ccNSO IANA Update
ICANN Singapore, June 2011

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Manager, Root Zone Services
Agenda

- Root Zone Management System
- Business Excellence
- Improvements to delegation and redelegation
Root Zone Management System
Background

- ICANN, VeriSign and NTIA are deploying a new system to manage the DNS root zone.
- A multi-year collaborative effort between the three organisations to develop and test the system.
What does the system do?

- Three piece system (one at each organisation) for replacing the current manual workflow.
- Retains the same workflow, but automates many of the processing steps.
- Communication between ICANN and VeriSign conducted via EPP removing risk from the current process.
- More immediate feedback to TLD managers on problems with requests.
- Automating aspects like obtaining confirmations and performing technical checks should decrease end-to-end processing times.
Development history

- Work on this project began in 2006, following discussions particularly between ICANN and CENTR.

- Initially an ICANN-only project, scope was expanded to include VeriSign and later systems for NTIA also. End product now covers the whole workflow.

- Using EPP proved to be a challenge for an asynchronous workflow.

- DNSSEC impacted roll-out schedule.

- Development substantially done by mid-2010. Since then, cautious and careful testing program has been conducted.
Highlights of the system

- Provides a new optional web interface for TLD managers. Change requests can be lodged through web interface with immediate feedback. Status of change requests can be monitored in real time.

- Steps that have been automated include contact confirmation process, technical check process, verification process and the general processing and status update notifications.

- There is still manual review by all three parties of every request. This ensures adequate safeguards are retained.
Testing

- Three types of testing: internal, OT&E (integration) and parallel operations

- Most interesting is parallel operations: for the last six months, all root changes we've processed have been done twice - in manual process, and in the automation system.

- We made sure the output of both processes were consistent to consider the system to be working correctly.

- To qualify the system for deployment, formal error free period starting 11 April, with a time and count threshold
Roll-out

- We formally passed the testing programme today
  - Sign off by all three parties
- System will now be accepted into production.
- All TLD managers will be issued with credentials to the system as part of the roll-out
## Key dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 June 2011</td>
<td>‣ System passes testing programme</td>
</tr>
<tr>
<td></td>
<td>‣ All three parties agree it is ready</td>
</tr>
<tr>
<td></td>
<td>‣ Commence notification process</td>
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<tr>
<td>Cutover day (Q3 2011)</td>
<td>‣ Root zone now comes from management system</td>
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<tr>
<td></td>
<td>‣ TLD confirmations and notifications will come from system, not manual staff email</td>
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<tr>
<td>Post cutover by Senegal</td>
<td>‣ Start inducting TLDs to web interface</td>
</tr>
<tr>
<td></td>
<td>‣ Complete inductions</td>
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Key take-aways

- For TLD managers, nothing changes if you don't want it to. Continue to submit requests as normal.

- Once inducted into the system, you'll have an additional choice in how to submit requests, and the ability to review and check requests.

- Overall end-to-end processing times will improve, although not drastically.
  - Much of the work to optimise the process was done in the past few years in the manual process.
Future work

‣ Our main focus has been a correctly functioning system for first version.
  ‣ Limited “new” functionality to avoid scope creep.

‣ Current version only supports “routine” changes from credentialed users. Look into supporting requests such as adding a new TLD in the future.

‣ Take feedback from the community on new features and refining the interface.
Thanks

- NTIA and VeriSign for collaborating on this project.
- NASK, who we contracted to help develop the back-end workflow. They used their experience developing the e-IANA prototype to help develop this new system for us.
- CENTR, who drove the initiative at the beginning.
Business Excellence
Business Excellence

- IANA is undertaking a multi-year “Business Excellence” project
- Following the EFQM model
  - European Foundation for Quality Management
- Methodology involves continuous improvement
- Pilot case, that is expected to extend across ICANN
Work to date

