



ccTLDs, gTLDs, and IDNs

Fahd Batayneh | MEAC-SIG 2015 | May 26, 2015



Topics of Discussion

- Top Level Domains (TLDs)
- ccTLDs
- gTLDs
- IDNs
- New gTLDs
- DNS Root Servers
- Registry/Registrar/Registrant
- Dispute Resolution
- Business Opportunities in the Domain Name Industry

What is the DNS?



<http://www.youtube.com/watch?v=72snZctFFtA>

Top Level Domains (TLDs)

- Exists at the highest level of the DNS hierarchy
- Is the entry installed into the root-zone
- Consists of various groups:
 - ccTLDs (.tn, .kw, .jo, .eg, .pk, .uk)
 - gTLDs
 - Sponsored (.asia, .cat)
 - Un-sponsored (.com, .net, .org)
 - New (.apps, .shop, .شبكة, .موقع)
 - IDN TLDs (.ابوظبي, .بازار, .تونس)

What is a Domain Name?



<http://www.youtube.com/watch?v=2ZUQ2Szu-JI>

Parts of a Domain Name?

Protocol



Top Level Domain

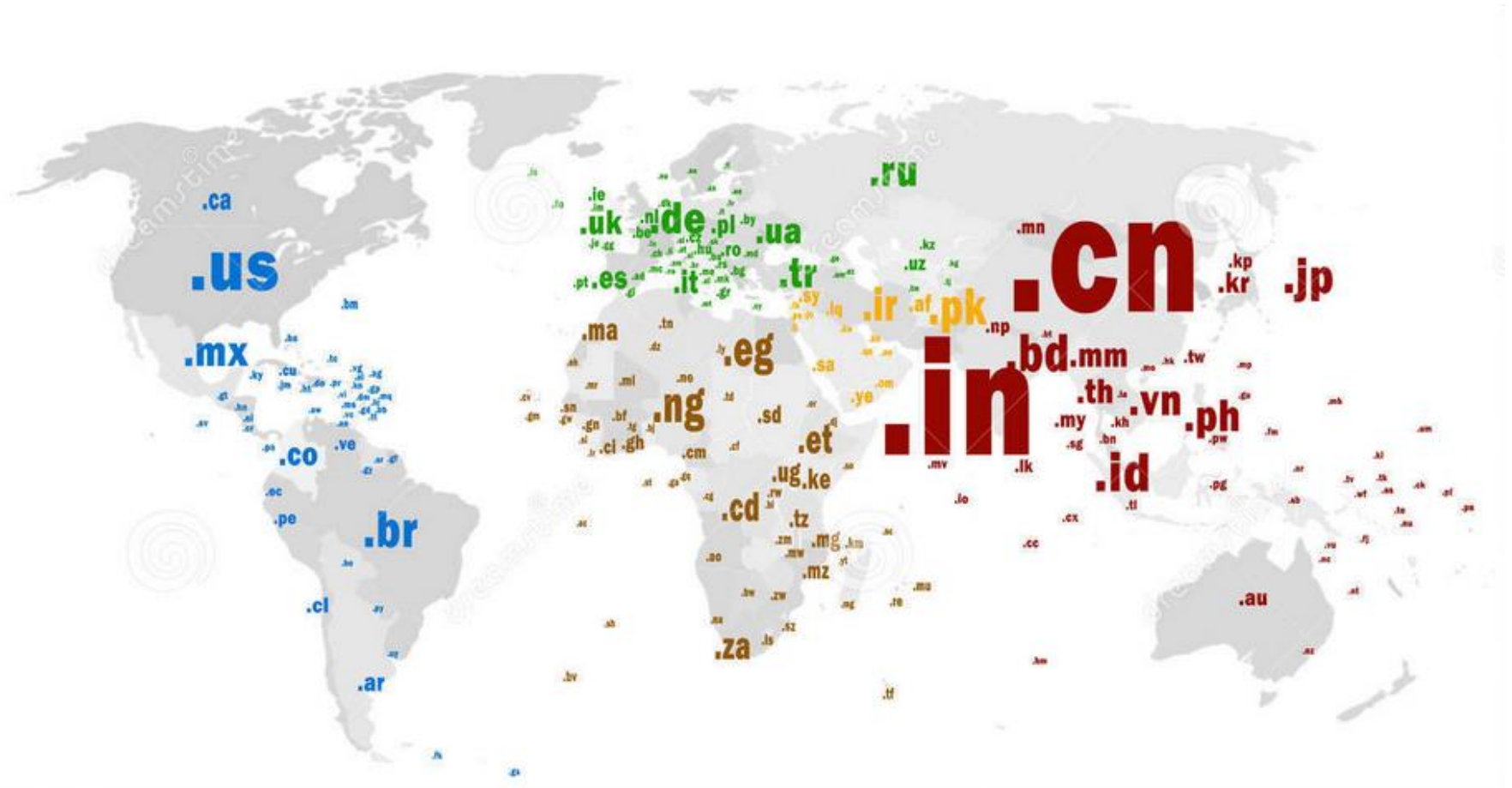


`http://icann.org/`



Domain Name

Country Code TLDs (ccTLD)



Source at <http://dreamstime.com/>

Where do ccTLDs get Their Code From?

- The ISO-3166 provides 2-letter codes and 3-letter codes of countries or a grouping of countries
- 249 assigned 2-letter codes
 - According to the UN, the world has 196 countries
- More at <https://www.iso.org/obp/ui/#search>

Generic TLDs (gTLDs)

- Initially started with 7 (.com, .net, .org, .gov, .edu, .mil, and .int)
- In 2000, 7 more were added (.aero, .biz, .coop, .info, .museum, .name, and .pro)
- In 2004, 6 more were added (.asia, .cat, .jobs, .mobi, .tel, and .travel)
- In 2012, .post was added
- Starting 2013, 10s of new names are being added

Internationalized Domain Names (IDNs)



<http://www.youtube.com/watch?v=wnauGpYh96c>

... cont. (IDNs)

- Lots of community work undertaken since 2000
- Groups who came together to work on this included:
