What is ICANN

- Internet Corporation for Assigned Names and Numbers, [http://www.icann.org/](http://www.icann.org/)
- Coordinates the global Internet’s unique identifiers and stable operation of the system of them, at the global level
- Domain Names, IP numbers and protocol numbers
- Three meetings held in a year touring all around the world
ICANN Organizational Structure
Multistakeholder Model
Multistakeholder Policy Making

ICANN Policy Making Process

- Business, including Domain Name Businesses
- Civil Society Organizations and Individuals
- End Users (all Categories)
- Address and Numbering Organizations
- Technical, Network, and Security Experts
- Governments and IGOs

ICANN Board Approval
ICANN GNSO Structure

GNSO Council
{22 members – 20 votes}
(1 NCA)

Contracted Party House {6+1}
Voting NCA

Non-Contracted Party House {12+1}
Voting NCA

Registry Stakeholder Group {3}
- Registries
- Others

Registrar Stakeholder Group {3}
- Registrars
- Others

Commercial Stakeholder Group {6}
- Business
- Intellectual Property
- Internet Svc Prov.
- Others

Non-Commercial Stakeholder Group {6}
- Non Comm’l Users
- Others

ccNSO**

ALAC*
What is ISPCP

- Technology oriented, concerned for sustainable operation of the Internet Infrastructure
  - SSR – Security Stability and Resiliency
  - DNSSEC
  - IPv6
  - Name Collisions

- Representing users who are their respective customers to better serve them
What is ISPCP

- A constituency within the Commercial Stakeholder Group (CSG) of Non-Contracted Party House (NCPH) of the ICANN GNSO

- It consists of those who deliver the Internet access to the users (consumers, corporates and service sites)
  - Internet Service Providers
  - Internet Connectivity Providers
  - Associations of those

- Habitant in ICANN since its establishment, even before
Internet Governance Timeline

- **October 2013:**
  - Montevideo Statement
- **April 2014:**
  - ITU World Telecommunications Development Conference (WTDC)
  - NETmundial
- **September 2014:**
  - 9th Internet Governance Forum
- **November 2014:**
  - ITU Plenipotentiary Conference (PP-14)

1net mailing list (http://1net.org): platform where all sectors of the community discuss issues prior to these events
Keep up with the issues

### Open for Public Comment

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Comment Period Close Date</th>
<th>Reply Period Close Date</th>
</tr>
</thead>
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<tr>
<td>Enhancing ICANN Accountability Process</td>
<td>27 Sep 2014 23:59 UTC</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- [https://www.icann.org/public-comments#open-public](https://www.icann.org/public-comments#open-public)
Keep up with the issues

SSAC Reports and Advisories

- [https://www.icann.org/resources/pages/documents-2012-02-25-en](https://www.icann.org/resources/pages/documents-2012-02-25-en)
What is Name Collision?

Collisions of names used internally in networks and approved new gTLD names:
- Unreachable to where you intend to communicate
- Unintentionally reach where you do not wish to communicate
Potential impact

• Security
  – Information intended for internal communications
  – may leak out to the public DNS
  – Malicious use of internal name certificates

• Reachability
  – Direction to Unexpected Web Sites
  – Direction of Email to the Wrong Recipients
Potential Scope of Impact

**Potential target:**

- Regular firms
- ISPs (including CATV, hosting service providers)
- Network/Information home appliance vendors
- Public Certificate Authorities and its agents
- System/Network Integrators

**Potential cases of name collisions:**

- Using of internal name inside networks
- Using Search list (To supplement domain name)
- Using/Issuing certificates with internal names
- Providing services using internal names
- Using internal names for URLs in configuration of equipment for the ease of user settings
Steps to Mitigate the Problems Associated with a Private TLD

1. Monitor the requests coming into the authoritative nameservers
2. Create an inventory of each system using the private TLD in an automated fashion
3. Determine where your global DNS names are administered
4. Change the root of your private namespace to use a name from the global DNS
5. Allocate new IP addresses for hosts, if needed
6. Create a system for monitoring equivalence between the new and old private names
7. Train users and system administrators to use the new name
8. Change every affected system over to the new names
9. Begin monitoring for use of old private names at the nameserver
10. Set up long-term monitoring at perimeters to watch for old private names
11. Change all names from the old root to point to a non-functioning address
12. If certificates were issued for any hosts under the old private names, revoke them
13. Long Term Operations with the New Name

