IRNIC cc TLD Registry of Iran

IDN Developments
@
IRNIC, .ir ccTLD

Alireza@irnic.ir

http://ایران.ثبتدامنه.ir

Statistical report on IDN

- Registration rate 20/week
- Number of current active domains
  - 2,322 ignoring bundles
  - 3,632 with bundles
  - About 80% are not active (no sites)
  - Just 1500 queries in 2 weeks

IRNIC IDN Policy

- Registration under "ایران" (Iran in Persian script)
    - .ir version also generates automatically for each registered domain
- registration is open except for restricted names.
- We had 2 sunrise periods.

Public interest in IDN

- IDN domains are not popular
  - ASCII labels for Email addresses and Websites are more popular. In the same period the number of .ir ASCII registrations was 62 times.
  - Some even prefer IP addresses (CLI users)
  - IDNA function has not been implemented yet in standard version of some clients specially for Microsoft things such as MediaPlayer!, IE, Outlook
  - DNS configuration for IDN domains seems hard specially when using bundles.
  - Translating the Unicode label to ASCII may not be a prefect solution, some protocol changes may need to be done.

Public interest in IDN

- – A resolvable label should be appended to the domain which also causes reading confusion for right-to-left scripts
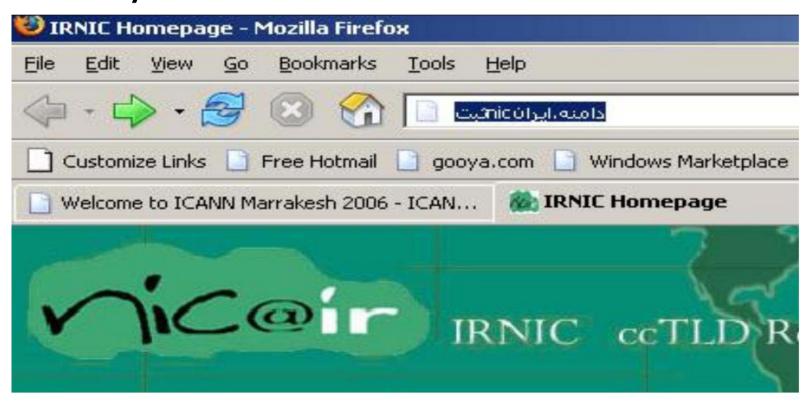- – No IDN.IDN implementation in sight

Label Restrictions

- RFC's limitations are implemented

  - The label should start and end with letters

  - Mixing left-to-right and right-to-left chars is not allowed within a label

- All letters should be in repertoire

Bidirectional problem

- Can you read this address ?

Bidirectional Problem

- Decoded version

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- Numbers and signs follow the context

Label Processing : The Bundle

	Persian ک ی (کـ یـ)	Arabic ك ي (كـ يـ)
Persian ۱۲۳۴۵۶۷۸۹۰	ک۴ی	ك۴ي
Arabic-Indic ۱۲۳٤٥٦۷۸۹۰	ک٤ی	ك٤ي
European 1234567890	ک4ی	ك4ي

Label Processing

I.   Checking Validity of the Label

II. Normalization

III. Simplifying (Removing what Stringprep removes

   – The meaning of a word may change when simplifying:

   – گلهای (a herd) → گلهای (flowers)

IV. Computing the Bundle

Label Processing

V.   Computing the ASCII equivalents of the bundle's memebrs using ToASCII

    I.   If the main registered label is too long after ToASCII, the registration will be rejected

    II.   If alternate bundle members get too long, we will only remove the failed cases

VI.   Showing the image of the registered label

Input label
كلمه۴اي

Normalized label
كلمه۴اى

GeneratingImage:
كلمه۴اى

Simple label
كلمهاۤى

Unicode Bundle
كلمهاۤى، كلمهاۤي، كلمها4ى،
كلمها4ي، كلمها٤ى، كلمها٤ي

Punnycode Bundle
xn--mgb1ddi10c2gjk
xn--mgb9cdekt30j
xn--4-ymc0gek99c0h
xn--4-ymc7fefmx
xn--mgb1ddi0m8p7h
xn--mgb9cdekt5p

Helping IDN applicants

- Generate the image of the normalized domain to be registered to prevent miss-registration due to using non-standard keyboard or fonts.

- DNS configuration generator to ease using an IDN domain

- Prepare the software to host an IDN domain and its bundles

IDN in DNS

- 2 scenarios have been chosen to export bundles to DNS.
  - NS records
    - Having larger files with more records
    - Taking more time to reload the Zone
    - Assigns up to 2 * 6 different domains to an applicant
    - Reduces bandwidth usage
    - Reduces delay in resolving a domain

IDN in DNS

- – Dnames
  - Decreases the size of the zone files
  - Decreases the time of reloading the zones
  - Increases bandwidth usage and delay (an issue in countries where bandwidth is expensive and connections are slow even at backbone level
  - It is easier to maintain

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- Questions ?

  Alireza Saleh علیرضا صالح

  Alireza@irnic.ir

  http://www.nic.ir