CURIE Syntax 1.0

A syntax for expressing Compact URIs

W3C Working Draft 7 March 2007

This version:
http://www.w3.org/TR/2007/WD-curie-20070307
Latest version:
http://www.w3.org/TR/curie
Editors:
Mark Birbeck, x-port.net Ltd. <Mark.Birbeck@x-port.net>
Shane McCarron, Applied Testing and Technology, Inc.

This document is also available in these non-normative formats: PostScript version, PDF version.

The English version of this specification is the only normative version. Non-normative translations may also be available.

Copyright © 2007 W3C® (MIT, ERCIM, Keio), All Rights Reserved. W3C liability, trademark and document use rules apply.

Abstract

The aim of this document is to outline a syntax for expressing URIs in a generic, abbreviated syntax. While it has been produced in conjunction with the HTML Working Group, it is not specifically targeted at use by XHTML Family Markup Languages. Note that the target audience for this document is Markup Language designers, not the users of those Markup Languages.

Status of this Document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the latest revision of this technical report can be found in the W3C technical reports index at http://www.w3.org/TR/.

This document is a first public working draft, but is nearly complete. It is based upon work done in the definition of [XHTML2 [p.11]], and work done by the RDF-in-HTML task force [RDFHTML] [p.11] , a joint task force of the Semantic Web Best Practices and Deployment Working Group [SWBPD-WG] [p.11] and HTML Working Group [HTML-WG] [p.11] . It is not yet stable, but has had extensive review over the last 8 months. It is being released in a separate, stand-alone specification in order to speed its adoption and facilitiate its use in various specifications.

This document has been produced by the W3C HTML Working Group (*Members only*) as part of the HTML Activity. The goals of the HTML Working Group are discussed in the HTML Working Group charter.

This document is governed by the 24 January 2002 CPP as amended by the W3C Patent Policy Transition Procedure. W3C maintains a public list of any patent disclosures made in connection with the deliverables of the group; that page also includes instructions for disclosing a patent. An individual who has actual knowledge of a patent which the individual believes contains Essential Claim(s) must disclose the information in accordance with section 6 of the W3C Patent Policy.

Publication as a Working Draft does not imply endorsement by the W3C Membership. This is a draft document and may be updated, replaced or obsoleted by other documents at any time. It is inappropriate to cite this document as other than work in progress.

Please report errors in this specification to www-html-editor@w3.org (archive). It is inappropriate to send discussion email to this address. Public discussion may take place on www-html@w3.org (archive).

Table of Contents

1. Introduction 3
1.1. Existing Uses of CURIEs 3
1.1.1. Wikis 4
2. Conformance Requirements 5
2.1. User Agent Conformance 5
3. Syntax 7
4. Usage 9
4.1. Examples 9
4.2. Ambiguities Between CURIEs and URIs 9
A. References 11

1.Introduction

This section is informative.

More and more grammars are expressing URIs in XML using QNames. Since QNames are invariably shorter than the URI that they express, this is obviously a very useful device. However, a major problem is that the origin of the notion of a QName [NAMESPACES-IN-XML-QNAMES] [p.11] is such that it does not allow all possible URIs to be expressed. (For the definition of the XML Schema datatype for QNames see [XML-SCHEMA-QNAME] [p.11] .)

A specific example of the problem this causes comes from the IPTC [IPTC] [p.11] . They would like to be able to use attributes in their mark-up to carry metadata in their documents, and as a consequence sought to make extensive use of QNames to keep the amount of data being transferred as small as possible. In other words, instead of sending lots of long URIs, QNames were to be used to abbreviate them. However, the purpose of QNames in XML is to provide a way for XML elements that contain a colon to be interpreted as an element with a different name (see [NAMESPACES-IN-XML-QNAMES] [p.11]). For this reason, the definition is such that the part after the colon must be a valid element name, making an example such as the following *invalid*:

```
iptc:10112244
```

This is not a valid QName simply because ’10112244’ is not a valid element name. Yet, in the IPTC example given, the whole reason for using a QName was to abbreviate the URI, and *not* to create a namespace qualified element name. This gives rise to an interesting problem; the definition of a QName insists on the use of valid XML element names, but an increasingly common *use* of QNames is as a means to abbreviate URIs, and unfortunately the two are in conflict with each other.

This specification addresses the problem by creating a new data type whose purpose is specifically to allow for the abbreviation of URIs in exactly this way. This type is called a "CURIE" or a "Compact URI", and QNames are a subset of this.

