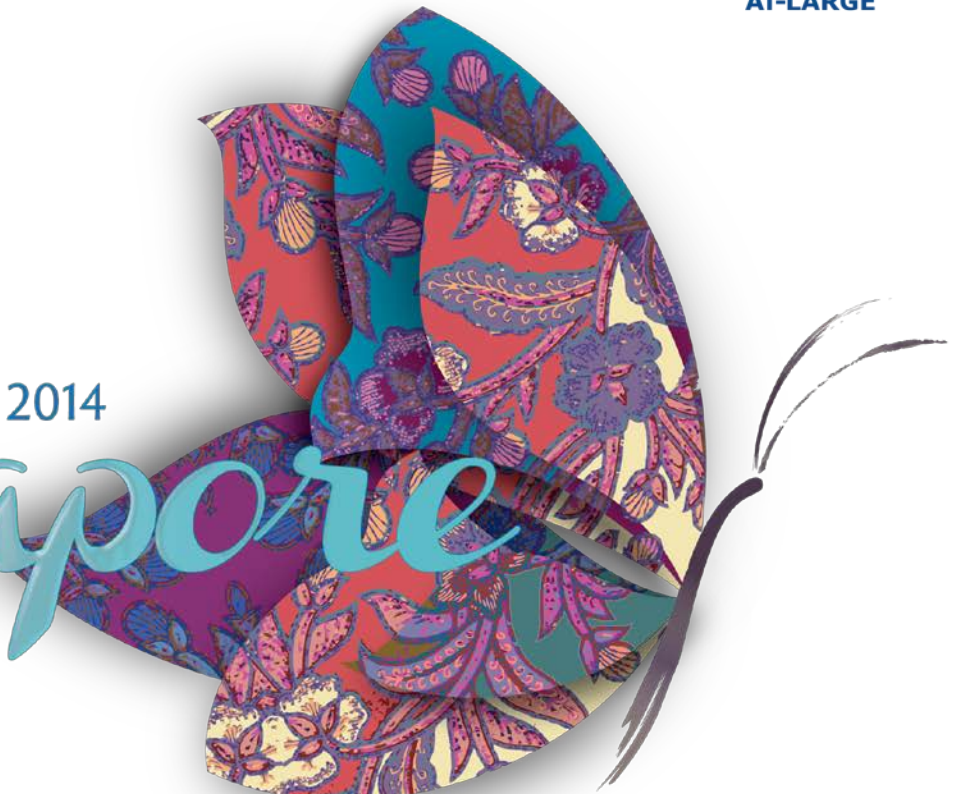




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23-27 MARCH 2014

Singapore



At-Large Workshop: Tor and Alternative Naming Mechanisms to the DN

Panelists

Monday 24 March 2009

14:00 -15:00 SGT

(+0800 UTC)

Evan Leibovitch, ALAC
Garth Bruen, NARALO Chair
Dave Piscitello , ICANN
Patrik Falstrom, Chair SSAC

Outline

1. Why this session?
2. The DNS is not the Whole Internet
3. Alternate DNS
4. Tor
5. Problems with Alternate Structures
6. Discussion

Why this session?

- If the Internet was not confusing enough, there are other systems not discussed at ICANN
- They are not discussed because these other systems are not operationally or contractually part of ICANN
- Regardless, they exist and provide challenges or opportunities to the Internet community

Why this session? (cont.)

