

Pakistan School on Internet Governance

New gTLDs, IDNs, and its Universal Acceptance

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AGENDA

Introductions to New gTLD

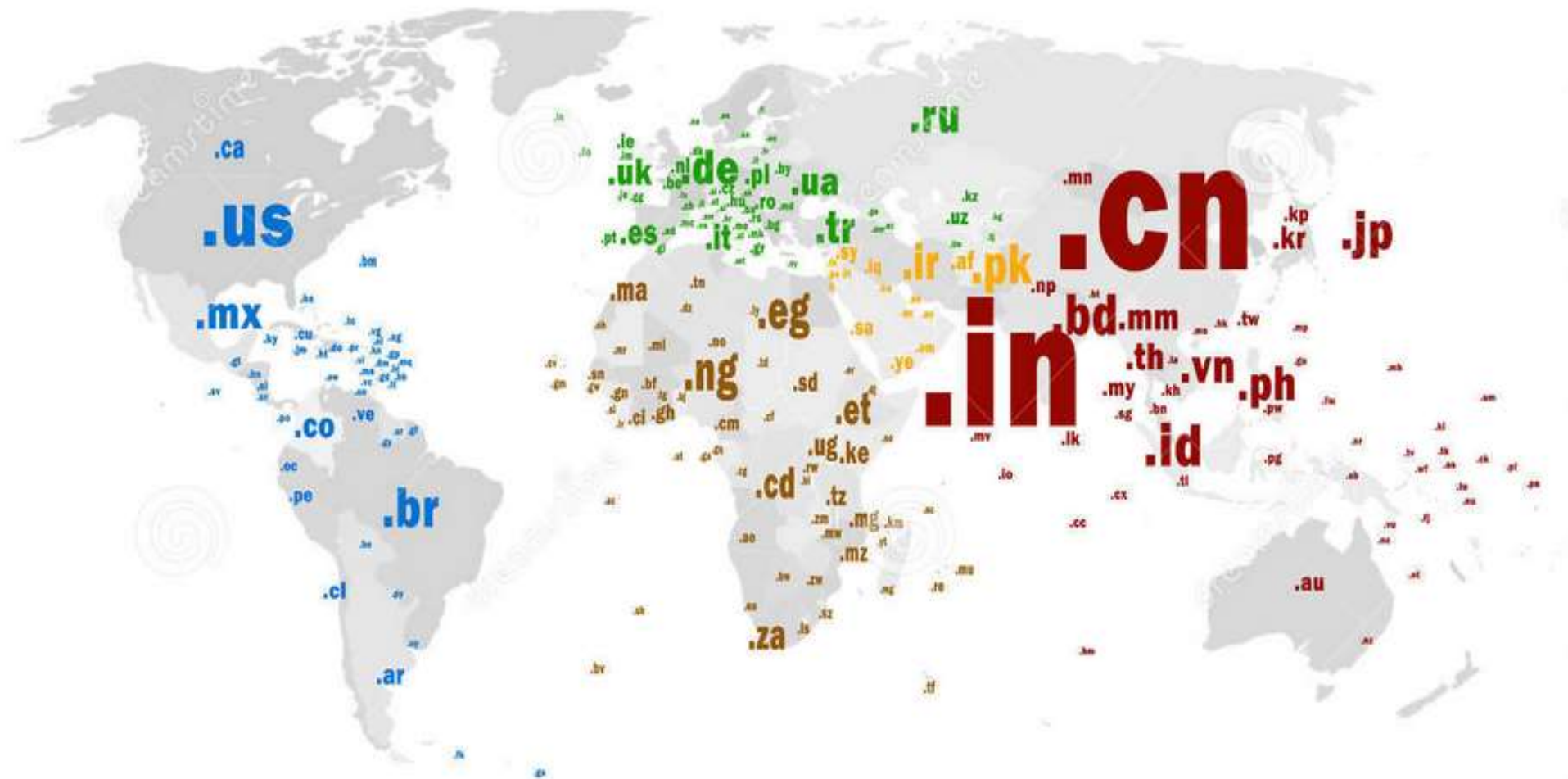
Internationalized Domain Names (IDNs)

Universal Acceptance

Brief on TF-AIDN



Country Code TLDs (ccTLD)



