



Open Meeting of the Security and Stability Advisory Committee (SSAC)



9 March 2010

Agenda

- Meeting Kick-Off: Steve Crocker, Chair, SSAC
- Report on the Activities of the Internationalized Registration Working Group: Edmon Chung, GNSO Co-Chair
- SSAC Update on Root Scaling Issues: Ram Mohan, SSAC Liaison to the Board, Afilias
- Orphan DNS – SSAC Work Party: Jim Galvin, Afilias
- ICANN Board Governance Committee Review of the SSAC: Steve Crocker, Chair, SSAC



Progress Report of the Internationalized Registration Data (IRD) Working Group



Edmon Chung

President and CEO .ASIA

7–12 March 2010

Outline

- Background
- Demographics of the working group
- Areas of discussion
- Timelines and next steps

Background

- There are internationalized domain name (IDN) guidelines for domain labels and names
- There are no standards for submission and display of domain name registration records (Registration Data):
 - contact information, host names, sponsoring registrar, domain name status...
- SSAC report SAC037 calls attention to this matter
- At the request of the ICANN Board, the GNSO and SSAC created an Internationalized Registration Data Working Group (IRD-WG)

Scope of IRD-WG Work

- Study the feasibility and suitability of introducing submission and display specifications to deal with the internationalization of Registration Data
- Engage participation from all ICANN Supporting Organizations (SOs) and Advisory Committees (ACs) as well as Country Code Top Level Domain (ccTLD) operators, to ensure broad community input

IRD-WG Composition

- Chairpersons
 - Edmon Chung (GNSO)
 - Jeremy Hitchcock (SSAC)
- Composition:
 - 17 participants, 5 staff support
 - 5 countries (China, New Zealand, Russia, Tunisia, USA)
 - 3 ccTLDs (.cn, .nz, .ru)
 - 3 SOs/ACs (ALAC, GNSO, SSAC)
- Bi-weekly teleconferences
- Wiki: https://st.icann.org/int-reg-data-wg/index.cgi?internationalized_registration_data_working_group
- Email list: ssac-gnso-irdwg@icann.org

Discussion Topics

What should we require from internationalized registration data?

- That a user can submit or have a domain name displayed in the IDN A-label (xn--) format or U-label (local language readable) format?
- That registration data accommodate users who want to submit and have registration data displayed in “familiar” characters from local languages?
- That data registration data be collected and displayed uniformly, in manners that would allow applications to process the data efficiently?
- That some effort be made reduce the opportunity for malicious use of multiple scripts in the composition of certain registration data?

Discussion Topics, Continued

How would internationalized registration data affect data representation?

- Should Whois support multiple representations of the same registration data, in different languages or scripts?
- Is it desirable to adopt a “must be present” representation of data, in conjunction with local character set support for the convenience of "local users"?
- Should we consider adopting a “format for civic address information” that's reasonably functional around the globe”?

Working Group Deliberations

Possible Recommendations:

- WHOIS must accept a "submit" in either U- or A-label.
- WHOIS must "display" both in U- and A-label.
- Bundled representations (e.g. both the simplified and traditional Chinese) of a single A or U-label query should be returned.
- Various elements of registration data could separately internationalized:
 - a) Domain name: IDN A-label and U-label
 - b) Registrar: a good example of always available in English/ASCII7
 - c) Telephone/Fax: E. 123 standard
 - d) Email address: RFC 5336
 - e) Contact information: (in discussion)

Working Group Deliberations, Continued

Under Discussion

- Considering no mixing of scripts to reduce the opportunity for malicious use
- Is it desirable to adopt a “must be present” representation of data, in conjunction with local character set support for the convenience of local users?
 - Requiring a “must be present” representation may present a barrier to those who do not know the “must be present” language.
 - But, requiring a “must be present” representation may be necessary to realize the original intent of Whois (that is to be able to contact registrants).

Working Group Deliberations, Continued

Yet to Discuss

- How should registration data be collected and displayed uniformly, in manners that would allow applications to process the data efficiently?
- Should Whois support multiple representations of the same registration data, in different languages or scripts?
- Should there be a standard “format for civic address information” that is reasonably functional around the globe”?