 - Arabic Script
 - CJK (Chinese, Japanese, and Korean)
 - Cyrillic
 - Greek
 - Latin
 - Neo-Brahmi
 - ... and much more

IDN ccTLD Fast Track Process

- Years of policy development before being announced on October 31, 2009 at the end of the ICANN Seoul meeting
- Restricted to countries willing to register their ccTLD in their local language
 - Restricted to non-Latin languages
- Goes through two phases; String Evaluation and then Delegation
- Needs consensus from local communities on who should operate it
- More than 26 delegations so far with 13 in Arabic, 1 in Farsi, and 2 in Urdu
- First 4 delegations were مصر., امارات., السعودية., and .Pφ
- More at <https://www.icann.org/resources/pages/string-evaluation-completion-2014-02-19-en>

Problems with IDNs

- Variants across the same script
 - Can you spot the difference between ‘ك’ and ‘ک’?
- Browser support
- Email support
- SEO support
- Smartphone applications
- Integration with other applications and software

The 2012 New gTLDs Program

- Considered the 3rd round of New TLDs
- More than 5 years of community collaboration to come out with the “TLD Applicant Guidebook”
- A one-time application fee of USD 185,000, and an annual fee of USD 25,000
- Allowed the application of non-Latin names
- 1,930 applications received for 1,420 unique strings
 - 116 non-Latin strings

... cont. (The 2012 New gTLDs Program)

- A rigorous application and evaluation process
 - To ensure that TLDs remain operational and that registrants do not lose their domain names due to the instability of a TLD
- The New gTLD microsite at <http://newgtlds.icann.org/>
- More statistics on the program can be found at <http://newgtlds.icann.org/en/program-status/statistics>

