Arabic Domain Names Pilot Project

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ICANN 2005, Vancouver
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Introduction

What is the problem?

- Current ASCII-based DNs are incapable of representing Arabic characters
- Difficulty to reach Arabic sites using English DNs (pronunciation & spelling problems)
- Full Arabic DNs will encourage Arab users to widely use the Internet

Arabic News paper
صحيفة الشرق الأوسط
www.al-sharqalawsat.com
www.asharqalawsat.com
www.asharq-alaowsat.com
www.elsharkelaosat.com
...

E-government Site
يِسَّر
www.yasser.gov.sa
www.yaser.gov.sa
www.yasir.gov.sa
www.yassir.gov.sa
...
Case 1: A teacher asked his students to access an article in one of the most popular Arabic newspaper called “صحيفة الشرق الأوسط”. Students have tried to access the newspaper web site by typing the following domains (all with wrong spelling!!):

www.al-sharqalawsat.com
www.alsharqalawsat.com
www.asharq-alaowsat.com
www.elsharkelaosat.com
...

Case 2: The Saudi government has introduced an e-government portal called “يسر” which means “make it easy”. But it is not easy for the citizens to type the portal domain name, here some misspelled domains:

www.yasser.gov.sa
www.yaser.gov.sa
www.yasir.gov.sa
www.yassir.gov.sa
www.yassir.gov.sa
...

Introduction

Internet in the Arab World

• Statistics
  – Population of Arab world: 275 B (5% of world population)
  – Arab Internet users represent 0.9% of world users
  – 2.6% Average Internet penetration in Arab world
  – 1.2% PC penetration
  – Less than 10% who can speak English in the Arab world

• Obstacles facing Internet use
  – Low level of telecommunication infrastructure
  – Lack of adequate regulations
  – High cost
  – Computer Illiteracy
  – Language barrier
    • Contents
    • Tools and applications
    • Domain names
Introduction
Arabic Language Characteristics

• Consists of 28 characters.
• Writing direction from Right-to-Left.
• Diacritics are used for pronunciations which lead to different meanings as well.
• Two sets of numerals are used (Arabic and Arabic-Indic).
• Abbreviation is not common.
• ...
Arabic Domain Names
Levels of an ADN Solution

1. **Linguistic issues**
   To define the accepted Arabic character set to be used for writing Arabic domain names

2. **Arabic TLDs**
   To define the top-level Arabic domain name (i.e., Arabic TLDs)

3. **Technical solutions**
   IETF, ...

4. **IDN root servers**
   ICANN/IANA, ...
Arabic Domain Names
Contribution Methodology

• Identifying problems & areas of contributions

• Participating and initiating interest groups & task forces
  – MINC, AINC, ADNTF (ESCWA-UN), GCC ccTLDs Group, ADNT (Arab League)

• Conducting web surveys

• Publishing reports & papers

• Meeting linguists (face to face)

• Testing and building local experiences
Arabic Domain Names
What has been done so far?

1. **Linguistic issues**
   - To define the accepted Arabic character set to be used for writing Arabic domain names.

2. **Arabic TLDs**
   - To define the top-level Arabic domain name (i.e., Arabic TLDs).
     - Local community efforts:
       - Linguistic Committee – Arabic linguists – publishing papers – web surveys, ...
     - Internet Draft
       - defining accepted Arabic character set for Arabic domain names
         - U0621-U063A (hamza-gheen)
         - U0641-U064A (feh-yeh)
         - U0660-U0669 (٩،...،٠،١،٢)
         - U0030 - U0039 (0,1,2,...,9)
         - U002D (Hyphen)
         - U002E (Dot)

3. **Technical solutions**
   - IETF, MINC, ...

4. **IDN root servers**
   - ICANN/IANA, ...

- defining Arabic ccTLDs
Arabic Domain Names

What is remaining?

1. Linguistic issues
   - To define the accepted Arabic character set to be used for writing Arabic domain names

2. Arabic TLDs
   - To define the top-level Arabic domain name (i.e., Arabic TLDs)

3. Technical solutions
   - IETF, MINC, ...

4. IDN root servers
   - ICANN/IANA, ...

Partially done by IETF:
- 3490 IDNA
- 3491 Nameprep
- 3492 Punycode
- 3454 Stringprep
Arabic Domain Names

What is remaining?