Other Topics Under Deliberation

- Is it necessary that data provided by registrars be displayed using characters from local languages?
- Is the collection and display of IRD a local matter for registrars?
 - If yes, then is it incumbent upon registrars to provide “interpretation” of all local languages it supports?
 - What are the consequences of having a registry database populated with highly localized contact information?

Timeline and Next Steps

■ Next Steps

- Collect more information from ccTLD registries regarding how they accommodate local users today
- Continue discussion of issues

- Near-Term Timeline

- Possible preliminary report May 2010
- Public meeting ICANN Brussels June 2010

Questions

- Did we miss any important questions?



SSAC Update on Root Scaling Issues

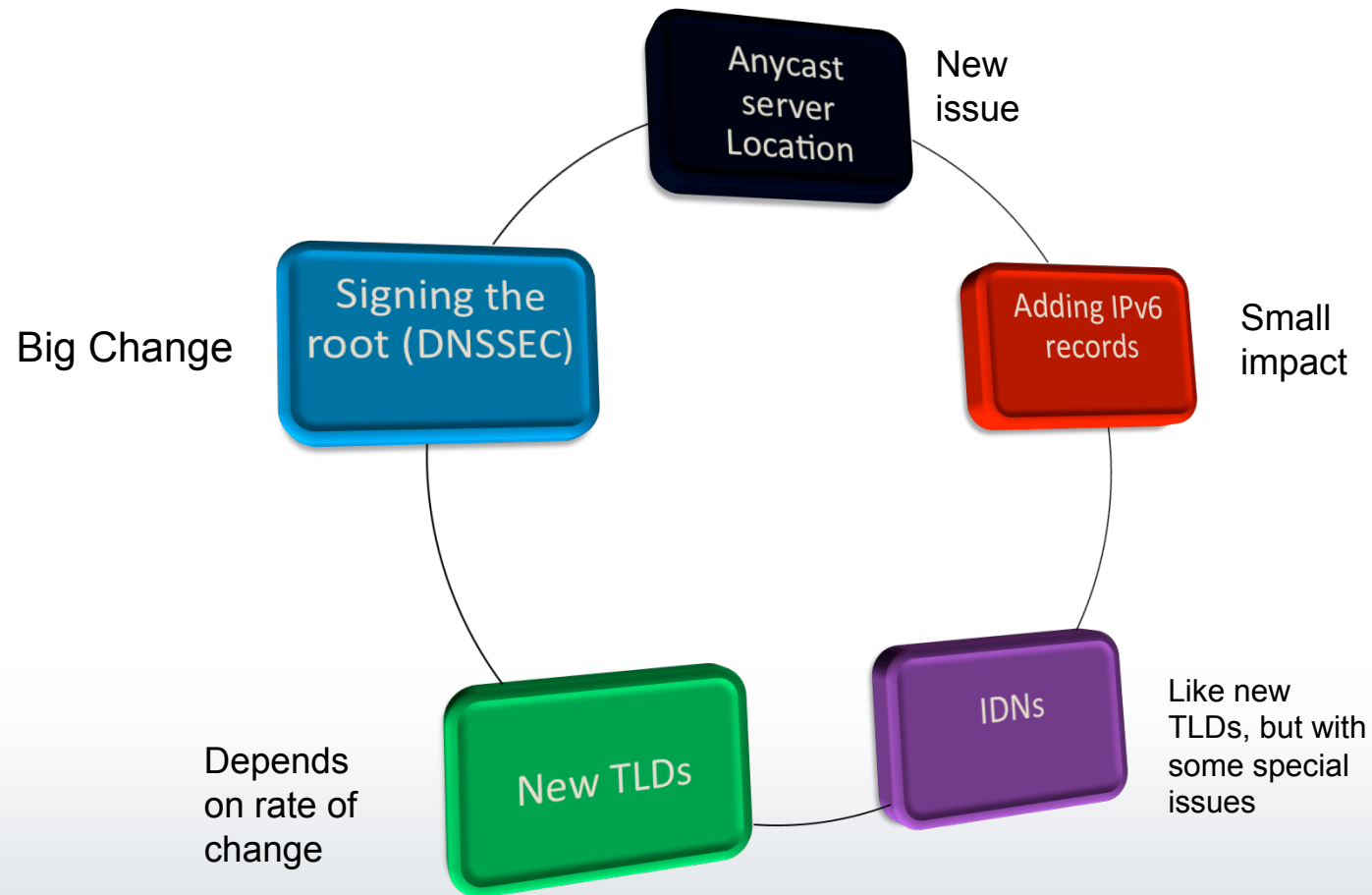


Ram Mohan, SSAC Liaison to the Board, Afiliast
9 March 2010

Background

- February 2009: ICANN Board asks SSAC and Root Server System Advisory Committee (RSSAC) to coordinate a study:
 - To consider the potential impact on the stability of the root when adding:
 - DNSSEC
 - IPv6 address records
 - Internationalized Domain Name top level domains (IDN TLDs), and
 - New TLDs
- September 2009: SSAC began consideration of two reports: the Root Scaling Study Team's (RSST) Report and the TNO Report; and
- March 2010: SSAC has reviewed both reports and is considering recommendations.

Multiple changes, some large, some small



Signing the Root (DNSSEC) – A Big Change

- Signing the Root is underway
- Anticipated to be in full operation in July
- Lots of testing in progress
 - Some of the root servers have the signed zone with the test key
 - Large responses are being returned
 - Nothing bad has happened
 - This appears to be moving along smoothly
- Conclusion: Among the multiple factors, this was clearly the largest. If this continues to proceed smoothly, we're in good shape.



Signing the
root (DNSSEC)

New TLDs – Depends on Rate of Change



- Will the addition of new TLDs overwhelm any part of the root server system?
 - If so, how many?
 - When?
 - How will we know?
- ICANN preparing to ramp up capacity to evaluate and approve new TLDs to a max of 924 per year, a year or more after the initiation of the new gTLD program.
