

Identification of a top-level domain for private use

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Summary

IANA has performed an evaluation to determine a suitable string to be reserved for the purpose of a top-level domain that may be used for internal or private use applications. The string "INTERNAL" has been identified as appropriate for this purpose.

In accordance with the process described by ICANN, this assessment will be put for a public comment proceeding, followed by review and potential adoption by ICANN.

Background

There are certain circumstances where private network operators may wish to use their own domain naming scheme that is not intended to be used or accessible by the broader Domain Name System, such as within closed corporate or home networks. IANA currently has demarcated [special blocks of private-use IP addresses](#) for such applications, but there is no comparable designated private-use namespace in the DNS. This has resulted in operational practices including informal use of top-level domains that have the potential to conflict with the root zone, or other designated purposes.

The ICANN Security and Stability Advisory Committee (SSAC) recommended that ICANN reserve a top-level DNS label for such private-use purposes, and to ensure the label does not conflict with usage in the DNS root zone. Its recommendation, described in [SSAC Advisory on Private-Use TLDs](#) (SAC113), proposed four criteria for selecting such a label:

1. It is a valid DNS label
2. It is not already delegated in the root zone.
3. It is not confusingly similar to another TLD in existence
4. It is relatively short, memorable and meaningful.

ICANN has accepted this advice and [consulted on the selection process](#). The process asks IANA staff to perform an assessment of candidate options and to identify a string that meets the four selection criteria.

Evaluation

IANA identified a set of 35 specific candidate strings for review, and considered the potential application of using an ISO 3166-1 private-use code assignment for this purpose. These strings were predominantly identified from candidates suggested in prior community discussions and proposals on the topic, augmented by additional potential strings identified by staff.

All candidate strings were assessed to be valid DNS labels and not presently in the root zone. Specific analysis was performed on each string based on potential for confusing similarity, for length, and for its capacity to be memorable and meaningful. The qualitative assessment on the latter properties was performed in the six United Nations languages (Arabic, Chinese, English, French, Russian and Spanish).

Many candidate strings were deemed unsuitable due to their lack of meaningfulness. IANA has interpreted the requirement for the string to be meaningful to allow the purpose of the string's reservation to be gleaned from its name without special expertise. For example, "DOMAIN" as a string is meaningful, but would not convey that its purpose is specifically for private-use applications.

In this evaluation, only two candidates emerged as broadly meeting the assessment criteria across the assessed languages. These were "INTERNAL" and "PRIVATE".

Some weaknesses were identified for both of these candidates. Both were considered as potentially connoting guarantees that their usage would remain internal or private within their intended scope, however it is likely the contents of such namespaces will leak in practice just as private-use IP addresses do today. It was noted "INTERNAL" could be contracted to "INT" which is designated for the unrelated purpose of intergovernmental treaty organizations, but that was not deemed to represent a confusing similarity. It was noted that "PRIVATE" may carry the unintended imputation of privacy to a higher degree, and more potential was seen for conflicting meanings across the gamut of assessed languages. No potential visual confusability was identified across lowercase, mixed case or upper case applications of either of the strings.

Therefore, "INTERNAL" is identified as the proposed top-level string for private-use applications.

Next steps

In accordance with the agreed procedure, this recommendation will be subject to an ICANN public comment proceeding, which will provide the opportunity for commentary on whether the string properly meets the SAC113 selection criteria, or is encumbered in some other

unanticipated way. The ICANN Board of Directors will then consider the output of the public comment proceeding before deciding whether to reserve this string for this purpose or to take alternate action.

Upon final decision of a reserved string, such string will consequently be memorialized by IANA and ICANN, and more broadly in technical literature, to confirm its availability for use in private applications.

Acknowledgements

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