Internationalized Domain Names

Tina Dam
Senior Director, IDNs
tina.dam@icann.org

Prepared for:
Localization World
Berlin, Germany - 8 June 2010
First Four IDN ccTLDs

 Emirates

 السعودية

 РФ

 مصر
The First Four

- Special recognition of the first four IDN ccTLD:
  - United Arab Emirates, Saudi-Arabia, Russian Federation, Egypt
  - simultaneous: delegation: مصـر. السعوـدية and ﺍﻣـارات. السعوـدية.
  - .рф followed shortly after

- Milestones include:
  - Jun 2003: IDNA protocol, IDN Guidelines, initiation browser implemented
  - Feb 2008: First report from IDNC leading to IDN ccTLD Fast Track Process
  - Oct 2008: First draft implementation plan for IDN ccTLD Process
  - Oct 2009: ICANN Board approves IDN ccTLD Fast Track Process
  - Nov 2009: Launch of IDN ccTLD Fast Track Process
  - Jan 2010: First four IDN ccTLD labels approved
  - Apr 2010: First four IDN ccTLD approved to be delegated
  - May 2010: Introduction of the first four
Brief TLD Historical Background

- There are presently 21 gTLDs in the root zone
- Eight predates ICANN:
  
  .com .edu .gov .int .mil .net .org .arpa
- Seven were added in a round starting in 2000:
  
  .aero .biz .coop .info .museum .name .pro
- Six were added in a round starting in 2003:
  
  .asia .cat .jobs .mobi .tel .travel (soon to be added - .post)

  - Experience in past rounds has been factored into a program for new gTLD introductions

- ccTLDs are currently allocated per reference to the ISO3166-1 list (e.g. .cn for China, .gr for Greece)

  - IDN ccTLDs being added via IDN ccTLD Fast Track Process
Characters, DNS, and domain names...

- All TLD registries implemented the LDH rule
  - Domain names can only contain:
    - (a,b,...z)
    - (0,1,...9)
    - (-)
  - ....before internationalization....
Internationalized domain names are:
- Names with characters other than the standard ASCII (a,b,...z), (0,1,...9), (-)

Example:
ñandú.cl → xn--and-6ma2c.cl

IDNs are about localized solutions
- But need to be ‘internationalized’ due to the global nature of the Internet
IDN Functionality

Example: Domain Name Resolution Process

IDNA is a client based protocol:
1. User types in 실례.test in for example a browser
   • IDN aware browser
2. 실례.test gets converted to Unicode,
   • if not already entered as such
3. IDNA conversion \( \rightarrow \) xn--9n2bp8q.test
Browser usability examples
Usability and Security

• Reason for the varying usability issues often relates to the problem of confusability

• User considerations:
  – choice, opportunity, new branding and establishing identity on Internet

• Security is best possible
  – just like “0” looks like “o” and “1” looks like “l”
  – increased problem with increased # of chars

• Recent APWG meeting shows no IDN phising
  – lets keep it that way!
Preventing Confusability

• Some problems solved in the IDN Guidelines
  • preventing mixing of scripts unless a linguistic need
    – no mixing of fx Latin and Cyrillic
    – ok to mix scripts used to fx represent Japanese

• Registries required to develop IDN Tables & publish associated registration rules
  • inform users what characters are available
  • eliminate confusability by listing variant characters
  • strongly urging collaboration btw language communities when confusion could exists
    – languages using the same script
    – scripts looking alike (fx. Cyrillic, Greek, Latin)
IDNs so far...

- IDNs have existed as second level since 2003
  - under web protocol standards (revision - IETF)
  - some email clients (standard underway - IETF)
- Focus on IDN TLDs
  - IDN .test TLDs since Sept 2007 (http://idn.icann.org)
  - IDN ccTLD Fast Track Process & New gTLDs