1.1.Existing Uses of CURIEs

Although they are not currently called CURIEs, the technique described here is in widespread usage. However, taken literally, QNames would not support many of the examples that we would find ’in the wild’ — the fact that they do is mainly because systems and authors take a very lax approach to QNames.

In other words, the *principle* used in QNames — that of substituting a namespace prefix for a URI and thereby producing a longer URI — is widely used, but little checking is done on the element part to ensure that the string is a valid element name. However, this does mean that CURIEs can be easily used in a number of places, since there is already a large amount of ’mind-share’. Current uses include:

1.1.1.Wikis

Many Wikis support a feature where a prefix like `isbn` can be substituted for something like:

```
http://www.amazon.com/?isbn=
```

or:

```
http://www.barnesandnoble.com/?q=
```

When a Wiki author wants to make use of this, they can simply enter:

```
Go and buy T. V. Raman's [[isbn:0321154991][book on XForms]].
```

and the Wiki software will automatically generate:

```
Go and buy T. V. Raman's <a href="http://www.amazon.com/?isbn=0321154991">book on XForms</a>
```

2.Conformance Requirements

This section is *normative*.

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119 [p.11]].

2.1.User Agent Conformance

A conforming user agent must support all of the features required in this specification.

3.Syntax

This section is normative.

A CURIE is comprised of two components, a *prefix* and a *suffix*. The prefix is optional. When the prefix is supplied, it is separated from the suffix by a colon (`:`). To disambiguate a CURIE when it appears in a context where a normal [URI [p.11]] may also be used, the entire CURIE is permitted to be enclosed in brackets (`[, ]`).

```
curie   :=   ( [ prefix ':' ] suffix ) | ( '[' [ prefix ':' ] suffix ']' )

prefix  :=   NCName

suffix  :=   ifragment (as defined in IRI)
```

When a CURIE is used in an XML grammar, and the prefix on the CURIE is omitted, then the prefix MUST be interpreted as the current default XML namespace.

When a CURIE is used in a non-XML grammar, the grammar MUST provide a mechanism for defining the default prefix.

When CURIES are used in an XML grammar, prefix values MUST be defined using the 'xmlns:' syntax specified in [XMLNAMES [p.11]].

When CURIES are used in a non-XML grammar, the grammar MUST provide a mechanism for defining the mapping from the `prefix` to an IRI.

The concatenation of the namespace associated with a CURIE and its `suffix` MUST be an IRI [IRI [p.11]].

The namespace prefix '_' has special meaning when CURIEs are used for RDF serialisations. In order to provide support for BNodes, the namespace prefix '_' is reserved and RDF processors are free to generate anonymous URIs as they see fit. For this reason, namespace declarations using '_' SHOULD be avoided by authors.

Grammars MAY define additional constraints on these syntax rules when CURIES are used in the context of those grammars. Grammars MUST NOT relax the constraints defined this specification.

4.Usage

This section is informative.

CURIEs can be used in exactly the same way that QNames are, with the modification that the format of the strings before and after the colon are looser. In all cases a parsed CURIE will produce a IRI. However, the process of parsing involves substituting the namespace represented by the namespace prefix for the prefix itself, and then simply appending the part after the colon. There is one additional rule; if there is no colon present, then the current default XML namespace is used as the prefix. This should become clearer with examples.

4.1.Examples

All of the following are valid CURIEs — even though they are not valid QNames — and they take advantage of the fact that the part after the colon no longer needs to conform to the rules for element names:

```
home:#start
joseki:
google:xforms+or+'xml+forms'
```

When using an XML grammar, the part before the colon cannot be quite as lax as the part after, since it must conform to the syntax for a namespace prefix. However, given that a simple string substitution takes place, the following are also all valid:

```
#start
?foo=bar&amp;other=other#fragment
xforms+or+'xml+forms'
```

In each of these instances, the CURIE would be appended onto the default namespace URI to generate a complete IRI.