Understanding New gTLDs

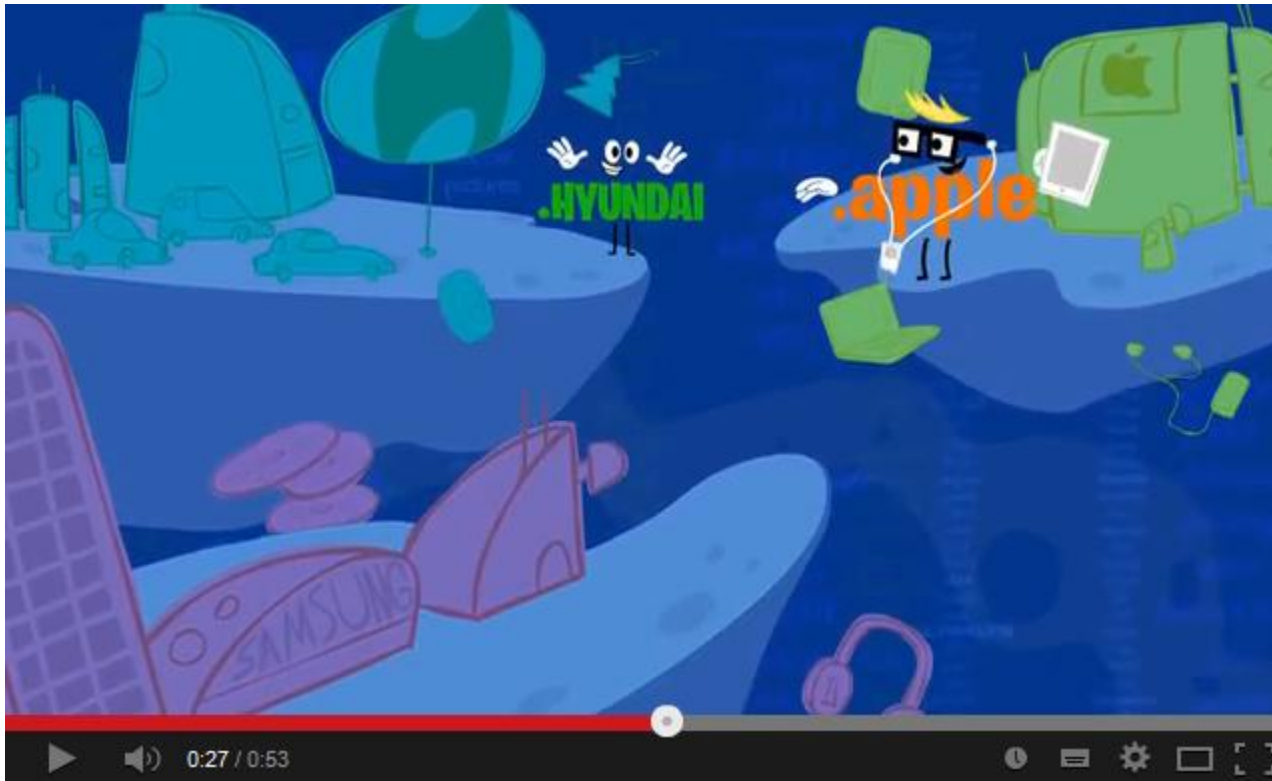


New gTLDs Application Breakdown by Region



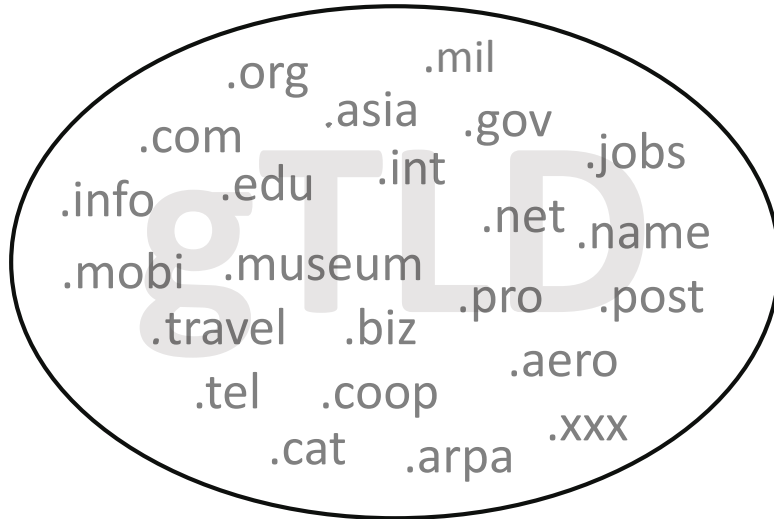
Where do Things Stand at Now?

- More than 50% of the applications have been invited to contracting, pre-delegation testing, or delegation
- 10s of names are being delegated on weekly basis



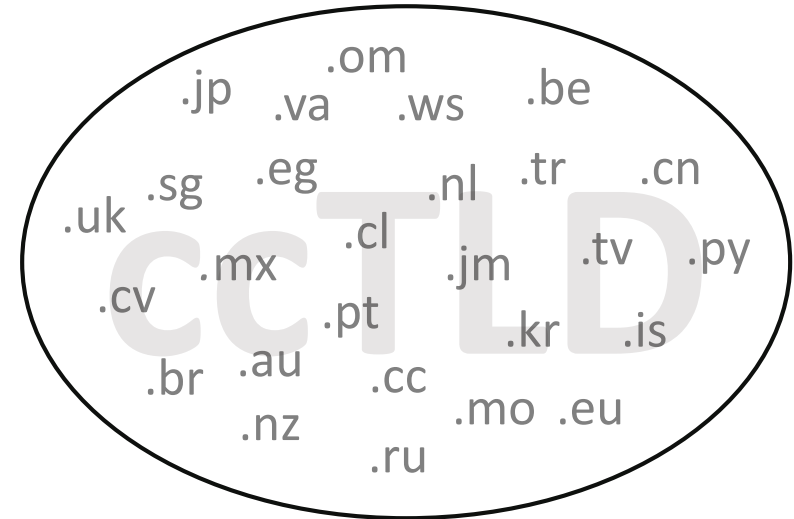
How does the Name Space Look Nowadays?

