

# TechDay at ICANN64, Kobe

## Report

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This was the 38<sup>th</sup> TechDay organized by the ccNSO's Technical Working Group. As usual we had a mixed selection of topics and speakers. Predominant were IDN/UA/EDI related topics, but also technical ones such as introducing IPv6 on a large internal network, or (cloud based) DNS practices of a large service provider. The host presentation was excellent not only highlighting technical preparation and testing, but also mundane, often overlooked issues such as logistics.

One of the most interesting presentation came from the University of Twente about long term DNS Research where the speaker did not make it to Japan, presumably due to lack of funds. Attendance was standing room only, and we must consider asking for a bigger room for future TechDays.

## 1 Opening Remarks: [Lisse](#)

## 2 Topics

### 2.1 IPv6 @ Microsoft Campus: [Svancarek](#)

- Microsoft is making some great progress on IPv6 deployment, drivers coming from many places.
- As with many organizations, different properties and groups have different enthusiasm.
- Running dual stack is expensive and complex. We are running out of IPv4 addresses and they are increasingly expensive.
- They rolled out IPv6 on the Microsoft Wireless network, NAT64/DNS64 is essential, DualStack VPN. The goal is IPv6-*only* everywhere.

## 2.2 Two Million Registered IDN: [Levine](#)

- 1% of contracted names are IDNs, the distribution is very uneven.
- Some TLDs register languages not in the contract.
- Table files rarely follow RFC3743 syntax, and some are sent as HTML.
- Some TLDs haven't sent in Label Generation Files, there are good examples to follow.
- 4845 names are invalid IDN2008.
  - Most are length errors, but some are new gTLD naughtiness.
  - Some seem to be sloppy.
  - Some are clearly phishing for example (xn-google-36d.com).
- Most IDNs are ok, some new gTLDs need compliance help.

## 2.3 How to Find a DoH Resolver: [Hoffman](#)

- The DoH standard doesn't explain how to find a DoH server, we have made some assumptions about UIs, but they turned out to be wrong. Firefox allows you to enable DoH, but has a *default*, but unless you are an expert, you are not likely to be able to change this. Defaults are important!
- It looks like there might be a way to be added to a list, but how is unclear, and it is unclear that having a *curated* list is a good idea.
- New proposal:
  - A means to find the DoH server associated with a resolver, for example a *special* domain name or URI to find the DoH server.
- A healthy debate ensued.

## 2.4 Public Suffix List: [Frakes](#)

- ccTLDs and the DNS allow registering at the 2nd level, 3rd level, etc. The PSL allows you to determine that e.g. `.co.jp` has registrations beneath it. This is critical for things like cookies, LetsEncrypt, etc.
- This really important resource is managed by the community (volunteers), please help maintain it. The process to contribute is simple.

## 2.5 Host Presentation: [Sato](#)

- How central to Disaster Recovery the Internet has become.
- JPRS is doing lots of interesting work, including interesting security research using the .jprs gTLD. This is hindered by the contractual obligations to ICANN as a gTLD.
- Their DR plan seems very comprehensive, including some *obvious* things which many people forget, like how employees will get to the DR sites, etc.

## 2.6 Blockchain, IoT & the DNS: [Barrett](#)

Introductory presentation from a commercial perspective.

## 2.7 Alibaba Cloud DNS Practices: [Guo](#)

The presentation was made by an ICANN Fellow<sup>1</sup> and was very well received.

- They are a large provider
  - 14+ million records
  - 160+ billion queries per day
  - lots of attacks every day.
- Provided an interesting overview of their architecture.
- They hope to do DNSSEC and DoH in the future.

## 2.8 Emerging Security Issues: [April](#)

- Lots of useful security advice to help keep registrants safe.
- This included great advice for Registrars, and end clients, Email security, etc, and included advice such as Client Locks, Registry Locks, etc.
- There is no silver bullet, defense is in depth.
- Lots of great discussions on how and what you should monitor, including Cert issuance.

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<sup>1</sup>We remain committed to make slots available at TechDay to ICANN Fellows wishing to deliver Technical Presentations.

## 2.9 Make Your Mail EAI Ready: [Levine](#)

- A brief history for email's move to non-ASCII, and an introduction to Unicode. EAI completes this by allowing UTF-8 in email addresses.
- EAI are similar to IDNs.
- Interesting compatibility issues with legacy mail and EAI capable mail systems.
- Descriptions of what you need to do to make your system EAI compliant.

## 2.10 Long Term DNS Research: [Akkerhuis](#)

Probably our favorite, not only because of the topic, the depth of the research, but also very well presented, even though the authors did not attend the ICANN Meeting themselves.

- Passive DNS only sees what the client asks, and you have no control over when the questions are asked.
- OpenINTEL does active measurements.
  - 216 millions domains per day
  - They make arrangements for access to zone files.
- We can use this for all sorts of really interesting experiments such as
  - checking DNSSEC KSK size.
  - finding how many people change providers after DDoS attacks,
  - noticing interesting and unexpected content in DNS TXT records.
- The authors issued a plea to collaborate.

## 2.11 IDN/EAI in Thailand: [Ratanajaipan](#)

- The Timeline of the Thai IDN ccTLD was presented
  - Delegated 2011
  - 14.7K IDNs - 27% of .TH domains.
  - Much of this is through advocacy of THNIC.
- Direction is moving towards using email address as a global digital ID.

## 3 Closing Remarks: [Kumari](#)

Warren Kumari was volunteered to wrap TechDay up and this report draws heavily on his notes.

## 4 Moment of Silence

We were asked by the host government to observe a Moment of Silence which we did at 14:46 reading the following:

*On 11 March 2011, at 14:46 local time, a 9.1 magnitude earthquake struck in the Pacific ocean off the northeast coast of Japan's Honshu island. The earthquake, known as the Great East Japan Earthquake triggered a massive Tsunami with waves that rose to heights of up to 40 meters and travelled up to 10km inland. This was the most powerful earthquake ever recorded in Japan and the fourth most powerful earthquake in the world.*

*An estimated 20,000 people were lost and close to 500,000 people were forced to evacuate*

*In remembrance of the lives lost and affected by the Great East Japan Earthquake, we will observe a moment of silence.*