

# Internationalized Domain Names



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New gTLDs Outreach Event  
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# Agenda

- Introduction
- IDNs for end users
- IDN tests and protocol revision
- ICANN policy process for IDN TLDs
- IDN ccTLD Fast Track
- Where we are today
- Next steps

# Introduction to IDNs

- IDN stands for Internationalized Domain Name
- Domain labels that contain characters other than Letters 'a' to 'z', Digits '0' to '9', and the Hyphen '-'
- IDNA protocol developed by IETF in 2002-2003
  - RFCs 3454, 3490, 3491, 3492
- IDNs have existed at second level since 2003
  - عربي.com
- Work is underway for introducing IDNs at the top level
  - عربي.عربي

# IDNs at the top level

- ccTLDs
  - Implementing IDN ccTLDs would normally take 3-7 years
  - Fast track: a quick feasible method for introducing IDN ccTLDs
- gTLDs
  - IDNs are part of the new gTLDs process

# Why IDNs?

- Demand by growing number of users who prefer to access the Internet in their native languages

<b>Top Ten Languages Used in the Web</b> ( Number of Internet Users by Language )					
<b>TOP TEN LANGUAGES IN THE INTERNET</b>	<b>Internet Users by Language</b>	<b>Internet Penetration by Language</b>	<b>Growth in Internet ( 2000 - 2008 )</b>	<b>Internet Users % of Total</b>	<b>World Population for this Language (2008 Estimate)</b>
<a href="#"><u>English</u></a>	463,790,410	37.2 %	226.7 %	29.1 %	1,247,862,351
<a href="#"><u>Chinese</u></a>	321,361,613	23.5 %	894.8 %	20.1 %	1,365,138,028
<a href="#"><u>Spanish</u></a>	130,775,144	32.0 %	619.3 %	8.2 %	408,760,807
<a href="#"><u>Japanese</u></a>	94,000,000	73.8 %	99.7 %	5.9 %	127,288,419
<a href="#"><u>French</u></a>	73,609,362	17.8 %	503.4 %	4.6 %	414,043,695
<a href="#"><u>Portuguese</u></a>	72,555,800	29.7 %	857.7 %	4.5 %	244,080,690
<a href="#"><u>German</u></a>	65,243,673	67.7 %	135.5 %	4.1 %	96,402,666
<a href="#"><u>Arabic</u></a>	41,396,600	14.2 %	1,545.2 %	2.6 %	291,073,346
<a href="#"><u>Russian</u></a>	38,000,000	27.0 %	1,125.8 %	2.4 %	140,702,094
<a href="#"><u>Korean</u></a>	36,794,800	51.9 %	93.3 %	2.3 %	70,944,739
<b>TOP 10 LANGUAGES</b>	<b>1,337,527,402</b>	<b>30.4 %</b>	<b>329.2 %</b>	<b>83.8 %</b>	<b>4,406,296,835</b>
Rest of the Languages	258,742,706	11.2 %	424.5 %	16.2 %	2,303,732,235
<b>WORLD TOTAL</b>	<b>1,596,270,108</b>	<b>23.8 %</b>	<b>342.2 %</b>	<b>100.0 %</b>	<b>6,710,029,070</b>

