

# Arabic Domain Names

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*Abstract:* - Domain names are a very crucial part of applied Internet technology. To this day, they remain dependant upon Latin characters regardless of the global reach of the Internet itself. Other languages are not yet fully supported to locate resources and sites on the network. Nevertheless, using Arabic domain names is essential to increase Internet penetration in the Arab world. Supporting the Arabic language in domain names calls for investigating and addressing a number of questions related to linguistic issues and the Arabic domain name tree structure.

This paper highlights and discusses the contributions and offers some recommendations regarding the accepted Arabic character set to be used in Arabic domain names, as well as some recommendations concerning the appropriate Arabic generic and country code top-level domain names (i.e., Arabic gTLDs and ccTLDs).

*Key-Words:* - Arabic Domain Names, Internationalized Domain Names (IDN), Domain names, Arabization, Internet applications.

## 1 Introduction

The Internet has become a global network of most, if not all, countries of the world with hundreds of millions of users. Recently, it is estimated that more than 60% of Internet content is in languages other than English. Also, it is estimated that by the year 2005 only one third of Internet businesses will use English for on-line communication [1,2].

Domain names are used widely by Internet users to locate resources on the Internet via a format that is easy to remember and understand. These names, however, are not required by the network software, but are used for human mnemonic convenience. They are used instead of the numerical addresses which are known as Internet protocol (IP) addresses, which are mainly used by machines to route data packets through the Internet. Hence, the main objective of using domain names is to ease and simplify the use of the Internet [3,4,5].

Since the Internet originally evolved in the United States, it supported only 7-bit ASCII code. Domain names consist of alphanumeric strings separated by dots, e.g., www.kacst.edu.sa. They are written using Latin characters particularly letters, digits, and the hyphen character. To the network, however, a domain name such as "www.kacst.edu.sa" is meaningless until it is translated into a numerical IP address. Name resolution is carried out by the Internet domain name system (DNS) in that domain names are

mapped to the actual corresponding IP addresses.

Despite the worldwide spread of the Internet, the Internet domain name system has not supported other languages to locate resources on the Internet. Users in non-English speaking countries, such as Arab users, are at a disadvantage. Using domain names in a language that is different from the users' native language defeats the main objective of having the domain name in characters rather than just numbers.

The Internet penetration in the Arab world is estimated to be 1.67 % and it is expected to be around 6.41 % by end of 2005, which is indeed very low. One of the obstacles facing the growth of Internet use in the Arab world is the language barrier. Many countries and nations are encouraging their people to use Internet, therefore it is important to ensure that the Internet supports the Arabic language, not only in web content but also in it's addresses [6,7,8].

Internationalized domain names were first developed in Asia-Pacific countries in 1998 [1,2,8,9], which led later to the creation of a number of non-for-profit organizations to supervise and pursue the deployment of multilingual domain names. Among these organizations are: the Multilingual Internet Names Consortium (MINC), the Arabic Internet Names Consortium (AINC), Arabic Team for Domain Names, Arabic Domain Names Pilot Project (ADNPP), the Chinese Domain Name Consortium (CDNC), the International Forum

for IT in Tamil (INFITT), and the Japanese Domain Names Association (JDNA). Also, the Internet Corporation for Assigned Names and Numbers (ICANN) established an internal Internationalized Domain Name (IDN) Working Group, and the Internet Engineering Task Force (IETF) created an internationalized DNS group dedicated to exploring the possibility of supporting a truly international Internet. The IDN group of IETF has issued 3 Request for Comments (RFC) for Internationalized DNS [10,11,12].

It is required that the Arabic language be used from the start of switching on the user's personal computer till the required data is retrieved from the Internet. This entails the elimination of the need for entering non-Arabic web addresses particularly if the sites are in Arabic. There are a number of reasons why Arabizing domain names is needed [7], such as:

- There is only a small percentage of Arabs who can read and write English.
- There are many well-known Arabic names that need to be used in the Internet.
- English letters are not capable of representing (or substituting for) Arabic letters.
- Encouraging the use of the Internet by Arabs who do not speak English. As the trend nowadays is towards the implementation of e-government and e-business, therefore it is important to provide the relevant information and services in the user's native language.

