CIRA IDN EPP Extension
draft-wilcox-cira-idn-eppext-00

Canadian Internet Registration Authority (CIRA)
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CIRA IDN POLICY AND BUSINESS REQUIREMENTS

• CIRA offers French character IDNs within the .CA Registry.

• French characters include:
  – é, è, ê, è, à, â, î, ì, ù, ü, ö, ô, ç, œ, æ, and ſ

• Need to support easily adding new character sets in the future – referred to as *repertoires*.

• Administrative bundling – discussed later

• Production early January 2013
About .CA

2,359,605 .CA domain names registered.

.CA Domain Features:

• IPv6 Glue Records `2620:10a:80ec::2`

• French IDN domains `viagénie.ca` <- 651

• DNSSEC support 📋 DS or DNSKEY

• Registry lock 🔒 check it out!!!
THE CIRA ADMINISTRATIVE BUNDLE

• Not a registration bundle: registered variants are registered and managed independently, and are only administratively linked by the following criteria:

1. All registered domain variants with the same canonical representation make up a bundle
2. Domains in a bundle are sponsored by the same registrar
3. All domains in a bundle have the same registrant contact id
DOMAIN VARIANTS

• Domains having the same canonical form
• To obtain canonical form, convert Unicode character points to their ASCII equivalent
• Simple algorithm: convert to NFD form, and remove diacritics
• Example:
  – œuvre.ca  (canonical form)
  – œuvre.ca  (variant)
  – œuvré.ca  (variant)
U-Label Support

• Business requirement that CIRA web interfaces (eg. web WHOIS, registrar portal) support u-labels AND a-labels for display and input

• Business requirements that EPP optionally accept u-label on check and registration as suggested in section 4.1 of RFC 5891 - IDNA2008 Protocol
Technical Challenges – Domain Transfers and Registrant Updates

• Most significant design issue - same problem for both operations

• Requirement that all variants be registered to same registrant contact id and registrar BUT domains are managed independently
Technical Challenges – Domain Transfers and Registrant Updates

• Two options:
  1. Apply transfers and rant updates to all variants automatically
  2. Use pending actions as described in EPP RFCs 5730/5731 until all domains have been consistently transferred or registrant updated

• CIRA has selected to use option 2. This prevents data from being changed under registrar’s feet.
Domain Update Logic

1. Begin Domain Update
2. RANT ID updated? (YES/NO)
   - YES: Other variants? (YES/NO)
     - YES: Variants in pendingUpdate? (YES/NO)
       - YES: Pending update RANT contacts match? (YES/NO)
         - YES: Apply "pendingUpdate" status (YES/NO)
           - NO: All variant in "pendingUpdate"? (YES/NO)
             - NO: Assign new RANT to domain(s) (YES/NO)
               - YES: End Domain Update
               - NO: Return Error
             - YES: Assign new RANT to domain(s) (YES/NO)
               - YES: End Domain Update
               - NO: Return Error
           - NO: Apply "pendingUpdate" status (YES/NO)
             - YES: End Domain Update
             - NO: Return Error
         - NO: All variant in "pendingUpdate"? (YES/NO)
           - NO: Assign new RANT to domain(s) (YES/NO)
             - YES: End Domain Update
             - NO: Return Error
         - NO: Apply "pendingUpdate" status (YES/NO)
           - YES: End Domain Update
           - NO: Return Error
     - NO: Assign new RANT to domain(s) (YES/NO)
       - YES: End Domain Update
       - NO: Return Error
3. NO: Assign new RANT to domain(s) (YES/NO)
   - YES: End Domain Update
   - NO: Return Error
EPP Extensions in support of IDN

• Domain Check:
  – Repertoire ID ("fr")
  – This is not strictly necessary to check availability but allows us to validate Unicode character points
  – Uses two-characters language code
EPP Extensions in support of IDN

• Domain Create:
  – Repertoire ID (“fr”)
  – Optional u-label for validation of user intent (as recommended in RFC 5891)
  – Recommendation has not been applied by many other registries
  – UTF-8 encoding does not render legibly on most editors. Worried about registrar confusion.
EPP Extensions in support of IDN

• Domain Info:
  – Because transfer/update actions must be carried out on all variants, registrars need a way to tell which other variants are part of a bundle.
  – Adding an extension to domain info that returns all other variants:

    <cira-idn:ciraldnInfo>
    <cira-idn:repertoire>fr</cira-idn:repertoire>
    <cira-idn:domainVariants>
    <cira-idn:name>xn--lve-6lad.ca</cira-idn:name>
    <cira-idn:name>xn--leve-9oa.ca</cira-idn:name>
    <cira-idn:name>eleve.ca</cira-idn:name>
    </cira-idn:domainVariants>
    </cira-idn:ciraldnInfo>
IANA Considerations

The CIRA IDN EPP extension is to be added to the EPP extension registry as specified in [RFC7451].

Below is the registration template. (informational vs standard track?)

-----BEGIN FORM-----

Name of Extension: "CIRA IDN EPP Extension"
Document Status: Informational
Reference: draft-wilcox-cira-idn-eppext
Registrant Name and Email Address: .CA Registry Operations, regops@cira.ca
TLDs: .ca
IPR Disclosure: TBD
Status: Active
Notes: None

-----END FORM-----