4.2.Ambiguities Between CURIEs and URIs

There will be situations in the design of a language where it is desirable for an attribute that can take a URI to also be able to contain a CURIE. For example, in XHTML the `href` attribute allows a URI to be specified that will be navigated on user action, but it would also be useful to be able to abbreviate this URI, using the compact syntax. However, the problem is that it is not possible for the language parser to be completely sure whether it has located a CURIE or a URI. For example, a link to an email address can be expressed like this:

```
Why not <a href="smtp:contactus@example.com">drop us a line</a>.
```

There is no way to be sure that this is a normal URI, or a CURIE. Therefore the syntax for carrying a CURIE when there is any possibility of ambiguity is to enclose the CURIE in square brackets, as in the following example:

```
<html xmlns:wiki="http://en.wikipedia.org/wiki/">
    <head>...</head>
    <body>
        <p>
            Find out more about <a href="[wiki:Thales]">Thales</a>.
        </p>
    </body>
</html>
```

Note:

Not only does this abbreviate the URI, but it also makes it possible to change a whole group of URIs to point to some other source, simply by changing the namespace definition. For example, consider the following mark-up:

```
<html xmlns:wiki="http://en.wikipedia.org/wiki/">
    <head>...</head>
    <body>
        <p>
            Thales had a profound influence on other Greek thinkers and therefore on Western history.
            Some believe <a href="[wiki:Anaximander]">Anaximander</a> was a pupil of Thales. Early
            sources report that one of Anaximander's more famous pupils,
            <a href="[wiki:Pythagoras]">Pythagoras</a>, visited Thales as a young man, and that Thales
            advised him to travel to Egypt to further his philosophical and mathematical studies.
        </p>
    </body>
</html>
```

Given that all references to Wiki entries are based on the namespace defined in `xmlns:wiki`, then simply changing this namespace changes the base for all Wiki references within the document. It is not difficult to see how, by extending this principle a user can begin to get control of their own browsing experience. For example, a document might contain a reference to a company, with links to news about the company, financial information and details on key directors. By using CURIEs to express those links it is possible to use different sources for the information, event to the extent that they could be overridden the user:

```
<html xmlns:finance="..."
      xmlns:news="..."
      xmlns:people="...">
    <head>...</head>
    <body>
        <p>We hear from people in the know that the great thinker
        Bullwinkle is being recruited by <b>Google</b>
        (nasdaq: <a href="[finance:GOOG]" class="maintkrlink">GOOG</a> -
        <a href="[news:GOOG]">news</a> - <a href="[people:GOOG]">people</a>)
        was an "unconfirmed rumor", but that the search engine behemoth is
        indeed keen to expand its cartoon presence.</p>
    </body>
</html>
```

A.References

This appendix is normative.

RDF-SYNTAX
RDF/XML Syntax and Grammar (See http://www.w3.org/TR/rdf-syntax-grammar/.)
XML-SCHEMA-QNAME
XML Schema Part 2: Datatypes Second Edition: Section 3.2.18 QName (See http://www.w3.org/TR/xmlschema-2/#QName.)
NAMESPACES-IN-XML-QNAMES
Namespaces in XML: Section 3: Qualified Names (See http://www.w3.org/TR/REC-xml-names/#dt-qualname.)
IPTC
International Press Telecommunications Council (See http://www.iptc.org/.)
RDFHTML
RDF-in-HTML Task Force (See http://w3.org/2001/sw/BestPractices/HTML/.)
SWBPD-WG
Semantic Web Best Practices and Deployment Working Group (See http://w3.org/2001/sw/BestPractices/.)
HTML-WG
HTML Working Group (See http://w3.org/MarkUp/Group/.)
IRI
"*Internationalized Resource Identifiers (IRI)*", RFC 3987, M.Duerst, M. Suignard January 2005.
Available at: http://www.ietf.org/rfc/rfc3987.txt
RFC2119
"*Key words for use in RFCs to indicate requirement levels*", RFC 2119, S. Bradner, March 1997.
Available at: http://www.ietf.org/rfc/rfc2119.txt
URI
"*Uniform Resource Identifiers (URI): Generic Syntax*", RFC 3986, T. Berners-Lee *et al.*, January 2005.
Available at: http://www.rfc-editor.org/rfc/rfc3986.txt. This RFC updates RFC 1738 [URI [p.11]] and obsoletes RFC 2732, 2396 and 1808.
[XHTML2]
"*XHTML™ 2.0*". J. Axelsson *et al.*, 26 July 2006.
Available at: http://www.w3.org/TR/2006/WD-xhtml2-20060726
The latest version is available at: http://www.w3.org/TR/xhtml2
XML
"*Extensible Markup Language (XML) 1.0 (Third Edition)*", W3C Recommendation, T. Bray, J. Paoli, C. M. Sperberg-McQueen, E. Maler, F. Yergeau, *eds.*, 2 February 2004.
Available at: http://www.w3.org/TR/2004/REC-xml-20040204
XMLNAMES
"*Namespaces in XML*", W3C Recommendation, T. Bray, D. Hollander, A. Layman, *eds.*, 14 January 1999.
Available at: http://www.w3.org/TR/1999/REC-xml-names-19990114