Handles and DNS Persistence

IDCC/W3C Workshop on Domain Name Persistence

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Introduction to Handles
Handle System

- Protocol
- Software
- Name Service
4263537/4086
http://hdl.handle.net/4263537/4086
resolveHandle("4263537/4086")
The Handle System is a collection of handle services, each of which consists of one or more replicated sites, each of which may have one or more servers.
How do Handles encourage and enable persistence?
Numeric Prefixes
Permanent Prefix Allocation
Limited Delegation
Secure Resolution Service

http://something ≠ https://something
How are Handles Resolved?

- Handle-aware Clients
- Browser Plugin
- HTTP proxy: http://hdl.handle.net/4263537/4086
Whoa, Hold on There

Ultra-Persistent Handles depend upon DNS?

Not exactly...
Handle System Doesn’t Use DNS
One Domain Gets All the Attention
Exceptional Domain Names

http://geographiclocations.org/?lat=x&lon=y
  → Google Maps
  → MapQuest
  → Car Navigator

http://hdl.handle.net/12345/abcde
  → Handle Resolver
  → Get Metadata
DNS Persistence Issues
Domain names are only part of the picture
Should an identifier be atomic?
Should an identifier actually exist?

http://www.w3.org/Provider/Style/URI.html
vs
http://www.w3.org/Provider/Style/URI.html?new_url_same_resource
vs
URL.Provider.Style.w3.org
Hierarchy is Harmful
Top-Level Domain for Persistence?

Helpful, but not a complete solution
Workshop Question

What are the negative consequences of domain name impermanence?

• Not much!

• Domains already do their job really well. There are other better methods for providing permanence:
  • Special Domains
  • URI Schemes
Workshop Question

What action can be taken to forestall or ameliorate those consequences?

• A top-level domain intended for persistent namespaces would be an improvement if done properly, but it’s not a silver bullet