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Writing I-Ds and RFCs using Pandoc  
draft-gieben-pandoc2rfc-00

## Abstract

This document presents a technique for using Pandoc syntax as a source format for documents in the Internet-Drafts (I-Ds) and Request for Comments (RFC) series.

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## 1. Introduction

This document presents a technique for using Pandoc syntax as a source format for documents in the Internet-Drafts (I-Ds) and Request for Comments (RFC) series.

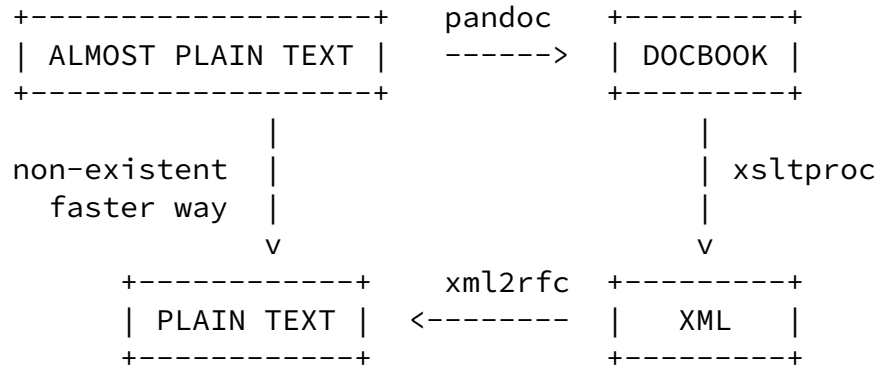
Pandoc [[Pandoc](#)] is an "almost plain text" format and therefore particularly well suited for editing RFC-like documents. The syntax itself is a superset of the syntax championed by Markdown [[Markdown](#)].

Pandoc2rfc generates XML compatible with [[RFC2629](#)].

## 2. Pandoc to RFC

During the last few years people have been developing markup languages that are very easy to remember and type. These languages have become known as "almost plain text"-markup languages. One of the first was the Markdown ([\[Markdown\]](#)) syntax. One that was developed later and incorporates Markdown syntax and a number of extensions is Pandoc ([\[Pandoc\]](#)). The power of Pandoc comes from the fact that it can be translated to numerous output formats, including, but not limited to: HTML, (plain) Markdown and "docbook" XML.

Pandoc2rfc allows authors to write in (the simple) Pandoc syntax which is then transformed to XML and given to xml2rfc. The conversions are, in some way amusing, as we start off with (almost) plain text, use elaborate XML and end up with plain text again.



Attempt to justify Pandoc2rfc.

Figure 1

The XML generated (the output after the "xsltproc" step in Figure 1) is suitable for inclusion in either the "middle" or "back" section of an RFC.

Even though Pandoc2rfc abstracts away a lot of XML details, there are still a few places left where some XML needs to be edited. Most notably in the "front" section of an RFC.

The simplest way to start is to create a template XML file and include the appropriate XML for this "front" section:

```

<?xml version='1.0' ?>
<!DOCTYPE rfc SYSTEM 'rfc2629.dtd' [
<!ENTITY pandocMiddle PUBLIC '' 'middle.xml'>
<!ENTITY pandocBack PUBLIC '' 'back.xml'>
<!ENTITY rfc.2629 PUBLIC '' 'reference.RFC.2629.xml'>
]>

<rfc ipr='trust200902' docName='draft-gieben-pandoc2rfc-00'>
  <front>
    <title>Writing I-Ds and RFCs using Pandoc</title>
  </front>
  <middle>
    &pandocMiddle;
  </middle>
  <back>
    <references title="Normative References">

```

```
        &rfc.2629;
    </references>
    &pandocBack;
</back>

</rfc>
```

A very minimal template.xml.

Figure 2

In this case you need to edit three documents:

1. middle.txt - contains the main body of text;
2. back.txt - holds appendices;
3. this template.xml - probably a fairly static file, but it also holds the references.