ROOT



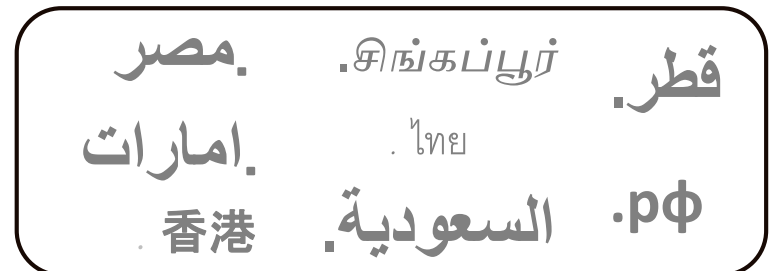
New gTLD Program

New gTLDs



Fast Track Program

IDN ccTLDs



Root Servers

- Publish the root zone file to other DNS servers and clients on the Internet
- The root zone file describes where the authoritative servers for the DNS TLDs are located
- The root name server operators publish the root zone file as received from the IANA

Root Server Operators

1. A - VeriSign Global Registry Services
2. B - University of Southern California - Information Sciences Institute
3. C - Cogent Communications
4. D - University of Maryland
5. E - NASA Ames Research Center
6. F - Internet Systems Consortium, Inc.
7. G - U.S. DOD Network Information Center
8. H - U.S. Army Research Lab
9. I - Autonomica/NORDUnet
10. J - VeriSign Global Registry Services
11. K - RIPE NCC
12. L – ICANN
13. M - WIDE Project

13 root-servers

12 Operators

Root Servers Around the World (500+)



Source at <http://root-servers.org/>

Registry/Registrar/Registrant

- **Registry** – The entity that operates a TLD
- **Registrar** – A middle-agent that sells domain names to registrants on behalf of a TLD Registry
 - ICANN Accredited Registrar vs. Resellers
 - ccTLDs vs. gTLDs
- **Registrant** – Entity registering a domain name

Dispute Resolution

- Cases could arise where a registrant registers a domain name that could infringe the naming rights of others. This is also called “Cybersquatting”
- When ICANN was formed in 1998, one of the first things it worked on was the “Uniform Domain Name Dispute Resolution Process (UDRP)”
 - 5 accredited providers for gTLDs to date
 - ccTLDs can customize this to fit their needs and local laws
 - An expensive and sometimes long process

New gTLDs and Dispute Resolution

- With the introduction of 100s of New gTLDs, cybersquatting is on the high
- Several protection and DRP mechanisms devised
 - Trademark Clearinghouse (TMCH)
 - Uniform Rapid Suspension (URS)
 - Post Delegation Dispute Resolution Procedure (PDDRP)
- UDRP would not be the best path for clear cut cases that need urgent attention
 - TMCH is good for initial protection, while URS comes in for a faster and cheaper path for resolving disputes

Trademark Clearinghouse (TMCH)



<http://www.youtube.com/watch?v=ZXP2dieeZes>

Business Opportunities in the DNS Industry

- Registry Services
 - 4 ccTLDs in the region have state-of-the-art registries. Many others are moving to a shared system
 - Having a Registry/Registrar model is the way forward
- New gTLDs
 - Providing more options in the TLD space away from the traditional .com/.net/.org and the ccTLDs, and providing multilingual TLDs
- Accredited Registrars
 - More than 1000 registrars
 - More at <http://www.icann.org/en/resources/registrars/accreditation>

... continue (Business Opportunities)

- Dispute Resolution Services
 - Five providers in total, and one from the Arab region who joined in 2013
- Online Intellectual Property Protection Services
 - Domain names are digital assets online
- Domain Name Aftermarket
 - **business.com** sold for USD 7.5 million in November 2010
 - **investing.com** sold for USD 2.45 million in December 2012
- Development of Domain Name Tools and Software

Questions?!



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