Arabic Domain Names Pilot Project

APTLD Meeting, Dubai Jun 3-6 2007

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  - Arabic Language Characteristics

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Introduction: About SaudiNIC

- administering the domain name space under (.sa) since 1995.
- operated by Communication and Information Technology Commission (CITC) ... governmental org.
- coordinating with regional and international bodies in order to present the local community needs
- leading the local community effort towards supporting Arabic language in DNS
Introduction: What is the problem?

- Current ASCII-based DNIs are **incapable** of representing Arabic characters
- Difficulty to reach Arabic sites using English DNIs (pronunciation & spelling problems)
- Full Arabic DNIs will encourage Arab users to widely use the Internet
Statistics
- Population of Arab world: 275 B (5% of world population)
- Arab Internet users represent 0.9% of world users
- 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: Why do we need ADN?

- Arabic language differs from Latin-based languages

- Some proposed solutions, e.g. (ICANN IDN): mixing two scripts: نطاقة.com.sa
  - Dose not solve the problem since the user will have to write in two different languages (left-to-right and right-to-left)
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)
  - 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
  - ٠، ١، ٢، ٣، ٤، ٥، ٦، ٧، ٨، ٩
- Abbreviation is not common.
- ...
Contribution Methodology

- Conducting Web surveys
- Meeting linguists (face to face)
- Publishing Reports papers
- Identifying problems & areas of contributions
- Participating initiating interest groups & task forces
- Disseminate information
- Testing and building local experiences
ADN: Solution Levels

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 domains of the Arabic domain name tree structure (i.e., Arabic gTLDs, and ccTLDs)

3. Technical solutions

4. Arabic root servers
   - IETF, MINC, ...
   - ICANN/IANA, MINC, ITU, ...
ADN: What has been done so far?

1. **Linguistic issues**
   To define the accepted Arabic characters that can be used for writing Arabic domain names.

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

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

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

- **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 (٠،١،٢،٣،٤)
    - U0030 - U0039 (0,1,2,…,9)
    - U002D (Hyphen)
    - U002E (Dot)
  - defining Arabic ccTLDs
**ADN: 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
ADN: 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
Groups

- **MINC: Multilingual Internet Names Consortium, 2000**
  - Arabic Working Group
- **AINC: Arab Internet Names Consortium, April 2001**
  - Founder and member of the board
  - Chairman of the Linguistic Committee
- **ADNTF: Arabic Domain Name Task Force, Q2/2003**
  - Formed under the auspices of ESCWA (UN)
  - Issuing an RFC for supporting the Arabic language in domain names with the cooperation of MINC
- **GCC ccTLDs Group:**
  - Formed under the auspices of ITC committee of GCC
  - GCC Arabic domain name pilot project
- **Arab Team for Arabic Domain Names:**
  - Formed under the auspices of Arab League
  - Arabic domain name pilot project
Testing Projects (1): At country-level

- Individually done by some Arab countries (ccTLDs)
  - Arabic.English
  - E.g., domain.com.sa
  - Problem of mixing languages (left-to-right and right-to-left)
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
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".
  - Under the auspices of the Arab League.
ADNPP: Introduction

- 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
- The project is not commercial and had been initiated by a non profit organizations
ADNPP: Goals & objectives

- Establish and implement Arabic domain names.
- Increase the Internet use in the Arab world by making the Internet easier to use for native Arabic speakers.
- Gain experience and knowledge of using Arabic domain names and share it with the Internet community.
- Test the implantations of Arabic domain names based on the guidelines drafted by the “Arabic Team for Domain Names”.
- Develop necessary tools required for Arabic domain names and DNS.
**ADNPP: 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.
ADNPP: Deliverables

- Establish and activate the Steering and Technical Committees (done)
- Prepare and maintain a website for the project (done)
  - www.arabic-domains.org
- 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 (in progress)
- Test and develop tools supporting the use of Arabic domain names (done and in progress)
- Participate in local and regional activities related to Arabic domain names (done)
ADNPP: Participants so far

- Participated Countries:
  - United Arab Emirates
  - Saudi Arabia
  - Qatar
  - Oman
  - Palestine
  - Egypt
  - Tunisia
  - Syria
  - Jordan
  - ...

Participants so far:
- United Arab Emirates
  - United Arab Emirates Network Information Center
- Kingdom of Saudi Arabia
  - Saudi Network Information Center
- State of Qatar
  - Internet Qatar
- Sultanate of Oman
  - Oman Telecommunications Company
- State Of Palestine
  - Ministry of Telecom and IT
- Arab Republic Of Egypt
  - Ministry of Communications & Information Technology
- Republic Of Tunisia
  - Tunisian Internet agency
- Syrian Arab Republic
  - Tunisian Internet agency
- Hashemite Kingdom of Jordan
  - National Information Technology Center
ADNPP: Root Servers

AR-ROOT.NIC.NET.SA
(Arabic Root Server)
- Slave for all the Arabic ccTLDs.
  (Only NS records + any Glue A records)

AR-ROOT.NIC.AE
(Arabic Root Server)
- Master for all the Arabic ccTLDs.
  (Only NS records + any Glue A records)

AR-CCTLD.NIC.NET.SA
(SA Arabic ccTLD Server)
- Master for "السعودية" domain

NS1.UAENIC.AE
(AE Arabic ccTLD Server)
- Master for "الإمارات" domain

AR-ROOT.QATAR.NET.QA
(QA Arabic ccTLD Server)
- Master for "قطر" domain

Arabic ccTLD servers

Arabic Root servers
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
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).
ADNPP: Last Participations

