Design Team F - Relationship between IANA and the Root Zone Maintainer in the absence of the NTIA

Recommendations

1. Recommendations related to the elimination of routine NTIA Authorization

   Currently, changes to the DNS Root Zone File, as well as changes to the DNS Root Zone WHOIS Database, are transmitted to the NTIA for authorization. Such changes cannot be enacted without explicit positive authorization from the NTIA. Post-transition, as per DT-D, there will no longer be a requirement for the NTIA to authorize any changes to the Root Zone.

   a. Changes will be required to the IANA Function Operator and Root Zone Maintainer software to remove this requirement. In the very short term, IANA staff could take over this role of authorizing all changes.

   b. Currently there is a Cooperative Agreement between the NTIA and the Root Zone Maintainer. The NTIA has said that there will be a parallel but separate transition to disengage the NTIA from the Root Zone Maintainer. The exact form of the latter transition is not currently known, nor what will replace the current Cooperative Agreement. However, there will likely be a requirement to have a formal agreement between the IANA Function Operator and The Root Zone Maintainer. In the event that the Cooperative Agreement stays in place post-IANA transition (on a temporary or permanent basis), it is likely that some wording changes in it will be required to remove the requirement for NTIA authorization for Root Zone changes.

   c. [Do we want to require that any additional checks/balances/verifications be added in light of the elimination of the NTIA authorization? See section 4]

2. The NTIA has traditionally been involved in discussions related to substantive Root Zone changes, (such as the implementation of DNSSEC and the deployment of IPv6), or Root Zone Management process changes (such as decisions to make specific reports public or further automation). They have contributed and opened avenues to resources (such as those from NIST – the National Institute of Standards and Technologies, a part of the U.S. Department of Commerce in efforts surrounding DNSSEC). Moreover as the Root Zone Administrator, they have been the entity to ultimately approve the changes going forward.

   Access to resources will surely be possible in the absence of the NTIA acting as the Root Zone Administrator. Similarly, it is clear that among the parties who inevitably get involved in such

discussions, there is no shortage of technology skills, and those who will want to take a cautious approach to any change to the Root Zone. Nevertheless, the CWG must recommend whether GO/NO-GO decisions should be made in an ad hoc manner, or whether there needs to be a more formal process including stakeholder consultation and perhaps an identified body responsible for passing judgement.

Related to this, we will need to ensure that studies and decisions that are already in process do not get lost in the transition.

3. The DT notes that IANA budgets must not only address operational costs, but must include a component to allow for the investigation, development and deployment of further Root Zone enhancements (requires consultation with IANA). Such development cost might be significant. The approval to embark on such an investigation or development should be addressed under Recommendation 2. [Already covered by DT-O?]

Issues Warranting Further Study

These issues require further reflection, but will likely be included in the final recommendations as work to be considered post-transition.

4. Robustness – Reduction/Elimination of single points of failure
    a. Potential for accidental or malicious changes or omissions within the IANA Functions Operator.
    b. Potential for out-of-policy changes within the IANA Functions Operator. The term "policy" is used in its most general sense, representing formal Policy adopted by ICANN or some other entity with jurisdiction as well as established practices and processes.
    c. Potential for accidental or malicious changes or omissions within the Root Zone Maintainer
    d. Potential for accidental or malicious errors in the communications path from the IANA Functions Operator to the Root Zone Maintainer.
    e. Potential for accidental outages or malicious actions related to the telecommunications infrastructure serving the IANA Function Operator and The Root Zone Maintainer. Such outages or actions could be related to the infrastructure shared with ICANN.

Any such decisions should be based on a cost/benefit and risk analysis factoring in the history and possibility of such problems.

5. To what extent can we or should we increase the transparency of the IANA Root Zone operation? Currently, all change requests are treated as confidential until they are actually deployed by Root Server Operators. In addition to an overall preference for transparency, if the content of changes (or proposed changes) could be made public earlier, there are a number of possible ways of addressing some of the robustness issues. Note that there are two separate aspects to this:
    f. Changes requested by a registry. These could be made public either at the time of the request, or at the time that a request has passed all IANA Function Provider verifications and validation. This would also apply to delegations or redelegations once a formal decision has been made.

       g.   Notice that a Delegation and Redelegation is in process. This was suggested in the 2012 Technical Proposal from IANA to the NTIA, but has not as yet been approved.

6. Currently updating the Root Zone requires the active participation of three parties, the IANA Function Operator, the Root Zone Maintainer and the NTIA. Post transition there will only be the first two. It is conceivable that the IANA function and the Root Zone Maintainer agreements could be awarded to a single entity. Should the CWG explicitly recommend that the power/responsibility to modify/update the root zone not be concentrated in a single entity? Note that the implications of such an award would vary depending on whether any or all of the robustness issues identified in Issue 1 have been addressed.

7. Not an issue in its own right, but future changes to the Root Zone Management must be made in such a way as to not reduce the speed of Root Zone change implementation.