Therefore, it is urgently required from the local and international Internet community to produce a set of standards that are acceptable by the Internet community at large. These standards should cover several aspects of supporting Arabic domain names at different levels, such as:

1. Linguistic issues and the accepted Arabic character set.
2. The Arabic domain name tree structure, i.e., Arabic gTLDs and ccTLDs. These 2 points have been addressed by an Internet draft [].
3. Technical solutions to Arabize the domain name system. This is partially addressed by the IETF RFCs [10,11,12].
4. The administrative and organizational issues of IDN root servers. This is ICANN territory.

Section 2 discusses some linguistic issues related to Arabic domain names. Whitest Section 3 compares a number of suggested Arabic TLDs and gives some recommendations. Section 4 provides some highlights about the Arabic domain name pilot

project (ADNPP). Conclusions are provided in Section 5.

## 2. Linguistic Issues

There are a number of linguistic issues that have to be discussed and agreed upon with respect to the usage of the Arabic language in domain names. This section will highlight some of them. For more detailed discussion see [7, 14, 20].

### 2.1. Al-Tashkeel (Diacritics)

Al-Tashkeel (diacritic) is a small sign that is usually put on top or under an Arabic letter for the purpose of correct pronunciation which may lead to a different meaning. Al-tashkeel is not a letter by itself but it is a mean to correctly pronounce a letter. It is not widely used except in case of the possibility of mispronouncing words that have the same letters but with different pronunciations, and hence having different meanings.

**Recommendation:** With respect to domain names, al-tashkeel can be supported only in the user interface but should not be stored in the zone file. Therefore, it can be striped off at the preparation of internationalized strings ("stringprep") phase.

### 2.2. Kasheeda (Tatweel)

Kasheeda is not a letter. It is a horizontal line (like dash) used to lengthen the connection line between letters. It is used sometimes to enhance the display of Arabic words on screens or printouts.

**Recommendation:** Kasheeda should not be used in Arabic domain names.

### 2.3. Character folding

A character folding is the process where multiple letters (that may have some similarity with respect to their shapes) are folded into one shape. This includes:

- Folding Teh Marbuta and Heh at the end of a word.
- Folding different forms of Hamzah.
- Folding Alif Maksura and Yeh at the end of a word.
- Folding Waw with Hamzah and Waw.

Character folding is unacceptable in the Arabic language because it changes the meaning of the words and it is against the simplest spelling rules. Replacing a character with another character, which may have the same shape but different pronunciation, will give a different meaning. This will lead to have only one form (word) out many other forms of words that are made by all the

combination of folded characters. Hence, the other forms will be masked by the common form.

Hand writing mixes between different characters (e.g., Heh and Teh-Marbuta) and this is due to laziness or weakness in spelling. However, this is not the case in published and printed materials. One of the motivations to support the Arabic language in domain names is to preserve the language particularly with the spread of the globalization movement. Hence, character folding is working against this motivation since it is going to have a negative effect on the principles and ethics of the language.

**Recommendation:** Character folding should not be allowed.

## 2.4. Numbers

In the Arab world, there are two sets of numerical digits used:

- Set I: (0, 1, 2, 3, 4, 5, 6, 7, 8, 9),  
Mostly used in the western part of the Arab world (al-maghrib al-arabi).
- Set II: (٩ ,٨ ,٧ ,٦ ,٥ ,٤ ,٣ ,٢ ,١ ,٠),  
Mostly used in the eastern part of the Arab world (al-mashriq al-arabi).

Set I has been suggested because it is thought that there is similarity (or confusion) between the Arabic zero (0) and the dot (.). But the differences appear clearly in publications. The zero is larger and is printed higher than the dot. Also, With respect to a domain name, it is quite easy to distinguish between the zero and the dot based on the context of the domain name. And since the two sets are used they should be both supported.

**Recommendation:** Both sets should be supported in the user interface and both are folded to one set (Set I) at the preparation of internationalized strings (e.g., "stringprep") phase.

## 2.5. Connecting Multiple Words

In the Arab language words are separated by spaces. Connecting words without spaces is usually not acceptable. Therefore, a single space is the best word separator in an Arabic domain name with multiple words.

**Recommendation:** Space should be used to separate words if it is technically visible. Otherwise, it is recommended that multiple words are separated by the character "-" dash.

If the space is used as a word separator in Arabic domain names then it should be only a single space and it should not be used at the beginning or at the end of words.