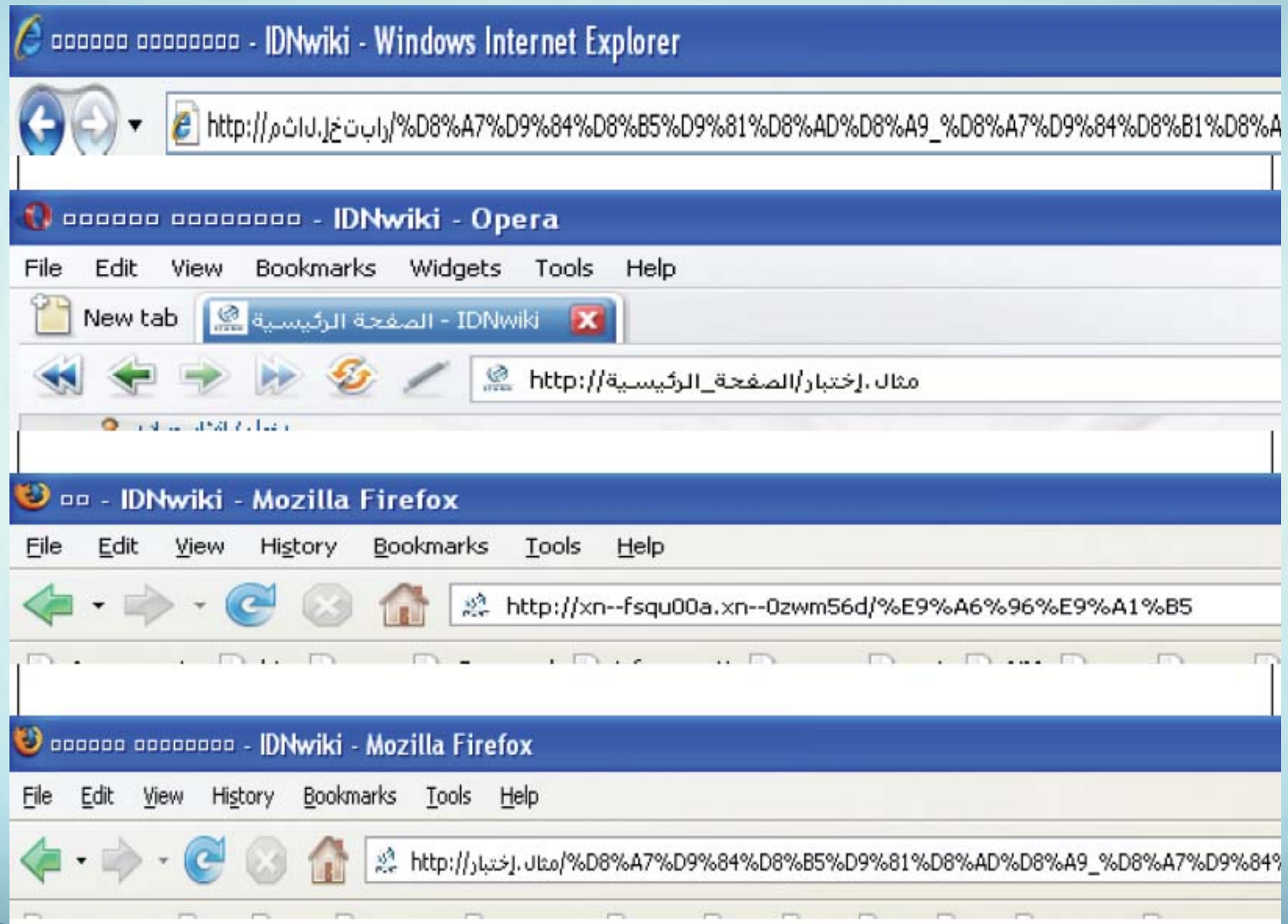


Source: <http://www.internetworldstats.com/stats7.htm>

# IDNs from user's perspective

- Registrants can register names in their native languages  
- مثال.إختبار
- Registries handle all encoding required  
- مثال.إختبار <  
xn--mgbh0fb.xn--kgbechtv
- IDN emails are still under development at the IETF  
- مستخدم@مثال.إختبار
- What you write is not always what you see!

# Here is what you see



# User confusion

- Problem exists in ASCII strings
  - Lower-case "l" and upper-case "I"
  - Digit "0" and upper case "O"
- IDNs increase the number of characters used hence increase the possibility of user's confusion
  - "paypal and "paypal"
  - "py" and "py"
  - "کتاب" و "کتاب"



# Preventing confusability

- IDN tables and variants
  - Developed by registry operators to inform registrants of characters available for use, and to eliminate confusability by listing variant characters
  - Used both at second and top level domain names
  - Collaboration across language communities in recommended
    - Arabic Script IDN Working Group (ASIWG) is one example
  - Variant TLDs could be problematic
    - For example Pakistan with Persian KAF (U+06A9) vs. Pakistan with Arabic KAF (U+0643)