Top Level Domains

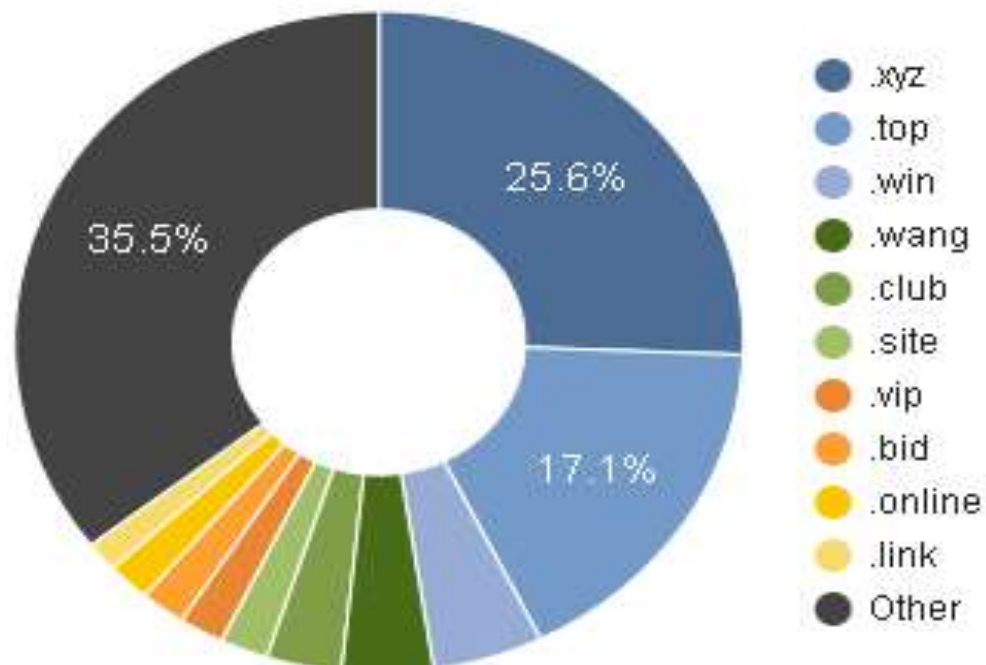
Domain Name Anatomy

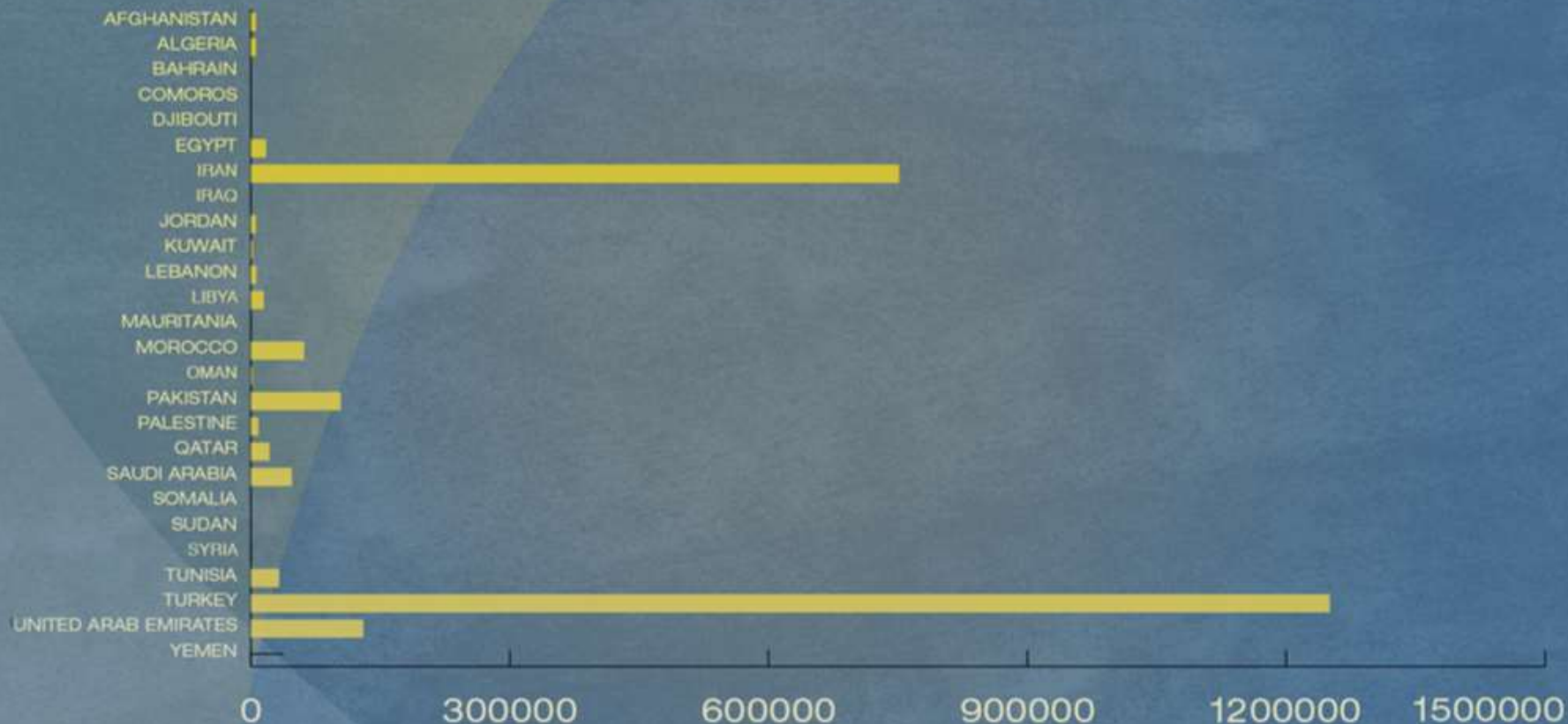


Generic TLDs (gTLDs)

- Initially started with 7 (.com, .net, .org, .gov, .edu, .mil, and .int)
- In 2000, 7 more were added (.aero, .biz, .coop, .info, .museum, .name, and .pro)
- In 2004, 6 more were added (.asia, .cat, .jobs, .mobi, .tel, and .travel)
- In 2012, .post was added
- In 2013, .xxx was added
- Starting 2013, 10s of new names are being added

	TLD	Domains	% Share
1.	 .xyz	6,616,878	 25.60%
2.	 .top	4,414,915	 17.08%
3.	 .win	1,268,068	 4.91%
4.	 .wang	1,043,830	 4.04%
5.	 .club	863,234	 3.34%
6.	 .site	547,432	 2.12%
7.	 .vip	521,758	 2.02%
8.	 .bid	514,585	 1.99%
9.	 .online	496,943	 1.92%
10.	 .link	379,695	 1.47%





New gTLDs Application Breakdown by Region



Internationalized Domain Names (IDNs)

- Domain Names in non-ASCII characters
- Were introduced in hopes to bring more users to the online world

<http://مثال.إختبار/>

- First 4 delegations were مصر., الإمارات., السعودية., and .Pڤ
- More at <https://www.icann.org/resources/pages/string-evaluation-completion-2014-02-19-en>

What has changed with Top-Level Domains?

DOMAIN NAME

Latin letters a to z without accents or symbols.

.org

.com

.uk

2009

INTERNATIONALIZED DOMAIN NAMES ADDED

Characters from different scripts.

عرب.

(.arab)