## 2.6 Supported Character Set

It is recommended to use only the following Unicode characters. These are based on the study in [7] and the report from the Arabic linguistic committee of AINC [14]. The following codes are based on Unicode [15].

### Characters from Unicode Arabic Table (0600–06FF)

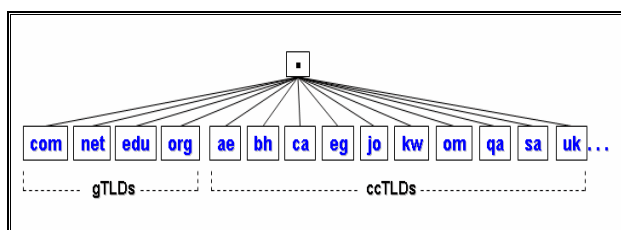
0621	(ﺀ)	Arabic Letter HAMZA
0622	(ﺀ)	Arabic Letter ALEF with MADDA above
0623	(ﺀ)	Arabic Letter ALEF with HAMZA above
0624	(ﻭ)	Arabic Letter WAW with HAMZA above
0625	(ﺀ)	Arabic Letter ALEF with HAMZA below
0626	(ﻱ)	Arabic Letter YEH with HAMZA above
0627	(ﺀ)	Arabic Letter ALEF
0628	(ﺏ)	Arabic Letter BEH
0629	(ﺓ)	Arabic Letter TEH MARBUTA
062A	(ﺖ)	Arabic Letter TEH
062B	(ﺙ)	Arabic Letter THEH
062C	(ﺝ)	Arabic Letter JEEM
062D	(ﺡ)	Arabic Letter HAH
062E	(ﺦ)	Arabic Letter KHAH
062F	(ﺩ)	Arabic Letter DAL
0630	(ﺬ)	Arabic Letter THAL
0631	(ﺭ)	Arabic Letter REH
0632	(ﺯ)	Arabic Letter ZAIN
0633	(ﺲ)	Arabic Letter SEEN
0634	(ﺶ)	Arabic Letter SHEEN
0635	(ﺺ)	Arabic Letter SAD
0636	(ﺾ)	Arabic Letter DAD
0637	(ﻁ)	Arabic Letter TAH
0638	(ﻅ)	Arabic Letter ZAH
0639	(ﻊ)	Arabic Letter AIN
063A	(ﻍ)	Arabic Letter GHAIN
0641	(ﻑ)	Arabic Letter FEH
0642	(ﻗ)	Arabic Letter QAF
0643	(ﻙ)	Arabic Letter KAF
0644	(ﻝ)	Arabic Letter LAM
0645	(ﻡ)	Arabic Letter MEEM
0646	(ﻥ)	Arabic Letter NOON
0647	(ﻩ)	Arabic Letter HEH
0648	(ﻭ)	Arabic Letter WAW
0649	(ﻱ)	Arabic Letter ALEF MAKSURA
064A	(ﻱ)	Arabic Letter YEH
0660	(٠)	Arabic-Indic Digit Zero
0661	(١)	Arabic-Indic Digit One
0662	(٢)	Arabic-Indic Digit Two
0663	(٣)	Arabic-Indic Digit Three
0664	(٤)	Arabic-Indic Digit Four
0665	(٥)	Arabic-Indic Digit Five
0666	(٦)	Arabic-Indic Digit Six
0667	(٧)	Arabic-Indic Digit Seven
0668	(٨)	Arabic-Indic Digit Eight
0669	(٩)	Arabic-Indic Digit Nine

**Characters from Unicode Basic Latin Table (0000–007F):**

- 0030 (0) Digit Zero
- 0031 (1) Digit One
- 0032 (2) Digit Two
- 0033 (3) Digit Three
- 0034 (4) Digit Four
- 0035 (5) Digit Five
- 0036 (6) Digit Six
- 0037 (7) Digit Seven
- 0038 (8) Digit Eight
- 0039 (9) Digit Nine
- 002D (-) Hyphen-Minus
- 002E (.) Full Stop (Dot)

