

Universal Acceptance of Domain Names and Email Addresses

A Key to Digital Inclusion

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English is third in terms of native speakers around the world, with much of the world communicating in other languages.

Languages by number of native speakers

Language	Native Speakers
Mandarin	1300 million
Spanish	475 million
English	373 million
Arabic	362 million
Hindi	344 million
Bengali	234 million
Portuguese	232 million
Russian	154 million
Japanese	125 million

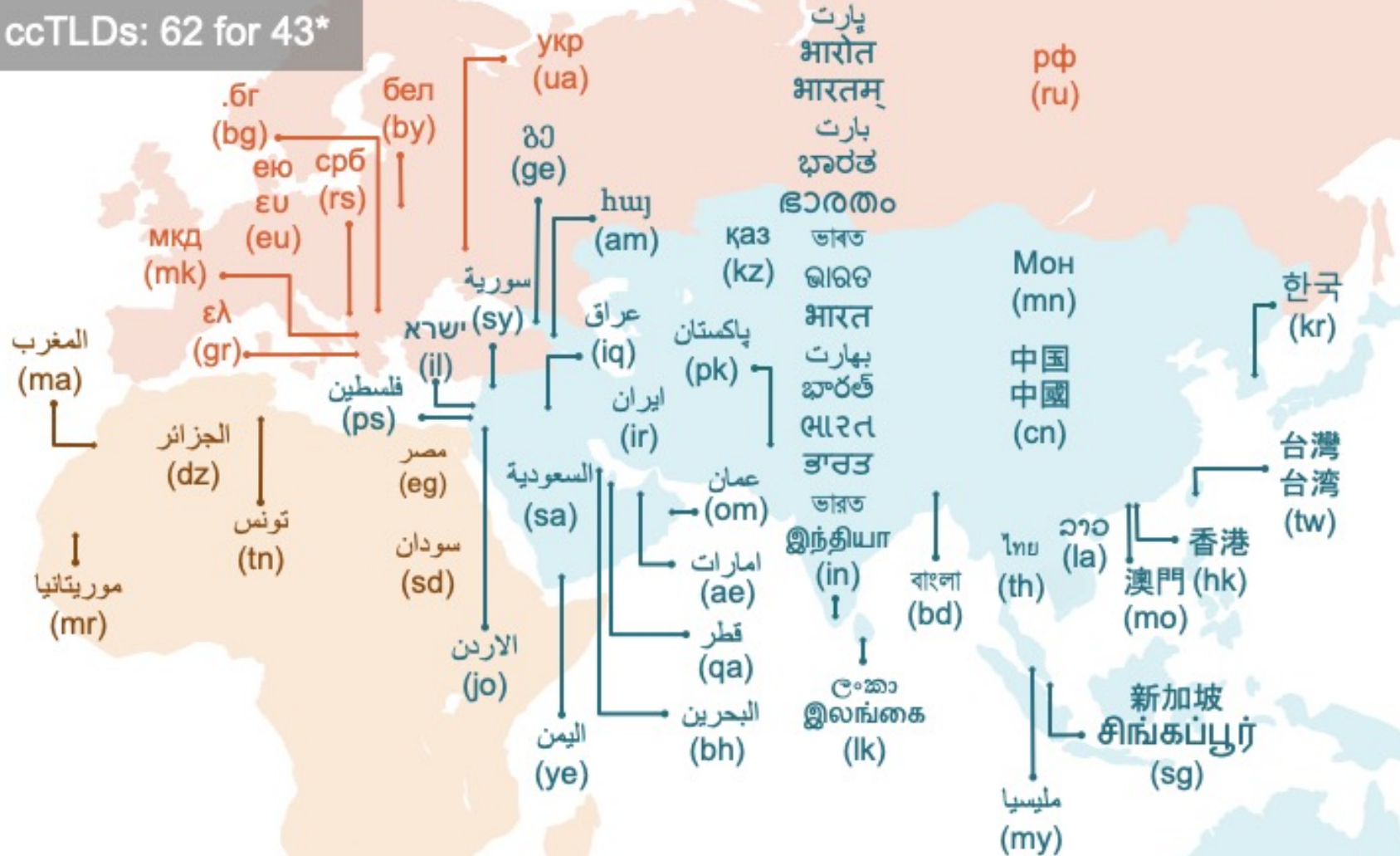
Source: <https://www.babbel.com/en/magazine/the-10-most-spoken-languages-in-the-world>

- ⦿ Two-thirds of world population, approximately 5.4 billion people, is online today. The remaining one-thirds, another 2.7 billion people, of the world population, still have to come online. (ITU Sept. 2023)
- ⦿ Most of those coming online in the future are from Africa and Asia.
- ⦿ Many of the people already online, and most of those who will be coming online in the future, communicate in their own language using their own writing system.
- ⦿ This allows for a significant business and social opportunity for multilingual domain names globally.

