Internationalized Domain Names

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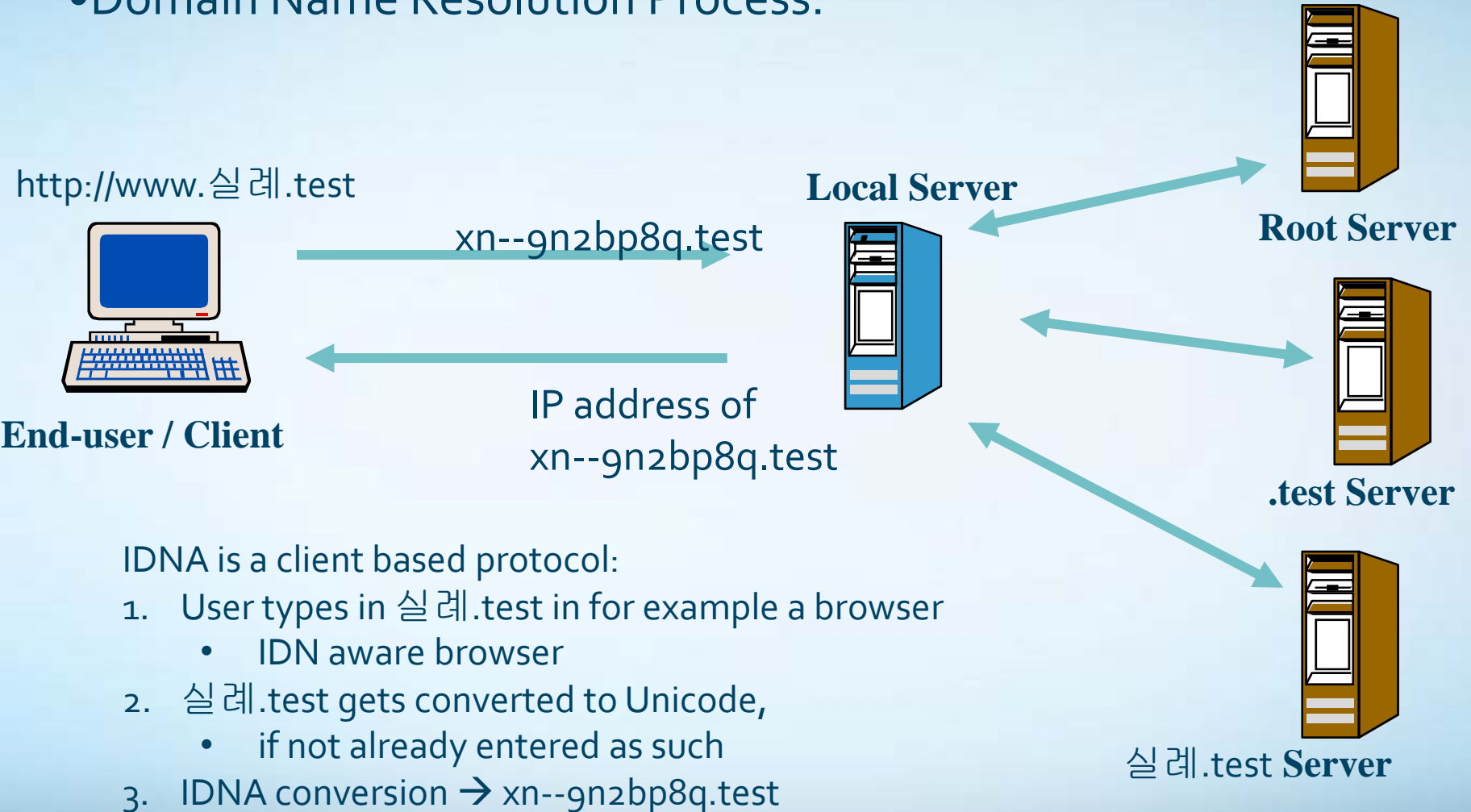# Characters, DNS, and domain names…

- 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:

http://www.실례.test

xn--9n2bp8q.test →

← IP address of
xn--9n2bp8q.test

End-user / Client

Local Server

Root Server

.test Server

실례.test **Server**

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 → xn--9n2bp8q.test
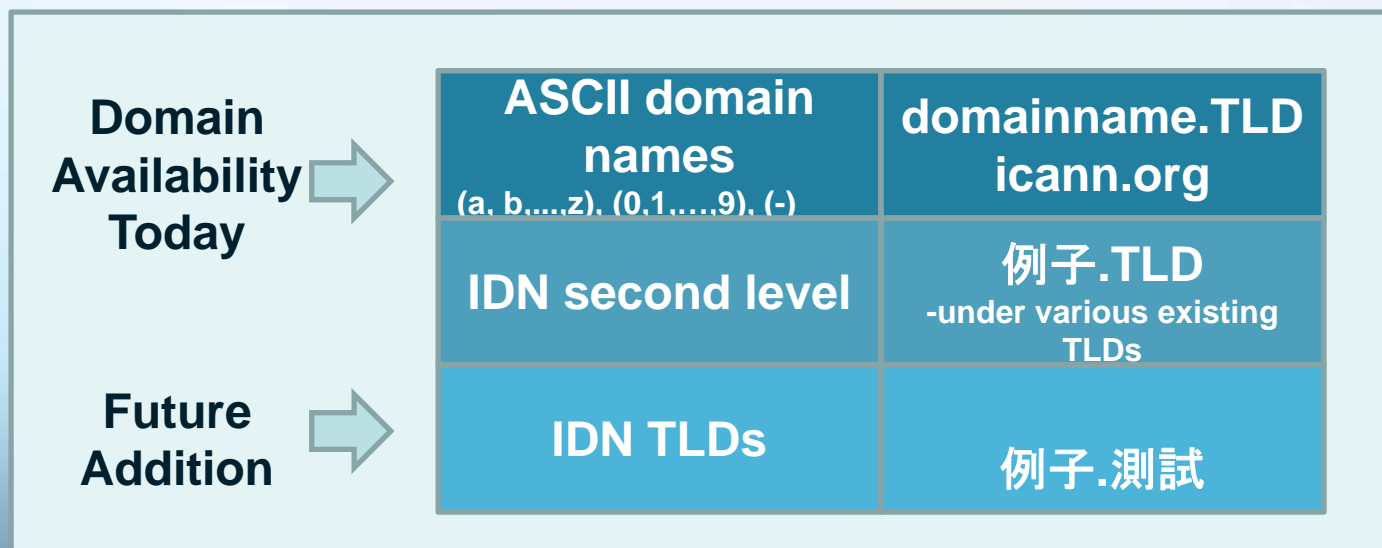
IDN Confusability

- Not a new topic
  - "0" looks like "o" and "1" looks like "l"
- Increased problem with increased # of chars
  - ASCII: 37/26 chars 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

Domain Availability Today ⇨	**ASCII domain names** (a, b,....z), (0,1....,9), (-)	**domainname.TLD icann.org**
	IDN second level	例子.TLD -under various existing TLDs
Future Addition ⇨	**IDN TLDs**	例子.測試

IDN wiki

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	בײַשפּיל.טעסט	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

IDNwiki - IDNwiki - Windows Internet Explorer

http://idn.icann.org/

File Edit View Favorites Tools Help

IDNwiki - IDNwiki

article | discussion | view source | history

IDNwiki

ICANN

Welcome to the IDN TLD evaluation gateway!

There are new articles on Additional languages and Technical

navigation
- IDNwiki main page
- E-mail test
- Basic concepts
- Technical topics
- Software

interaction
- Recent changes
- Contact
- Wiki help

evaluation
- العربية
- 简体中文
- 繁體中文
- Ελληνικά
- हिन्दी
- 日本語
- 한국어
- فارسی
- Русский
- தமிழ்
- ייִדיש

additional

Contents [hide]
1 Introduction
2 Your participation is important!
3 Limited evaluation period
4 Things to test
5 Further information about the IDNwiki
6 The example.test names

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 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.

- Were the results what you expected?

start | Presentations | 2 Microsoft Offic... | Beijing-Apr08 [Co... | SJ-Staff-IDN-traini... | IDNwiki - IDNwiki - ... | ram - Conversation | 8:06 PM

IDN TLD Processes

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

ISO	COUNTRY- English (UN)	ISO code; Language	Short name	Formal name
AF	AFGHANISTAN	Dari	أفغانستان Afghānestān	جمهورئ إسلامئ أفغانستان Jomhūrī-ye Eslāmī-ye Afghānestān
		ps: Pashto	أفغانستان Afghānistān	د أفغانستان إسلامى جمهوریت Afghānistān Islāmī Jumhūrīyat (Dê)
AL	ALBANIA	sq: Albanian	Shqipëri / Shqipëria	Republika e Shqipërisë
DZ	ALGERIA	ar: Arabic	الْجَزَائِر Al Jazā'ir	الْجُمْهُورِيَّة الْجَزَائِرِيَّة الدِّيمُقْرَاطِيَّة الشَّعْبِيَّة Al Jumhūrīyah al Jazā'irīyah ad Dīmuqrāṭīyah ash Sha'bīyah
AD	ANDORRA	ca: Catalan	Andorra	Principat d'Andorra
AO	ANGOLA	pt: Portuguese	Angola	República de Angola
AG	ANTIGUA AND BARBUDA	en: English	Antigua and Barbuda	Antigua and Barbuda
AR	ARGENTINA	es: Spanish	Argentina (la)	República Argentina
AM	ARMENIA	hy: Armenian	Հայաստան Hayastan	Հայաստանի Հանրապետություն Hayastani Hanrapetut'yun
AU	AUSTRALIA	en: English	Australia	Commonwealth of Australia
AT	AUSTRIA	de: German	Österreich	Republik Österreich

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 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
    - http://www.icann.org/en/announcements/announcement-21jan10-en.htm
    - рф ,امارات ,مصر ,السعودية
    - Saudi-Arabia, Egypt, United Arab Emirates, Russia
  - String delegation can take a few-several months

IDN TLDs – *technical related issues ahead*

- Variant TLD reservation or blocking
  - No technical solution exists to manage TLDs in the root, but community need is expressed
    - for example: Pakistan: پاکستان and پاکستان
    - Draft proposal of BNAME for "TLD aliasing"

- Number of characters in a label
  - ccTLDs 2char labels → 2+char
  - gTLDs 3+char → proposed 2+char
  - Usability and acceptability across applications is an issue

- IDNA technical standard revision

- Security and stability impact of number of TLDs
  - Scaling study being reviewed by SSAC

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/

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 current new gTLD planning
- 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

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 in 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