**3. Arabic Top-Level Domain Names**

The domain name system (DNS) is a distributed database of host information that is organized in a hierarchal tree structure [3], see Fig.1. Theoretically, there is a "root domain" at the top of the domain name tree which is usually left unnamed. Immediately underneath the root come the top-level domains (TLDs). Basically, there are tow types of TLDs [3]. One is the generic TLDs (gTLDs), such as .com, .org, .net, and .edu. The second one is the country code TLDs (ccTLDs), such as .ae (United Arab Emirates), .bh (Bahrain), .ca (Canada), .de (Germany), .eg (Egypt), .jo (Jordan), .kw (Kuwait), .om (Oman), .qa (Qatar), .sa (Saudi Arabia), and .uk (United Kingdom). There are more than 240 ccTLDs following the two-letter country codes defined in the ISO standard number 3166 [16].



**Fig. 1: Domain Name Tree Structure**

A domain name, whether under a gTLD or ccTLD offers a global presence which makes sure that the corresponding web site is accessible through the Internet from anywhere. More than 170 millions of such names are estimated to be already stored in the Internet domain name system [17].

Part of supporting the Arabic language in domain names is defining the Arabic domain name tree structure. This means that the Arabic Internet community should produce a set of agreed upon Arabic gTLDs and ccTLDs.

There have been some suggestions with respect to the Arabic gTLDs and ccTLDs. They were studied and compared in [18]. The following subsections will summarize what has been found in this study.

**3.1. Existing Suggested Arabic gTLDs**

There are three main suggestions for Arabic gTLDs proposed by vendors and researchers. Table (2) lists these suggestions with the corresponding English gTLDs. These suggestions are:

1. Single Letter (SL):  
A single letter is used as an Arabic gTLD. For example, the Arabic letter "ش" is used for the Arabic gTLD corresponding to the English gTLD ".com" and the letter "م" is used for the gTLD corresponding to the English gTLD ".org".
2. Word Root (WR):  
The root of the Arabic word corresponding to an English gTLD is used for the Arabic gTLD. For example, the root ("شرك") of the Arabic word "شركة" is corresponding to the English gTLD ".com" and the root ("نظم") of the Arabic word "منظمة" is corresponding to the English gTLD ".org".
3. Full Word (FW):  
A full Arabic word that corresponds to an English gTLD is used. For example, the Arabic word "شركة" is used for the Arabic gTLD corresponding to the English gTLD ".com" and the Arabic word "منظمة" is used for the Arabic gTLD corresponding to the English gTLD ".org".

**Table 2: Proposed Arabic gTLDs**

English gTLDs	SL	FW	WR
com	ش	شركة	شرك
net	ك	شبكة	شبكة
edu	ت	تعليمي	علم
gov	ح	حكومي	حكم
org	م	منظمة	نظم
mil	ع	عسكري	عسكر

**3.2. Existing Suggested Arabic ccTLDs**

There are four main suggestions for Arabic ccTLDs discussed by the Arab Internet community. Table (3) lists these suggestions for all members of the Arab League. These suggestions are:

1. Short Form:  
This suggestion proposes the use of the short forms of country names based on the Arab standard specifications No. 642-1985 [19].
2. Nationality:  
This suggestion proposes the use of the nationality descriptive of each country.
3. Country Code:  
This suggestion proposes the use of the 2-letter country codes based on the Arab standard specifications No. 642-1985 [19], which is the equivalent to the ISO 3166 standard [16].

**Table 3: Existing Arabic ccTLDs**

Country Official Names	Country Code		Nationality	Short Name
	En	Ar		
Hashemite Kingdom of Jordan	jo	ار	أردني	الأردن
United Arab Emirates	ae	ام	إماراتي	الإمارات
Kingdom of Bahrain	bh	بح	بحريني	البحرين
Republic of Tunisia	tn	تو	تونسي	تونس
People's Democratic Republic of Algeria	dz	جز	جزائري	الجزائر
Federal and Islamic Republic of Comoros	km	قم	قمري	جزر القمر
Republic of Djibouti	dj	جي	جيبوتي	جيبوتي
Kingdom of Saudi Arabia	sa	سع	سعودي	السعودية
Democratic Republic of Sudan	sd	سد	سوداني	السودان
Syria Arab Republic	sy	سر	سوري	سورية
Somalia Democratic Republic	so	صو	صومالي	الصومال
Republic of Iraq	iq	عر	عراقي	العراق
Sultanate of Oman	om	عم	عماني	عمان
Palestine	ps	فل	فلسطيني	فلسطين
State of Qatar	qa	قط	قطري	قطر
Stat of Kuwait	kw	كو	كويتي	الكويت
Lebanese Republic	lb	لب	لبناني	لبنان
Socialist People's Libyan Arab Jamahiriya	ly	لي	ليبي	ليبيا
Arab Republic of Egypt	eg	مص	مصري	مصر
Kingdom of Morocco	ma	مغ	مغربي	المغرب
Islamic Republic of Mauritania	mr	مو	موريتاني	موريتانيا
Yemen Arab Republic	ye	يم	يمني	اليمن

