

Universal Acceptance Overview

Global UA Day | 28 March 2024

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Universal Acceptance

UA Technology GAP Analysis

Technology Stack for UA Consideration

Applications and Websites

- Wikipedia.org, ICANN.org, Amazon.com, custom websites globally
- PowerPoint, Google-Docs, Safari, Acrobat, custom apps

Social Media and Search Engines

- Chrome, Bing, Safari, Firefox, local (e.g., Chinese) browsers
- Facebook, Instagram, Twitter, Skype, WeChat, WhatsApp, Viber

Programming Languages and Frameworks

- JavaScript, Java, Swift, C#, PHP, Python
- Angular, Spring, .NET core, J2EE, WordPress, SAP, Oracle

Platforms, Operating Systems and System Tools

- iOS, Windows, Linux, Android, App Stores
- Active Directory, OpenLDAP, OpenSSL, Ping, Telnet

Standards and Best Practices

- IETF RFCs, W3C HTML, Unicode CLDR, WHATWG
- Industry-based standards (health, aviation, ...)

UA Readiness needs to be checked and fixed at multiple layers of technology

Challenges

IDN TLDs allow for multilingual domain names and email addresses for communities to register and use, allowing for more digital inclusion.

But, there are issues in their acceptance, e.g., a valid email is rejected by a form on a website and is incorrectly displayed from left-to-right instead of right-to-left:

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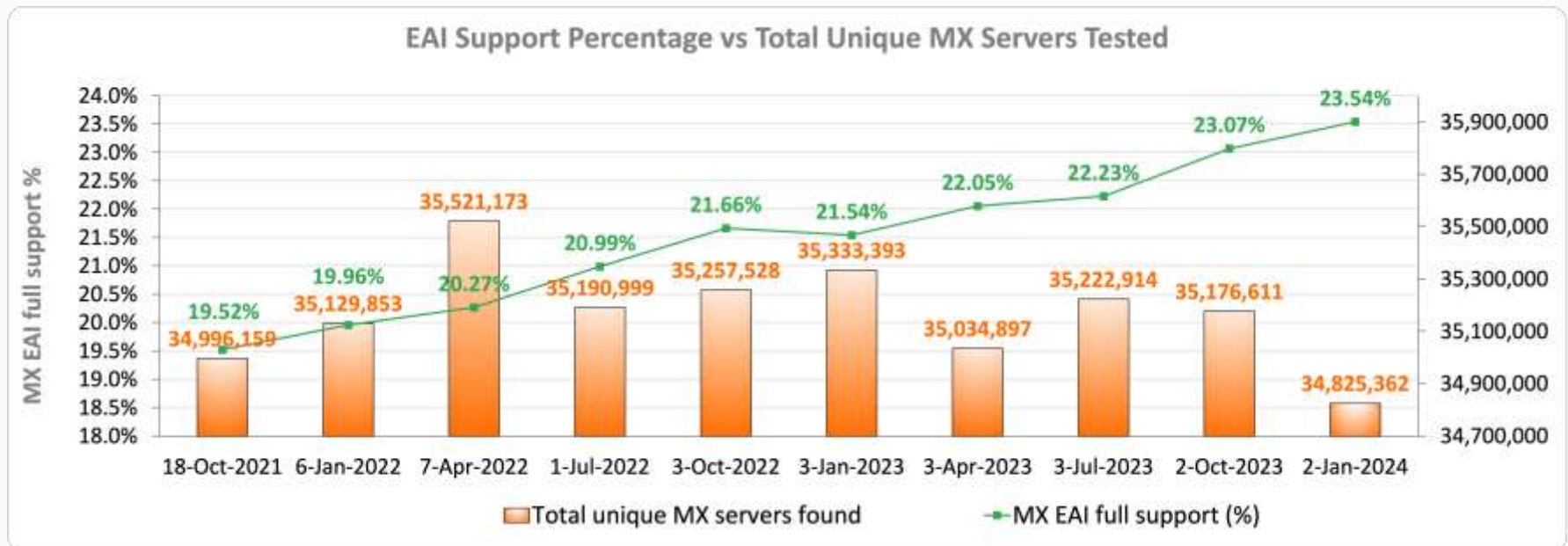
* indicates required

موقع، مثال @میل-ای

Please enter a valid email address.