1. **Linguistic issues**
   - To define the accepted Arabic character set to be used for writing Arabic domain names

2. **Arabic TLDs**
   - To define the top-level Arabic domain name (i.e., Arabic TLDs)

3. **Technical solutions**
   - IETF, MINC, ...

4. **IDN root servers**
   - ICANN/IANA, ...

No root servers yet available for non-ASCII domain names
Testing Projects
1. At country-level

- Individually done be some Arab countries (ccTLDs)
  - Arabic.English
  - E.g., موقع-عربي.sa
  - Problem of mixing languages (left-to-right and right-to-left)
Testing Projects
2. GCC ADN Project

• March 2004:
  – During the Gulf Cooperation Council (GCC) ccTLDs group meeting on 7 March 2004,
    • “A Technical Proposal for Implementing Arabic Domain names in the GCC Countries” was presented and accepted
  – A technical taskforce was formed and assigned the task to implement the proposal within 6 months in three phases

ae, bh, kw, om, qa, sa
Testing Projects

2. GCC ADN Project

- Phase 1: Testing ADNS
  - Setting up Arabic GCC root servers.
  - Resolving Arabic GCC domain names.
  - Testing other DNS software and browsers.
  - Writing technical documents about the gained experience.
- Phase 2: Developing policies and regulations
  - Studying the current available polices for domain registration.
  - Defining our special needs.
  - Writing policies and regulations for registering Arabic domains.
- Phase 3: Public awareness
  - Build a website for the project and publish some tools and useful documents in it.
  - Encourage other Arab countries and entities to participate in this project.
  - Registering some test Arabic Domain names.
Testing Projects
3. ADN Pilot Project

- May 2005: the 2nd meeting of the Working Group on Arabic Domain Names, Cairo.

- Recommendations:
  - Extend the GCC Pilot Project for Arabic Domain Names to include all members of the Arab League (22 countries).
  - Renamed it to be "Arabic Domain Names Pilot Project".
  - It will be under the auspices of the Arab League.
ADN Pilot Project
Mission & Objectives

• Mission
  – Implementing a test bed for Arabic domain names (ADN) in the Arab world.
  – This will allow all Arab countries to early experience the use of Arabic domain names, identify their needs, agree on standards, locate possible problems, and develop required tools and policies.

• Objectives:
  – To establish and implement Arabic domain names.
  – To increase the Internet use in the Arab world by making the Internet easier to use for native Arabic speakers.
  – To gain experience and knowledge of using Arabic domain names and share it with the Internet community.
  – To test the implantations of Arabic domain names based on the guidelines drafted by the “Arabic Team for Domain Names”.
  – To develop necessary tools required for Arabic domain names and DNS.

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ADN Pilot Project
Participants & Duration

- Participants
  - All members of Arab League are invited to participate in this pilot project

- Duration
  - Open ... will continue as a test bed until the recognition of Arabic TLDs by concerned international bodies, e.g., ICANN

- Team Structure
  - Steering Committee:
    - general supervision of the project, management supervision of the Arabic root servers, and setting policies and procedures which include participation policies and use terms and conditions.
  - Technical Committee:
    - Providing technical support for participants and users, technical coordination between participants, technical supervision of the Arabic root servers, and enhancing and improving the project from technical point of view.

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ADN Pilot Project
Deliverables

• Establish and activate the Steering and Technical Committees (done)
• Prepare and maintain a website for the project (done)
• Prepare the Arabic DNS root servers (done)
• Prepare the Arabic ccTLD servers for the participating countries and connect them with the Arabic root servers (done)
• Register and test Arabic domain names (partially done)
• Test and develop tools supporting the use of Arabic domain names and DNS (done and in progress)
• Test and develop end-user applications (browsers, email clients, ....etc) to ensure support of Arabic domain names
• Draft technical guidelines (done)
• Define policies and regulations for registering Arabic domain names (done)
• Participate in local and regional activities related to Arabic domain names (done)
ADN Pilot Project
Accomplishments: Participants