The up to date source code for Pandoc2rfc can be found at [[Pandoc2rfc](#)], this includes the stylesheet "transform.xsl" used for the transformation.

### [2.1.](#) Dependencies

Pandoc2rfc needs "xsltproc" [[XSLT](#)] and "pandoc" [[Pandoc](#)] to be installed. When using the template from Figure 2 xml2rfc version 2 needs to be used.

The conversion is done with a stylesheet based on XSLT version 1.0 [[W3C.REC-xslt-19991116](#)].

### [3.](#) Building an Internet-Draft

Assuming the setup from [Section 2](#), we can build an I-D as follows (in a Unix-like environment):

```
pandoc -t docbook -s middle.txt | xsltproc \
    --nonet transform.xsl - > middle.xml
pandoc -t docbook -s back.txt | xsltproc \
    --nonet transform.xsl - > back.xml
```

```
# Create text output
xml2rfc template.xml -f draft.txt --text

# ... or create HTML output
xml2rfc template.xml -f draft.html --html

# ... or create (self-contained) XML output
xml2rfc template.xml -f draft.xml --exp
```

Building an I-D with Pandoc2rfc.

Figure 3

The "draft.txt" and "draft.xml" are then ready to be uploaded to the I-D tracker.

#### 4. Supported Features

Almost everything xml2rfc can do is supported, see Table 1 in [Appendix A](#) for a "cheat sheet".

- o Sections with an anchor and title attributes
- o Lists
  - \* style=symbols, use "\*" for each item;
  - \* style=numbers, use a digit "1. " for each item;
  - \* style=empty, use "#. " for each item;
  - \* style=format %i, use roman lowercase numerals: "ii. ";
  - \* style=format (%d), use roman uppercase numerals "II. ";

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- \* style=letters, use lower- or uppercase letters: "a. " and "A. " (note: two spaces);
- \* style=hanging, use the Pandoc definition list syntax;
- o Spanx style=verb, style=emph and style=strong, respectively use: "`text`", "\_text\_" or "\*\*text\*\*";
- o Block quote - not supported by xml2rfc, so this is converted to

- "<list style="hanging">" paragraph;
- o Figure/artwork with an anchor and postamble ([Section 7.1](#));
- o Tables with an anchor and postamble ([Section 7.2](#));
- o References ([Section 7.3](#))
  - \* external (eref);
  - \* internal (xref):
    - + section (handled by Pandoc);
    - + figures (handled by XSLT);
    - + tables (handled by XSLT).
- o Citations, by using internal references;
- o Indexes, by (ab)using footnotes ([Section 7.4](#)).

## [5.](#) Unsupported Features

- o Pandoc markup in the caption for figures/artwork. Pandoc markup for table captions *is* supported;
- o crefs: for comments, but you can use HTML comments: "<!-- ... -->";
- o preamble in figures and tables.

## [6.](#) Acknowledgements

The following people have helped shape Pandoc2rfc: Benno Overeinder, Erlend Hamnaberg, Matthijs Mekking and Trygve Laugstoel.

This document was prepared using Pandoc2rfc.

## [7.](#) Pandoc Style

In some cases the Pandoc syntax is slightly misused to get the desired output, in the following paragraphs we will detail these. Also the meta data features of Pandoc are not used in Pandoc2rfc.

### [7.1.](#) Figure/Artwork

Indent the paragraph with 4 spaces as mandated by Pandoc. Note that xml2rfc supports a caption with "<artwork>". If you add a "Figure: some text" as the last line, the artwork gets a "<postamble>" with the text after "Figure: ". It will also be possible to reference the artwork. If a caption is supplied the artwork will be centered on the page.

### [7.2.](#) Tables

A table can be entered by using Pandoc's table syntax. All tables are translated to a "<texttable>" element in xml2rfc. You can choose multiple styles as input, but they all are converted to the same style (plain "<texttable>") table in xml2rfc.

The table caption is -always- translated to a "<postamble>". The "<preamble>" tag isn't supported. If a table has a caption, it will also be possible to reference the table.