# IDN wiki

IDNwiki - الصفحة الرئيسية
Google

From PC ▾ ICANN VPN ICANN E-Mail IANA ICANN Tech Support News (1031) ▾

Script	Language	SLD.TLD U-labels	SLD A-label	TLD A-label
Arabic	Arabic	مثال إختبار	xn--mgbb0fb	xn--kgbechtv
Arabic	Persian	مثال أرماني	xn--mgbb0fb	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--8lakbhbyknj4f
Devanagari	Hindi	उदाहरण.परीक्षण	xn--p1b6ci4b4b3a	xn--11b5bs3a9aj6g
Greek	Greek	παράδειγμα.δοκιμή	xn--hxajbhqeg2az3al	xn--jxalpdlp
Hangul	Korean	실례.테스트	xn--9n2bp8q	xn--9l4b1ly5a
Hebrew	Yiddish	דער פּראָבירונג פּאָנעל	xn--fbbk5d8ap9b8a8d	xn--deba0ad
Kanji Hirigana, and Katakana	Japanese	例え.テスト	xn--r8je45g	xn--zckzah
Tamil	Tamil	உதாரணம்.பரிசீலனை	xn--zkc6cc5bi7i6e	xn--hlcj6aya9esc7a

صفحة نقاش عرض المصدر تاريخ

## الصفحة الرئيسية

*?Can't see the font*

محتويات إخفاء

- مرحباً بكم في الموقع التجريبي لنطاقات example.test
- مشاركته تهما!
- أشياء يجب اختبارها
- معلومات إضافية

**مرحباً بكم في الموقع التجريبي لنطاقات example.test**

مرحباً في منطقة التقييم لأحد النطاقات الدولية العليا الجديدة ( IDN ). أسماء النطاقات الدولية التجريبية، والتي يمثلها الاسم example.test في إحدى عشرة لغة مختلفة، كلها موجهة لموقع الـ IDNwiki التابع لهيئة إنترنت المعنية بالأسماء والأرقام المخصصة (ICANN). بحيث لو قمت بكتابة اسم النطاق الدولي في المستعرض لديك أو في حال النقر فوق رابط لأحد أسماء النطاقات الدولية سيتم نقلك إلى منطقة التقييم هذه (IDNwiki). فتها نينا على وصولك إلى منطقة التقييم الخاصة باللغة العربية! هناك عدد من الطرق التي يمكن بها الوصول إلى هذا المقال، ولذا فمن الممكن أن تكون عدة مسارات محتملة هي التي انتقلت بك إلى هنا. ليس من الضروري أن يدعم المستعرض الخاص بك أسماء النطاقات الدولية بالكامل للوصول إلى هذه الصفحة أو لأن تشارك. على سبيل المثال، يمكنك اختبار قدرة بيئة العمل الخاصة بك مع هذه الروابط أدناه، فكل منها يعود بك إلى هذه الصفحة. اختبار آخر وهو أن تكتب أو تنسخ وتلصق اسم النطاق الدولي مباشرة في سطر العنوان بالمستعرض. وسينتقل هذا بك إلى هذه الصفحة فقط إذا كان المستعرض لديك يدعم اسم النطاق الدولي بالكامل.

اسم النطاق الدولي التقليدي

<http://ar.idn.icann.org>

يمكن النقر فوقه في كل المستعرضات

للكتابة أو للنسخ واللصق في عنوان المتصفح. يحتاج لدعم كامل من المتصفح للـ IDN

<http://مثال.إختبار>

اسم النطاق الدولي التقليدي

<http://مثال.إختبار>

بالإضافة إلى أسماء النطاقات الدولية هذه، يمكن أيضاً الوصول إلى هذه الصفحة باستخدام الاسم اللاتيني فقط <http://ar.idn.icann.org>. الهدف من هذا النموذج أساساً الاستخدام والتواصل مع المستخدمين الذي لا يألون النصوص العربية أو الذين ليس لديهم إمكانية الوصول إلى برامج لإدراك أسماء النطاقات الدولية. (المزيد عن هذا الموضوع وارد في المقال الخاص عن المفاهيم الأساسية).