- Internet Engineering Task Force (IETF) developed a protocol for domain names in local languages, called Internationalized Domain Names (IDNs) in 2003 and revised in 2010 (called IDNA2008).
- ICANN community developed IDN implementation guidelines in 2003.
- In addition the ICANN community developed policies to allow for new top-level domains (TLDs) to be introduced, including IDN TLDs.
- There are now more than 1,200 active TLDs available providing greater consumer choice representing cultures, brands, geographies, communities, special interests, and more (e.g., .ไทย, .london, .sport).
- Of these, there are 151 IDN TLDs, covering 37 languages using 23 scripts.
 - 90 IDN gTLDs have been delegated.
 - 61 IDN ccTLDs have been delegated (out of 62 evaluated).

IDN Country Code Top-Level Domains

ccTLDs: 62 for 43*



* Successfully evaluated IDN ccTLDs for total countries and territories (as of May 2020)

Examples of IDNs

- | | |
|--|-----------|
| 1. համընդհանուր-ընկալում-թեքստ.հայ | Armenian |
| 2. മുൻ‌കരുതൽ-വകുപ്പ്-റേഷ.ଭାରତ | Oriya |
| 3. უნივერსალური-თავსობადობის-ტესტი.გე | Georgian |
| 4. 다국어도메인이용환경테스트.한국 | Korean |
| 5. സാർവത്രിക-സ്വീകാര്യതാ-പരിശോധന.ഭാരതം | Malayalam |
| 6. تجربة-القبول-الشامل.موريتانيا | Arabic |

Examples of Internationalized Email

1. Էլփոստ-թեստ@համընդհանուր-ընկալում-թեստ.հայ Armenian
2. 电子邮件测试@普遍适用测试.我爱你 Chinese
3. ईमेल-परीक्षण@सार्वभौमिक-स्वीकृति-परीक्षण.संगठन Devanagari
4. تجربة-بريد-الالكتروني@تجربة-القبول-الشامل.موريتانيا Arabic
5. ηλεκτρονικό-μήνυμα-δοκιμή@καθολική-αποδοχή-δοκιμή.ευ Greek
6. மின்னஞ்சல்-சோதனை@பொது-ஏற்பு-
சோதனை.சிங்கப்பூர் Tamil

- ⦿ However, many people around the world are currently excluded from experiencing the full benefits of the Internet simply because they're unable to use a domain name or email address of choice in their language and script.
- ⦿ For example, a valid email is rejected by a form in a website (and also incorrectly displayed from left to right instead of RTL):

NEWSLETTER - SUBSCRIBE FOR FREE

Join our mailing list

* indicates required

Email Address *

موقع، مثال @میل-ای

Please enter a valid email address.

⦿ Domain Names:

- Newer top-level domain names: example.**sky**
- Longer top-level domain names: example.**engineering**
- Internationalized Domain Names (IDN): **คน.ไทย**

⦿ Internationalized email addresses (EAI):

- ASCII@ASCII (new and long TLD) ekrem@misal.**istanbul**
- ASCII@IDN marc@**société**.org
- Unicode@ASCII **测试**@example.com
- Unicode@IDN **電子郵件測試@普遍適用測試.組織.澳門**
- Unicode@IDN; right to left scripts **ای-میل @مثال.موقع**