### 3.3. Results of the Study

These suggested Arabic gTLDs and ccTLDs were studied and compared using the following criteria [18]:

1. Length of the Arabic TLDs.
2. Coherence and Clarity of the Arabic TLDs, .i.e., how much easy to associate an Arabic TLD with its corresponding category.
3. Linguistic structure of the Arabic domain name, .i.e., consistency with the Arabic language.
4. Easiness of pronunciation of the Arabic TLDs.
5. Future expansion of more Arabic TLDs (.i.e., extendibility).

Additional two factors were used, for comparing Arabic ccTLDs, namely:

6. Undesirable code for Arabic ccTLDs. This factor indicates whether the proposed Arabic ccTLDs introduce undesirable Arabic words. This is particularly if arbitrary combination of Arabic characters is used to produce an Arabic ccTLD.
7. The easy of reaching consensus among the involved parties (e.g., Arab countries).

Here are some major points from the study [18]:

- With respect to the length of the proposed Arabic gTLDs and ccTLDs it is obvious that using single letter for a gTLD and 2-letter country code for ccTLD gives the best score.
- Arabic gTLDs that are based on full words are much clearer than Arabic gTLDs that are based only on single letters. For example, the full Arabic word "شبكة" is much clearer than just a single letter "ك" for representing the category "network".
- Pronouncing single letters or full words is much easier than word roots.
- Using single letters is limited to 28 possible Arabic gTLDs because there are only 28 letters in the Arabic character set. Using word roots has little limitation in which multiple words may give the same root, e.g., the following words: "تعليم" and "إعلام" have the same root "علم". While using full words virtually has no limitation.
- In general, abbreviations are not widely used in Arabic language. Even if they are used they are pronounced in full wording. For example, the Arabic abbreviation (ص.ب) is used but its pronounced (صندوق بريد), also the Arabic abbreviation (أهـ) is used but its pronounced (انتهى كلامه). Thus, the use of full words in domain names will be more acceptable than abbreviations. This applicable to both Arabic gTLDs and ccTLDs.
- It has been found that using Arabic full words for gTLDs is more suitable for the Arabic language. This is because they are straightforward to relate

to the corresponding categories and easy to pronounce.

- Most of the proposed Arabic gTLDs are basically based on one-to-one translation of the English gTLDs either using full words or single letters. They are based on the activities of the entities (i.e., commercial, government, education) which might not suite the Arabic language. This means that the name of the entity comes before its category (i.e., gTLD). For example, the domain name of "the food and agriculture organization (fao)" is "fao.org"; the actual name and the domain name both have the entity type (organization/org) at the end. However, for the proposed Arabic gTLDs particularly the use of full words presents unpleasant structure of a domain name from linguistic point of view. This is due to the fact that the entity category in Arabic (i.e., منظمة, شركة, ... ) comes in front of the entity name and not at the end. Hence, this leads to creating awkward Arabic domain names. For example, Table (4) depicts examples of some Arabic domain names in which the Arabic linguistic structure of domain names is sound awkward.

**Table 4: Some examples of Arabic Domain Names**

Entity name	Type	Arabic domain name
اتحاد السباحة العربي	org (منظمة)	اتحاد-السباحة-العربي.منظمة
شركة الأمانة	com (شركة)	الأمانة.شركة
الشبكة العربية للمعلومات	net (شبكة)	عربية.شبكة

Geographical classification is widely used in Arabic language for indenting people, entities, and products. The geographical descriptive words usually come at the end of the phrase. Table (5) lists some examples.