 - However, it is not clear that the legal department, the Board or the US Government can accommodate that many contract actions
- Can the Root Server Operators accommodate that many new TLDs?
 - Probably, but might depend on rate of change

IDN TLDs – New TLDs with Special Situations



- Adding IDN TLD to the root is a non-issue
 - Extensive testing was completed a long time ago
 - Adding an IDN TLD is exactly the same as adding a non-IDN TLD
- **Except**: There are requests for IDN TLD variants to be delegated to the root zone
- Technical and operational issues not yet thoroughly worked out:
 - Methods to ensure variants point to the same locations
- This issue is separable from the scaling issues
- But wrong approach can cause stability issues

Adding IPv6 records – Small Impact

Adding IPv6 records

- IPv6 records have been added at a slow, steady rate
- Impact on the size of the root zone is very small
- This is business as usual without any issue at all
- There is no reason to interrupt future requests for new IPv6 records.

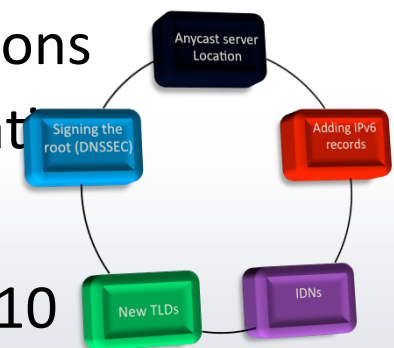
Location of Anycast Servers – New Issue

Anycast
server
Location

- Possibility that remote location of Anycast instances of the root might inhibit the growth of the root zone
- This would be a new consideration, not previously explicit
- The Root Server Operators have not spoken clearly on this
- Some Root Server Operators say this is not a problem at all
- Conclusion: Some straightforward discussion with the Root Operators is needed

Status and Conclusions to Date

- The RSST Report and TNO report are not sufficient to conclude the Root Scaling Study
- Several issues that may potentially impact the scaling of the root, including placement of Anycast instances;
- Communication between ICANN and the root server operators should/could be improved
- Further work
 - May not be required to start new TLD delegations
 - Could be required to continue new TLD delegations
- Targets
 - Completion of SSAC Recommendations: 2Q 2010
 - Initiate Scaling Study v2.0: 2Q 2010
 - Initiate Root Scaling End-User Impact Study: 3Q 2010



Questions?



