

Report on the APTLD Workshop on IDN Universal Acceptance

*Held May 11, 2014
Muscat, Oman*

Executive Summary

While there is indeed a challenge around IDN Universal Acceptance, there was no call for a structured Global Alliance, instead the community agreed to keep one another apprised and to meet regularly, most likely at ICANN and APTLD meetings, to share activities, achievements and remaining challenges.

The commercial decision to allocate resources to IDNs by solution providers like Google and Microsoft will be better influenced by growing demand from IDN TLD registrants.

Action Agenda

1. ccTLD registries to make sure that their registry systems can support IDN's in a TLD, both at the left and right of the dot. This includes e-mail addresses and domain names in the registry system, mail, customer support, DNS and everywhere else.
2. ccTLD operators to make sure that their registrars can support IDN's as outlined above.
3. ccTLD operators to make sure that their e-mail systems are compliant enough to send and receive addresses which include IDNs.
4. ccTLDs to engage with their local software development community to ensure that they are aware of the challenges so that their respective software developments will be compliant.
5. Participants to share experiences and achievements – ideally as magazine articles and/or presentations.
6. Edmon Chung has agreed to facilitate, through ICANN, a one-day gathering prior to the ICANN meeting in Los Angeles.
7. Participants to seek to have the issue included in relevant developer conferences around the globe.
8. APTLD to keep the issue 'in play' within the Internet Technical community.

IDN Universal Acceptance

APTLD convened a workshop during its May 2014 meeting in Oman to look at IDN Universal Acceptance and determine whether it was a Barrier to IDN TLD registration, or an excuse.

The meeting included attendance from 11 ccTLDs, several gTLDs, Afilias, ARI, Google, ICANN, Microsoft and others.

The meeting heard that there was general agreement on the areas that constitute IDN Universal Acceptance, and that these include:

Browsers and their display of IDN addresses within the address bar as well as within the browser itself.	E-mail, including the clients as well as the server side components	Operating Systems
Anti-Virus and Spam filters	E-Commerce, Social-Media and just about any system that accepts an e-mail address or Domain Name.	Mobile Devices and related operating systems

The meeting also heard, from Google and Microsoft specifically, that it is not a simple issue to solve, but that some progress is being made and that the pace is, in part, related to the priorities required to solve competing needs. Because of the way that e-mail addresses and domains are embedded through solution eco-systems, it is difficult to deploy solution in a fragmented manner.

Of particular concern was whether IDN TLD registries (cc or g) and their respective Registrars were already able to accept domain names and e-mail addresses in non-ASCII scripts.

e-mail

We saw demonstration and presentation of several IDN compliant e-mail systems and how they correctly displayed e-mail addresses as expected. But, once IDN e-mail systems leave their cosy compliant home, the results are unexpected displays at best, and non-delivery at worst.

Scripts

More work is needed for establishing policies and best practices for including multiple scripts into a URL. And this is further challenged because while policies may be able to be established at the top level, and possibly a second or third level, it becomes very difficult to establish and enforce policies where the allocation of names is no longer in control of a registry. The Unicode consortium has done considerable work on this issue¹ and application developers are pursuing a cautious approach.

Further aggravating the challenge for scripts are the variants, where different characters may be from multiple scripts, are in a single string.

Web

We heard that things on the web can and do work – under certain circumstances. Browsers with a compliant underlying operating system can work well. And we heard that for IDN.ASCII names the language content of the web site was consistent with the language content of the name. We also heard that idn.idn sometimes, such as in the case of .pڤ, work and are used.

However, the applications that run on the browser, such as e-commerce or social-media or any other application that makes use of an e-mail address or a domain name, are not generally so compliant.

Scope

More than once during the day we heard the question of the Chicken or the Egg and the concern of the negative spiral. But we also heard that in some cases, IDN TLDs and IDNs within domain names were doing reasonable well. Russia had more than 800,000 IDN.pڤ names. The com/net name space more than a million, there are nearly 900,000 within .vn, and there will millions more within the ccTLD community – both at the ASCII space as well as the IDN space. The 2013 World Report on IDNs showed more than 5 Million IDN names.

