

Root Zone Update Process Study

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- ⦿ In March 2016, the IANA Stewardship Transition Coordination Group published a proposal to transition the IANA functions from the U.S. Department of Commerce (DoC) to the global multistakeholder community.
- ⦿ In addition to the transition plan, the document called for a formal study of the operational procedures governing changes to the root zone after DoC's involvement ceased.
- ⦿ ICANN org's Office of the CTO (OCTO) took the lead to oversee this study and opened an RFP in April 2020 to find a contractor to complete it.
- ⦿ JAS Global Advisors won the bid with a small team of experts assembled specifically for the study.
- ⦿ The JAS team worked throughout 2021 to research and write the study. They worked closely with the IANA team and also interacted with Verisign in its capacity as the Root Zone Maintainer. Their process included surveying 90 TLD operators about their interaction and experience with IANA.
- ⦿ An initial draft of the study is now complete. A public comment on the study draft was opened on March 14, 2022 and closes on April 25, 2022. Details at <https://www.icann.org/en/public-comment>

Study Objectives

- ⦿ The objectives of the study are to investigate whether there is a need to increase (and if so, how) the robustness of the operational arrangements for making changes to the root zone content, identifying any single points of failure that may exist and, should they exist, offering recommendations on how to reduce or eliminate them.
- ⦿ The scope of the study is the processing of change requests to the DNS root zone. This process typically begins with a TLD manager's request for a change and ends with the publication of a new root zone on the Root Zone Maintainer's platform for distributing the root zone to the Root Server Operators (RSOs).

Study Scope

- ⦿ The process and means by which a TLD manager submits a root zone change request to the IANA4
- ⦿ All policies in place, tasks performed, and systems used by IANA to evaluate and process a requested root zone change, from receipt of the request from the TLD manager through the means and mechanism by which the change request is communicated to the Root Zone Maintainer
- ⦿ All communications between IANA and the Root Zone Maintainer
- ⦿ All policies in place, tasks performed, and systems used by the Root Zone Maintainer to evaluate and process a requested root zone change, from receipt of the request from IANA through the means and mechanism by which the signed root zone is distributed to the Root Server Operators.

Opportunities for Improvement

- ⊙ The scope instructed the study provider to look for opportunities to improve the overall architecture and process along several dimensions:
 - Efficiency: Are there unnecessary steps or complexity? Robustness: Are there single points of failure?
 - Conformance: Does the process ensure that the intended root zone changes are made following the policies established by the ICANN community?
 - Confidentiality: Do communications between various parties meet the level of confidentiality required by the system?
 - Integrity: Does the system ensure the integrity of data, both in transit among various parties and at rest?
 - Availability: Do the system's components meet the appropriate availability requirements?
 - Transparency: Is the operation of the system sufficiently transparent and auditable?

- ⦿ The contractor's work plan comprised three tracks:
 - Systems, software architecture, and Security, Stability, Resiliency (SSR): to ensure that IANA processes are secure, stable, and resilient to accidental or malicious changes,
 - Process management: to ensure that IANA processes are necessary and sufficient, efficient, effective, and resilient, and
 - Communications and Stakeholder consultation: to ensure that every IANA customer everywhere in the world receives and recognizes the same high level of support delivered efficiently and effectively.

Headlines of the Root Zone Update Process Study

- ⦿ Quoting from the report's Management Summary:
 - First, that IANA customers are delighted with the level of service that they receive from IANA. They are pleased both in their use of the Root Zone Management (RZM) System and in their personal interactions with IANA staff. Through the surveys and interviews conducted in this study, IANA customers recommended a relatively small number of improvements to the system and process. The IANA customers characterised these as “tweaks” to a well-operated, smoothly running process and should not be taken as anything but constructive improvements to a collegial, professionally managed organization.
 - Second, that the RZM study team found no single points of failure or unjustified redundancies. The findings of the IANA RZM process, systems and architecture study revealed a robust operation that is largely “right sized” given load, function, and resiliency requirements. The study's recommendations for improving security and efficiency resulted from the ICJ team investigations and, to a great extent, mirrored IANA's customer recommendations that were made in response to the survey and interviews with TLD managers. These recommendations were of no surprise to the IANA team, who have been contemplating how to make similar improvements while maintaining an open, accessible RZM change process.

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