Accept



Validate



Process

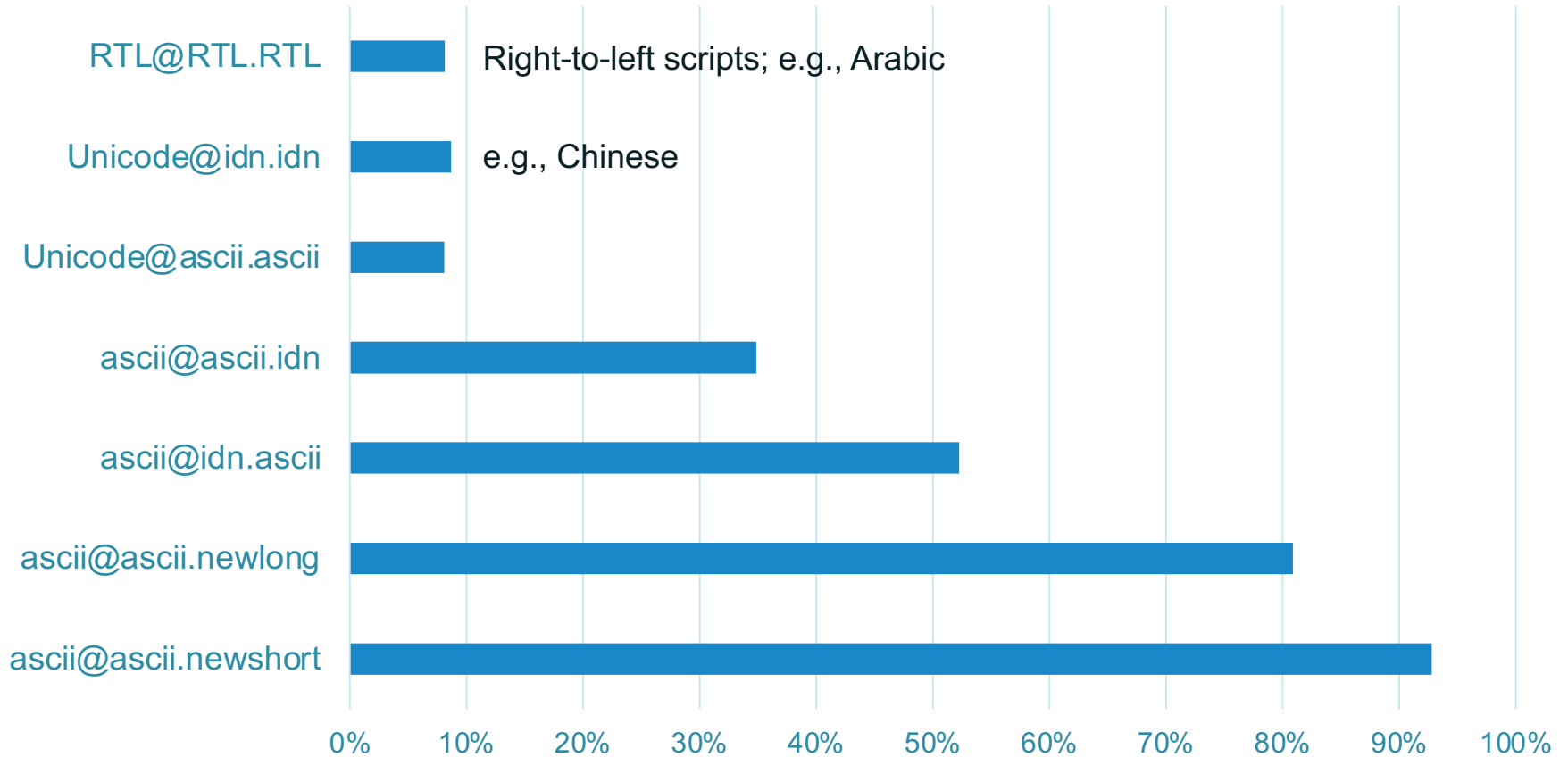


Store



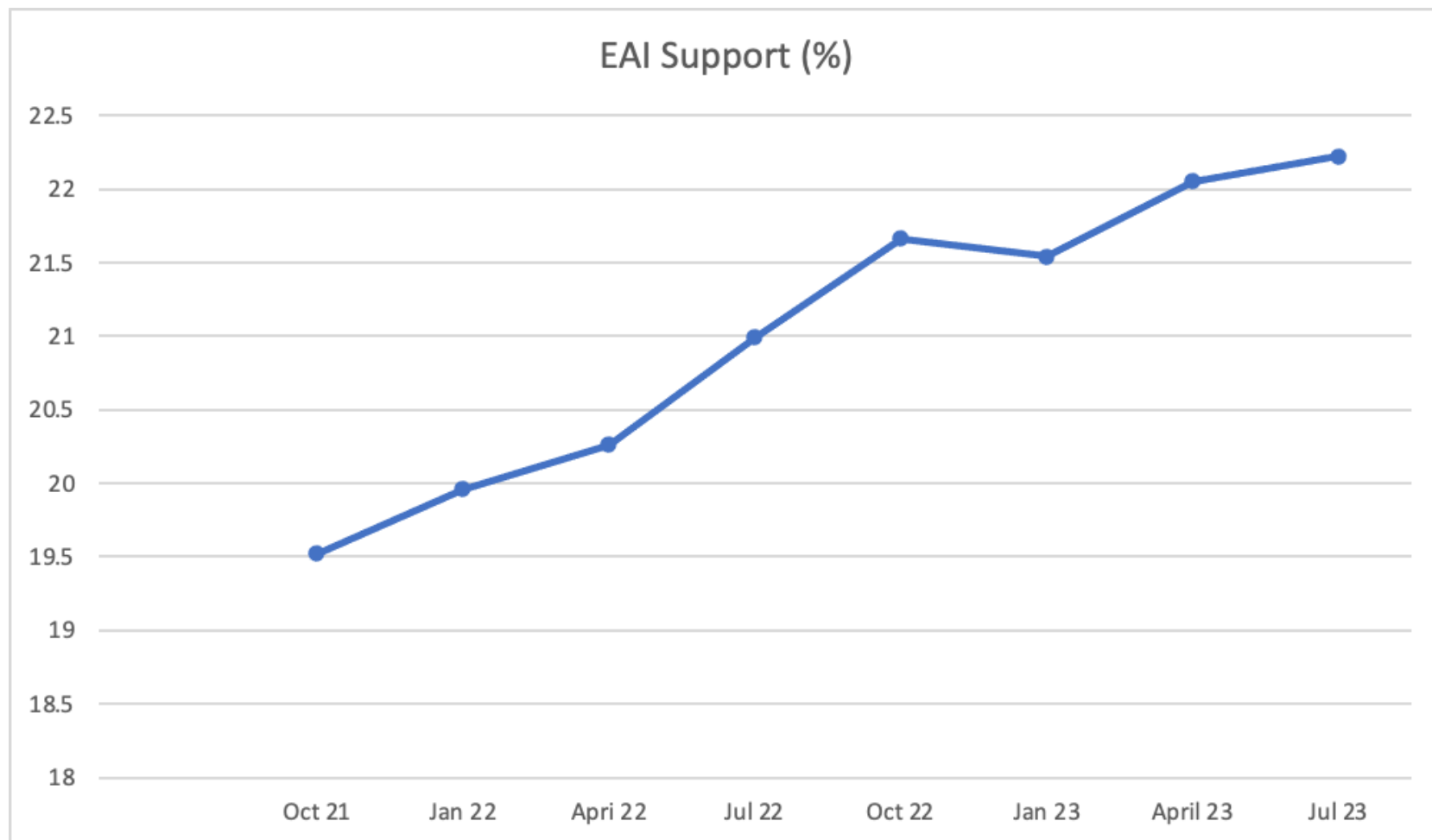
Display

EAI Acceptance Rates in Form Fields on 2000 Websites



Source: UASG039 at <https://uasg.tech>, published in 2022;

Current EAI Support Across Email Servers



Source: <https://ithi.research.icann.org/graph-eai.html>

- ⦿ Upgrade university websites and email systems to support Internationalized Domain Names and Internationalized Email Addresses.
- ⦿ Update IT curricula to include teaching and learning of software internationalization related concepts and UA.
- ⦿ Train faculty and students to adopt UA practices in software development.
- ⦿ Create awareness of UA issues and solutions in the local technical community.

- ⦿ Businesses that are UA-ready will be best positioned to reach growing global audiences and maximize revenue potential from the current Internet population, as well as the next billions of online users.
- ⦿ As more Internet users come online from around the world, there will be increased demand for businesses that can support domain names and email addresses in a language and script of their choice.
- ⦿ Businesses that support customers in this way will have a first-mover advantage and the potential to capture new increasing revenue streams.
- ⦿ A strong understanding of Universal Acceptance (UA) is the new competitive differentiator every developer and business should have in their skill set.

- ⦿ Being UA-ready can assist governments and policymakers in reaching their citizens.