.中国

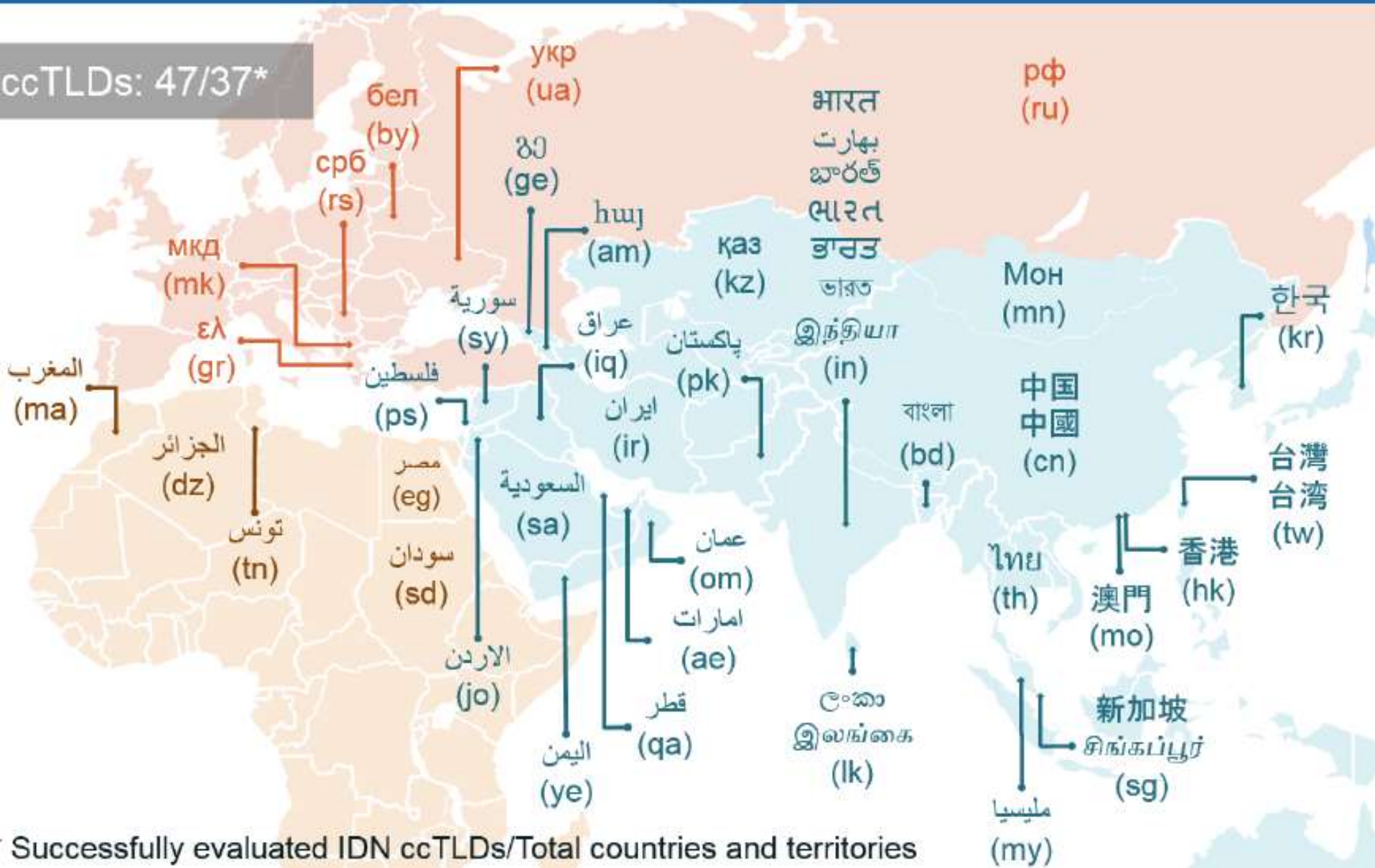
(.china)

.рф

(.rf)

IDN Country Code Top-Level Domains

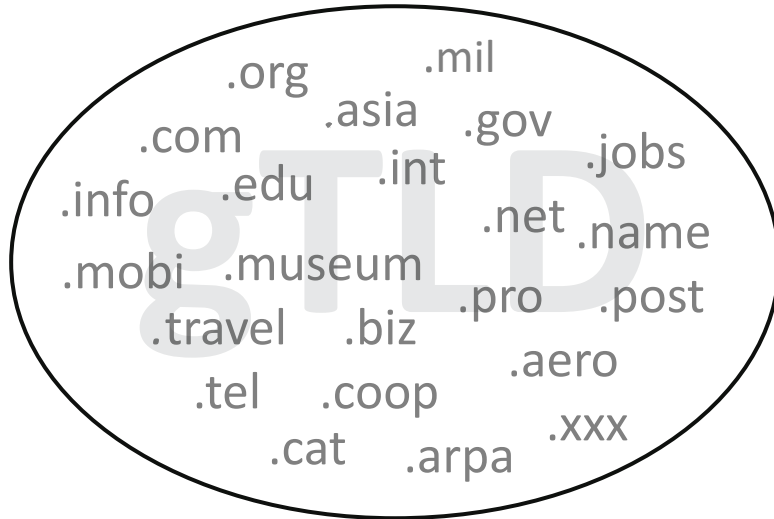
ccTLDs: 47/37*



