

Internationalized Domain Names: Overview & Update



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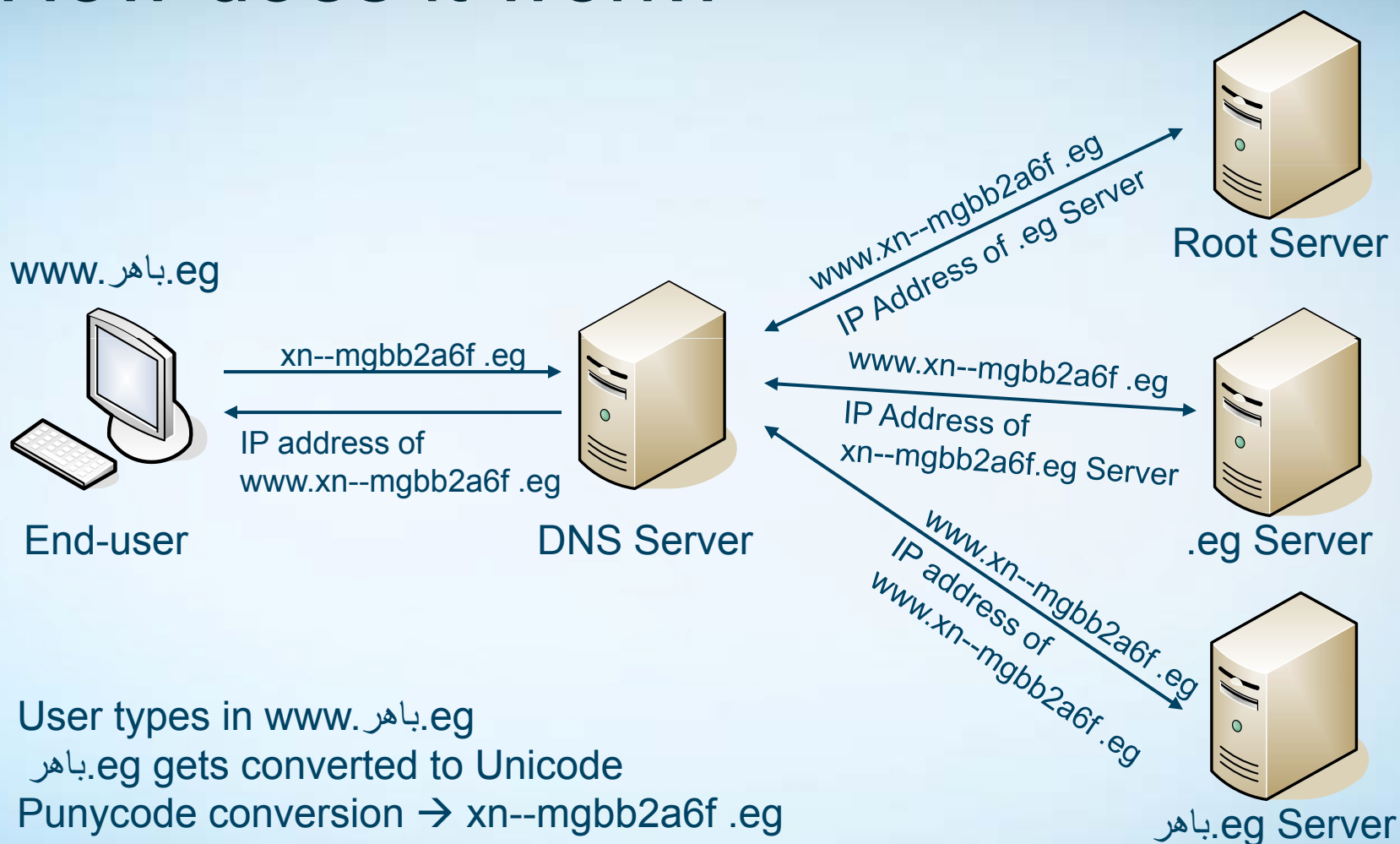
Introduction to IDNs

- IDN stands for Internationalized Domain Name
- Domain labels that contain characters other than: **L**etters “a” to “z”, **D**igits “0” to “9”, and the **H**yphen “-”
- IDNA protocol developed by IETF in 2002-2003: RFCs 3454, 3490, 3491, 3492
- IDNs have existed as SLD since 2003
 - Example: عربي.tld
- Work is underway for introducing IDNs at the top level
 - Example: 例子.测试

Why IDNs?

- There is demand by community
 - Help people access the Internet using their native languages
 - Promote cultural diversity and help preserve languages
- In promoting “Internet Multilingualism” it is important to realize that IDN is not the only element
 - Content and application development in local languages

How does it work?