- Internal documentation of process flow and procedures
- Internal annual assessments
- Initial research into appropriate performance metrics
<table>
<thead>
<tr>
<th></th>
<th>Is this a spurious request?</th>
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<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Review whether the request is substantive, or can be deleted.</td>
</tr>
<tr>
<td><strong>Actor</strong></td>
<td>IANA Staff</td>
</tr>
<tr>
<td><strong>Documents</strong></td>
<td>—</td>
</tr>
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</table>
| **Steps** | - Review particulars of the request.  
- A request should not be considered spurious:  
  - If it clearly involves a specific TLD and relates to a change or question concerning the TLD.  
  - If it involves the root zone in general, or management of the root zone.  
- A request will likely be considered spurious if:  
  - It relates to a commercial product offering ("spam").  
  - It is fully in a foreign language that has no reference to root zone management; or is otherwise entirely unintelligible.  
  - Clearly caused by malfunctioning software (e.g. mail loop).  
- If the request is spurious, for example spam, unintelligible or caused by malfunctioning software; then mark the ticket as deleted in the ticketing system.  
- Proceed to **Step 3**. |
Current work

- Develop measurement models regarding quality of service to help us drive continuous improvement

- Iterating the delegation and redelegation process to be as objective as possible
# Sample metrics

<table>
<thead>
<tr>
<th>Category</th>
<th>Metrics</th>
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<tbody>
<tr>
<td><strong>Timeliness</strong></td>
<td>▪ End-to-end processing time</td>
</tr>
<tr>
<td></td>
<td>▪ Time for different actors (incl. requestor)</td>
</tr>
<tr>
<td><strong>Accuracy</strong></td>
<td>▪ Are changes being implemented as originally intended?</td>
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<tr>
<td><strong>Quality</strong></td>
<td>▪ How many requests need clarifications or followups with the applicant?</td>
</tr>
<tr>
<td></td>
<td>▪ Are customers happy?</td>
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<tr>
<td><strong>Transparency</strong></td>
<td>▪ Is required reporting performed on time?</td>
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<tr>
<td></td>
<td>▪ ?</td>
</tr>
<tr>
<td><strong>Contract performance</strong></td>
<td>▪ Are we satisfying all metrics dictated in contracts?</td>
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Documentation

- RFC 1591 is not good documentation
- (IMHO) the best way for the community to hold us accountable is to fully document our process, and for us to report against how we execute on that process.
  - Gives the community a basis to criticise and suggest improvements — right now everyone is left to guess.
  - Improves customer service by setting common expectations and reducing ICANN servicing customer issues.
- Key challenge is past history and risk perception
  - ICP-1; Is ICANN creating policy by documenting current practice?
Delegation and Redelegations
Board improvements

- Fast Track has emphasised some interpretation issues for assessing delegations and redelegations
- ICANN Board tasked Board IANA Committee to consider improvements in August 2010
- Board Committee passed its recommendations back to full Board to consider later this week
- Improvements do not change policy, just clarify the interpretation
  - Does not prejudice outcome of FOIWG, etc.
Other work

- Following the work of the ccNSO
- Iterating the process to make more objective and predictable
  - Ideal situation is a checklist based approach
- Board IANA Committee evaluating improvements
- Scaling up process for new gTLD program
Other items
DNSSEC

- No news is good news
New IANA Contract

- Responses to initial NOI highlighted areas ICANN strongly supports, like improved transparency
- US Government has issued a Further Notice of Inquiry (FNOI)
  - ICANN Board is reviewing FNOI, to decide what response, if any, to make
  - We encourage community to respond to the FNOI
- Interesting session held at the APrIGF meeting on Friday
Current IANA Contract

- Extended until March 31, 2012
Current TLD Census
As at 19 June 2011
IPv6

- IANA handed out last IPv4 blocks earlier this year
- All IANA services now available over IPv6
ccTLD diversity by origin AS of IPv6 nameservers
As at 8 June 2011
Thanks!
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