The Challenge: Support Across Email Servers

To measure how widely internationalized email addresses are accepted, quarterly surveys of email servers across domains registered in hundreds of TLDs are being conducted.



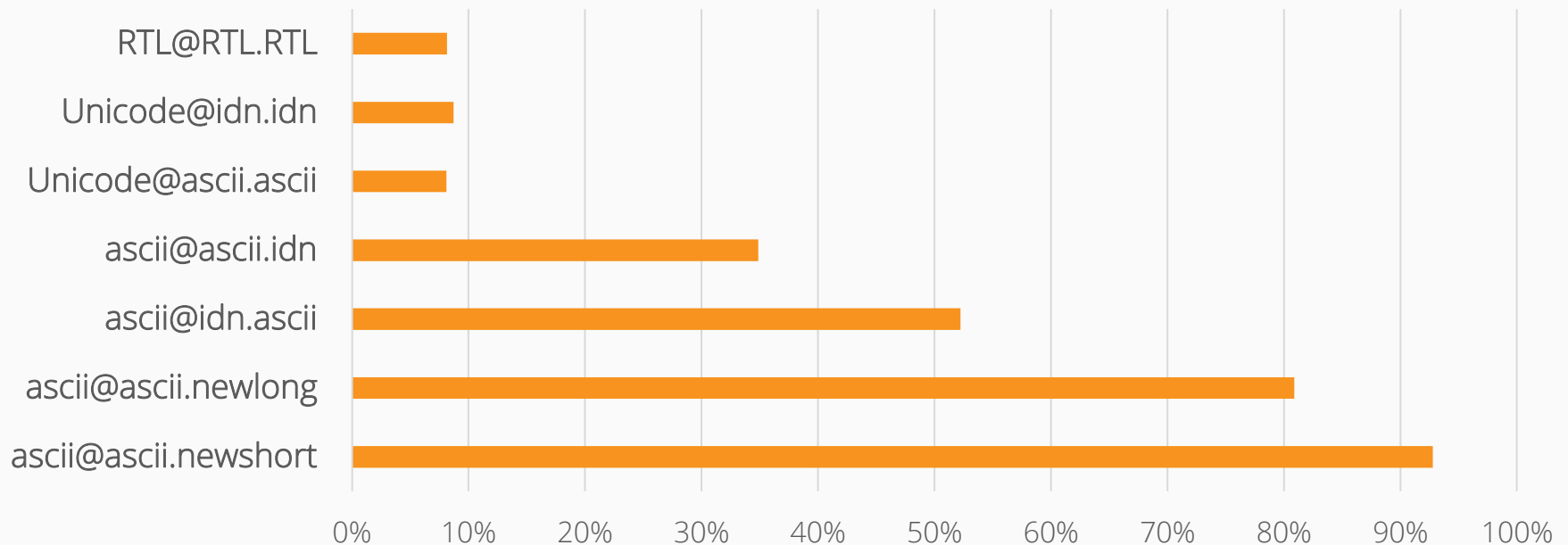
Test your email server for EAI support: <https://uasg.tech/eai-check/>

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



The Challenge: Acceptance by Websites

EAI Acceptance Rates in Form Fields on 2000 Websites



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

Universal Acceptance | Content Management Systems (CMS)



Evaluation of Content Management Systems (CMS)

The UA-readiness of Content Management Systems, namely WordPress and its associated plugins under multiple extensions, were tested with various categories of email addresses and domain names.

Observations:

- * **Domain Names:** In most cases, IDNs generally worked well for end-to-end, but failed some tests (e.g., the A-label is stored instead of U-label in the database).
- * **Emails:** While various categories of ASCII email addresses work well in WordPress, it is not EAI compatible.