### 3.4. Recommended Arabic TLDs

Based on the discussions in the previous sections, the current suggested Arabic gTLDs which use the entity type for the classification are not suitable for the Arabic language. Therefore, it is suggested to use the geographical classification instead.

With respect to Arabic gTLDs, it is recommended to use geographical descriptive words such as "دولي" and "عربي". In later phase (if needed) other Arabic gTLDs can be added which represents activities such as "تعليمي", "تجاري", and "معلوماتي".

With respect to the proposed Arabic ccTLDs, it has been found that using the Arabic standard for country codes or country short name [19] would be the easiest and fastest way to reach agreements among the concerned parties. Also, it is quite comprehensive which include most of the world's countries. This is said despite its shortcoming of having some unpleasant codes. Enhancement to the standard to overcome this problem can be done for certain country codes to become three letters rather than two letters. For example, "مصر" and "قطر". Alternatively, the standard short country names (e.g., السعودية) would be recommended.

**Table 5: Some Examples of Arabic Names with Geographical Descriptive Words**

حمص حلبي	جمعية الحاسبات السورية	أبو إسماعيل البخاري
مشمش شامي	حزب العمل اللبناني	قناة السويس
قهوة عربية	نادي الأهلي المصري	اتحاد كرة الطائرة السعودي
جامعة الدول العربية	دينار كويتي	فرس عربي

The following could be the proposed Arabic domain name structure based on the assumption that the geographical classification is adopted:

<A-TLD>.<entity-name>

Where, <entity-name> represents the Arabic name of the entity and <A-TLD> represents an Arabic TLD. For example,

شركة-الزومان.السعودية  
شركة-أرامكو.السعودية  
المركز-التجاري.سورية  
اتحاد-كرة-الطائرة.عربي  
جامعة-الخرطوم.السودان

Fig. 2 show the suggested Arabic domain name tree structure whether using country codes or nationalities for the Arabic ccTLDs.

## 4. Arabic Domain Names Pilot Project

Arab countries have recognized the importance of assuring Internet supporting the Arabic language not only in web content but also in it's addresses. Thus, an Arabic Team for Domain Names was created under the auspices of the Arab League in 2004 to coordinate these efforts and in the Arab region. In their 2nd meeting, held in Cairo on the 7th and 9th of May 2005, it was recommended that the Gulf Cooperation Council (GCC) Pilot Project for Arabic Domain Names be extended to include all members of the Arab League. Hence, the project was renamed "Arabic Domain Names Pilot Project"

and it was determined that henceforth all related efforts will be under the auspices of League of Arab [22].

Two committees have been created for the management and operation of the project: A Steering Committee and a Technical Committee. The Steering Committee's tasks include: 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. While the Technical Committee's tasks include: 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 the technical standpoint.

The mission of the project is: "Implementing a test bed for Arabic domain names (ADN) in the Arab world. This will allow for the early experience the use of Arabic domain names by all Arab countries, the identification of their needs, the agreement upon uniform standards, the identification of possible problems, and the development of required tools and policies."

The project is expected to contribute to the following strategic objectives:

1. To implement Arabic domain names.
2. To increase Internet use in the Arab world by addressing linguistic barriers facing users.
3. To promote the use of Arabic language and to increase the Arabic content on the Internet.
4. To promote Arab cultural identity on the Internet.

While the main objectives of the project are:

1. To make the Internet easier to use for native Arabic speakers.
2. To gain experience and knowledge in the use of Arabic domain names and share it with the Internet community.
3. To test the implantations of Arabic domain names based upon the guidelines drafted by the "Arabic Team for Domain Names".
4. To build local awareness related to Arabic domain names.
5. Possibly, to develop necessary tools required for Arabic domain names and DNS.

6. To develop required policies and guidelines that help achieve the above objectives.

The major achievements of the project so far are:

1. Draft a number of policy documents:
  - a. Project Initiation Document
  - b. Participation Policy for Arabic ccTLD managers
  - c. Terms and Conditions
  - d. Guidelines writing Arabic domain names
2. Technical work:
  - a. Building project website and mailing list.
  - b. Adding some tools and forms.
  - c. Preparing some technical documents.
  - d. Adding new participants to the project (ccTLD).
3. There are at the current time 7 participants: Saudi Arabia, United Arab Emirates, State of Qatar, Egypt, Tunisia, Palestine, Syria

## 5. Conclusions

This paper listed and discussed most of the Arabic linguistic issues related to Arabic domain names, and it gave the recommended Arabic character set based on Unicode.

