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Best Practices Document



The Printer Working Group

Best Practices for use of the RepertoireSupported Element

Status: Approved

Abstract

In traditional printing environments, clients rely on font downloads when they are not sure a given character is embedded in the printer. As printing moves to small clients, downloading may not be an option and clients have a need to know what characters are available in a given device.

There are many published named character repertoires, and a small client will not know about them all.

[RS] describes the syntax and semantics for the Semantic Model element "RepertoireSupported". The current document describes Best Practices for the use of that element, in order to maximize interoperability between client devices and printers.

The reader of this document should be familiar with the terminology and concepts in [RS].

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Members of the PWG and interested parties are encouraged to join the PWG and Character Repertoire WG mailing lists in order to participate in discussions, clarifications and review of the WG product.

All sections of this document are normative unless noted as informative.

1. Well-known Repertoires

[RS] describes a syntax for referring to a wide range of character repertoires. In order to promote interoperability, this document designates a small number of repertoires as "well-known". In this way a print client that only knows the names of the well-known repertoires can get useful results.

The repertoires designated as well-known are:

- All repertoires based on Unicode code charts
- These repertoires based on IANA charsets:
 - `iana_gb2312` [PRC]
 - `iana_shift_jis` [Japan]
 - `iana_ksc_5601` [Korea]
 - `iana_big5` [Taiwan]

A conforming printer should support and advertise a well-known repertoire whenever it advertises similar repertoires. For example, any printer advertising any Cyrillic repertoire should also advertise "`unicode_cyrillic`". In this way a client that does not recognize a large number of repertoires can still recognize that some form of Cyrillic printing is possible on this device.

Printers will often support larger repertoires. If a printer supports a repertoire that is a superset of a well-known repertoire, then it should advertise the well-known repertoire in addition to the superset. Examples:

- `unicode_basic-latin`, `unicode_latin-1-supplement`, `iana_windows-1252` [adds Windows characters]
- `unicode_basic-latin`, `unicode_latin-1-supplement`, `iana_shift_jis`, `iana_jis-x-0213` [adds characters from 0213]

2. Printer Operation

A conforming printer should follow these rules:

1. All printers should support and advertise:
 - `unicode_basic-latin`, and
 - `unicode_latin-1-supplement`
2. All printers should support the euro (U+20AC) character, even though it is not advertised.
3. A well-known repertoire should be supported whenever similar ones are, as described above.
4. In some document formats (e.g. XHTML-Print) certain additional characters (e.g. as built-in named character entities) are supported for printing, without being advertised in any repertoire.

3. Print Client Operation

Printing protocols (outside of this document) specify how a print client learns about the supported repertoires in a printer. [RS] describes how to determine which characters are

supported in each supported charset.

Once it knows, a client may choose to use this knowledge in any of these ways:

1. If multiple printers are available, look for one that can print all the characters in a job.
2. If printing to a printer that can't print all the characters in a job, warn the user.
3. Make a substitution for a character that won't print.

A. References

[IANA-Charsets]

Available online at <http://www.iana.org/assignments/character-sets>.

[PWG-SM]

PWG 5105.1-2004 The Printer Working Group Semantic Model, January 20, 2004, P. Zehler.

<ftp://ftp.pwg.org/pub/pwg/candidates/cs-sm10-20040120-5105.1.pdf>, Candidate Standard.

[RFC2119]

"*RFC2119 - Key words for use in RFCs to Indicate Requirement Levels*", S. Bradner. Available online at <http://www.ietf.org/rfc/rfc2119>.

[Unicode-Charts]

Unicode code charts, version 4.0. Beta code charts available online at <http://www.unicode.org/charts/u40-beta.html>.

[RS]

PWG 5101.2-2004 The Printer Working Group RepertoireSupported Element, February 1, 2004, E. Bradshaw.

<ftp://ftp.pwg.org/pub/pwg/candidates/cs-crrepsup10-20040201-5101.2.pdf>, Candidate Standard.