1. User types in `www.باهر.eg`
2. `باهر.eg` gets converted to Unicode
3. Punycode conversion → `xn--mgb2a6f` .eg

*.eg ccTLD does not provide IDNs at second level and using it in this slide is only for illustration purposes.

IDNs from user perspective

- Registrants can register names in their local languages
- Registries handle all encodings needed during registration process
 - Example: باهر.eg → xn--mgbb2a6f.eg
 - Encodings tools:
 - <http://josefsson.org/idn.php>
 - <http://mct.verisign-grs.com/index.shtml>
- End users will be able write URLs and email addresses fully in IDNs (IETF is working on a standard for internationalized email)
- Some applications display the A-Label instead of the U-Label
 - xn--mgbb2a6f.eg instead of باهر.eg

IDNA protocol revision

- Effort led by the IETF
- The basic framework of the revision was published in RFC4690 in Sep 06
 - Raises issues like same script/multiple languages, same language/multiple scripts, bi-directional issues, similar-looking characters, combining characters, migration to new versions of Unicode, etc.
- The revised protocol will:
 - Use an inclusion-based mechanism
 - Three categories by procedure not table
 - Protocol-valid (some w/ contextual rules)
 - Disallowed
 - Unassigned
 - Be Unicode version independent
 - Fix bi-directional issues

Status of IDNA revision

- A number of Internet drafts published
 - draft-ietf-idnabis-rationale-01.txt
 - <http://www.ietf.org/internet-drafts/draft-ietf-idnabis-rationale-01.txt>
 - draft-ietf-idnabis-protocol-03.txt
 - <http://www.ietf.org/internet-drafts/draft-ietf-idnabis-protocol-03.txt>
 - draft-ietf-idnabis-tables-02.txt
 - <http://www.ietf.org/internet-drafts/draft-ietf-idnabis-tables-02.txt>
 - draft-ietf-idnabis-bidi-02
 - <http://www.ietf.org/internet-drafts/draft-ietf-idnabis-bidi-02.txt>

IDN technical tests - Laboratory

- Laboratory test was successfully conducted by Autonomica and results were published in Mar 07:
<http://www.icann.org/announcements/announcement-4-07mar07.htm>
- The laboratory environment was a close replica of the root server environment
- Localized labels for testing IDNs (.hippo18potamus):
<http://www.icann.org/topics/idn/idn-test-labels.pdf>
 - Normal Unicode-Punycode conversion
 - فرس18النهر → xn--18-dtd1bdi0h3ask
 - Performance with a 63-character long TLD string
 - .hippo18potamushippo18potamushippo18potamushippo18po
 - Right to left script
 - Left to right script with sophisticated shaping properties
 - Non-alphabetic script

IDN technical tests - Live

- 11 evaluative top-level domains were inserted in the root in Oct 07
- They represent the term “test” translated into: Arabic, Persian, Chinese (simplified and traditional), Russian, Hindi, Greek, Korean, Yiddish, Japanese and Tamil
- 11 SLDs were introduced representing the term “example” with the same 11 languages/scripts
- The final version of the Evaluation Plan is available at: <http://www.icann.org/topics/idn/idn-evaluation-plan-v2-9-2-14aug07.pdf>

example.test

Script	Language	SLD.TLD U-labels	SLD A-label	TLD A-label
Arabic	Arabic	مثال.إختبار	xn--mgbh0fb	xn--kgbechtv
Arabic	Persian	مثال.آزمایشی	xn--mgbh0fb	xn--hgbk6aj7f53bba
Chinese, simplified	Chinese	例子.测试	xn--fsqu00a	xn--0zwm56d
Chinese, traditional	Chinese	例子.測試	xn--fsqu00a	xn--g6w251d
Cyrillic	Russian	пример.испытание	xn--e1afmkfd	xn--80akhbyknj4f
Devanagari	Hindi	उदाहरण.परीक्षा	xn--p1b6ci4b4b3a	xn--11b5bs3a9aj6g
Greek	Greek	παράδειγμα.δοκιμή	xn--hxajbheg2az3al	xn--jxalpdlp
Hangul	Korean	실례.테스트	xn--9n2bp8q	xn--9t4b11yi5a
Hebrew	Yiddish	מוצג.פּרױפּט	xn--fdbk5d8ap9b8a8d	xn--deba0ad
Kanji Hirigana, and Katakana	Japanese	例え.テスト	xn--r8jz45g	xn--zckzah
Tamil	Tamil	உதாரணம்.பரிட்சை	xn--zkc6cc5bi7f6e	xn--hlcj6aya9esc7a