- Comments on ICANN IDN Guidelines V 2.0
- Comments on deployment of internationalized top level domains (Chinese Domain Name Consortium CDNC)
- ICANN Meeting, Vancouver, 30 Nov 2005
- ICANN Meeting, Marrakech (Morocco), 26 Jun 2006
  - Technical Presentation about the ADNPP
  - Technical Presentation about the ADNPP
- ICANN & UAENIC - IDN workshop, Dubai, 20 Nov 2006
  - Technical Presentation about the ADNPP
- Monitoring and following up ADN new activities 😊
SaudiNIC’s Experiences: Introduction

- SaudiNIC has opened the registration of Arabic domain names under (السعودية) for test purposes on:
  - 26/9/2005 (22/8/1426 H)

- Following the regulations of the Arabic Domain Names Pilot Project (www.arabic-domains.org)
SaudiNIC’s Experiences:
Accomplishments (1/2)

- Writing registration policies for Arabic domains (السعودية).
- Publishing a section in SaudiNIC website about ADNs:
  - [http://www.nic.net.sa/adn.php](http://www.nic.net.sa/adn.php)
- Making announcements through the media regarding
  - Arabic Domain Names Pilot Project
  - The launching date for accepting Arabic domains requests under (السعودية).
- Building forms and tools:
  - Online form for submitting registration requests.
  - Online form for instant modification.
  - Whois service.
  - Zone builder for (السعودية).
  - ADN Registration System.
  - Provide domain hosting choices for ADN.
  - And many other generic 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 corresponding IP address and vice versa.

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

ADN plug-in “Arabic.Arabic” (عربية.عربية)
- Browser plug-in that enables users to reach fully Arabic domain names for any country participating in the ADN Project.
الأسهم السعودية

Compare with: www.tadawul.com.sa
SaudiNIC’s Experiences: Policies and Regulations

- Governed by the policies and regulations of the ADNPP
- Utilize the .SA policies as a template for the Arabic domains
- Flat Registration under (السعودية)
- First come first serve (matching the policies)
- Domain names format (based on the ADNPP guidelines):
  - Length from 3 to 30 (approximate).
  - Consists of the main 28 Arabic letters and their possible shapes.
    - U0621-U063A + U0641-U064A
  - Use Dash (-) as word separators.
  - Domain should start with the entity type or activities
  - Match spelling and grammar rules (manually).
  - No registration for individuals (temporary).
  - Not permitted:
    - Mixing between languages and scripts.
    - Kasheeda (التطويلة)
    - Tashkeel (diacritica) and Shaddah
    - Numbers (temporary)
    - Character folding
    - Combining many Arabic words without separator.
SaudiNIC’s Experiences: Reg. Requirements & Procedure

- **Registration Requirements:**
  - Having an active .sa domain name.
  - Filling the online form.
  - Sending a conformation letter to SaudiNIC.
    - Confirm reading the policies!

- **Registration Procedure:**
  - Reading and agreeing on SaudiNIC ADN Policies.
  - Choosing appropriate Arabic domain names
    - Guidelines that helps choosing Arabic domain name.
  - Filling the online application form.
SaudiNIC’s Experiences: Technical Issues

- **Domain name hosting choices:**
  - URL forwarding/Redirecting (shared hosting)
  - IP addressing (dedicated/IP-based hosting)
  - Pointing to name servers (full DNS hosting)
    - If ISP familiar with IDN/ADN

- **Use UTF-8 for all data.**

- **Store the puny-code for the ADN.**
SaudiNIC’s Experiences: Learned Lessons

- **Users submit many requests for Arabic domains:**
  - With Arabic spelling Mistakes! (مؤسسة)
  - With English pronunciation in Arabic letters. (ورلد وايد)
  - Popular and general names of future selling purposes. (إنترنت)

- **Main Obstacles:**
  - Difficult to coordinate and make every ISP to join the project so users can reach ADN
  - Some ISPs lack technical experiences to work with IDN
  - MS browser IE (Ver. 6 or less) does not support IDN
Developing “Arabic.Arabic” Plug-in

- The Goal is to enable the Arabic user to reach Arabic domains:
  - Independently from the ISP
  - Independently from any service/connection type.

- The solution:
  - Develop a browser plug-in that enable the user reaching Arabic domain names in easy and smart way.
  - The plug-in should convert any Arabic domain name to a real & reachable domain name registered in the current DNS (e.g. xn--?????.adn.sa).
ADNPP Current Solution

DNS System
sa ae eg … sy

ISP
Firewall

DNS Resolver
Participating in ADNPP

Proxy

User

ADN Solution
AR-ROOT.NIC.NET.SA
AR-ROOT.NIC.AE

Internet

Web server

DNS Resolver

Query
Response

أهلا بكم في موقع السعودية

قطر "الإمارات" السعودية

發電所
“Arabic.Arabic”: Plug-in tool

- browser plug-in tool that simulate the solution.
- approved by the ADNPP.
- Latest version is 1.1
  - Supports Windows OS (2000, XP)
  - Works with IE 6
  - Auto update checking.
  - Support the IDN punycode converting (IDNA)
  - Interacts only with Arabic domain names (participant counties)
  - Support the ADNPP non-plugin solution (old way)
  - Change the Arabic domain name to real domain:
    xn--4gbrim.adn.sa ← موقع.السعودية ← موقع.adn.sa

- Future versions:
  - Support other OS
  - Support IE7 & Firefox
  - Support Key word searching
Summary

- Having Arabic Domain Names is becoming an essential requirement to our community development and it is not a commodity!
  - Imagine ... e-government solutions using a foreign language!!

- Not having a full IDN root servers by itself is a big obstacle.

- Local community can help in defining what they need and how they can be implemented
  - Reserve the development of Arabic language standards and tables to be done by Arabs derived from their respective community. [local empowerment]
Thanks

شكرا

xn--mgbti4d