draft-ietf-iri-iri-3987bis-03 Issues Overview

IETF 79, Beijing
IRI WG Meeting
2010-11-09

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Overview

- Overview/Background
- Issues in Groups:

  (discussion after each group)
  - Conversion by Decomposition
  - Registered Names
  - Query Parts
  - Legacy and Bugwards Compatibility
  - Bidirectionality
  - Weed-out
  - Other issues

Background

- IRI: Internationalized Resource Identifier, currently RFC 3987
- Internationalized (i.e. not-ASCII-only) version of URI (STD66, RFC 3986)
- Updating draft-ietf-iri-3987bis-03.txt
- List of open issues at: http://trac.tools.ietf.org/wg/iri/trac/report/1
- SVN revision log: http://trac.tools.ietf.org/wg/iri/trac/log/draft-ietf-iri-3987bis/draft-ietf-iri-3987bis.xml

IRI Examples

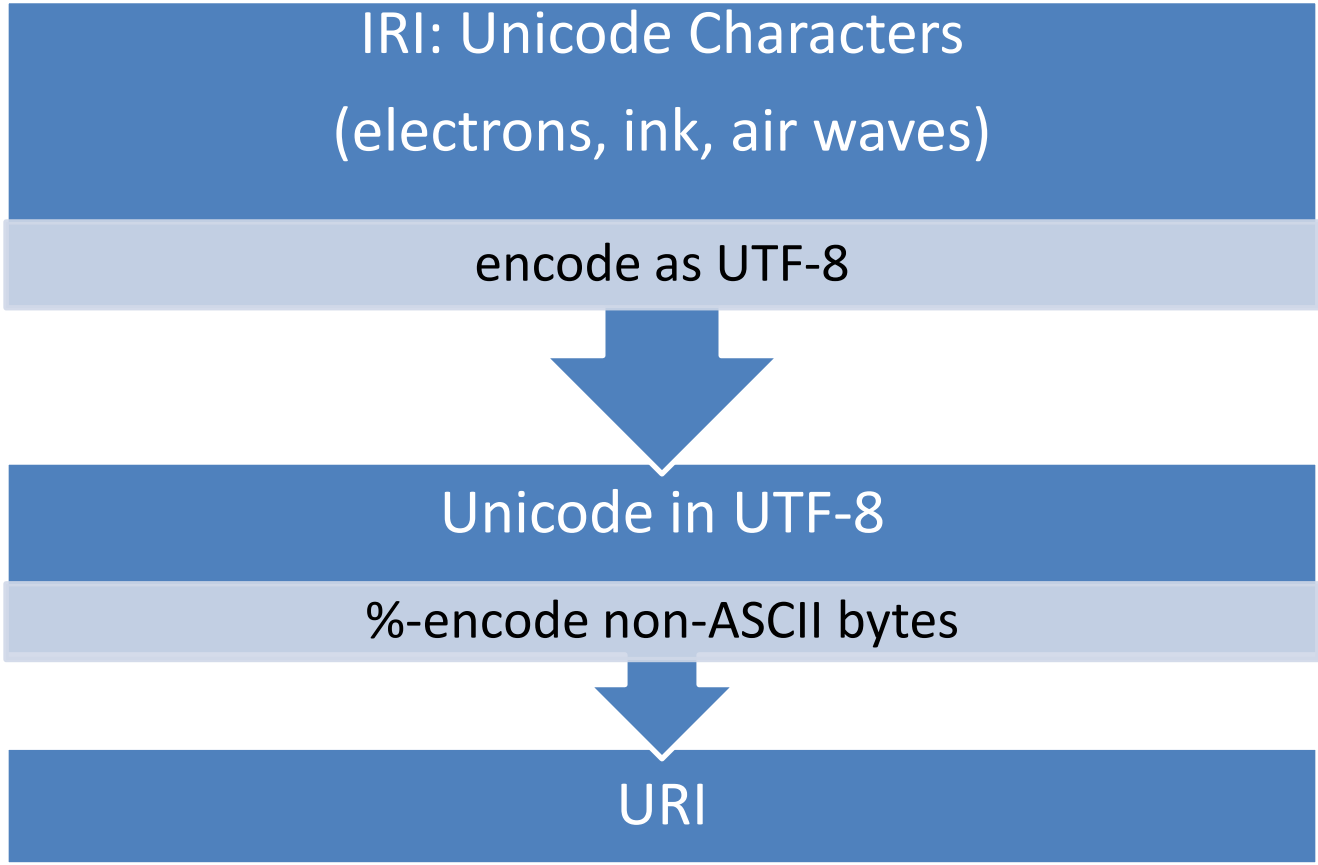
- http://清华大学.中国, http://清華大學.中国
- http://zh.wikipedia.org/zh/中国互联网协会
- http://بوابة.تونس
- http://ja.wikipedia.org/wiki/青山学院大学

