

Work Plan: introduction to IANA WG activities

(IANA and ccNSO IANA Working Group context)

1. Background

The Internet Assigned Numbers Authority (IANA) coordinates the allocation and the publication of unique codes that internet protocols (and therefore internet applications) use to communicate together in a stable and predictable way.

According to IANA web site:

"IANA's various activities can be broadly grouped in to three categories:

- Domain Names IANA manages the DNS root, the .int and .arpa domains.
- Number Resources IANA coordinates the global pool of IP and AS numbers, providing them to Regional Internet Registries.
- Protocol Assignments Internet protocols' numbering systems are managed by IANA in conjunction with standards bodies."

The US government, on behalf of which these technical functions were initially performed, entered into an agreement in year 2000 (and 2001) with ICANN for the IANA functions to be transferred to ICANN.

The core IANA services, activities and requirements are described in a specific document (order for service) issued by the US government (NTIA) in agreement with ICANN. In particular, IANA operates the authoritative repository for root zone management.

As such, IANA receives requests submitted by country code registry operators in order to update Top Level Domain information in the IANA repository.

However, IANA does not directly modifies, adds or deletes entries to the root zone file, which is the top level reference used across the internet to query the public DNS tree. This task goes to Verisign under USG instructions, as set forth in an agreement between them.

Therefore, any changes related to the TLD zone server designation is forwarded by IANA to Verisign for publication by the primary root zone name server.

Authoritative replications of the root zone are also published by individual organizations that operate DNS servers around the world. There are 13 root zone servers instances declared in the root zone, "root-servers.net" is the DNS zone used to announce relevant technical information about them. Additionally, some of those operators have deployed anycast techniques to provide an even more decentralized service. The Root Server System Advisory Committee of ICANN (RSSAC) includes representatives of those operators; it provides updates and advices about root name server's activities and operations.

Accuracy and consistency of published information is vital to TLD domains. Secure management of all the operations, taking into account new threats that the DNS may face is critical; the right channels of communication needs to be set up, and responsiveness of involved stakeholders ensured. This includes the implementation of a secured IANA repository.

IANA does not set its own policies, but implements policies that are developed in relationship with a variety of interested parties that IANA work with: IETF, Regional Internet Registries, and of course gTLD and ccTLD operators. ICANN has a structure of supporting organizations to develop and maintain relationship with those parties. IANA staff also participates to meetings or discussions with relevant communities to propose and implement developments.

ccTLD identifiers are two letters long domain names that are published in the DNS root zone, and that normally corresponds to the ISO 3166-1 alpha-2 country codes maintained by the ISO 3166 Maintenance Agency. According to the GAC principles, ccTLD policies are set locally in the country associated with that country code, unless it can be shown that the issue has global impact and needs to be resolved in an international framework (principle of subsidiarity).

The Country Code Names Supporting Organisation (ccNSO) of ICANN was created in 2003. The ccNSO is the policy development body for a narrow range of global ccTLD issues within the ICANN structure. To date, 77 ccTLD operators are members of the ccNSO. The ccNSO IANA working group is a ccNSO group that focuses on the service provided by IANA to ccTLDs. IANA is a member of the ccNSO IANA working group.

2. IANA and ccTLD

According to a calculation performed the 26th of May 2008, there are 280¹ Top-level domains announced in the root zone, 248 of which are ccTLDs, and 11 are test idn ccTLDs. The root zone lists 1036 authoritative DNS servers, 959 of which are hosting ccTLDs: IANA and ccTLDs are critical pieces of the puzzle that contribute to maintain a stable, interoperable and secure common DNS resource.

The description of IANA and ccTLD activities, as well as interactions between them, can be found in various documentations, from historical papers such as RFC1591 or ICP-1 to bilateral agreements such as accountability frameworks, through technical guide (RFC 1033) or DNS protocol specifications (RFC 2181).

ccTLD/IANA collaboration is mostly expressed upon TLD data and DNS management operations, communication through mailing lists or at the occasion of the various meetings that are organized by the relevant internet bodies.

It must be acknowledged here that IANA is not only a portal to the root zone for ccTLD, but that it is used by other TLD operators (gTLD, .arpa ...) : knowledge of the expectations of those operators is also an aspect that ccTLD should be aware of.

¹ 11 of which are test TLD hosted by IANA, representing the word 'test' in different scripting

3. ccNSO IANA Working Group background

In beginning 2004, there were concerns raised by ccTLDs about IANA service: IANA and ccTLDs jointly created in December 2004 the ccNSO IANA Working Group (IANAWG), with the goal to improve the service that IANA provided to ccTLDs.

A list of things that would require attention was quickly identified, and the group started to assist IANA to work on them, set up mailing list, web site and organized conf calls. A charter was developed and adopted by the working group in 2006, the list of ccTLD IANA concerns was also refreshed, and the working group pursued its activities.

Considering the importance of issues addressed by the Working Group, and considering also the various ccTLD context and environments, it was felt and recognized that some mechanism was required to set up a good representation of the ccTLD community in the IANAWG.

In December 2006, a membership protocol was developed and adopted by the ccNSO to implement a good participation in the IANAWG: membership consists of two ccTLD per ICANN region (for a total of ten in the group) whether members of the ccNSO or otherwise, and also includes IANA staff members.

In 2007, the community recognized that the IANA service proposed to ccTLD had improved. At that time, activities of the working group were structured around three documentations:

- ccNSO IANA working group charter
- ccNSO IANA working group membership protocol
- List of ccTLD concerns/topics about IANA

In the meantime, new IANA issues were also raised and identified of primary interest to the ccTLD community (such as the signature of the root zone, the project to deploy a new software to increase IANA responsiveness over ccTLD requests, etc.).

The working group charter was reviewed, and a new charter was adopted by the ccNSO in February 2008 (New Delhi). The new Charter is set up as a consolidation of the previous documentation, it includes the "ccNSO IANA working group membership protocol", as well as a "work plan" section to structure the IANAWG activities, to increase awareness about ccTLD expectation and to better address new challenges that may be raised about IANA.

Whereas the focus and the nature of the IANAWG, the Charter anticipates that the group is established for an undetermined time.

4. IANA WG activities

Whereas the IANA context, and based on the scope of the ccNSO IANA WG charter, two main areas of activity for the Working Group can be distinguished: **IANA services to ccTLD** and **communication related to IANA services**.

The ccNSO IANA WG work plan is structured around these two main areas of activity.

5. Participation in the ccNSO IANA WG and ccNSO IANA WG activities

Membership of the ccNSO IANA working group is open to all ccTLDs, whether members of the ccNSO or not. Considering the issues addressed, a rule of two members per ICANN region was set up to ensure a wide diversity of participants in the working group, and to keep the group efficient and workable by limiting the number of participants to ten. IANA staff is a member of the ccNSO IANA WG.

Although the ccNSO secretariat is also supporting activities, it has to be stressed that ccNSO IANA WG participation is based on volunteering and only involves voluntary work. Additionally, because of the nature of the IANA function and the way it is structured, ccNSO IANA WG progresses may be subject to the responsiveness of stakeholders that are not members of the group. This means that, if milestones and indications can be foreseen about ccNSO IANA WG activities, this is difficult to commit on fixed deadlines over specific projects.