**مشاركته تهما!**

تحثك على المشاركة في التقييم عن طريق وصف تجاربك مع النطاق مثال.إختبار والخدمات الموفرة له على IDNwiki. توجد صفحة منفصلة للمناقشة خاصة بكل مقال يمكن الوصول إليها عن طريق علامة التبويب التي تحمل اسم "النقاش". سيكون لتعليقك قيمة كبيرة في تخطيط وتطبيق الخطوات النهائية التي تؤدي إلى التفويض بأسماء النطاقات العليا.

إبحار

- الصفحة الرئيسية
- الواجهة الرئيسية (English)
- اختبار البريد الالكتروني
- مفاهيم أساسية
- البرامج والتطبيقات

التواصل

- أحدث التغييرات
- اتصل بنا
- مساعدة

أسماء النطاقات التجريبية

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

# IDN protocol revision

- IDNA provides the technical requirements for IDN strings:
  - The label must be valid internationalized domain name, as specified in technical standards: <http://www.icann.org/en/topics/idn/rfcs.htm>
  - Protocol revision is ongoing in the IETF
  - Key developments include:
    - Unicode version independent
    - Fixing problems with right-to-left script strings

# IDN policy process

## County Code Top Level Domains

### Fast Track

- Introduce limited number of non-contentious IDN ccTLDs within short timeframe
- Non-Latin scripts only
- Match ISO 3166 list
- Match country/territory names

## County Code Top Level Domains

### Long Term

- Full policy that caters for all
- Follows the full ccNSO Policy Development Process
- Launched in April 2009, working groups appointed, and timeline approved

## Generic Top Level Domains

### New gTLDs

- Includes IDN TLDs
- Same IDN technical requirements as in Fast Track
- Focus on non-ASCII squatting & confusingly similarity issues

# IDN ccTLD Fast Track Process

- Lunched by creating the IDNC working group in November 2007
- IDNC WG's main task was to develop and report on feasible methods for introducing a limited number of non-contentious IDN ccTLDs within a short timeframe
- IDNC WG was guided by:
  - The overarching requirement to preserve the security and stability of the DNS
  - Compliance with the IDNA protocols
  - Input and advice from the technical community in respect to the implementation of IDNs
  - Current practices for the delegation of ccTLDs
- IDNC WG's final report was approved by the ICANN Board in June 2008
- ICANN staff have been working on the implementation plan of the Fast Track

# Fast Track: draft implementation plan

- First version of the draft implementation plan posted in October 2008
- An updated version posted in November 2008 - contained clarifying information about IDN tables
- Public comments till 7 January:
  - Relationship between the prospective IDN ccTLD managers and ICANN
  - Financial consideration including application fees and annual registry fees
  - Contention between IDN ccTLD strings and existing / new gTLD strings
  - Role of IDN tables

**M1:** General Introduction and background Information

**M2:** Fast Track Eligibility Requirements

**M3:** TLD String Criteria and Requirements

**M4:** Technical Committee Considerations

**M5:** Request and Evaluation Process

**M6:** TLD Delegation Process

**M7:** Discussion of Additional Topics

# Fast Track: interest of governments and ccTLD managers

- ICANN sent letters to 252 governments and ccTLD managers
- 74 responses received
- 31 responses (excluding confidential ones) showed interest
  - Represent 15 different languages
- Details posted at:
  - <http://www.icann.org/en/announcements/announcement-10feb09-en.htm>

# Fast Track: revised implementation plan

- 2<sup>nd</sup> revision of the draft implementation plan together with explanatory documents posted on 18 Feb and public comments received until 6 April
- Explanatory papers cover:
  - Documentation of responsibility between ICANN and prospective IDN ccTLD managers
  - Development and use of IDN tables and character variants for second and top level strings



# Fast Track: where are we today?

- 3<sup>rd</sup> revision of the draft implementation plan together with consultation papers posted on 31 May and public comments received until 15 July
- Implementation plan updates:
  - Detailed evaluation process
  - Draft application online form
  - Clarified eligibility requirements
- Consultation papers cover:
  - Documentation of responsibility
  - Fee and cost considerations
  - IDN tables and variants