### [7.3.](#) References

Any reference like: "[Click here](URI)", is an external reference and it converted to an "<ulink>". An internal (i.e. see Section X) reference is typeset with: "[Click here](#localid)" or "[ ](#localid)". This converts to a "<link>".

For referencing RFCs, you will need add the reference source in the template, as an external XML entity. After that you can use: "[ ](#RFC2119)"

Note that referencing figures/artworks and tables is done slightly different. The reason for this is that Pandoc does not have native support/syntax for this. We work around it, by "faking" the reference in the xslt. Thus for referencing figures/artworks and tables, you need:

- o To take the first 10 characters of the caption (i.e. this is the text -after- the string "Table: " or "Figure: ");
- o Translate spaces and single quotes ' to a minus "-";
- o Translate uppercase letters to lowercase;
- o For tables prefix the anchor with "tab:" and for figures use "fig:".

The figure from [Section 2](#) will get "fig:a-very-min" as an anchor.

Note that duplicate anchors are an XML validation error which will

make xml2rfc fail. These are not detected during the XSL transformation.

#### [7.4.](#) Indexes

The footnote syntax of Pandoc is slightly abused to support an index. Sub items are also supported. Use an exclamation mark ("!") to separate them:

```
[^1]: item!sub item
```

#### [8.](#) Security Considerations

This document raises no security issues.

#### [9.](#) IANA Considerations

This document has no actions for IANA.

#### [10.](#) Normative References

[Markdown]

Gruber, J., "Markdown", 2004, <<http://daringfireball.net/projects/markdown/>>.

[Pandoc2rfc]

Gieben, R., "Pandoc2rfc git repository", October 2012, <<http://github.com/miekg/pandoc2rfc>>.

[Pandoc]

MacFarlane, J., "Pandoc, a universal document converter", 2006, <<http://johnmacfarlane.net/pandoc/>>.

[RFC2629]

Rose, M.T., "Writing I-Ds and RFCs using XML", [RFC 2629](#), June 1999.

[W3C.REC-xslt-19991116]

Clark, J., "XSL Transformations (XSLT) Version 1.0", World Wide Web Consortium Recommendation REC-xslt-19991116, November 1999, <<http://www.w3.org/TR/1999/REC-xslt-19991116>>.

[XSLT]

Veillard, D., "The XSLT C library for GNOME", 2006, <<http://xmlsoft.org/XSLT/xsltproc2.html>>.



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Textual Construct	Pandoc Syntax	Xml2rfc Syntax
Section Header	"# Section"	"<section title= ...>"
Unordered List	"* item"	"<list style=\"symbols\">"
Unordered List	"#. item"	"<list style=\"empty\">"
Ordered List	"1. item"	"<list style=\"numbers\">"
Ordered List	"a. item"	"<list style=\"letters\">"
Ordered List	"ii. item"	"<list style=\"format %i\">"
Ordered List	"II. item"	"<list style=\"format (%d)\">"
Ordered List	"A. item"	"<list style=\"format (%C)\">"
Definition List	Definition	"<list style=\"hanging\">"
Emphasis	"_text_"	"<spanx style=\"emph\">"
Strong Emphasis	"**text**"	"<spanx style=\"strong\">"
Verbatim	"`text`"	"<spanx style=\"verb\">"
Block Quote	"> quote"	"<list style=\"hanging\">"
Index	Footnotes	"<iref item=\"index\"/>"
Table	Tables	"<texttable>"
Figure/Artwork	Code Blocks	"<figure><artwork>"
External Reference	"[Click](URI)"	"<eref target=\"...\"/>"
Internal Reference	"[#id]"	"<xref target=\"id\">"
Figure Reference	"[#fig:...]"	"<xref target=\"...\"/>"
Table Reference	"[#tab:...]"	"<xref target=\"...\"/>"
Citations	"[#RFC2119]"	"<xref target=\"RFC2119\">"

The most important textual constructs that can be used in Pandoc2rfc.

Table 1

Author's Address

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