IDN .test wiki

- Purpose of the IDNwiki:
 - Introduce users to IDN TLDs
 - Evaluate usability of IDN TLDs in applications
 - Gather information about user problems
- Adding new “features”
 - New languages:
 - Amharic (4th level under idn.icann.org)
 - Hebrew (2nd level under existing TLD)
 - Thai (4th level under idn.icann.org)
 - Urdu (2nd level under existing TLD)
 - Process available for others languages
 - DNSSEC signing the zones
 - IPv6 support
 - Exploring IDN email addition
- Having a language / script represented in the IDNwiki is not a pre-requisite for eventually having an IDN TLD with the same language / script in the root
- Wiki can be accessed at: <http://idn.icann.org>

IDN policy process

- ICANN staff does not develop or decide on policy
- Work has been undertaken by various working groups of GAC, GNSO, and ccNSO
 - ccNSO and GAC formed a joint working group to address IDN ccTLDs:
<http://www.icann.org/topics/idn/ccnso-gac-issues-report-on-idn-09jul07.pdf>
 - GNSO developed policy for new gTLDs which included IDN gTLDs:
<http://gnso.icann.org/issues/new-gtlds/council-report-to-board-pdp-new-gtlds-11sep07.pdf>
 - ICANN Board requested ICANN community to set up the IDNC WG and work in accordance with the Charter, and to explore both an interim and an overall approach to IDN ccTLDs:
<http://www.icann.org/en/minutes/resolutions-02nov07.htm>
 - IDNC WG submitted its final report on IDN Fast Track for ccTLDs:
<http://www.icann.org/en/announcements/announcement-26jun08-en.htm>

Fast Track – IDNC WG

- IDN cc PDP (policy developing process) would take 2-7 years
- Fast Track is a quick feasible method for introducing IDN ccTLDs
- Purpose of IDNC WG is to develop and report on feasible methods, if any, for introduction of a limited number of non-contentious IDN ccTLDs and not pre-empt on IDN policy development process
- IDNC WG should take into account and be guided by:
 - Need to preserve the security and stability of the DNS
 - Compliance with the IDNA protocols
 - Input and advice from the technical community
 - Current practices for the delegation of ccTLDs

IDNC WG final report

- The final report identifies three-stage methodology: 1. Territory prepares to enter Fast Track; 2. Due diligence; 3. Delegation process
 - Identify the language and script
 - Select string
 - Support by community
 - Language table
 - Meaningful string
 - Technical committee
- The WG recommends that as part of the implementation plan an RFI is sent to all territories to ascertain their interest in obtaining an IDN ccTLD string through the Fast Track

Recent policy developments

- ICANN Board approved GNSO policy recommendations on new gTLDs during its meeting in Paris last June:
 - http://www.icann.org/en/minutes/resolutions-26jun08.htm#_Toc76113171
- ICANN Board directs staff to: post the IDNC WG final report for public comments, and commence work on implementation issues, and submit a detailed implementation report in advance of the ICANN Cairo meeting in November:
 - http://www.icann.org/en/minutes/resolutions-26jun08.htm#_Toc76113172

What is going on?

- Public comments received on IDNC final report:
 - <http://forum.icann.org/lists/idn-cctld-fast-track/>
- Staff is working on the implementation plan
- An RFI letter will shortly be sent out to governments and ccTLD managers
- A revision of the IDN Guidelines will take place soon
- IANA is considering what additional information might be required to be submitted by the applicant
- UNESCO is supporting the Fast Track and has accepted to provide opinion on requested labels
- ICANN regional managers to provide support to potential applicants in their respective regions

Useful links and contacts

- IDN area: provides information on all developments
 - <http://www.icann.org/en/topics/idn/>
- Fast Track activities: provides updates pertaining to the Fast Track process
 - <http://www.icann.org/en/topics/idn/fast-track/>
- Next ICANN meeting will take place in Cairo on 2-7 November
 - <http://cai.icann.org/>
- For more information on how to participate in IDN activities contact
 - Tina Dam, Director, IDN Program: tina.dam@icann.org
 - Anne-Rachel Inne, Regional Manager, Africa: anne-rachel.inne@icann.org
 - Baher Esmat, Regional Manager, Middle East: baher.esmat@icann.org

IDNs with Arabic script

- Arabic Script IDN Working Group (ASIWG): A self-organizing group that consists of interested parties in the implementation of Arabic script in Internationalized Domain Names
- Open working group with current membership of:
 - Egypt – Iran – Kuwait – Pakistan – Saudi Arabia – Syria – UAE - Malaysia
 - Afilias – PIR – UN ESCWA - APTLD
 - ICANN – ISOC Africa
 - Experts (Michael Everson & John Klensin)
- The goal is to develop a unified Arabic script table taking into consideration technical, linguistic and policy matters
- Language represented so far: Arabic, Persian, Urdu, Sindhi, Pashto, Jawi

