Launching IDN ccTLD
السعودية (.alsaudiah)

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SaudiNIC - CITC
Agenda

About SaudiNIC

What we have done

What is Next

Lessons learned
About SaudiNIC
SaudiNIC is a non-profit unit that is operated by Communication and Information Technology Commission (CITC) which is a semi-governmental entity.

SaudiNIC administers the Saudi ccTLDs:
- .sa since 1995.
- The new IDN ccTLD (السعودية) since May 2010

Leading the local community efforts towards supporting Arabic language in DNS
- Chairing both Steering and Technical Committees of the ADNPP
AboutSaudiNIC
Latest Achievements

- Full IPv6 Support – Jan 2010

- Open registration of Arabic domain names under “سجل.السعودية” – May 2010

- Open registration of domain names directly under “.sa” (nic.sa) – Jan 2011

- Updated the “Domain Name Regulations” – Apr 2011

- Updated “Procedures for Submitting an Objection to Saudi domain names” (Dispute Resolution) – Apr 2011
About SaudiNIC
Coming Projects

- Registry-Registrar model
- DNSSEC
- IDN Emails
- Testing and checking IDN implementation in well-known applications
About SaudiNIC Statistics

- com.sa: 65%
- .sa: 7%
- السعودية: 7%
- gov.sa: 5%
- net.sa: 5%
- org.sa: 4%
- edu.sa: 3%
- sch.sa: 2%
- med.sa: 1%
- pub.sa: 1%
What we have done? ... السعودية ...
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Nov 2009</td>
<td>ICANN opened IDN ccTLD FT Process</td>
</tr>
<tr>
<td>16 Nov 2009</td>
<td>Applying to fast track process</td>
</tr>
<tr>
<td>20 Jan 2010</td>
<td>ICANN Approved the String</td>
</tr>
<tr>
<td>5 May 2010</td>
<td>IANA added xn--mgberp4a5d4ar to the root servers</td>
</tr>
<tr>
<td>22 Apr 2010</td>
<td>IANA Approved the Delegation</td>
</tr>
<tr>
<td>24 Jan 2010</td>
<td>Applying for delegation</td>
</tr>
</tbody>
</table>
Main Registration Regulation

Regulation for Opening ADN Registration

Objection Rules and Procedures

Procedures Governing Reserved Names

Guideline for writing ADNs

Criteria to Demonstrate Reasonable Relationship between a Domain Name and a Registrant
We announced our Registration Plan (2 phases) on
   – 15 April 2010
- Rebuilt the registration system to support (in-house)
  - Arabic IDN
  - IDN Variants (Master-key Algorithm)
- Increased Connection BW and installed new servers
- Implemented Anycast and IPv6 on our DNS servers
- Build some tools & scripts related to IDN
  - IDNA 2003 & IDNA2008 implantations
  - DNS checker & Zone editor
  - Zone builder and Whois
It gives the registrant the control (to register or block) on the valid list of variants domain names.

Registry-Level Approach

Stage 1
Language Table

Stage 2
Confusability Safeguard (Language)

Stage 3
Master-Key Algorithm (Script-wide Variants)

A master-key code
What we have done
Developed a Registry-level Approach

Stage 1: Defining Language-Table

- List all supported code points that will be used in our IDN ccTLD (السعودية).
  - Based on the RFC# 5564 (Linguistic Guidelines for the Use of the Arabic Language in Internet Domains)
    - Letters: From (ا) to (ي)
    - Numbers: From (٩) to (٩) & (۰) to (۹)
    - Others: Hyphen (-) & Dot(.)

- This will help in solving the following issues:
  - Valid Unicode Codepoints
  - Non-spacing Marks
  - Combining Marks
  - ZWNJ/ZWJ
  - Digit (partial)
What we have done
Developed a Registry-level Approach

Stage 2: Language Confusability Safeguard

- Provide a phishing protection layer (Emlaa Key Algorithm) to handle issues within the language such as:
  - Characters that have many shapes (يـ) (أـ إـ آـ):
    أحمد & أحمد
  - Similarities between Letter HEH (٥) and Number Five (٥):
    بريد & بريد
  - Similarities between Letter ALEF(ا) and Number one (١):
    رائد & رائد
  - Digit mixing
    مؤتمر ٢٠١٠ & مؤتمر ٢٠١١
SaudiNIC developed an algorithm (Master Key Algorithm) that can be used at the registry level.

