Internationalized Domain Names

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Brief TLD Historical Background

• There are presently 21 gTLDs in the root zone
• There were eight that predate 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 2004:
  .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....
IDN Definitions

- 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

• 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
مثال، إختيار الصفحة الرئيسية

http://xn--fsqu00a.xn--0zwm56d/%E9%A6%96%E9%A1%B5

http://%D8%A7%D9%84%D8%B5%D9%81%D8%AD%D8%A9_%D8%A7%D9%84%D8%B1%D8%A
IDN Confusability

• Not a new topic
  – “0” looks like “o” and “1” looks like “l”

• Increased problem with increased # of chars
  – ASCII: 37 characters used in domain names
  – IDNs → approx. 100,000 characters available

• Some problems solved in the IDN Guidelines
  • Preventing mixing of scripts unless a linguistic need
    – No mixing of Latin and Cyrillic
    – Ok to mix scripts used to represent Japanese
  • Requirement to develop IDN Tables and publish associated registration rules
Preventing Confusability

• IDN tables developed by registries to
  • Inform users what characters are available
  • Eliminate confusability by listing variant characters

• IDN Tables are used on second & top level
  – Strongly urging collaboration btw language communities when confusion could exists
    • Languages using the same script
    • Scripts looking alike (fx. Cyrillic, Greek, Latin)
  – IDN TLD variant strings
    • Work in progress, currently not delegated in the DNS as TLDs
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

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<table>
<thead>
<tr>
<th>Domain Availability</th>
<th>ASCII domain names (a, b, ..., z), (0, 1, ..., 9), (−)</th>
<th>IDN second level - under various existing TLDs</th>
<th>IDN TLDs</th>
<th>例子.TLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today</td>
<td>domainname.TLD icann.org</td>
<td>例子.TLD</td>
<td>例子.測試</td>
<td></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 names 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 rationales 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 for 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.

<table>
<thead>
<tr>
<th>Script</th>
<th>Language</th>
<th>SLD.TLD U-labels</th>
<th>SLD A-label</th>
<th>TLD A-label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>Arabic</td>
<td>xn--mgbh0fb</td>
<td>xn--kgbechtv</td>
<td></td>
</tr>
<tr>
<td>Arabic</td>
<td>Persian</td>
<td>xn--mgbh0fb</td>
<td>xn--hgbk6aq713bba</td>
<td></td>
</tr>
<tr>
<td>Chinese, simplified</td>
<td>Chinese</td>
<td>xn--fsqu00a</td>
<td>xn--0zwm56d</td>
<td></td>
</tr>
<tr>
<td>Chinese, traditional</td>
<td>Chinese</td>
<td>xn--fsqu00a</td>
<td>xn--g6w251d</td>
<td></td>
</tr>
<tr>
<td>Cyrillic</td>
<td>Russian</td>
<td>xn--e1afmkfd</td>
<td>xn--80akbylanj4f</td>
<td></td>
</tr>
<tr>
<td>Devanagari</td>
<td>Hindi</td>
<td>xn--p1b6cj4b4b3a</td>
<td>xn--11b5bs3a0aj6g</td>
<td></td>
</tr>
<tr>
<td>Greek</td>
<td>Greek</td>
<td>xn--hxajbh4eg2az3al</td>
<td>xn--jsxapdp</td>
<td></td>
</tr>
<tr>
<td>Hangul</td>
<td>Korean</td>
<td>xn--9n2hp8q</td>
<td>xn--9y4b11yf5a</td>
<td></td>
</tr>
<tr>
<td>Hebrew</td>
<td>Yiddish</td>
<td>xn--f Funk 5d8ay9b8a8d</td>
<td>xn--deba0ad</td>
<td></td>
</tr>
<tr>
<td>Kanji Hirigana, and Katakana</td>
<td>Japanese</td>
<td>xn--r8j4z5g</td>
<td>xn--zekzah</td>
<td></td>
</tr>
<tr>
<td>Tamil</td>
<td>Tamil</td>
<td>xn--zc6cc5b17f6e</td>
<td>xn--hlcj6aya0ese7a</td>
<td></td>
</tr>
</tbody>
</table>
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>أفغانستان</td>
<td>جمهورية إسلامية أفغانستان (جمهوریه‌ي اسلامیه‌ي افغانستان)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>أفغانستان</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>AL</td>
<td>ALBANIA</td>
<td>sq: Albanian</td>
<td>Shqipëri /</td>
<td>Republika e Shqipërisë</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shqipëria</td>
<td></td>
</tr>
<tr>
<td>DZ</td>
<td>ALGERIA</td>
<td>ar: Arabic</td>
<td>الجزائر</td>
<td>الجمهورية الجزائرية الديمقراطية الشعبية (جمهوریه‌ي الجزائریه ديمقراطیه‌ي الشعبیه)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></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>Հայաստան, Հայաստան, Հայաստան (Hayasten)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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. Check request for completeness
   • All material and support letters included & from adequate government / public authority
   • Technical string check initiated

2. Linguistic process check
   • Verification that processes has been followed for:
     – Official language
     – Meaningfulness of string
     – Community support for string

3. DNS stability evaluation
   • Technical criteria & confusability w/ existing strings
   • Revised IDNA protocol is used
IDN ccTLD Status and Timing

• Process launched 16 November 2010
  – 17 requests from countries and territories
  – 10 languages
  – Continued updates at
    http://www.icann.org/en/topics/idn.fast-track/
  – 4 strings approved
    • امارات, مصر, السعودية
    • РФ
    • Saudi-Arabia, Egypt, United Arab Emirates, Russia
  – String delegation can take a few-several months
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.
ICANN’s Mission and New gTLDs

• ICANN’s founding documents (in 1998):
  “The new corporation ultimately should … 3) oversee policy for determining the circumstances under which new TLDs are added to the root system”

• Core objective in founding ICANN; a requirement in each of ICANN + U.S. government agreements
  “Define and implement a predictable strategy for selecting new TLDs”

• Promote competition, consumer trust and consumer choice; address various issues
  (9.3 - Affirmation of Commitments)
What can we Potentially Expect?

- Internationalized Domain Names (IDN)
- Increase in creativity, innovation and choice
- Increase competition in the domain name space
- gTLDs tailored to address community needs
- Geographic gTLDs
- New ways of branding and establishing corporate identity on the Internet
Why is it Important?

- New ways end users find and produce information on-line
- More choices as registrant
- Opportunity for investment and new businesses
- A more globally and culturally inclusive internet with IDNs
- Potential impact on your brand or trademark
- Potential impact on your cultural community, organization and industry sector
- Potential impact on your geographic name
- Systems and applications will need to be updated to accept new TLDs
New gTLD rights protection

• Legal rights objections
  Strings must not infringe the existing legal rights of others…recognized under accepted internationally principle of laws
  • Filing latest 2 weeks after Initial Evaluation
  • Received objections managed by DRSP panel

• Post delegation dispute mechanism
  If registry does systemic registration of infringing domain names or uses gTLD for infringing purpose

• 2^nd level protections - under discussion
  – User Choice
  – Trademark Clearinghouse
  – Uniform Rapid Suspension Procedure
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/
New gTLD Evaluation Process

- Application Period: Module 1
- Initial Evaluation: Module 2
- Transition to Delegation: Module 5
- Extended Evaluation: Module 2
- Objections and Dispute Resolution: Module 3
- String Contention: Module 4