<table>
<thead>
<tr>
<th>Domain Availability Today</th>
<th>Future/Latest Addition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCII domain names</td>
<td>IDN second level</td>
</tr>
<tr>
<td>(a, b,...,z), (0,1,...,9), (-)</td>
<td>-under various existing TLDs</td>
</tr>
<tr>
<td>domainname.TLD icann.org</td>
<td>IDN TLDs</td>
</tr>
<tr>
<td></td>
<td>例子.TLD</td>
</tr>
<tr>
<td></td>
<td>-under various existing TLDs</td>
</tr>
<tr>
<td></td>
<td>例子.測試</td>
</tr>
<tr>
<td>Language</td>
<td>SLD TLD U-labels</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>Arabic</td>
<td>مثال اختبار</td>
</tr>
<tr>
<td>Arabic</td>
<td>مثال نموذجي</td>
</tr>
<tr>
<td>Chinese, simplified</td>
<td>例子,测试</td>
</tr>
<tr>
<td>Chinese, traditional</td>
<td>例子,测试</td>
</tr>
<tr>
<td>Cyrillic</td>
<td>пример,использование</td>
</tr>
<tr>
<td>Devanagari</td>
<td>उदाहरण,परीक्षा</td>
</tr>
<tr>
<td>Greek</td>
<td>Συμπληρώματα,δοκίμα</td>
</tr>
<tr>
<td>Hangul</td>
<td>살례 테스트</td>
</tr>
<tr>
<td>Hebrew</td>
<td>ידידות</td>
</tr>
<tr>
<td>Kanji Hirigana, and Katakana</td>
<td>例え,テスト</td>
</tr>
<tr>
<td>Tamil</td>
<td>தமிழ் முன் பாணி 6069</td>
</tr>
</tbody>
</table>

**Introduction**

This page provides an introduction to a test of IDN top-level domain names that ICANN is coordinating. The test is based on eleven new internationalized domains representing the name example.test entirely in scripts other than the familiar Latin characters that appear in current top-level labels. The languages initially selected for illustrating this are listed in the table below, and the rationale behind their choice is discussed in the sidebar article on basic concepts. These TLDs can be accessed by clicking on the links in the first column in the table. However, as with any other IDNs, if they are typed or copied and pasted directly into the address line of a browser, they will only work if that browser has full support for IDN. The names in the second column are intended to be used in that manner and, if they don’t initially perform as intended, some software reconfiguration may help. Additional articles discuss local configuration and individual software applications.

**Your participation is important!**

Public participation in the evaluation of these domains is one of the most important parts of the project. Joining this initiative requires nothing more than you to click through one or more of the links in the table and report about the experience on the “discussion page” indicated with a tab at the top of this and the other IDNwiki articles.

1. Were the results what you expected?
2. Were there any problems that you couldn’t solve?
Launched: IDN ccTLDs Fast Track Process
- to introduce a limited number of IDN ccTLDs
- non-Latin scripts only, matching ISO3166 list
- must match country/territory names

In Policy Development: IDN ccTLDs – Long Term
- full policy that caters for all
- follows the ccNSO Policy Development Process

In Implementation: New gTLDs
- includes internationalized domains
- IDN technical requirements same as Fast Track
- focus on non-ASCII squatting & confusingly similarity solutions
- no launch date specified
IDN ccTLD Fast Track Process

• Introducing limited number of IDN ccTLDs
  – on ISO-3166 list (or EC)
  – official language not based on Latin (extended)
    • ISO 639 (UN manual) listed or Government doc
  – technical string criteria (IDNA and Guidelines)
    • 2 char minimum + IDN tables submission
  – meaningfulness of string
    • long or short version in UN manual
      – if not in UN manual ➔ documentation required
    • can be acronym
    • usability issue with strings longer than 3 chars
Technical reference manual for the standardization of geographical names

