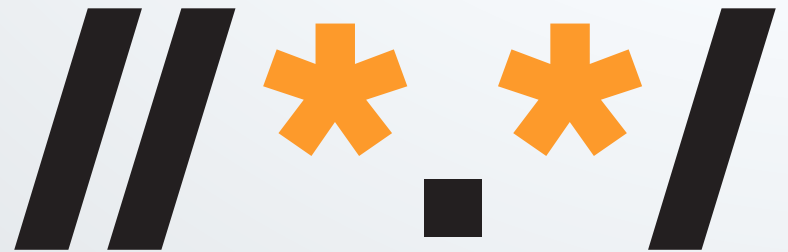


A Geek's Guide to Universal Acceptance

An update to TechDay



Universal Acceptance

Agenda

- What is Universal Acceptance
- How is this a Geek's Issue
- Case Studies
 - ICANN IT
 - Verisign-GoDaddy
- How can Geek's Help
- Introduction to UASG
- Review of Quick Guides
- EAI: What is it & Why is it so hard?
- Accelerating Solutions



What is Universal Acceptance (UA)?

*“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.”*



Why is this a Geek's Issue

- The solution is distributed – almost every internet focused application needs to be adjusted. *Think Y2K*
- The problem is software more than hardware, applications and operating systems more than networks.
- It is not 'difficult', but it is effortful.
- There are still some hard bits.



The Hard Bits

- EAI – Email Address Internationalisation
 - Email with unicode in the local part
 - Email with IDNs
 - RTL Scripts – Arabic & Hebrew
 - Arabic.arabic@arabic.arabic (which is the local part?)
- Unicode issues & IDNA versions
- Still a couple of unresolved characters
- An evolving world



Case Study: ICANN

- Identifying & Documenting all applications in use
- What Should ICANN IT be able to fix
 - Does it have the source code?
- What can't it fix (little fish, big pond)
- What can it get others to fix? (big fish, little pond)
- What are the other issues discovered?



ICANN IT - Continued

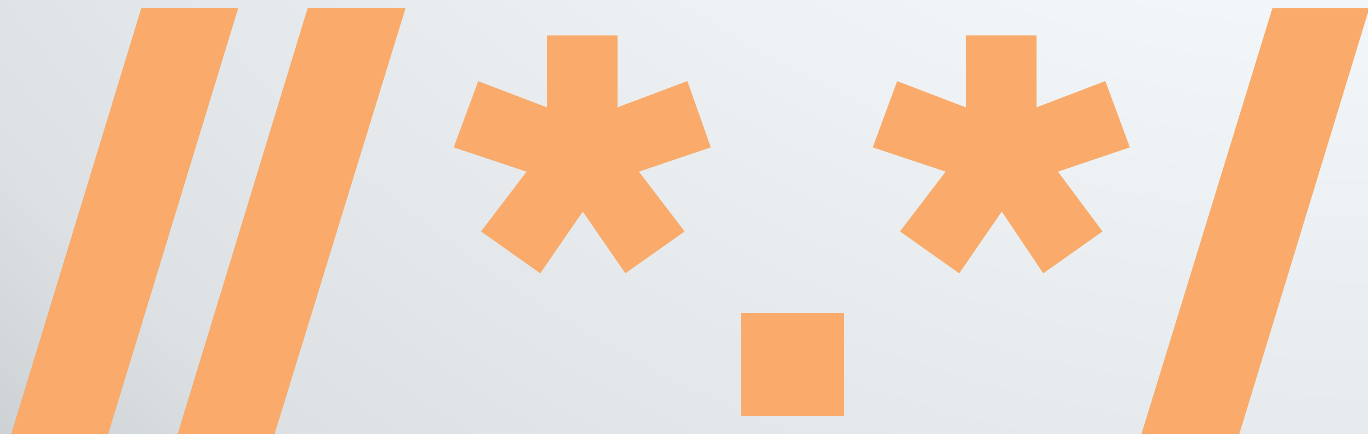
- 84 Business Solutions Identified
- Half 'Off-the-Shelf'
 - 19% UA not an issue
 - 81% need adjustment by suppliers
- Half Customised or in-house (fixable)
 - Evaluation – 90% need testing and fixing
 - 74% require user input or user display
 - 26% make sure proper conversion applied in & out
- 18-24 months – where it can make changes.