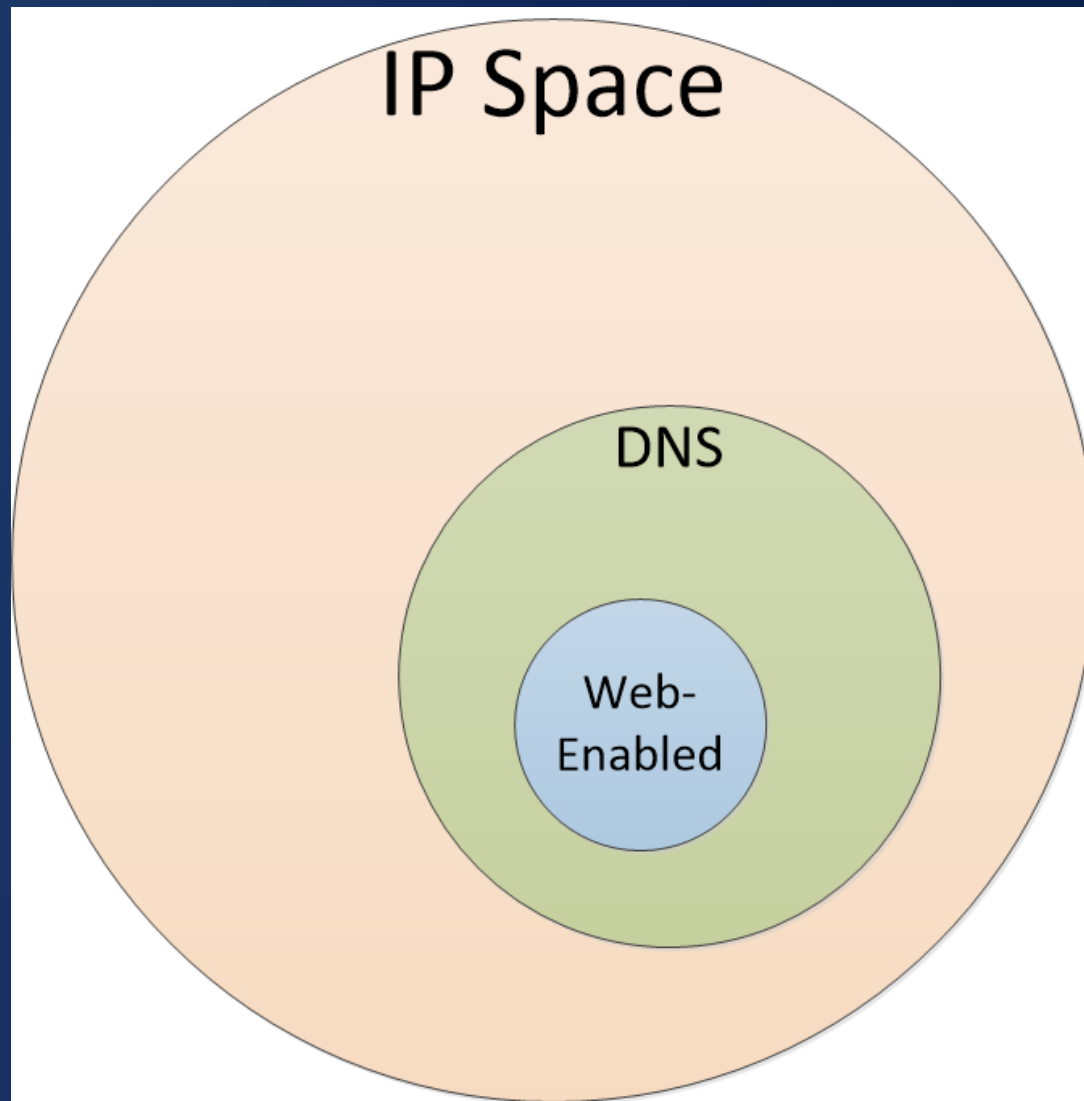
- Only by discussing can we better guide the community, make informed decisions, and create sound policy
- There are literally hundreds of alternate naming systems of roots running now
- If some see a need for other systems, is ICANN reaching *everyone*?
- Are they a threat? Should they be ignored?
- Let's discuss...

1. The DNS is not the Whole Internet

The Domain system occupies a small part the Net

Domains with content hold an even smaller portion

What else is “out there?”