- It will safely allow users to register a domain name using the allowed characters (from the language table) and at the same time protect the possible variants (across the script) in other languages (Arabic, Farsi, Urdu ..etc)

- Transparent to end users

What we have done
Developed a Registry-level Approach

Registry (demo)

<table>
<thead>
<tr>
<th>Type a domain name</th>
<th>Domain Chars</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>G31A,G29B,G36B,G9C</td>
<td>(U+0645)(U+064F)(U+06C9)(U+0629)</td>
<td>مكة.مثال</td>
</tr>
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</table>

OK, The domain registered. Domain details:
What we have done
Basic Rules for writing Arabic domains

- The Arabic Label should be at least 2 symbols.
- The Arabic Label should have a corresponding valid ASCII Label.
- A label should not start or end with a dash “-“ and should not have two consecutive dashes.
- The symbols representing the Arabic Label should comply with terms and conditions specified by SaudiNIC which include permitted characters and symbol to be used in registering Arabic domain names.
Guideline Rules for writing Arabic IDNs under (السعودية) IDN ccTLD

Consists of:
- Language Table
- 7 Rules
Rule #1: Diacritics are not allowed

سجل. السعودية

سجل. السعودية
What we have done
Guideline Rules for writing Arabic domains

- **Rule #2**: No mixing between scripts (Arabic & Latin)

مواقع السعودية.SaudiNIC
المملكة السعودية.SaudiNIC
Rule #3: Use of hyphen (instead of space) between words particularly if the 2 words will get connected.
Rule #4: Hyphen can not be used at the beginning or end of a label and 2 or more consecutive hyphens are not allowed.

مثال (e.g.): هيئة الاتصالات. السعودية
مثال (e.g.): هيئة الاتصالات- السعودية
مثال (e.g.): هيئة- الاتصالات. السعودية
Rule #5: Digits can not be used at the beginning or end of a label. Digits can be used inside a label from the 2 sets without mixing.

It is permitted to register other variants of the domain name that can be formulated just by changing the digit set.
Rule #6: Variants within the language
- Characters that have many shapes (ي، ى، و، ال، اله)

It is permitted to register the other variants names that can be created just by changing the confusingly similar characters provided that it does not infringe on the rights of others.

مثال (e.g.) شبكة-الأخبار.السعودية

It is permitted to register the other variants

مثال (e.g.) شبكة-الأخبار.السعودية

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مثال (e.g.) شبكة-الأخبار.السعودية
Rule #7: Variants within the script

It is permitted to register the Variants within the Arabic Script that will allow the Arabic domain names to be used globally despite the fact that some other languages that use the Arabic script (such as Urdu, Farsi, Pashto, ...) might have characters that lock confusingly similar to some of the Arabic characters. This also takes care of the problem of having different input devices (e.g., keyboards) used within the Arabic script communities.

(all characters are from the Arabic Language) ✔ مكة.السعودية

(the letter KAF and THE MARBUTA are from Urdu) ✔ مكة.السعودية

(the letter KAF and THE MARBUTA are from Urdu) ✗ مكة.السعودية
What we have done
Awareness and Support

- Videos
- Documents
- Guidelines
- Support
- Training
- Blog
What is Next? ... السعودية
There is a need to enable TLD Variants
Delegating IDN variants to our clients can not happen without getting the TLD variants.
IDN support in any users applications:
- email, chat, search engines, …

User friendly applications:
- Display the (U-Label) to the user (NO A-label display)
- Handel Right to Left correctly … better readability of the address bar
- Recognize IDN (U-Label) as a hyperlink
- Transparent to the user (discouraging the A-label display)
- Converting “spaces” to Dashes
Lessons learned
Lessons learned

- TLD variants are a must-have!
  - Reaching IDN domains from any place
- Hosting Companies (local and global) do not support new IDN TLDs
  - Need more awareness and coordination
- Still there are some issues with IDN applications
  - Need to test each application version for Right-to-Left compatibilities and follow-up with their vendors
    • Generation technical reports (testing applications)
    • Attending IDN Software Developer’s Consortium
- Marketing is a must!
  - We will deploy Registry-Registrar model soon
Thank you

For more information you can visit:

www.nic.sa