Email Address Internalization (EAI)

My EAI Address
नितिन@एक्सजेनप्लस.भारत

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Nitin Walia
Director
Data Xgen Technologies (P) Ltd.
Member – ICANN, UASG
Skype: n_walia
Mobile: +91-98280-25000

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Director
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Skype: n_walia
Mobile: +91-98280-25000
Universal Acceptance

It’s a concept that Internet applications and systems must treat all Domain names & Email addresses in a consistent manner. Specifically, they must accept, validate, store, process and display all in a consistent and effective manner.
Email Address Internationalization - EAI

* Email addresses that use non-ASCII characters are called Internationalized Email Addresses
* The internationalized portion can be at the local or domain part or both.
  1. Local part (the username, before the “@” character)
  2. Domain (after the “@” character, which in this case includes the TLD part)

Email address internationalization supported servers/clients are supposed to deal with non-ascii email address perfectly i.e. gmail, outlook, xgenplus.
EAI - Examples

Left to Right (LTR) Scripts

Username   Domain   TLD
↓          ↓          ↓
user@example.app

Right to Left (RTL) Scripts

TLD   Domain   Username
↓          ↓          ↓
المستخدم @مثال app
More Examples of Email Addresses including IDNs
Why Internationalization in Email Address

- IDN TLDs are progressing, lack of EAI is a major limiting factor
- Native language communication
- Exchange addresses by voice
- Easy typing using local keyboard and voice command
- Native language search queries

The future of internet is Internationalization and full UNICODE support!
Punycode is a representation of Unicode with the limited ASCII character subset used for Internet host names.
12 Major Components of EAI

Webmail, IMAP, POP, SMTP, Contacts, Calendar, Antispam, Search, Storage, Logger, Rules and Email client/apps.
Client Software (MUA – Mail User Agent)

* Display the domain name in Unicode.
* Pass the domain name to the MTA (Mail Transport Agent) in A-Label format (RFC 5890).
* Store and display the Mailbox name in Unicode.
* Follow good practice guides for Linkification within the body of the email (see UASG 010 – Quick Guide to Linkification).
* Follow good practice guides for validation of domain name (see UASG 007 – Introduction to Universal Acceptance).
Server Software (MTA - Mail Transport Agent)

* Confirm EAI-readiness (e.g. advertise SMTPUTF8 support) when making connection to another MTA.

220 SpamJadoo Antispam SMTP Service by http://datainfosys.net
EHLO EC2AMAZ-CT1LM3F.mxtoolbox.com
250-SIZE 100145728
250-ETRN
250-STARTTLS
**250-SMTPUTF8**
250-8BITMIME
250-AUTH LOGIN PLAIN DIGEST-MD5 CRAM-MD5
250 PIPELINING
**POP & IMAP Servers**

- Post Office Protocol version 3 (POP3) supports international strings encoded in UTF-8 in usernames, passwords, mail addresses, message headers, and protocol-level text strings (see RFC 6856).

- Internet Message Access Protocol (IMAP) supports UTF-8 encoded international characters in user names, mail addresses, and message headers (see RFC 6855).
Email Work Flow

Sender

MUA
Mail User Agent

Message Submission Agent

MTA
Mail Transfer Agent

Validating Mail exchanger (MX)

MTA
Mail Transfer Agent

Recipient

MDA
Mail Delivery Agent

//*/
When an MTA attempts to send a message to a recipient, the attempt may fail because the recipient MTA doesn’t offer SMTPUTF8, or rejects the message with a status code that indicates that the recipient doesn’t accept EAI mail. At that point the MTA might attempt to create a downgraded version of the message to send to the recipient. In theory any MTA in the message’s path might do this, but the result is more likely to be useful if the MTA can find substitute addresses (alias) for the EAI addresses in the downgraded message. The most likely situation for a successful downgrade is a webmail system that integrates the MUA, MSA, and outgoing MTA into a single package.
Prevention from IDN homograph attack

It’s is a way a malicious party may deceive computer users to make it appear someone legitimate where as its probably to fool the user and attack for many reasons and benefits. This is done by exploiting the fact that many different characters look alike. Below is an example.

```
oracle.in   office.com   outlook.com   gov.in
0racle.in   0ffice.com   0utlook.com   g0v.in
```

a Normal person will not be able to differentiate but your email software should be capable to differentiate and alert the user for the attack.

Xgenplus magically detects and alerts the user.
EAI Check

This widget takes an email address and checks to see if the mail server advertises support for receiving EAI (Email Address Internationalization) email addresses.

https://uasg.tech/eai-check/

Check to see if your email address is EAI compliant. Enter a valid email address below:

imm1@hal-india.com

Results

You entered: imm1@hal-india.com

EAI is supported!

Resources

View the Universal Acceptance Quick Guide or take a look at all documentation below.

- Quick Guide to EAI
- Detailed Guide to EAI
EAI Check

Free tools for developers & system administrators.

https://eai.xgenplus.com

- Check EAI Compatibility
- Puny Code Converter
- Mix Script Test
- UTF8 to Html Converter
- Encoding Decoding
- Mail Delivery Test
- Unicode to UTF8 Converter
- Homoglyph Check
- Homoglyph Generator
Important EAI RFCs

* RFC 6530 - Overview and Framework for Internationalized Email
* RFC 6531 - SMTP Extension for Internationalized Email
* RFC 6532 - Internationalized Email Headers
* RFC 6533 - Internationalized Delivery Status and Disposition Notifications
* RFC 6855 - IMAP Support for UTF-8
* RFC 6856 - Post Office Protocol Version 3 (POP3) Support for UTF-8
* RFC 6857 - Post-Delivery Message Downgrading for Internationalized Email Messages
* RFC 6858 - Simplified POP and IMAP Downgrading for Internationalized Email
Success

- Govt of Rajasthan  - Every Citizen FREE Hindi Email
- KAZ NIC
- TelOne Zimbabwe
- Police Department
- BSNL
- School Education
- DataMail
- Russia
- UAE
- Thailand
- Korea
- China
- Oil Company  - 25000 users

Being EAI Ready makes business sense
Global Recognitions: “Universal Acceptance Thought Leader”

For Rajasthan State’s Email Project - Brings Millions of Hindi Speakers Online
EAI Ready Email Software’s & Service Providers

Google
Microsoft
DATA XGEN Technologies Pvt. Ltd
KAZ NIC
THNIC
Telone
Coremail
BSNL
Connecting India Faster
Email Address In Your Language
DATA
Government of Rajasthan

Phase 1 Ready
EAI Ready Antispam Software

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Never See another SPAM again

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$10 billion opportunity

Being UA & EAI ready is not just a tech trend but makes business sense.

///*.*/
A Gateway to the Next Billion
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- Support EAI in your own services!
Want to Experience - EAI

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Thank you - Any Questions ? - Lets Discuss

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