- ⦿ Evaluate the possibility of including UA requirements in [government procurements](#).
- ⦿ Reach out to government departments involved in e-government services for citizens and ask them to incorporate UA practices to provide digital inclusivity.
- ⦿ Measure the progress on Universal Acceptance using indicators, e.g.:
 - IDN registrations under IDN ccTLDs.
 - UA support in popular websites locally.
 - EAI support in email servers listed under ccTLDs.

Some Relevant Materials

- ⦿ See <https://uasg.tech> for a complete list of reports.
 - Universal Acceptance Quick Guide: [UASG005](#)
 - Introduction to Universal Acceptance: [UASG007](#)
 - Quick Guide to EAI: [UASG014](#)
 - EAI – A Technical Overview: [UASG012](#)
 - Universal Acceptance Readiness Framework: [UASG026](#)
 - Considerations for Naming Internationalized Email Mailboxes: [UASG028](#)
 - Evaluation of EAI Support in Email Software and Services: [UASG030A](#)
 - UA of Content Management Systems (CMS) Phase 1: [UASG032](#)
 - UA Readiness of Social Media Platforms: [UASG035](#)
 - UA-Readiness of Some Programming Language Libraries and Frameworks: [UASG037](#)

Get Involved!

- ⦿ To get involved, email info@uasg.tech or UAProgram@icann.org
- ⦿ Access IDN and UA related documents, presentations and training materials at: <https://icann.org/idn> and <https://icann.org/ua>.
- ⦿ Access all UASG general awareness and technical documents as well as sign up to participate at: <https://uasg.tech>.

Engage with ICANN



Thank You and Questions

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