Successfully evaluated IDN ccTLDs/Total countries and territories

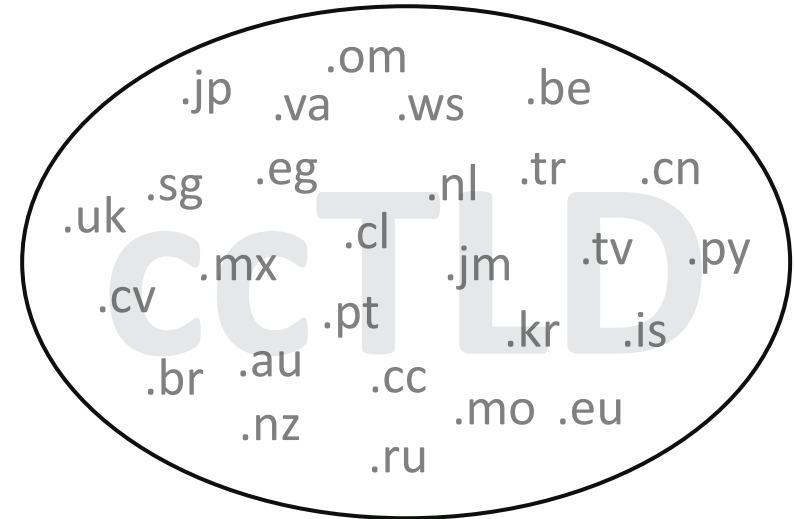
How does the Name Space Look Nowadays?