- Participated Countries:
  - Saudi Arabia
    - Saudi Network Information Center
  - United Arab Emirates
    - United Arab Emirates Network Information Center
  - Qatar
    - Internet Qatar
  - Oman
    - Oman Telecommunications Company
  - Palestine
    - The Government Computer Center
  - Egypt
    - Ministry of Communications and Information Technology
  - Tunisia
    - The Tunisian Internet Agency
  - Syria
    - Syrian Computer Society Network

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ADN Pilot Project
Accomplishments: Root Servers

AR-ROOT.NIC.NET.SA (Arabic Root Server)
AR-ROOT.NIC.AE (Arabic Root Server)

- Slave for all the Arabic ccTLDs, (Only NS records + any Glue A records)
- Master for all the Arabic ccTLDs, (Only NS records + any Glue A records)

AR-CCTLD.NIC.NET.SA (SA Arabic ccTLD Server)
NS1.UAENIC.AE (AE Arabic ccTLD Server)
AR-ROOT.QATAR.NET.QA (QA Arabic ccTLD Server)

- Master for "السعودية"
- Master for "الإمارات"
- Master for "قطر"

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The Steering Committee produced a number of policy documents (so far):

- Project initiation Document
- Guidelines for an Arabic Domain Name System (Internet Draft)
- Terms and Conditions
- Participation Policy for Arabic ccTLD managers
- Guidelines for forming Arabic Domain Names

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ADN Pilot Project
Accomplishments: Tech Docs

• The Technical Committee produced a number of technical documents (so far):
  – General Technical Introduction.
  – How to Setup Arabic root server.
  – How to Setup Arabic ccTLD server.
  – How to Resolve Arabic Domain Names (ISPs).
  – Requirements for Resolving Arabic Domains (End Users).

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ADN Pilot Project
Accomplishments: Tools

• IDN/ADN Converting Tool:
  – Convert domain names from IDN to ASCII and vice versa.

• DNS checker for Arabic Domains:
  – Check if an IDN domain name is hosted on any name servers.

• Host checker for Arabic Domains:
  – Resolve IDN domains to the correspondent IP address and vice versa.

• Zone file editor for Arabic domains:
  – Create and manage Arabic zone files easily using this zone editor.

• Arabic DN Registration system:
  – Manage Arabic domain names registration information.

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الأسهم السعودية

Compare with: www.tadawul.com.sa
ADN Pilot Project
Obstacles

- International bodies (e.g., ICANN) do not truly understand our needs
- Not having **IDN root servers** by itself is a big obstacle.
- Not all **browser vendors** have implemented IDN (e.g., MS Internet Explorer).
- Coordination with **DNS resolver** operators (e.g., local ISPs) to support our project.
• ICANN issued 2 guidelines for implanting IDN however:
  – They are still working on IDN solutions (IDN.English) that does not support full IDN (IDN.IDN).
  – Not suitable for languages that are not Latin-based (right-to-left or ideographic languages).
  – Version 2.0 reflects the experiences of the IDN registries who have only implemented Version 1.0.
  – Focusing on IDN.English solutions has introduced lots of problems because of using multiple languages in one label.
Comments on ICANN Guidelines for Implementing IDN

• Poly-IDN:
  – represents an international domain name in which each label in the domain name can be expressed using different language character set:
  – Example: موقع.com

• Mono-IDN:
  – represents an international domain name in which all labels in the domain names are expressed using the same language character set:
  – "Arabic.Arabic" or "Chinese.Chinese"
  – Example: موقع.السعودية
Conclusions

• Mono-IDN should be supported at the ccTLDs
  – ccTLD managers should be given the ability to implement Mono-IDN and develop their language guidelines and share them with ICANN.
  – ICANN may continue its effort on supporting Poly-IDN and solving their problems.

• Hence, we supports the proposal submitted by the Chinese Domain Name Consortium:
  – Give the priority to internationalizing ccTLDs.
  – One form of language character variant of internationalized ccTLD is accepted.
  – ccTLD registries make their own choice of which IDN character sets.
  – Register and operate the internationalized ccTLDs in the root DNS server in the form of IDNA Punycode.
Thanks

Please
... all of us ...
Let us help others to be part of the Internet by speeding up the implementation of full IDN

شكرا

xn--mgbti4d

thanks