United Nations Group of Experts on Geographical Names

<table>
<thead>
<tr>
<th>ISO</th>
<th>COUNTRY - English (UN)</th>
<th>ISO code; Language</th>
<th>Short name</th>
<th>Formal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF</td>
<td>AFGHANISTAN</td>
<td>Dari, ps: Pashto</td>
<td>Afghanestan</td>
<td>جمهورية إسلامي أفغانستان</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Afghanistán</td>
<td>جمهورية إسلامي أفغانستán</td>
</tr>
<tr>
<td>AL</td>
<td>ALBANIA</td>
<td>sq: Albanian</td>
<td>Shqipëri / Shqipëria</td>
<td>Republika e Shqipërisë</td>
</tr>
<tr>
<td>DZ</td>
<td>ALGERIA</td>
<td>ar: Arabic</td>
<td>الجزائر</td>
<td>الجمهورية الجزائرية الديمقراطية الشامية</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Al Jazā’ir</td>
<td>Al Jumhūryah al Jazā’iriyah ad Dimuqrāṭiyah ash Shābiyyah</td>
</tr>
<tr>
<td>AD</td>
<td>ANDORRA</td>
<td>ca: Catalan</td>
<td>Andorra</td>
<td>Principat d’Andorra</td>
</tr>
<tr>
<td>AO</td>
<td>ANGOLA</td>
<td>pt: Portuguese</td>
<td>Angola</td>
<td>República de Angola</td>
</tr>
<tr>
<td>AG</td>
<td>ANTIGUA AND BARBUDA</td>
<td>en: English</td>
<td>Antigua and Barbuda</td>
<td>Antigua and Barbuda</td>
</tr>
<tr>
<td>AR</td>
<td>ARGENTINA</td>
<td>es: Spanish</td>
<td>Argentina (la)</td>
<td>República Argentina</td>
</tr>
<tr>
<td>AM</td>
<td>ARMENIA</td>
<td>hy: Armenian</td>
<td>Հայաստան</td>
<td>Hayastani Hanrapetut’yun</td>
</tr>
<tr>
<td>AU</td>
<td>AUSTRALIA</td>
<td>en: English</td>
<td>Australia</td>
<td>Commonwealth of Australia</td>
</tr>
<tr>
<td>AT</td>
<td>AUSTRIA</td>
<td>de: German</td>
<td>Österreich</td>
<td>Republik Österreich</td>
</tr>
</tbody>
</table>
IDN ccTLD Fast Track Process

1. Preparation locally in country/territory
   - choice of IDN ccTLD
   - community activities & government support

2. String Evaluation
   - Initial completeness check
   - Linguistic process check
   - Technical and confusability check

3. String Delegation
   - Determine the entity to manage the TLD
   - Follow the same process as for ASCII ccTLD delegation and re-delegations
#2 String Evaluation

A. Check request for completeness
   • all material and support letters included & from adequate government / public authority
   • technical string check initiated

B. Linguistic process check
   • verification that processes has been followed for:
     – official language
     – meaningfulness of string
     – community support for string

C. DNS stability evaluation
   • technical criteria & confusability w/ existing strings
   • revised IDNA protocol is used
IDN ccTLD Status and Timing

• Process launched 16 November 2009
  – 31 requests from countries and territories
  – 19 languages
    • updates: http://www.icann.org/en/topics/idn/fast-track/
  – 4 strings approved and delegated
    • ﺍﻠﺴﻌﻮﺩﻳﺎ, ﻣﺼﺮ, ﺍﻣﺎﺭﺍﺗ, ﺭﻔ
    • Saudi-Arabia, Egypt, United Arab Emirates, Russia
      • http://blog.icann.org/2010/04/idn-cctld-delegations-approved-by-the-icann-board/
  – 9 string pass string evaluation (ready for delegation)
    • full list online: http://icann.org/en/topics/idn/fast-track/string-evaluation-completion-en.htm
Roles: IDN ccTLD Managers vs. ICANN

• ICANN provides:
  – string evaluation and string delegation
    • includes community support for the string and the IDN ccTLD Manager
  – terms & conditions focused on security/stability

• IDN ccTLD Manager provides:
  – registration policies
  – dispute resolution mechanisms
  – etc.
Synchronized IDN ccTLDs

• Synchronized IDN ccTLDs
  • type of variant IDN ccTLDs
  • proposed to address need and achieve experience with variant TLDs and inform ongoing work

• Proposed Implementation Plan
  • published for comments 22 March 2010
  • clarifying Q/A feedback to community concerns
  • two webinars conducted to increase communication

• Board consideration 22 April 2010
  • did not approve the process for launch
  • 2 requests approved for delegation w/special circumstance

• more work otw, see http://blog.icann.org/2010/04/update-about-synchronized-idn-cctlds/
More Work Ahead

• IDN ccTLD Fast Track:
  – additional countries/territories on the way
  – 31 requests for IDN ccTLDs this far
  – review to ensure continued functionality

• Internationalized email (IETF protocol)

• IDN Guidelines (revision on the way)

• Solution for TLD Variant Management

• Internationalized gTLDs

• Long term process for IDN ccTLDs

• IDN and Applications
In Summary: what can we expect?

- **Internationalized Domain Names**
  - IDN ccTLDs and IDN gTLDs to address community needs
- Increase in creativity, innovation and choice
- Increase competition in the domain name space
- More geographic gTLDs
- New ways of branding and establishing corporate identity on the Internet
Thank You

Internationalization of the internet means that the internet is equally accessible from all languages and scripts

http://www.icann.org/en/topics/idn/
http://www.icann.org/en/topics/idn/fast-track/