ROOT



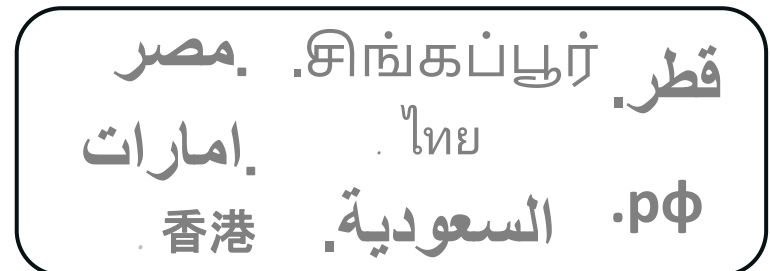
New gTLD Program

New gTLDs



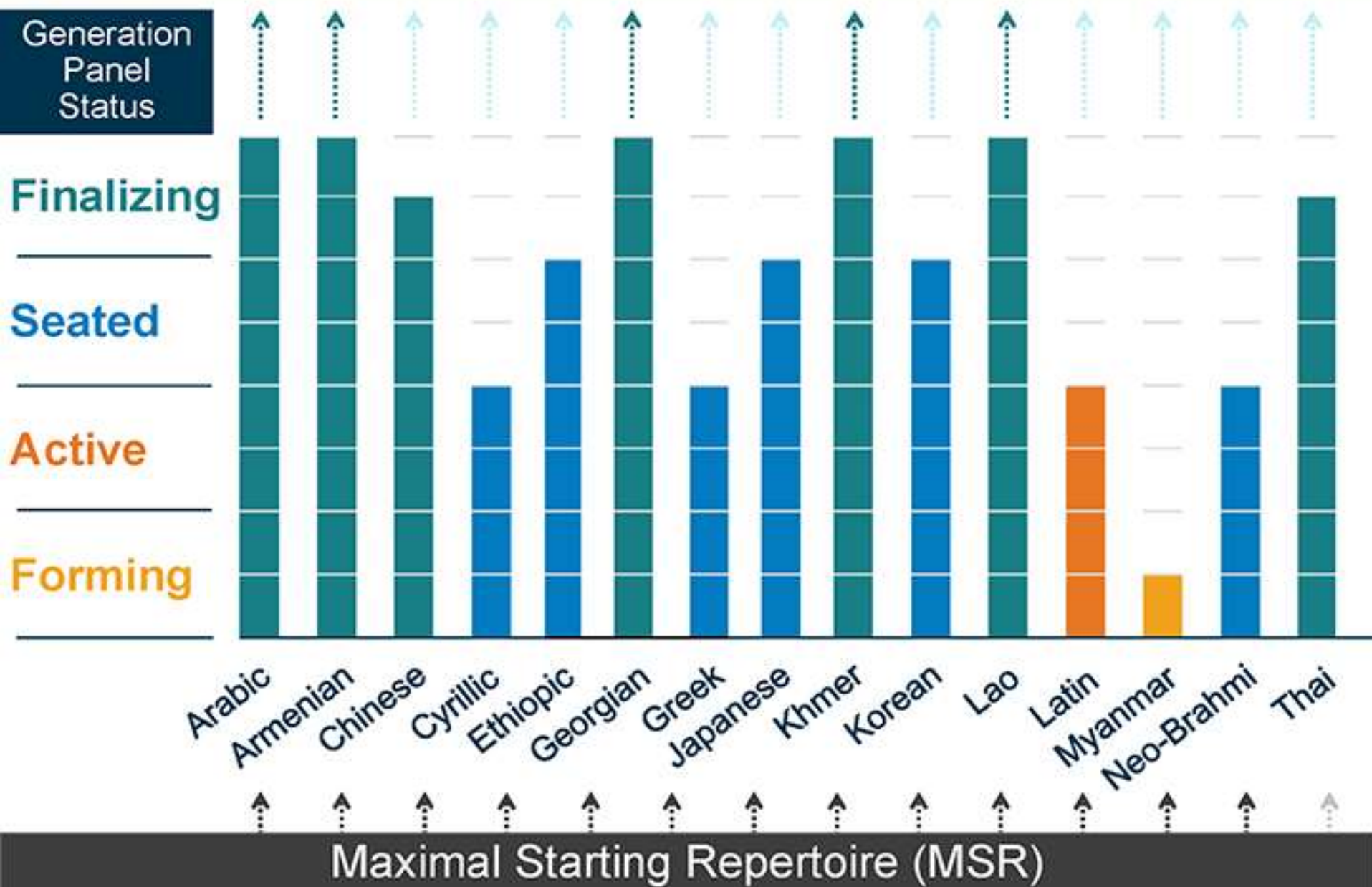
Fast Track Program

IDN ccTLDs





Label Generation Rules (LGR)



Root Server Operators

1. A - VeriSign Global Registry Services
 2. B - University of Southern California - Information Sciences Institute
 3. C - Cogent Communications
 4. D - University of Maryland
 5. E - NASA Ames Research Center
 6. F - Internet Systems Consortium, Inc.
 7. G - U.S. DOD Network Information Center
 8. H - U.S. Army Research Lab
 9. I - Autonomica/NORDUnet
 10. J - VeriSign Global Registry Services
 11. K - RIPE NCC
 12. L – ICANN
 13. M - WIDE Project
- 13 root-servers
- 12 Operators

Root Servers Around the World (583)



Source at <http://root-servers.org/>

Challenges: New gTLDs and IDNs

IDNs and its Variants

IDNs uses characters outside ASCII, like Arabic, Chinese, Cyrillic, Japanese or Korean

An IDN variant Top Level Domain (TLD) can use characters which are different in another language

