

EAI: what's up?



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Email Address Internationalization what's up?

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Classic email address (1982):

latinname@domain.com

Email address in IDN domain (2003):

latinname@домен.рф

latinname@xn--d1acufc.xn--p1ai

EAI email address (2012):

игорь@лидин.рф



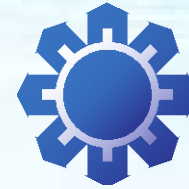
IETF EAI workgroup:

- *2007-2010: experimental RFCs*
- *2012: final RFCs 653x: SMTP*
- *2013: final RFCs 685x: POP/IMAP*



Group of RFC 653x (2012):

- *RFC 6530: Overview and Framework for Internationalized Email*
- *RFC 6531: SMTP Extension for Internationalized Email (SMTPUTF8)*
- *RFC 6532: Internationalized Email Headers*
- *RFC 6533: Internationalized Delivery Status and Disposition Notifications*
- *RFC 6783: Mailing Lists and Non-ASCII Addresses*



Group of RFC 685x (2013):

- *RFC 6855: IMAP Support for UTF-8*
- *RFC 6856: 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*



Use UTF-8, Luke!
(everywhere)

**No backwards
compatibility!**

**To communicate, all mail
systems must fully support
EAI!**



Reasons to implement EAI:

- **75% of world email traffic is not English!**
- Advance IDN TLDs, remove limiting factors
- Native language communication, no transliteration
- Extend login/id namespaces
- Allow your clients to communicate with existing EAI mail systems



Universal Acceptance

*“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.”*

Universal Acceptance Steering Group (UASG)



Troubles & obstacles:

- **Technical**

Need to improve software to support EAI, incl. programming languages and libraries

Need to update other standards, e.g. TLS Certificates, DNS

- **Security**

Fishing and other homoglyph attacks, no centralized policy for left parts of email addresses

- **Commercial**

Waiting for mass EAI adoption before invest in supporting EAI in own products



Troubles & obstacles:

- **Infrastructure**

Domains registries and EPP, Registrars, WHOIS, network operators, exchange points, routing databases, etc

- **Acceptance**

Government services, social networks, major mail providers, etc

- **Legacy**

Tons of legacy software (incl. miscellaneous web apps) have no EAI support



Who support EAI in Runet?

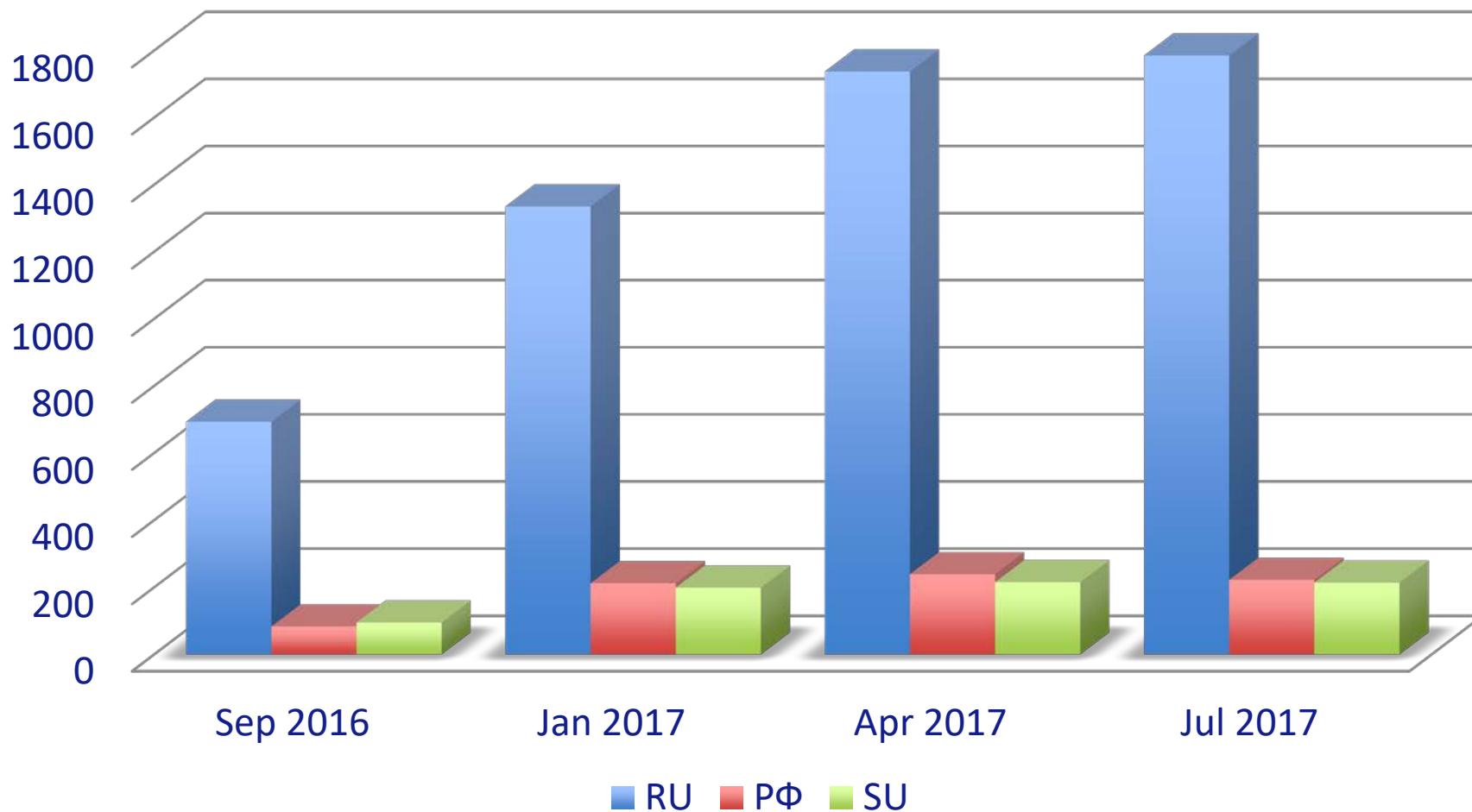
- Google Gmail (since 2014)
- As of July, 2017: **1785** MXs, 93516 domains in RU announce SMTFUTF8
- It is **1.25%** of 141971 total MXs
(not all of them really fully support EAI)
- It was **0.4%** of 141037 total MXs in Aug 2016

data by statdom.ru

EAI: trend



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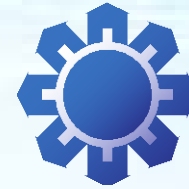
EAI support, mail clients

- Google Gmail (web and app)
- Microsoft Outlook 2016 for Windows
- Apple iOS Mail
- Roundcube, Kolab (web) — patch
- Ritlabs The Bat! — partially
- Mutt (unix console client)



EAI support, mail servers

- Postfix 3.0+ (was sponsored by CNNIC)
- Exim 4.86+
- Dovecot (partially, no LMTP)
- Rouncube, Kolab (needs patching)



Steps to implement EAI

1. Support getting mail from EAI systems
2. ...and sending mail to EAI systems
3. Support EAI in your own services
4. Add EAI aliases to your email addresses
5. Implement I18N in account names



TCI experimental EAI system

- Proof-of-concept EAI system: @тест-почты.рф
- .ДЕТИ NIC mail service: @почта.дети
- Testing EAI in common Internet e-mail software: Postfix, Exim, Roundcube, Thunderbird, etc
- Welcome everyone to communicate and test own EAI standards compliance



Questions?

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