

Security and Stability of the DNS Topics

Questions for Kim Davies – 14 August 2017

TLD Label management (what labels go in the root zone)

- What guidelines and constraints govern the labels that are placed into the root zone of the DNS?
 - For example, are single character domains, either in Ascii or in their Unicode equivalent permitted? Are two letter codes other than those defined through ISO3166 permitted?
- How are these constraints managed by ICANN, and how are the constraints communicated to the community?
- How is change control exercised over these constraints?
 - Presumably, one could envisage a scenario where some group is wanting to change these constraints. What process would ICANN follow to examine such a request for a change in these constraints?
 - For example, is ICANN bound to exclusively follow the specifications as described in current RFCs? Under what circumstances, if any, might ICANN reach a conclusion to deviate from the RFCs? If it were to do so how would ICANN codify its adopted specifications?
- If a proposed TLD contains non-ascii unicode characters (IDN) what procedures are followed to ensure that the label meets these criteria?
- Coordination with ISO3166 or both introduction and retirement of ccTLDs
 - What is the nature of the interaction between ISO 3166 and the root zone? Are all two letter TLDs reserved? What about Exceptionally reserved, traditionally reserved and indeterminately reserved names? Does ISO3166 provide for CC name retirement in an acceptable manner?
- Coordination with IETF over Special Use Names Registry
- Coordination between IETF and Unicode Consortium over IDNA standards and practice

NS and DS record management in the Root Zone

When a name is delegated in the root zone, the delegation is reflected by the presence of NS records in the root zone, and the DNSSEC security binding is reflected by the presence of DS records in the root zone.

- Are appropriate security practices used to ensure that changes are duly authorised by the correct party prior to inclusion onto the root zone?
- Are the NS and DS records validated by ICANN (or PTI) prior to inclusion in the root zone? What steps are taken if validation fails?
- Are these records, and the associated glue records, regularly audited to ensure their continuing accuracy?
- Are there any checks to ensure that the published root zone contents is exactly aligned to the record of delegation of TLDs?

DNS Root Zone KSK

- Are there procedures in place to manage an emergency KSK key roll?

- Are there procedures in place in the (unlikely) event that the two KSK repositories are inaccessible?
- Are there any procedures to access the KSK outside of the scheduled access windows?