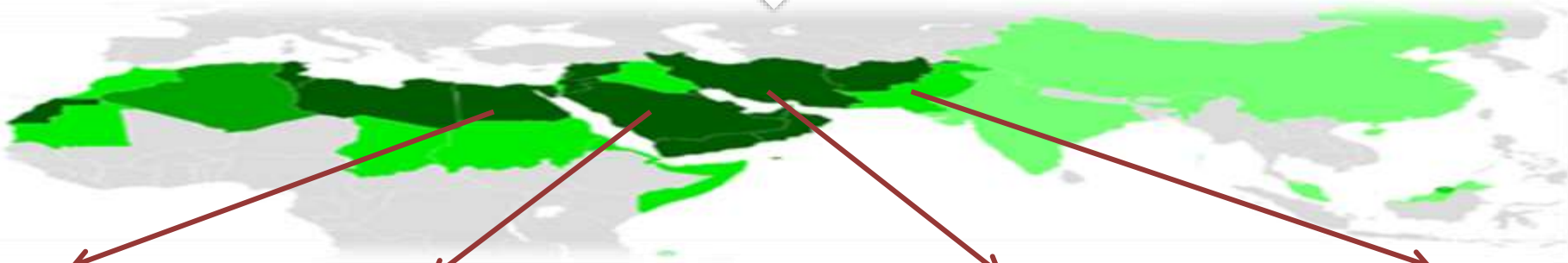
پاکستان - ک - U+06A9

پاکستان - ك - U+0643



Registrant will use his/her keyboard

مكة



مكة

U+0645
U+0643
U+0629



مكة

U+0645
U+0643
U+0647



مكة

U+0645
U+06A9
U+0647



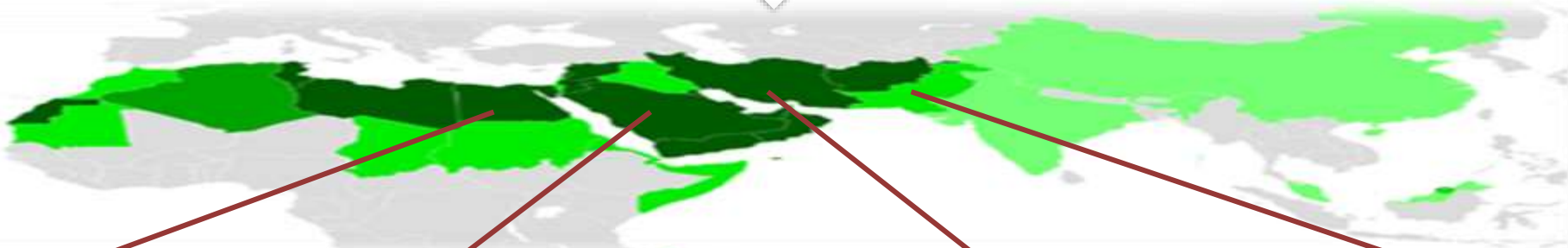
مكة

U+0645
U+06A9
U+06C1



Registrant will use his/her keyboard

علي



علي

U+0639
U+0644
U+0649

علي

U+0639
U+0644
U+064A

علي

U+0639
U+0644
U+06CC

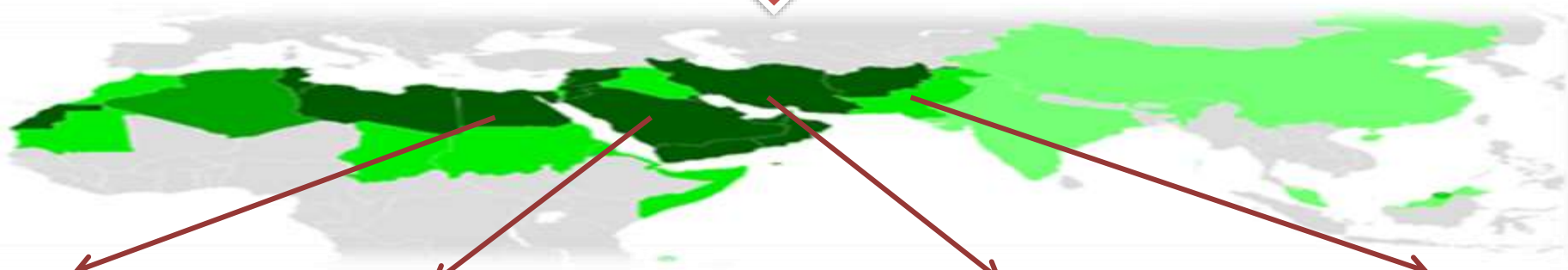
علي

U+0639
U+0644
U+06CC



Registrant will use his/her keyboard

بنك



بنك

U+0628
U+0646
U+0643



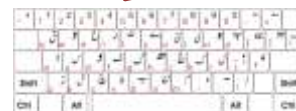
بنك

U+0628
U+0646
U+0643



بنك

U+0628
U+0646
U+06A9



بنك

U+0628
U+0646
U+06A9

Universal Acceptance: New gTLDs and IDNs

Definition of Universal Acceptance by UASG of ICANN

Universal Acceptance (UA) is the state where all valid domain names and email addresses are accepted, validated, stored, processed and displayed correctly and consistently by all Internet- enabled applications, devices and systems."

Major players of Universal Acceptance for New gTLDs and IDNs

Registrant / Users

Registry / Registrar

Service Provider

Application Vendors

UA issues: User's perspective

End to end email connectivity

Social Media

DNS Hierarchy

Operating Systems

Spam filters

Security Software

Browsers

Search Engines

UA issues: Technical communities

Working with ASCII and Unicode equivalents

Working with DNS hierarchy

Different input devices (keyboards)