Please Don’t Forget

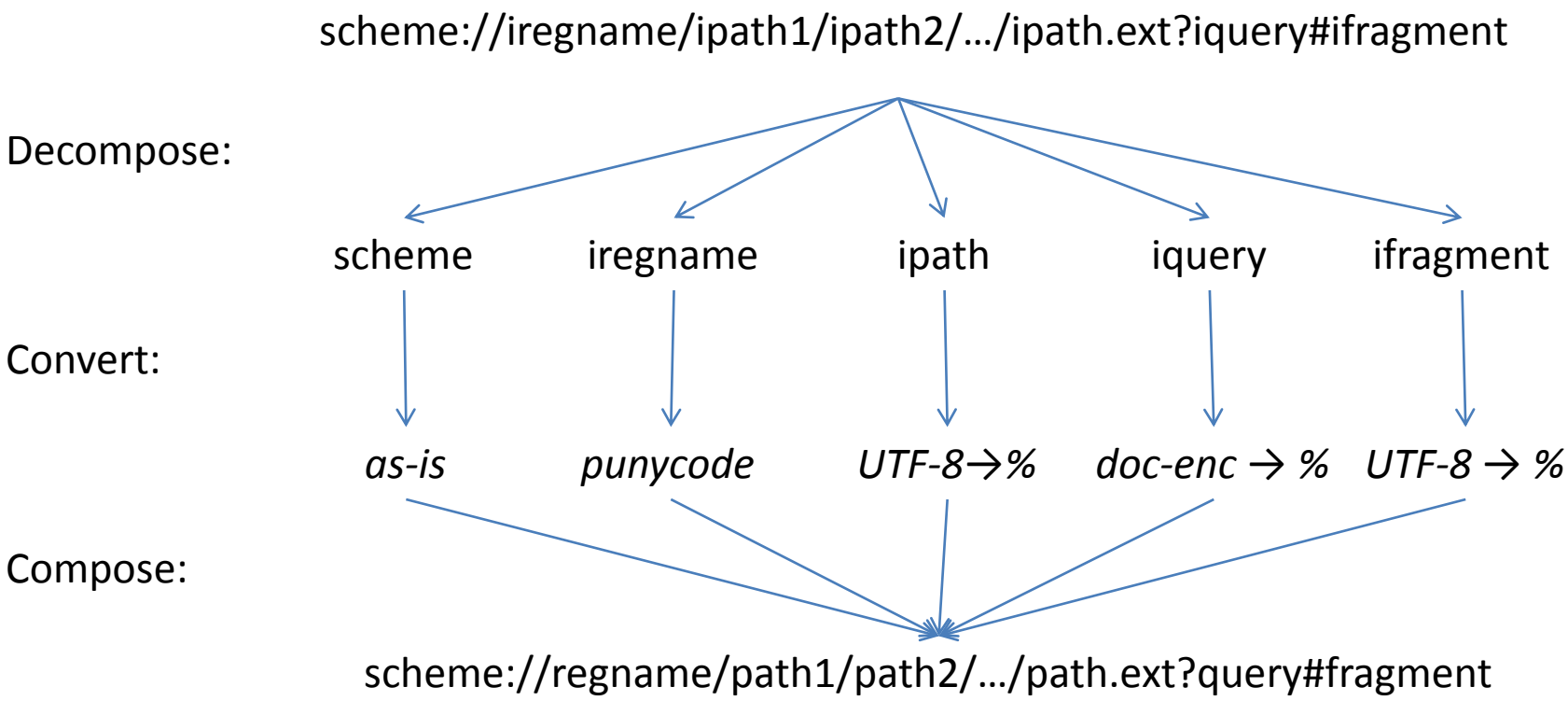
- URIs/IRIs are a META-syntax
- Many pieces with different requirements get thrown together
- URIs/IRIs can be:
  - Absolute, complete from scheme to fragment id
  - Relative, just one or a few pieces
  - User-oriented (short, memorable)
  - Back-end (long, complicated)

Biggest Change from RFC 3987

- Conversion: IRI ⇒ URI
- Old: Conversion by Decompo-sition



Conversion: New



New Conversion: Advantages

- Deal with special cases
  - ireg-name
  - query Part
- Base for API (HTML5,…)

New Conversion: Status

- IRI ⇒ URI:
  - Basic writedown completed
  - Need to check details [issue #13; please help!]
- URI ⇒ IRI: TODO [issue #14]

Registered Names: Mapping to URIs [issue #35]

- STD 66/RFC 3986: Allows %-encoding in reg-name
- RFC 3987: Allows conversion using %-encoding for ireg-name
- draft-03: MUST convert to punycode

Advantages of -03 Approach

- Less variability for URIs (only 中国 and xn--fiqs8s, not also %E4%B8%AD%E5%9B%BD)
- Better resolution: For IDNA, punycode always resolves

➢ Practical approach, but MUST too much (!?)