“Guide to Name Collision Identification and Mitigation for IT Professionals” : Section 4
Steps to Mitigate Name Collisions Associated with Search Lists

1. Monitor the requests coming into the nameserver
2. Create an inventory of each system using short unqualified names in an automated fashion
3. Train users and system administrators in using FQDNs
4. Change every affected system over to FQDN use
5. Turn off search lists at shared name resolvers
6. Begin monitoring for use of short unqualified names at the nameservers
7. Set up long-term monitoring at perimeters to watch for short unqualified names

“Guide to Name Collision Identification and Mitigation for IT Professionals” : Section 5
Key measures taken by ICANN

- Risk analysis and mitigation plan
  - Decision to reserve delegation of “.home”, ”.corp” indefinitely
    - “.mail” also under consideration
    - Risk analysis and mitigation plans per TLD
  - Reporting window for name collision
  - Published guidelines for IT professionals
  - Considering to develop private names, in collaboration with the IETF
  - Collaboration with CA/Browse Forum to stop/revote internal name certificates

[https://www.icann.org/resources/pages/name-collision-2013-12-06-en](https://www.icann.org/resources/pages/name-collision-2013-12-06-en)
Remaining Considerations

- **Outreach**
  - Reaching widely outside the ICANN community
  - Recommendation to use loopback address (127.0.53.53) for alerting the collision

- **Recommendation by JAS report**
  - Final Mitigating the Risk of DNS Namespace Collisions Phase One report

- **Issues raised in SSAC reports**
  - Define private domain names (SAC062)
  - Define standards for search lists (SAC064)
  - SSAC Comment Concerning JAS Phase One Report on Mitigating the Risk of DNS Namespace Collisions (SAC066)
Reports referenced

- ICANN resource on name collision
  - https://www.icann.org/resources/pages/name-collision-2013-12-06-en
- JAS Advisors report
- Relevant SSAC report
  - https://www.icann.org/resources/pages/documents-2012-02-25-en
What is TLD Universal Acceptance

• A TLD is a top level domain in the Domain Name System
  – Such as “com.” and this definition is extended to domains like “ip6.arpa.”, “co.uk.”, “ad.jp.” and “edu.br.”

• New TLDs sometimes appear “broken” to users
  – Such as “xn--unup4y.” (游戏.) or “uno.”

• Universal Acceptance means – no ‘false positive’ rejections
Why talk about this now?

- 1980s-90s: fewer TLDs; most ended in either a 2-letter country code (ccTLDs) or consisted of 3 ASCII letters (gTLDs)
  - 2000s: new ASCII gTLDs longer than 3 letters introduced (e.g. .info, .museum)
  - 2010: non-ASCII ccTLDs launched (e.g. .சிங்கப்பூர், .اﺍيﻱسﺱيﻱلﻝمﻡ)
  - 2012: New gTLD Program = expanded Domain Name System consisting of 1000s of new gTLDs (including new non-ASCII gTLDs)
Scope

• Universal Acceptance is concerned with eliminating bugs or errors, that is, unintended name blocking
  • Existing software packages often “screen out” domain names ending with more than 3 characters, or that are in non-ASCII scripts
  • Not an ICANN-specific problem – cooperation/coordination across software & website developers, vendors, registry operators etc.