While not perfectly, it was clear that names with IDNs embedded, including IDN TLDs, can function and can be useful.

More challenging, particularly for IDN TLDs, is the distribution channels. While less of a problem for ccTLDs, new IDNTLDs can only be registered by ICANN Accredited registrars who have signed the 2013 Registrar Accreditation Agreement – which includes clauses that some registrars are finding it difficult to accept. And in respect to the Arabic community, there are no registrars who can provide an end-to-end solution in Arabic for the Arabic community.

Who can do What to Help

We heard from the W3C (World Wide Web Consortium) that they have well proven processes that allow for effective community engagement, and that these would be available to the IDN Universal Acceptance community if we wanted it. ICANN also has some resources and has abilities to convene gatherings of relevant stakeholders – which would include registries, registrars, standards setters, solution providers and members of the community at large.

There were some concrete activities identified:

¹ <http://www.unicode.org/reports/tr39/>

- APTLD is preparing a magazine article on the topic for distribution to the New Zealand Computer Professional Community. APTLD will make this available for other communities.
- ccTLDs can engage with their own local software development communities.
- APTLD and EuRID will collaborate on a survey of registry and registrar readiness to accept registrations with IDN names.
- Edmund Chung from .asia agreed to facilitate a gathering at future ICANN events, probably starting in Los Angeles, where interested parties will be able to gather and share experiences and challenges to date.
- Governments, as potential anchor tenants, also have an important role to play to ensure that their RFP's for IT systems are able to support IDNs throughout their solutions.
- APTLD will engage with the I*² technical community to seek assurance that their systems all support IDNs.

Other Items of Note

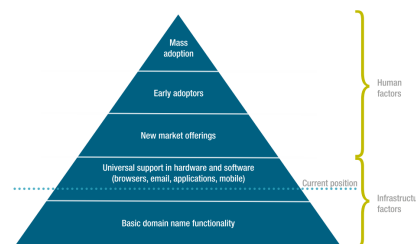
Security

Security was a regularly voiced concern with respect to confusingly similar characters from different character sets. While ideally, names will be limited to a single character set, in practice this just doesn't work. Many languages use characters from multiple scripts. *Find out from Ian the details of his reference sets*

Besides concerns about multiple character sets to the left of the dot (at 2nd, 3rd or 4th level), there's also concern of multiple character sets to the right of the TLD.

Emily Taylor provided an "IDN Hierarchy of Needs":

- Mass Adoption
- Early Adopters
- New Market Offerings
- Universal Support in Hardware and Software
- Basic Domain Name Functionality



ICANN Constraints

For IDN gTLDs there were concerns expressed with ICANN's approach and policies.

The 2013 Registrar Accreditation Agreement is required before ICANN Accredited Registrars are able to sell IDN Names. Some existing registrars feel they are conflicted between signing the agreement and obeying local law.

The process to become an ICANN Accredited Registrar is difficult, particularly in communities where IDNs would be most useful.

The ICANN Policy set is very English and ASCII centric, making it difficult for a registrant to obtain a name without Latin Character knowledge.

Conclusion

While IDN TLDs resolve, for them to effectively work in the real world, there is much work to be done by many parties. Global players, including Google and Microsoft, are working on the issue. But the IDN TLD community and the broader Internet Eco-System must make sure that it's house is also in order. We also see a role for individual Governments, and the United Nations (probably

² The I* community is an informal occasional gathering of the leaders of the Internet technical coordinating organisations and includes ICANN, IAB, IETF, W3C, the 5 RIRs and the 4 Regional ccTLD organisations. It is convened by ISOC.

through UNESCO) to also have a role in advocacy and ensuring that their systems support IDN TLDs.