Web Hosting

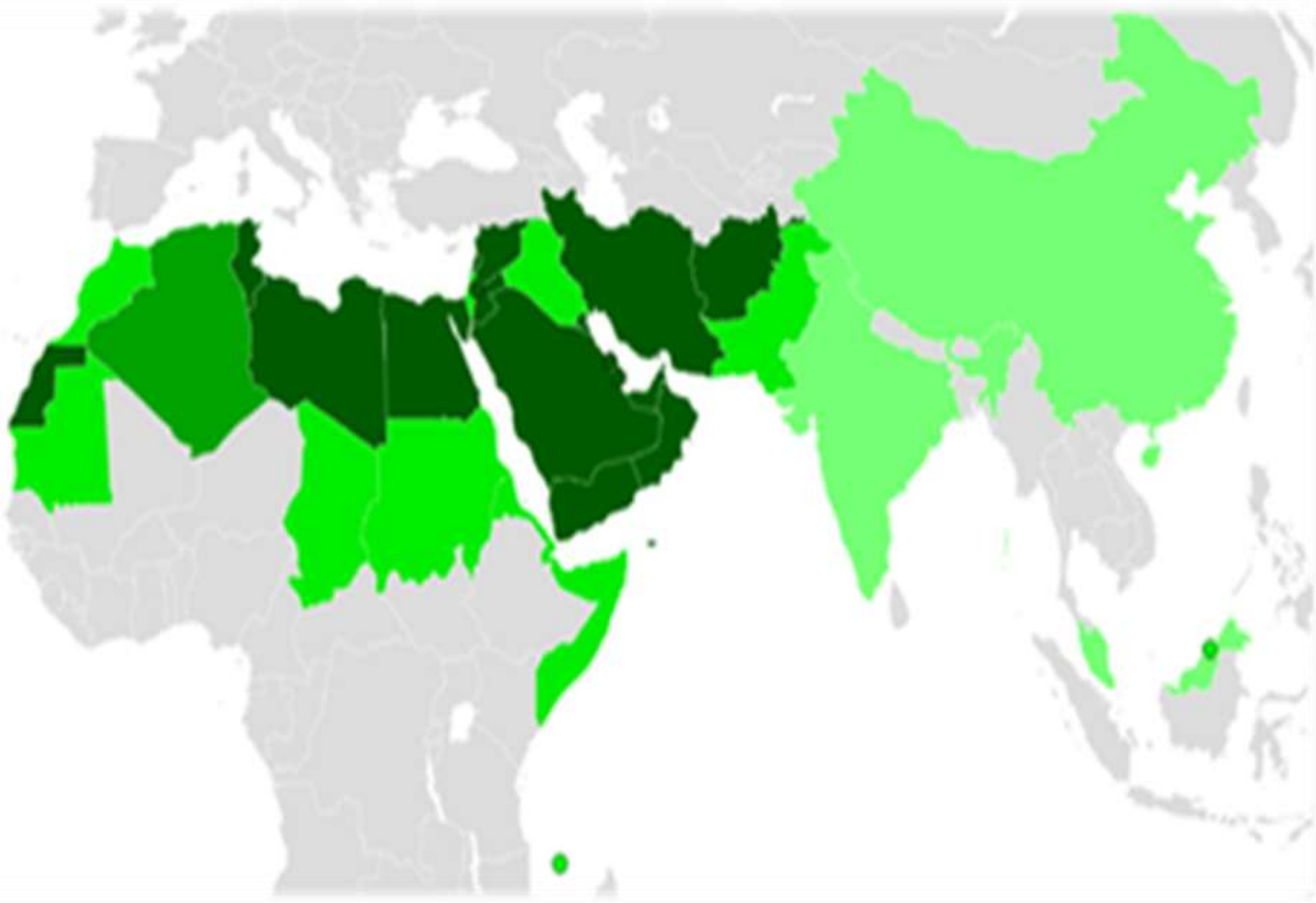
Language specific issues (Right-to-left direction, display, interface)

			Supports	
Market position	Client name	Share of market	International Email Addresses? ⁴⁶	Sending of International Email? ⁴⁷
1	Apple iPhone	26%	No	Yes
2	Outlook	14%	No	No
3	Apple iPad	12%	No	Yes
4	Gmail	12%	Yes	Yes
5	Apple Mail	8%	No	Yes
6	Google Android	6%	No	Yes
7	Outlook.com	6%	No	No
8	Yahoo! Mail	5%	No	No
9	Windows Live Mail	2%	No	No
10	Windows Mail	2%	No	No

TASK FORCE ON ARABIC IDNs

TF-AIDN

Region of Arabic Script



Community driven way forward: Task Force on Arabic Script IDNs

Creation and oversight by community based
Middle East Strategy Working Group (MESWG;

Diverse representation in the group

Root zone LGR proposal has been finalized

Working on second level LGR and Universal
Acceptance of Arabic Script

Arabic Script TLDs Assigned or Delegated

- | | | |
|------------|--------------|------------|
| 1. الجزائر | 8. بهارت | 15. تونس |
| 2. عمان | 9. المغرب | 16. مصر |
| 3. ايران | 10. السعودية | 17. قطر |
| 4. امارات | 11. سودان | 18. فلسطين |
| 5. بازار | 12. مليسيا | 19. عراق |
| 6. باكستان | 13. شبكة | 20. بازار |
| 7. الاردن | 14. سورية | 21. موقع |

Universal Acceptance : Arabic Script

Zero width joining characters (ZWJ)

Zero width Non joining characters (ZWNJ)

Combining marks

Bi Directional

Working test-cases sample

Pattern	Implementation Sample	Registered	Working	Conformity
RTL.ASCII	اختبار-القبول للعالمي.top	Yes	Yes	
RTL.RTL	مثال.السعودية	Yes	Yes	
RTL-RTL.RTL	اختبار-القبول للعالمي.شبكة	Yes	Yes	
RTL.RTL.RTL	فرع.مثال.السعودية	Yes	Yes	Yes
RTL-123.RTL.RTL	أرقام-123.مثال.السعودية	Yes	Yes	Yes



شکراً

شکریہ

با سپاس

تشکر

ثریما کاسیہ

Thanks