# Documentation of Responsibility (DoR)

- Commitment to adhere to technical standards and IDN Guidelines is essential and generally accepted
- Need to define and describe roles and responsibilities of ICANN and IDN ccTLD managers is broadly accepted
- Different views on how such agreement could be enforced
- Different views on the form of the agreement
  - Signed DoR or exchange of letters (EoL) at the time of approval of delegation
  - Express acceptance of specific terms and conditions when signing a TLD request

# IDN costs and cost recovery

- Three draft papers:
  - ICANN expenditure analysis by stakeholder interest area: Expense Area Group (EAG)
    - Associate ICANN costs with its stakeholders
    - ccTLD and ccNSO support costs ~\$9m (~17% of ICANN costs)
  - Cost analysis of IDN ccTLDs detailing
    - Program development costs: \$3m (recovered over time)
    - Processing costs: \$26.7k per request
  - Financial contribution paper
    - Pre-arranged and recommended contributions for IDN ccTLDs to cover the costs of processing string requests, and an annual contribution to cover program development costs

# Pre-arranged and recommended contributions

- Processing string requests (\$26.7k per request)
  - Based on direct processing costs
  - No development cost recovery
  - No fee for IANA services
- Annual contribution
  - To recover the program development costs
  - Calculated based on contribution across all ccTLDs  
NOT IDN ccTLDs only
  - 1-3% of revenue based on registry volume

# IDN tables and variant TLDs

- IDN tables are developed by registries to:
  - Inform users what characters are available
  - Eliminate confusability by listing variant characters
- Variant TLDs
  - Variant characters occur where a single character has two or more representations, which may or may not be visually similar
  - Variant TLDs are those which contain variant characters
  - So far, there is no technical solution to alias TLDs
  - Allowing variant TLDs may result in user confusion, while excluding them may impact communities that use characters in the excluded TLD strings

# Addressing the issue of variant TLDs

- Staff to form a working team with appropriate linguistic expertise and technical support to engage with relevant language communities to:
  - Develop recommendations to address the management of variant TLDs
  - Report back with recommendations to the ICANN Board and community in time for the Seoul meeting
- The same working team will be looking at the 3-character requirement for IDN gTLDs

# Working team charter: handling IDN TLD variants

- Develop definitions of variants as used in IDNs - what does “variant” mean as used in IDN tables for ccTLDs and gTLDs
- Determine whether blocking or reservation of variant TLDs is necessary to prevent user confusion
- Determine under what circumstances TLD variants might be delegated
- Determine responsibilities of TLD operator to whom TLD and variants might be delegated

# Next steps

- Finalize the implementation plan by the ICANN Seoul meeting (Oct-09) including:
  - Documentation of responsibility
  - Financial contributions
  - IDN tables and variant TLDs
- Informal pre-evaluation process to test portions of the implementation process
  - i.e. application, linguistic documentation, technical string criteria, etc.



# For more information

- Tina Dam, Director of IDN Programme: [tina.dam@icann.org](mailto:tina.dam@icann.org)
- IDN programme: <http://www.icann.org/en/topics/idn/>
- IDN ccTLD Fast Track process: <http://www.icann.org/en/topics/idn/fast-track/>
- 3<sup>rd</sup> revision of draft implementation plan: <http://www.icann.org/en/topics/idn/fast-track/draft-implementation-plan-cctld-clean-29may09-en.pdf>
- Revised implementation details regarding documentation of responsibilities: <http://www.icann.org/en/topics/idn/fast-track/proposed-implementation-details-dor-29may09-en.pdf>
- Revised implementation details regarding IDN tables and variant characters: <http://www.icann.org/en/topics/idn/fast-track/proposed-implementation-details-idn-tables-revision-1-clean-29may09-en.pdf>
- Cost analysis of IDN ccTLDs: <http://www.icann.org/en/topics/idn/fast-track/analysis-idn-cctld-development-processing-costs-04jun09-en.pdf>

# Thank You

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