• Universal Acceptance is not addressing administrative prohibition of names
Consequence

- New TLDs are not as useful as they could or should be
- Customer communities relying on non-Latin scripts continue to be disadvantaged
- Ultimately slower growth of the Internet
How ISPs are involved

• It was once said, erroneously, “ISPs have to stop blocking new TLDs”
  – But we know that a TLD is not part of an internet address (IPv4/IPv6) nor a route advertisement
  – I.e., ISPs don’t “filter” TLDs

• However, there may be some services run by an ISP that inadvertently limit new TLDs
Popular Application Services of ISPs

- **E-mail**
  - Delivery, spam filtering and e-mail management
- **HTTP**
  - Web Proxy and account management
- **DNS**
  - NXDomain Re-writing, hosting and hosting management
E-Mail

• TLDs determine valid domain names
  – When users configure their accounts
  – When mail is judged as spam or not

• Restrictions on characters in names
  – Expansion of written scripts
  – Email names (mailboxes) matching TLD languages are needed, as well as email content

• Faulty e-mail is a primary concern to many “non-Latin script” writers
HTTP

• User-typed strings (into browser) that are valid URLs should be treated as such
  – Some new TLDs are converted to search strings

• If ISP hosts HTTP services, customer needs to be able to use any name and any written script
  – Even if the script is not local to the ISP’s region
DNS

- DNS servers are able to handle new TLDs and new scripts
- But troubles have been seen in the management software around DNS
  - User Interfaces often times try to “help” users avoid errors, but with “bad” guidelines
  - NXDomain-rewrite software may base decisions on the TLD sought after a name returns NXDomain
Where Else Can ISPs (Self) Check?

- Mostly in the non-routing services
  - Don’t forget billing!
- TLDs and other Internet identifiers exist “above” the packet passing plane
  - They exist in the “user satisfaction” plane
  - Or in the “account management” plane

- Why does this matter to ISPs?
  - The ISP is the first place a customer calls when there is a problem
Further Information

• An description of the TLD Universal Acceptance Initiative

• An ICANN community wiki
  - https://community.icann.org/display/TUA/TLD+Universal+Acceptance+Home
Review of gTLD WHOIS

• Currently conducting fundamental review of gTLD WHOIS
  – purpose of registration, who uses data, information to be disclosed per users
  – Includes existing gTLDs such as .com, .net

• Background
  – Various issues on WHOIS: privacy, effectiveness for law enforcement, etc.
  – Need for consistent policies, especially with the new gTLD
Fundamental questions

• Why is WHOIS data collected?
• What is the purpose of providing data?
• Who collects data?
• How long should data be retained?
• Who needs data for what purpose?
• Who needs access log for what purpose? …etc

• SAC055 – WHOIS: Blind Men And An Elephant, p.4
Current Status

- ICANN Board has set up Expert Working Group to review the current issues and possible measures.
- Analysis has been made on:
  - Elements for considerations: purpose, data elements, privacy, validation of accuracy, data access, data retention
  - Users and Purposes
- The final report has been submitted to the ICANN Board by Expert Working Group.
  - Very preliminary stage of considerations but extensive reviews has been made.
RDS Users and Purpose

RDS Users and Purposes

Based on use case analysis

REGISTRATION DATA USERS
✓ All Registrants
✓ Protected Registrants
✓ Internet Tech Staff
✓ On-Line Service Providers
✓ Individual Internet Users
✓ Business Internet Users
✓ Intellectual Property Owners
✓ Internet Researchers
✓ LEA/OpSec Investigators
✓ Non-LEA Investigators
✗ Bad Actors

Domain Name Control
Technical Issue Resolution
Individual Internet Use
Domain Name Research
Regulatory/Contractual Enforcement
Abuse Mitigation
Legal Actions
Domain Name Purchase/Sale
Internet Services Provision
Personal Data Protection
gTLD Registration Data Recommended Purposes
Example of Registered Information

