

GUIDELINES FOR THE IMPLEMENTATION OF INTERNATIONALIZED DOMAIN NAMES

Version 2.2 draft 0.03

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Introduction.

Version 1.0 of the ICANN Guidelines for the Implementation of Internationalized Domain Names ("IDN Guidelines"), was published on 20 June 2003. That release coincided with the initial IDN deployment for second-level domains in accordance with the IETF Proposed Standard for Internationalized Domain Names in Applications as stated in RFCs 3454, 3490, 3491, and 3492. The ICANN Board endorsed the implementation approach set forth in the Version 1.0 Guidelines on 27 March 2003. This stated the conditions under which a top-level domain registry requiring ICANN's authorization to accept IDN registration could begin doing so. Although written for gTLD registries, the IDN Guidelines and were also intended as a support document for other registries establishing IDN policies.

After the initial deployment experiences of IDNs at the second level, a detailed review of the original IDN Guidelines commenced at an IDN workshop in Luxembourg <<http://icann.org/meetings/luxembourg/captioning-idn-workshop-13jul05.htm>>. Thereafter, a working group of gTLD and ccTLD registries with IDN experience (members listed below) was formed to prepare a revision of the Guidelines. The working group considered the results from the Luxembourg workshop and posted a draft Version 2.0 of the IDN Guidelines on 20 September 2005 for public comment. A wide range of remarks and suggestions were submitted to a public comment forum that was open through 23 October 2005. A final draft Version 2.0 of the Guidelines was prepared on the basis of that material.

The ICANN Board endorsed version 2.0 on 8 November 2005, effective for a period of nine months at the end of which specific recommendations for further revision were to be presented to the Board. An initial plan for this work was announced; milestones and deadlines were subsequently posted. These included the publication of a revised Version 2.1 on 27 February 2006. The period of validity of Version 2.1 was extended past the August 2006 deadline due to need for consideration of technical and policy factors specific to the introduction of IDN on the top-level of the Domain Name System.

The present 2.2 draft of the IDN Guidelines is the first to make specific reference to IDN in top-level labels, and will be amended and supplemented in subsequent drafts in preparation for the release of top-level IDN labels in the production

environment. This present draft Version 2.2 restates individual earlier guidelines written for the second-level that can be applied to the top-level of the DNS, in wording appropriate to that purpose. This document also amends other guidelines where need for modification is indicated in light both of TLD considerations and other experience gained subsequent to the release of Version 2.1.

Guidelines.

Preface.

The text presented below does not address all of the concerns that currently attach to IDN. The authors recognize need for periodic review of relevant issues and, where indicated, making corresponding modifications to the IDN Guidelines. The next major action with the IDN Guidelines will be to reframe them in a manner that is amenable to further development as a Best Current Practices (BCP) document for which formal IETF status will also be sought.

The IDN Guidelines have no direct conformance implications with respect to the IDN standards that they reference. The term "will" is not to be read as it would be in a formal normative instrument. Although the IDN Guidelines apply directly to the gTLD registries, they are intended to be suitable for implementation in other registries on all levels. Any areas in the present wording that lack clarity will be corrected in the successor Best Current Practices document.

Guidelines

1. Domain registries that implement internationalized domain name capabilities at any level, including their own top-level designations, will do so in strict compliance with the technical requirements described in RFCs 3454, 3490, 3491, and 3492 (collectively, the "IDN standards").
2. In implementing the IDN standards, domain registries will employ an "inclusion-based" approach (meaning that code points which are not explicitly permitted by the registry are prohibited) for identifying permissible sets of code points from among the full Unicode repertoire, as described below. A registry may not even by exception permit code points that are prohibited by the IDN standards.
3. In implementing the IDN standards, domain registries will associate each label in a registered internationalized domain name, as it appears in their registry, with a single script as defined by the block division of the Unicode code chart. A more specific association may be made by combining descriptors for both language and script. Alternatively, a label may be associated with a set of languages, or with more than one designator under the conditions described below.

- 3.1 A domain registry will publish the aggregate set of code points that it makes available in clearly identified IDN-specific character tables, and will define equivalent character variants if registration policies are established on their basis. Any such table will be designated in a manner that indicates the script(s) and/or language(s) it is intended to support.
 - 3.2 All code points in a single label will be taken from the same script as determined by the Unicode Standard Annex #24: Script Names <<http://www.unicode.org/reports/tr24>>. Exceptions to this guideline are permissible for languages with established orthographies and conventions that require the commingled use of multiple scripts. Even in the case of this exception, visually confusable characters from different scripts will not be allowed to co-exist in a single set of permissible codepoints unless a corresponding policy and character table is clearly defined.
4. All registry policies based on these considerations will be documented and publicly available, including a character table for each permissible set of code points, before the registration of any IDN associated with such an aggregate may be accepted.
5. Permissible code points will not include:
 - 5.1 geometrical and line-drawing symbols such as those in the Unicode Box Drawing and Box Elements blocks,
 - 5.2 symbols and icons that are neither alphanumeric nor ideographic language characters, such as typographic and pictographic dingbats,
 - 5.3 characters with well-established functions as protocol elements,
 - 5.4 punctuation marks used solely to indicate the structure of sentences,
 - 5.5 punctuation marks that are used within words, with possible exception of those that are not excluded by any of the preceding points, are essential to the language represented by the IDN, and are associated with explicit prescriptive rules about the context in which they may be used.
6. A domain registry will define an IDN registration in terms of both its Unicode and ASCII-encoded representations (also termed U-label and A-label). The availability of a given Unicode sequence is currently determined by its encodability into the scheme defined in RFC 3491.
 - 6.1 Changes to that component of the IDN standard can have disruptive consequences for the operability of a Unicode name. Characters that are marginally acceptable in the terms noted in the preceding section should

therefore only be made available where there is compelling and clearly documented reason.

6.2 The appearance of hyphens in the third and fourth positions of a label indicates an encoding scheme. The registration of any label containing hyphens in these positions must not be permitted unless the hyphens follow a two-letter designator for a sanctioned scheme and the label conforms to the corresponding specifications.

7. Domain registries will work collaboratively with relevant stakeholders to develop IDN-specific registration policies, with the objective of achieving consistent approaches to IDN implementation for the benefit of DNS users worldwide. Domain registries will work collaboratively with each other to address common issues, for example by forming or appointing a consortium to coordinate contact with external communities, elicit the assistance of support groups, and establish global fora.

8. Domain registries will make definitions of what constitutes an IDN registration and associated registration rules available to the IANA Repository for TLD IDN Practices <<http://www.iana.org/assignments/idn/>>. If material fundamental to the understanding of a registry's IDN policies does not appear in the IANA Repository, it will otherwise be made readily available online by the registry. The registry should also ensure that its registrars call the attention of prospective holders of IDN names to this documentation.

9. Domain registries should provide resources containing information about the sources and references that were used in the formation of the corresponding IDN registration policies for all languages and scripts in which they offer IDN registrations.

Additional remarks.

The deceptive use of visually confusable characters from different scripts is discussed in detail in the Unicode Technical Standard #39 on Unicode Security Mechanisms <<http://www.unicode.org/reports/tr39/>>.

A revision to the IDN standards that is currently under consideration may result in increased constraint on the availability of punctuation marks as discussed in Guideline 5.5. The RFCs cited in Guideline 1 will be provided with forward references to any replacement documents that may be adopted.

The IDN Guidelines Version 2.2 was prepared by the working group members:

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