Orphaned Name Servers



Jim Galvin

SSAC

9 March 2010

Outline

- What is an orphaned name server?
 - A name server record exists in a delegation
 - The parent domain name no longer exists
- How does an name server record become orphaned?
- Why should we care about this problem?
- SSAC research plan

How a Name Server is Orphaned: Step 1

example.TLD1 and **example2.TLD1** are registered in TLD1

in TLD1 zone file:

```
example.TLD1      NS      ns1.example2.TLD1
example.TLD1      NS      ns2.example2.TLD1
example2.TLD1     NS      ns1.example2.TLD2
example2.TLD1     NS      ns2.example2.TLD2
.
.
.
ns1.example2.TLD1 A      10.0.1.53
ns2.example2.TLD1 A      10.0.2.53
```

How a Name Server is Orphaned: Step 2

example2.TLD1 is deleted from in TLD1

in TLD1 zone file:

```
example.TLD1      NS   ns1.example2.TLD1
example.TLD1      NS   ns2.example2.TLD1
example2.TLD1    NS   ns1.example2.TLD2
example2.TLD1    NS   ns2.example2.TLD2
.
.
.
ns1.example2.TLD1 A    10.0.1.53
ns2.example2.TLD1 A    10.0.2.53
```

These resource records are removed by the registry when label is deleted

These resource records remain even though parent domain name no longer exists – these name servers are **orphans**

The registry cannot unilaterally remove the glue – other domains may be using the same name server
Identifying orphans and removing glue is harder when parent and delegation are not in same TLD

Why should we care about this problem?

- DNS abuse
 - Preliminary APWG study conducted by Internet Identity and Karmasphere showed that 3.4% of all malicious domains from APWG input list used orphan name servers, 59% of the malicious domains associated with FF attack networks used orphaned name servers

SSAC Research Plans

- To document through an empirical study the magnitude and prevalence of the orphaned name server records
- To document through an empirical study the extent to which it is used for abuse
- To discuss and document the practices of various registrars and registries on how they handle the issue through interviews with registry and registrar operators
- To assess whether any of the "solutions" these players implement are not only sufficient for their individual TLDs but also accommodate cases where names from multiple TLDs are affected by the orphan

SSAC Research Plans, Continued

- Empirical Study 1: measure the number of orphaned records in gTLDs
 - Used ICANN gTLD zone file depository
 - Currently collecting data
- Empirical Study 2: Measure the extent orphaned records are used for abuse
 - Cross check records found in Study 1 with abuse lists such as surl.bl, APWG phishing blacklist, etc.
- Interview Study: semi-structured interview of gTLD operators on how they handle orphaned records, problems if they are removed, and if any of the solutions affect cross TLDs

Questions?



ICANN Board Governance Committee Review of the SSAC



Steve Crocker, Chair, SSAC

Background

- In 2009, the ICANN Board appointed an SSAC Review Working Group (WG);
- The Board appointed JAS Communications as consultants for the independent review of the SSAC and in November 2008 they began their review with input from the ICANN community and released a report on 17 February 2009 followed by a Public Comment period;
- The SSAC review WG engaged in extensive consultations with the SSAC community and produced a draft report on 18 September 2009 followed by a Public Comment period; and
- The SSAC review WG released its final report on 08 February 2010.

SSAC Review WG Report Highlights

- The SSAC should:
 - maintain its fundamental identity as an Advisory Committee chartered by and reporting to the ICANN Board;
 - undertake a lightweight planning process to determine the research and publication agenda, membership strategy, and resource requirements;
 - keep and publish meeting minutes (but not transcripts as such) on the SSAC web site in a timely manner;
 - endeavor to keep its web site current to include work in progress and work planned;
 - appoint members for three-year terms renewable by the Board, not impose a limit on the number of terms served, and stagger member terms;

SSAC Review WG Report Highlights, Continued

- The SSAC should:
 - adopt a default confidentiality policy;
 - produce a yearly report of activities to the Board and for publication;
 - include sections in its reports to record member dissents and abstentions;
 - develop and post a conflicts of interest policy based on the ICANN Board policy; and
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