2. Alternate DNS

2.1. Other structures

2.2. Dot-less domains

2.3. Tor "Domains"

2.1. Other structures

- More than 400 non-ICANN TLDs exist
- Cesidian Root (100+ TLDs)
- Space.Name (sued ICANN)
- new.net (considered “malware”)
- Several smaller ones (New-Nations, OpenNIC)
- Some defunct (eDNS, Iperdome, AlterNIC, Open RSC)

Why Alternate DNS? Different Reasons

.SPACE - Competition. For consumers who feel restricted by ICANN

.CESIDIO - Political Independence. Under the “authority” of a non-existent country

.BIT - Economic. Used in the BitCoin payment architecture

.JAQ - Protest. Created when the Network Working Group of the Internet Architecture Board issued a memo in 2000 expressing concern over Alternate Roots

.PIRATE - Illicit. Created for “censorship free” downloading .

2.2. Dot-less domains

- A Dotless domain would be just that, a domain without a TLD extension
- *“SSAC stated that dotless domains would not be universally reachable and recommended strongly against their use” SAC053*
- *“Dotless Domains Considered Harmful” IAB*
- Dotless domains are how ARPANET nodes were configured before the DNS

2.3. Tor "Domains"

- Tor is not actually a DNS
- Tor unique site identifiers are called “domains” but they cannot be reached in the DNS
- Also called *hidden services* these hostnames (like: duskgytldkxiuqc6.onion) can only be reached with the Tor browser
- Operates more like early “hostfile” net