UA-Ready: Ry-Rr Considerations

Excerpts from a case study

- Richard Merdinger, Go Daddy
- Dennis Tan Tanaka, Verisign



Eating your own dog food!



Approach

- 100% open discussion
 - Confidential
 - Collaborative
 - Developmental
- Identified core system elements
- Engaged Internal Experts
- Painstakingly reviewed details
- Extrapolated issues to apply broadly



System Integration

- EPP is already UA-friendly
- Surprisingly few elements require special handling
- Some do...
 - Most important: host names and labels
 - System configuration complexities



Data Integrity

- Don't make assumptions
- Be explicit
 - A-label/U-label usage
 - Have defined defaults
- Robust implementations
 - Be prepared to validate input
 - Handle exceptions
 - Enforce Storage fidelity



Customer Data

- Input from customer is unpredictable
 - Contact data includes UTF-8 Data (RFC5730 recommends use of UTF-8)
 - Current Whois does not support it
- Validation and homogenization necessary
- Develop processes to deal with issues that cannot be immediately remedied



How Can Geek's Help


- Raise awareness within your own organisations
 - Support for Unicode in local part of email addresses
 - And other information held)
 - Support for IDNs at Top and lower levels of the domain name
 - Recognition that there are many, many more TLDs in existence.
 - Recognition that many, many TLDs are more than two or three characters.
- Raise awareness within your own communities
 - Geographic, Industry, language, tool sets

Universal Acceptance Steering Group

The Universal Acceptance Steering Group is a community-based team working to share this vision for the Internet of the future with those who construct this space: coders. The group's primary objective is to help software developers and website owners understand how to update their systems to keep pace with an evolving domain name system (DNS).



The UASG

- What it is
 - A Community Group supported by ICANN
 - Active participants include: Afilias, Apple, .Asia, ccTLDs (.rs, .th, more), Donuts, GoDaddy, Google, Microsoft, The DNA, Verisign and many more
 - What it's doing
 - Developing Documentation & Approach
 - Where it's going
 - Finishing Documentation
 - Getting common software tools UA Ready
 - Raising Awareness
 - Facilitating EAI deployment
- 

Quick Guides

- Quick Guides to help understand that to be UA Ready your application:
 - Can **accept** any domain or email name as an input from a user interface, document, application or service
 - Can **validate** any domain or email name
 - Can **store** any domain or email name
 - Can **process** any domain or email name
 - Can **display** any domain or email name to a user interface, document, application or service



Introduction to Universal Acceptance

- The 'Master' Document
- <http://tinyurl.com/UASG-007-7>




EAI – Email Address Internationalisation

- Should be able to support IDNs
 - Transform to Punycode onto the wire
 - Use Unicode outside the wire
 - Accept IDNs
 - Display IDNs
- Support Unicode in Local Part
 - This is the technical challenge
- Progress Underway
 - Some small, local players are in production in China, Taiwan, Thailand, Saudi Arabia, USA
 - Big players: Apple, Google, Microsoft, Yahoo – actively pursuing EAI.

Some of the Hard Parts

- Transporting unicode local parts
- Transformation of punycode names to unicode
- Normalisation of characters
- Dealing with Variants
- Dealing with systems that are NOT EAI ready (most)
- Right-to-Left Scripts – Hebrew and Arabic
 - `local.local@domain.domain` قاطن.قاطن@ي.لحم
 - [domain.domain@local.local](#) `ي.لحم@قاطن.قاطن`
- Shifting from Browser to Client based solutions

Accelerating Solutions

- Identifying the top application platforms and making sure that UA Ready modules exist and are promoted
 - Preparing and producing and publishing case studies
 - Measuring UA Readiness in largest websites (Spoiler: Only one web site tested to date accepts all our use cases!)
 - Encouraging local advocacy initiatives
 - Geeks to Geeks
- 

Summary

- Defined Universal Acceptance
 - It's a software opportunity
 - It's effortful but can be done
 - Internet Industry working on their own solutions. Need to instigate many other industries.
 - Documentation Nearing Completion
 - EAI – the Hard Bit
 - Get your own systems in order
 - Subscribe & Lurk & Participate
 - <http://tinyurl.com/ua-discuss>
 - <http://uasg.tech>
- 