Disadvantages

- Conversion less uniform, more effort needed
- Does not deal with other systems
  (MDNS,…, see draft-iab-idn-encoding)
- Unnecessary restriction on schemes
  (IANA registry)
- Does not deal with opaque syntax, domain names in query part,…
- Interaction with mapping
- Forward-compatibility
- %-encoding is still legal
- Layer violation

Reg-name: Mapping among Unicode

- To map or not to map?
- When to map?
- How to map? (IDNA 2003? RFC 5895? TR 46?) [issue #44]

- Proposal:
  - IRI creation: SHOULD only use U-Labels
  - Conversion to URI: MAY map (RFC 5895 or TR 46)

Query Part Encodings [issues #24, #40]

- From an HTML <form> (GET request):
  - Document encoding [issue #11], or
  - Follow accept-charset attribute
- Input by user:
  - UTF-8: Preferred by big sites
  - Local user encoding: Preferred by some sites in Asia, non-interoperable
- In a document (e.g. <a src=…):
  - Document encoding

Query Part: Scheme Dependency

- Document encoding (where available):
  - http:/https:
  - What else? [Please help!]
- UTF-8:
  - mailto:
  - What else? [Please help!]
- Schemes without query part:
  - What? [Please help!]

Legacy and Bugwards Compatibility

- LEIRI: Legacy Extended IRI, for XML
  - Problem: Main XML specs diverged on an early draft of RFC 3987
  - Solution: Allow spaces,… in LEIRIs, with lots of health warnings
  - Status: One of the most carefully checked parts of the draft (Section 7.1) [issue #30]

Bugwards Compatibility: HTML5

- [issues #1, #2, #3]
- Browsers do a lot more than what the specs require
- Browser makers want to get the spec up to speed with reality

Bugwards Compatibility Examples

- Allow single '%'? [issue #41]
- Allow '#' in fragment part? [issue #42]
- Illegal IRI characters [issue #43]
- Many others, wide variance in implementations

- Section, appendix, separate draft?
- draft in preparation by Adam Barth

Bidi(rectionality) Basics

- Arabic, Hebrew,… scripts read TFEL2THGIR

  (in examples, we use ESAC REPPU for right-to-left)
- Storage is in logical order (parsing,… is easy)
- Display for running text is specified by Unicode TR 9
  - Directionality of punctuation follows surrounding letters
  - In computer syntax, stuff gets thrown around

Bidi IRI Goals

- Easily readable (for native readers)
- Easy to display (ideally no deviation from TR 9)
- Consistent conversion logical ⇔ display

IRI Bidi Concepts

- Component: String between syntax characters
  - Domain name label
  - Path component
  - Query parameter name/value
  - …
- Component directionality:

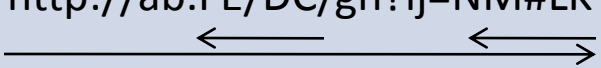
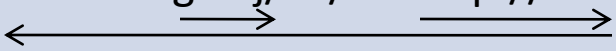
  Each component clearly one way, to avoid letters jumping punctuation
- Run: Same-directionality component sequence

Bidi Issues

- Adapt Bidi character restrictions to IDNA2008 [issue #25]
  - Allow combining marks at end of component (no-brainer)
  - Allow digits at end of component (probably yes, issue #28)
  - Establish non-jumping restrictions for IRIs (needs work, please help)
- Overall display strategy
- Move to separate document? [issue #6]

Bidi IRI Ordering Alternatives

Logical: http://ab.CD/EF/gh?ij=KL#MN

Overall Directi-onality	Reordering by	Example	RFC 3987	Uni-code TR #9	Users	#
LTR →	run	http://ab.FE/DC/gh?ij=NM#LK 	okay	possible	☹	1
LTR →	component	http://ab.DC/FE/gh?ij=LK#NM 	bad	need ex-ception	☹	2
RTL ←	run	NM#LK=gh?ij/FE/DC.http://ab 	bad	possible	☹	3
RTL ←	component	NM#KL=ij?gh/FE/DC.ab//:http 	bad	need ex-ception	☺ ?	4

- Worst-case example, shows main design choices
- Conflict between users (and user-oriented vendors) and security concerns

Weed-out

- Section 6: Use of IRIs [Please help reviewing!]
- Section 8: URI/IRI Processing Guidelines (Informative) [Please help reviewing!]
- Security Section: Replace large parts by pointers to Unicode TR 36 [issue #18]
- Appendix A, Design Considerations: Replace with pointer to RFC 3987 [issue #53]

Other Issues (except trivial)

- #5: Distinguish IRI vs. "Presentation of IRI"?
- #15: Move comparision section to separate document?
- #20: Update Acknowledgements Section
- #22: Fix "IRIs as identity tokens MUST"
- #23: When to use NFC normalizing transcoder? (close?)
- #26: No combining marks at start of component?
- #27: Anything to say about ZWNJ/ZWJ?
- #29: Include tag ranges in <iprivate> (close?)
- #34: Incomplete sentence
- #36: Some HTTP implementations send UTF-8 paths
- #39: Warn about wrong conversion of non-BMP characters
- #45: Secure comparisons
- #46, #47: Length limits
- #52: Update reference to Unicode 6.0 (patch available)