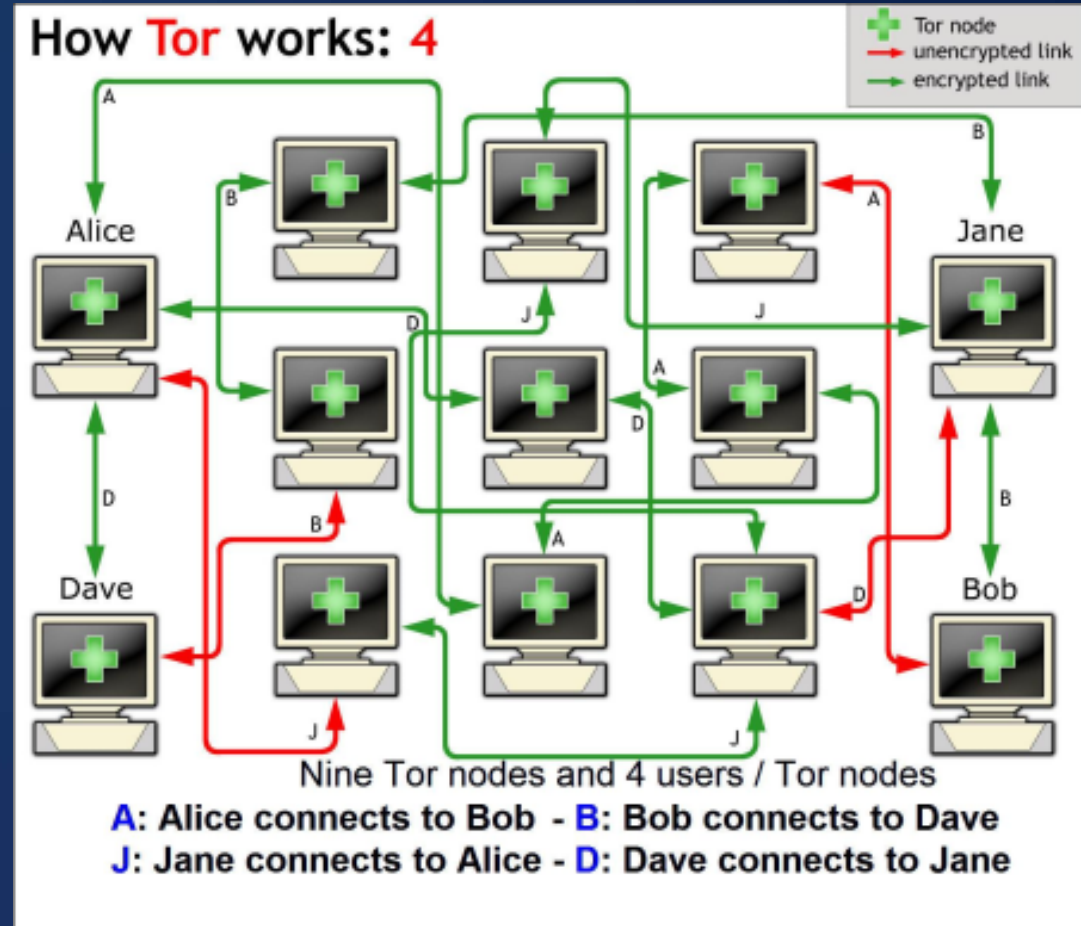
4. Tor

- Tor not primarily for naming
- Tor adds layers of routing to obscure traffic origin, path, and destination
- Tor also drops or blocks data typical in normal DNS
- In essence, Tor functions *counter* to common Internet logic by taking longer routes and not caching – thus providing a higher degree of anonymity

Tor Routing

Internet uses
the best short
path by design

Tor adds nodes
to routing
obscuring the
path



Is Tor just for criminals?

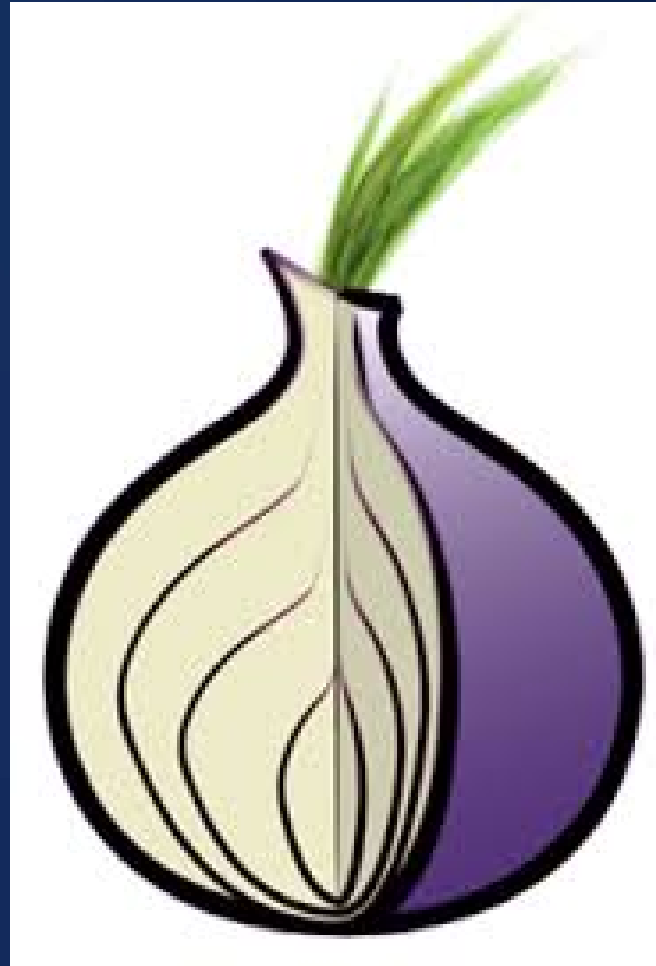
- **Hardly.** While recent controversies about SilkRoad and other Dark Markets on Tor have captured media attention this does not reflect the Tor community and its user base. Crime is a problem in the DNS too, as we know.
- **Tor is used by activists, journalists, stalking victims, law enforcement and anyone wishing to preserve their anonymity.**

Tor is software *and* a community—

The Tor Project
(torproject.org)
maintains the open-
source software and
the network

Donation/Volunteer
driven

Not intended to
replace DNS



5. Problems

- **Consumer Confusion**
- **Collisions**
- **Legal Issues**
- **Security**
- **Governance**

Strength or Weakness? of Alternate Systems

- No costs for domains (sometimes)
- No owner records (sometimes)
- No accountability?
- No resiliency?
- No security?

Discussion: Can ICANN Mandate a Unique Root?

- Really *One World One Internet*?
- Can alternate systems be stopped?
- Are alternate systems innovation or imitation?
- Will domains even matter in 10 years?
- Your questions?

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