Universal Acceptability

The Public Suffix List & IDN Whitelist

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"Domains should just work"
- This is not just a matter of Registry/Registrar/Registrant + DNS + a little advertising

"My TLD will just work" is an unsafe assumption
- 2001 round .INFO and .MUSEUM - TLD Length >3 exposed some issues, tip of iceberg
- 25 years of ‘static’ root zone (for lack of better term) has driven oversimplified TLD logic
Think about the people who build things for people that will use your domain

• Who are they?
• What do they need from you?
  – SRS Complimentary Services (Whois clients’ awareness of TLD and server, etc.)
  – Application Developers (Browsers, email clients, etc.)
  – Supplemental Service Providers (Hosting Companies, Certs etc.)
  – Anti-Spam and Security, Programming Languages, Etc.
ICANN is working on Universal Acceptability

- Outreach ongoing
- Still, anticipate that it is still your opportunity to do this for your community

Do what you can within your community

- Technical Seminars
- FAQs, White Papers, Clear Documentation
- Participate in industry events
• Outreach and Awareness
  – Seek out those with questions
  – Clarify wherever possible
    • Blog Posts
    • Forums
    • Mailing Lists

• Locate central comprehensive data resources
  – Public Suffix List
  – Net::DRI
YOU can help with Universal Acceptability

Two important community initiatives

- **Mozilla / community Initiatives**
  - Public Suffix List
  - Mozilla IDN Whitelist
The Public Suffix List

Community-Driven Universal Acceptability
The Public Suffix List (“PSL”)

http://publicsuffix.org

What Is it?

- PSL is a list of all known public suffixes
  - Factors in all levels under which Internet users can register or obtain delegations.
  - Some examples of public suffixes are ".com", ".co.uk" and ".pvt.k12.wy.us" where the IANA list would have ".com", ".uk" and ".us".
  - Complimentary to and adds depth/detail to the IANA list of TLDs
Where did it come from?

- **Designed to aid browsers**
  - *Founded in 2007 by Jo Hermans*

- **Practical application rapidly grew its use**
  - *Now maintained with Mozilla, by community and core group of volunteers*
The Public Suffix List ("PSL")

Where is it used?

It used by (at least):

**Browsers:** Firefox, Chrome, Opera, others;

**Languages:** Google’s Java libraries;

testom-libs for C, Perl, and PHP;

Nokia QT, Ruby on Rails,

JavaScript - Greasemonkey, many others.

Other Software and Services:

Operating Systems – Hosting Companies –
Statistics Providers – Anti-Spam – Security
Services – Certification Providers – CRM Systems –
Law Enforcement Agencies – Form Validation
+ Many, Many More
**The Public Suffix List ("PSL")**

**How can I view it?**

You can view it at [http://publicsuffix.org/list/](http://publicsuffix.org/list/) (click the link that says ‘See the list’).

**How can I update or add my IANA listed TLD or sub-delegation registry?**

To make amendments to the list, please visit this site: [http://publicsuffix.org/submit/](http://publicsuffix.org/submit/)

*Note: Requests go through a distributed approval process before implementation*
The Public Suffix List ("PSL")

What does it do?

It allows for validation of the rightmost elements as TLDs underneath a domain name.

It allows browsers to, for example:

- Avoid privacy-damaging "super cookies" being set for high-level domain name suffixes
- Highlight the most important part of a domain name in the user interface
- Accurately sort history entries by site
The Public Suffix List ("PSL")

Please review and add or update your entry

- **Requirements:**
  - Request must come from Registry/Authorized Party
  - Rightmost string must be IANA Listed
  - Subdomain Registries are allowed to request listing
  - Pre-Delegation Exceptions to IANA listed rule:
    - ccTLD IDN Fast-Track TLDs that have passed String Evaluation phase
      - (i.e. are listed on "IDN ccTLD Fast Track String Evaluation Completion")
The Public Suffix List (“PSL”)

Take Away This:

As it relates to **Universal Acceptability**
• My TLD benefits from being accurately represented in the PSL
• My Community / All Users also benefit
• Simple: One edit cascades out to many applications and developers

Public Suffix List = Good. Go update it now!
Mozilla IDN Whitelist

Internationalization with Curation
Mozilla Firefox 4.0 is fully localized into over 80 distinct languages and has over 227,486,079 downloads worldwide and growing!
“One World, One Internet, Everyone Connected”
Assuming for this portion that are all familiar with IDN at the top level, or second level and the numerous benefits that come for communities that need more than just A-Z.

All good, but the benefits of new things can often introduce new opportunities for bad actors to exploit.

Example:
well-worn paypal.com in mixed code as mixed language homograph

Homographs also possible within single language set
Æ -> AE        Æ -> OE        DŽ -> DZ

UNLESS registry has policy to avoid the circumstances where there would be two separate registrations for the visually similar domain.
Not all registries have policies to avoid visually similar domains from being registered within their IDN implementations.

Summarizing ICANN IDN Guidelines v 2.2

“List your allowed characters and all else are disallowed”


• This still leaves room for homographs
Not all registries have policies to avoid visually similar domains from being registered within their IDN implementations.

Summarizing Unicode TR 36 §2.10.4, item B

“Publicly document the enforcement policy on confusables: whether two domain names are allowed to be single-script or mixed script confusables”

Very oversimplified summary. View Full report here for authoritative detail: [http://www.unicode.org/reports/tr36/#international_domain_names](http://www.unicode.org/reports/tr36/#international_domain_names)

- UTR 36 ([http://unicode.org/reports/tr36](http://unicode.org/reports/tr36))
- UTR 39 ([http://unicode.org/reports/tr39](http://unicode.org/reports/tr39))

- This helps close the door on homographs
Where registries have policies to avoid visually similar domains from being registered within their IDN implementations.

Unicode TR36 §2.10.3 B,D “Security recommendation for User Agents” (aka Browsers)
• Expose Punicode in Location Bar as default behavior unless TLD Policy is reviewed and considered for conformity and then subsequently whitelisted if approved

This helps visually expose homographs so that general users are less likely tricked or confused
Mozilla maintains such a “whitelist” for their projects. Registry submits policies and code points for review. Until approved, domains display in Punicode.

Review the qualifications:
http://mozilla.org/projects/security/tld-idn-policy-list.html

Add your TLD to the list:
http://goo.gl/sdpqs
Questions?
Thank you and recognitions

Thank you!

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