RFC6762] was published
and contained entries for "254.169.in-addr.arpa", "8.e.f.ip6.arpa",
"9.e.f.ip6.arpa", "a.e.f.ip6.arpa", and "b.e.f.ip6.arpa". It also
contained the registration for ".local". All of these were placed in
the Special-Use Domain Names registry.

After that, the registry became contentious, with many parties
asking to have top-level names that were related to their protocols
added to the registry. In September 2014, the IAB issued a liaison
statment to ICANN concerning the registry. That statement said in
part:

Under its current charter, the DNSOP working group in the IETF is
responsible to review and clarify the overlap between (among other
things) the special names registry from RFC 6761 and the public DNS
root. This could include consideration of the problem of existing
name collisions, provision of additional guidelines, or further

modification to the process in RFC 6761 to reduce the potential for collisions in the future.

In September 2015, the IETF published a blog post, It says in part:

...the IESG believes RFC 6761 needs action, and substantial community input. It needs to be open for review and modification because the current process is unscalable.

Soon after, only one name, ".onion" [RFC7686] from October 2015, was added to the registry.

Even with a great deal of subsequent effort, the DNSOP Working Group could not reach consensus on how to move forward with any names other than ".onion". After that, the only names added to the registry were six names under ".arpa". Of those, only one RFC specifying those names followed the requirements in RFC 6761 for documenting all the types of special handling required.

In the future, the DNSOP WG and IESG can consider amending the DNSOP Working Group charter to remove the responsibility of the DNSOP WG for special-use domain names.

4. IANA Considerations

All entries in the Special-Use Domain Names registry that refer to RFC 6761 are updated to point to this document.

Names can be added to this registry by the IETF after being specified in an IETF "Standards Action" RFC or an "IESG Approval" specification.

The requirement from RFC 6761 that the specification must contain "Domain Name Reservation Considerations" is no longer required. It has not been consistently enforced by the IETF and IANA since 2015.

5. Security Considerations

This document has the same security considerations as those expressed in RFC 6761:

This document outlines the circumstances in which reserving a domain name for special use is appropriate, and the procedure for having that Special-Use Domain Name recorded by IANA. Any document requesting such a Special-Use Domain Name needs to contain an appropriate "Security Considerations" section which describes any security issues relevant to that special use.

6. References

6.1. Normative References

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6.2. Informative References

[RFC1918] Rekhter, Y., Moskowitz, B., Karrenberg, D., de Groot, G.
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[RFC2606] Eastlake 3rd, D. and A. Panitz, "Reserved Top Level DNS
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Appendix A. Acknowledgements

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