The paper also studied and compared a number of existing suggestions for both Arabic gTLDs and Arabic ccTLDs.

With respect to the Arabic gTLDs, It has been found that using Arabic full words for gTLDs is more suitable for the Arabic language. This is because they are easy to relate to the corresponding categories and to pronounce. However, they are too long. Also, it is recommended to use geographical descriptive words such as "دولي" and "عربي", and in later stage other descriptive words such as activities, e.g., "تعليمي" "تجاري", and "معلوماتي".

With respect to the proposed Arabic ccTLDs, it has been found that using the Arabic standard for country short names or codes (ASMO, Arab Standard Specifications, No. 642-1985) would be the easiest and fastest way to reach agreements among the concerned parties.

Now we need more support from ICANN to get the Arabic domain names part of the Standard domain name system (DNS root servers). We do not want alternative Arabic root servers.

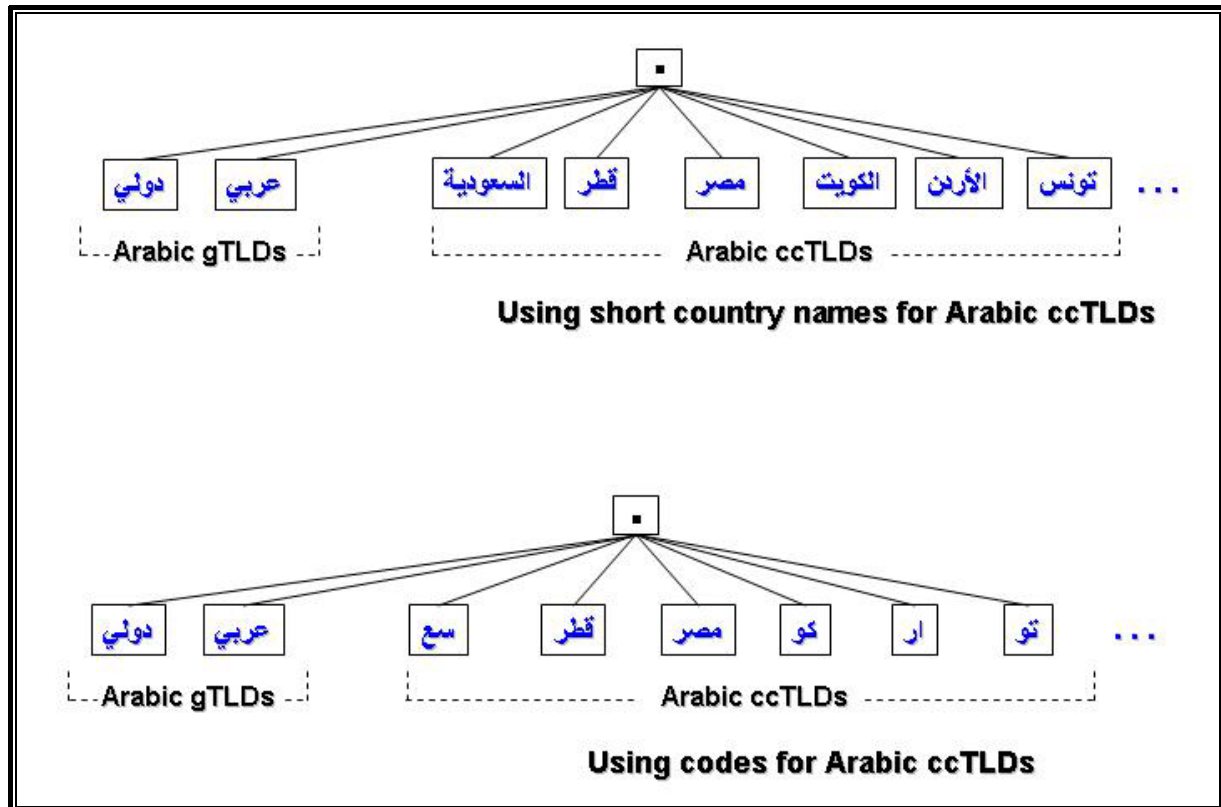


Fig. 2: Arabic Domain Name Tree Structure

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