Universal Acceptance |

Identity Platforms

Web Hosting Tools



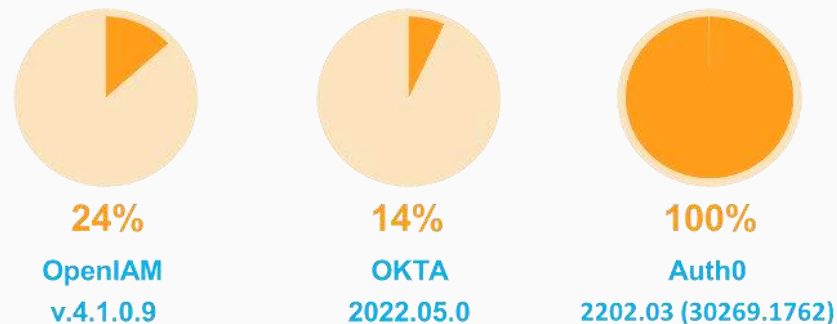
UA-Readiness of Popular Identity Platforms

Objectives:

- * Develop a test method and evaluate the OAuth standard and design structure that the identity products integrate into.
- * To assess the UA-readiness of three identity platforms that use OAuth' standards:
 - * Two from commercial source: Okta, Auth0
 - * One from open-source: OpenIAM

Results:

- * Out of 21 email addresses in different categories, UA-readiness testing was run.



Test pass percentages for target platforms ([UASG045](#))

UA-Readiness of Popular Web Hosting Tools

Objective:

- * The purpose of this project is to determine to what extent web hosting tools cPanel, Plesk, and ISPConfig offer the capacity for customers to build websites and host emails in accordance with Universal Acceptance.

Results:

- * None of the web hosting tools (cPanel, Plesk and ISPConfig) are in compliance.
- * Plesk has the highest chance of providing a full native script experience.
- * ISPConfig has the advantage of being an open-source web hosting tool and allows making ad hoc changes.

Universal Acceptance |

Browsers

Social Media Platforms



UA-Readiness of Browsers: Desktop vs. Mobile Device

	Passed all tests	Failed tests:
Windows	86	66
Mac OS	42	91
Linux	9	48
Android	48	104
IOS	31	102

- * There were more UA difficulties with mobile device environments.
- * Most failures were due to the following tests:
 - * Confirm that the URL display is in the correct format as added.
 - * Confirm that the URL is displayed correctly in the bar.

Details in [UASG036](#)

UA-Readiness of Social Media Platforms - Registration and Authentication

No social media platform supports registration using a non-ASCII email address. This is shown in the chart as being **RED**.

Unsurprising due to lack of support and/or adoption of internationalized emails in the email transport systems and clients.

Test Part 1: Can the user can register onto the social media application, log in and use the social media application with a non-ASCII email address?									
	Baidu Teiba	Dou Yin	Facebook	Facebook Messenger	Instagram	Line	Linkedin	Odnoklassniki	QQ (Tencent)
Mac Chrome	[Red]								
Windows Chrome									
Android App									
iOS App									

	QZone	Sina Weibo	Snapchat	Telegram	Tik Tok	Twitter	Vkontakte	Wechat	Whatsapp	Youtube
Mac Chrome	[Red]									
Windows Chrome										
Android App										
iOS App										

Details in [UASG035](#)

Universal Acceptance | Programming Languages



Programming Languages and Frameworks

LANGUAGE	LIB NAME	COMPLIANCE (%)	Type
Javascript	Idna-Uts46	85.5	IDN
Javascript	Nodemailer	84.3	Mail
Javascript	Validator	94.2	Mail
Python3	Django_Auth	48.1	Mail
Python3	Email_Validator	86.3	Mail
Python3	Encodings_Idna	67.7	IDN
Python3	<u>Idna</u>	100	IDN
Python3	<u>Smtplib</u>	84.3	Mail
Rust	<u>Idna</u>	87.1	IDN
Rust	<u>Lettre</u>	7.8	Mail

Legend
(UASG018A)

UA-ready

UA-ready but
developer needs to
be careful

Not UA-ready