URI Scheme Registration
Problem Statement
draft-thaler-uri-scheme-reg-ps-01

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RFC 4395 defines guidelines and procedures (same in draft-ietf-iri-4395bis-irireg)

Four categories of schemes:
- Registered: Permanent (req’d for Stds Track), Provisional, Historical
- Unregistered: Private

Goals of IANA registry:
1) Discover names and defining docs
2) Discourage collisions
3) Discern conventions and avoid confusion with existing schemes
4) Encourage registration via low bar for Provisional

Importantly, all goals assume majority of schemes get registered
URI not just for the web

- RFC 3986 (URI syntax) explicitly allows for wide use
- "A resource is not necessarily accessible via the Internet"
- "does not place any limits on the nature of a resource, the reasons why an application might seek to refer to a resource, or the kinds of systems that might use URIs for the sake of identifying resources."
- "abstract concepts can be resources, such as the operators and operands of a mathematical equation, ... or numeric values"
App-specific schemes increasingly common

• Windows, iOS, Android all allow custom app-specific schemes
  • Associated app launched when URI accessed (clicked or invoked via API)
  • Supported across form factors (PC, phone, etc.)

• URIs becoming a form of inter-process communication
  • myapp://some/args/here/or?here

• Potentially already orders of magnitude more than currently registered schemes
  • Various other sites (e.g., Wikipedia) have other lists
  • Result is that our stated goals are not being met
Problem 1: Lack of incentive to register

• No guidance on when to use “Private” vs Provisional

• Low bar for Provisional is still much higher than “Private”
  • Cost is: Effort, time delay, churn based on feedback, disclosure
  • Benefit is: Lowering risk of collision
    • Making doc discoverable not usually seen as a benefit by registrant
    • Contrast our process with Wikipedia’s...

• Impact is:
  • People sometimes ignore URI syntax guidelines
  • Collisions can happen, e.g. two apps can use “myapp” with differing syntax
    • User chooses which one, but might get invalid “args” to the “API”, may not be well tested
Problem 2: Current process doesn’t scale well

• RFC 4395 ambiguous whether Provisional requires 4-week list review
  • IRI WG agreed it doesn’t, just 2-week expert review, but not doc’ed

• Current expert review likely couldn’t handle the load if the current uses actually tried to register
  • In 2012 we did an experiment simultaneously registering (as 3rd-party) >75 schemes listed on Wikipedia
  • Review resulted in adding warning re unknown security impact of 1 scheme
  • After 2 weeks, IANA registered them due to timeout (per RFC 4395)
Problem 3: Current private scheme guidance causes conflicts

• “Organizations that desire a private name space for URI scheme names are encouraged to use a prefix based on their domain name, expressed in reverse order. For example, a URI scheme name of com-example-info might be registered by the vendor that owns the example.com domain name.”

• Hyphens in domain names: foo.bar.example and foo-bar.example

• “For example” is unclear whether to use hyphen or dot

• Guidance doesn’t protect against collision with registered schemes (“iris.beep”, “xcon-userid”, etc.) especially with new gTLDs
  • .xcon or .iris, anyone?

• Most custom schemes aren’t following reversed name guidance
Summary

• Current goals not being met
  • Do we change the goals or change the process or both?

• Do we really want majority of schemes to be IANA registered?
  • If yes, how do we scale?
  • If no, how do we discourage collisions and syntax guideline violations?

• How should we deal with Wikipedia (etc.) lists going forward?