Sample RDS Record

<table>
<thead>
<tr>
<th>Registry or Registrar Source</th>
<th>Registrant Source</th>
<th>Optional Role Based Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration Status</td>
<td>Domain Name</td>
<td>Contact Name</td>
</tr>
<tr>
<td>DNSSEC Delegation</td>
<td>Name Server</td>
<td>Contact Role</td>
</tr>
<tr>
<td>Client Status</td>
<td>Registrant Name</td>
<td>Contact ID</td>
</tr>
<tr>
<td>Server Status</td>
<td>Registrant Type</td>
<td>Contact Organization</td>
</tr>
<tr>
<td>Registrar</td>
<td>Registrant Contact ID (issued by RDS-accredited Validator)</td>
<td>Contact Street</td>
</tr>
<tr>
<td>Reseller</td>
<td>Registrant Email</td>
<td>Contact City</td>
</tr>
<tr>
<td>Registrar Jurisdiction</td>
<td>Registrant Street</td>
<td>Contact State/Province</td>
</tr>
<tr>
<td>Registry Jurisdiction</td>
<td>Registrant City</td>
<td>Contact Country</td>
</tr>
<tr>
<td>Registration Contract Language</td>
<td>Registrant State/Province</td>
<td>Contact Phone</td>
</tr>
<tr>
<td>Creation Date</td>
<td>Registrant Postal Code</td>
<td>Contact Phone Ext</td>
</tr>
<tr>
<td>Original Registration Date</td>
<td>Registrant Country</td>
<td>Contact Email</td>
</tr>
<tr>
<td>Registrar Registration Expiration Date</td>
<td>Registrant Phone</td>
<td>Contact Fax</td>
</tr>
<tr>
<td>Updated Date</td>
<td>Registrant Phone Ext</td>
<td>Contact Fax Ext</td>
</tr>
<tr>
<td>Registrar URL</td>
<td>Registrant Fax</td>
<td>Contact SMS</td>
</tr>
<tr>
<td>Registrar IANA Number</td>
<td>Registrant Fax</td>
<td>Grey = Not mandatory</td>
</tr>
<tr>
<td>Registrar Abuse Contact Email</td>
<td>Registrant SMS</td>
<td>Validation of registered information is under considerations</td>
</tr>
<tr>
<td>Registrar Abuse Contact Phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>URL of the Interncomplaint Site</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Aggregated RDS Model

Aggregated RDS (ARDs)

Registrants → Registrars
Data Collection

Registrars → gTLD Registries
Data Storage

gTLD Registries → Aggregated RDS

Aggregated RDS

Requestors
Purpose-Driven Data Disclosure
via Public & Authenticated Access Methods

Stores copies of Data
Validates Collected Data
Handles All Queries (public & authenticated)
Licenses Requestors
Applies Gating Policy
Returns Allowed Data
Audits Data Access
Additional Services

Data Access Enabled via Periodic Data Copies for all gTLDs
Federated RDS Model

An option added after ICANN Durban
The final report recommends Aggregated model
The IANA Functions

The Internet Assigned Numbers Authority (IANA) functions, which are managed by ICANN, play a role in ensuring you get to where you want to go by coordinating unique identifiers. The three core IANA functions are described below.

The History

The IANA functions were developed during the administration of the ARPANET, a U.S.-government-funded Department of Defense network.

Originally, just one person - Jon Postel - performed the functions. Since then, the Internet has grown tremendously and the IANA functions are now managed by ICANN.
The IANA functions involve the coordination of unique Internet identifiers, including:

- Maintenance of the protocol parameter registries on behalf of the IETF
- Allocation of Internet Numbers in cooperation with the Regional Internet Registries
- Management of the .ARPA and .INT domains
- Administrative responsibilities of the DNS root zone
- Coordination of root zone management
IANA Functions’ Stewardship Transition

Stewardship in Transition

To support and enhance the multistakeholder model of Internet policymaking and governance, NTIA announced its intent to transition its stewardship of the IANA functions to the global multistakeholder community. To learn more about this transition, visit: https://www.icann.org/stewardship.
On 14 March 2014, the U.S. Government (USG) announced its intent to transition its stewardship of the IANA functions to the global multistakeholder community.

As the first step, it asked ICANN to convene global stakeholders to develop a proposal to transition the current role played by the US.

ICANN was asked to serve as a convener based on its role as the IANA functions administrator (since 1998) and the global coordinator for the Internet's Domain Name System (DNS).

The multistakeholder community has set the policies implemented by ICANN for more than 15 years.
Timeline

• Suggested Transition Process Timeline, full version here:
Questions

- ICANN
- The role of the ISPCP
- The importance of Internet Governance
- Name Collisions
- Universal Acceptance
- WHOIS
- The IANA transition
- Why you should join the ISPCP
Thank you

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• Visit ISPCP.INFO