

# Tools for Creating Internet-Drafts

### Convert Your XML Source

Input file

Output mode  Text  HTML  nroff  unpaginated  XML

Output result  Window  File

```
File Edit Action SpellChk Help
.pl 10.01
.po 0
.ll 7.21
.nr 12 7.21
.st 7.21
.ds RF P000000[Page 1]
.ds IS Internet Draft
.ds --> [comment: set short title, author(s), and dates:
.ds CN 2-nroff-template
.ds IS [author, initials] \ \<short title>
.ds RM October 23, 2006 \ \<author>
.ds CP Expires April 2007 \ \<submission date>
.by 0 \ \<expiration date>
.ds I
.ds I
!l 12345678901234567 check 72 column width 12345678901234567890123456789012
!l "Internet draft" J. Postal
!l "draft-rfc-editor-nroff-template-00.txt" RFC Editor
!l "category: Informational" "RFC 231"
!l "Expires April 2007" "October 23, 2006"
.ds I
.ce
Nroff Template for Internet Drafts and RFCs
.ds
<draft-rfc-editor-nroff-template-00.txt>
.in 3 \ \<basic indent for text is 3 spaces>
!l 0 \ \<temporary indent for next lines 0 spaces>
!l 0
Status of this Memo
Distribution of this memo is unlimited.
By submitting this Internet-Draft, each author represents that any
applicable patent or other IPR claims of which he or she is aware
have been or will be disclosed, and any of which he or she becomes
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http://www.ietf.org/1id-abstracts.html
The list of Internet-Draft Shadow Directories can be accessed at
http://www.ietf.org/shadow.html.
Abstract
This file is a template for preparing an nroff source file for an
Internet Draft or an RFC. It contains instructions for applying
nroff to this file to create a correct Internet Draft. It also
describes the simple nroff subset used for markup by the RFC Editor,
as well as some nroff tips.
J. Postal, Braden Expires April 2007 [Page 1]
Cursor Selection Search Next Replace Issue Date Expiration Date
672 0 2-nroff_template.nroff August 31 2009 March 4, 2010 Page View
```

27 March 2011  
Prague, Czech Republic

# This tutorial

- The options
- Overview of NroffEdit
  - Demo
- Overview of xml2rfc
  - Demo
- Questions

# The options

	<b>NroffEdit</b>	<b>xml2rfc</b>	<b>Word template</b>
Source file	nroff	XML	.doc or .docx
Web site / RFC	<a href="http://aaa-sec.com/nroffedit">http://aaa-sec.com/nroffedit</a>	<a href="http://xml.resource.org">http://xml.resource.org</a>	RFC 5385
Run locally	Yes	Yes or online	Yes
Template for I-D	Yes (auto updated)	Yes (multiple)	2-Word- v2.0.template.dot
Automated reference creation	Yes (for RFCs)	Yes (for RFCs, I-Ds, and more)	No
Automatic TOC	Yes	Yes	Yes
Post-processing necessary	No	No (XML->XML option to make standalone file)	Yes (using Perl script)

*Other options include editing .txt directly or using LaTeX -> nroff conversion.*

# What is NroffEdit?

It's a WYSIWYG editor for writing and editing Internet-Drafts.

- Provides a side-by-side view of nroff source and text output.
- Is available for download <http://aaa-sec.com/nroffedit/>
- Includes various features such as spellcheck and a template when starting an I-D.

# Why use NroffEdit?

This tool:

- creates an Internet-Draft in the proper format
- has a pre-loaded template
- includes an auto-generated table of contents
- generates references from rfc-ref.txt
- is straightforward

You will have a source file that:

- the RFC Editor can edit

# Quick-Start Guide

- Download and install the tool.  
(Latest version: 1.40)
- Select File > New Draft from Template.
- Build reference list (automatically pulls entries from <ftp://ftp.rfc-editor.org/in-notes/rfc-ref.txt>)

# Templates

- Pre-loaded with a template, which is automatically updated. The latest version can be downloaded:
  - <http://aaa-sec.com/pub/NroffEdit/empty.nroff>
- Other template available from the RFC Editor:
  - <http://www.rfc-editor.org/rfc-editor/3-nroff.template>

# nroff Basics

- Indentation

- **.in x** - Set indent to x spaces from left column.

- **.ti x** - Next line has a temporary indent of x spaces, then back to normal indent.

- Text Wrapping

- **.fi** - Fill subsequent lines until page width.

- **.nf** - No fill. Subsequent output lines are neither filled nor adjusted. Input text lines are copied directly to output lines without regard for the current line length.

- **.br** - Line break.

- Page breaks

- **.bp** - Break page.

- **.ne x** - Keep next x lines on same page.

For more: go to Help > Supported Features



# Inserting References

Use **.ti 3** before each entry.

For RFCs:

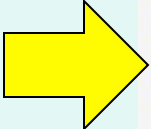
Select “Paste new managed reference list” from the Edit menu. Enter RFC numbers and optional labels, e.g.,

**.\# 2119, 2459, 5280**

For I-Ds and other documents:

Copy & paste from other I-Ds, or type from scratch.

# Managed reference list



```
.ti 0
5 References

.ti 0
5.1 Normative References

.in 14
.\ \# REF -- Managed reference list. Syntax: [RFC]nnnn[;Label], ... ,[RFC]nnnn[;Label]
.\ \# 2119;KEYWORDS, 1776, 1924, RFC1925;TRUTHS, 1926, 1927
.ti 3
[KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP
14, RFC 2119, March 1997.

.ti 3
[RFC1776] Crocker, S., "The Address is the Message", RFC 1776, April 1 1995.

.ti 3
[RFC1924] Elz, R., "A Compact Representation of IPv6 Addresses", RFC 1924, April 1 1996.

.ti 3
[TRUTHS] Callon, R., "The Twelve Networking Truths", RFC 1925, April 1 1996.

.ti 3
[RFC1926] Eriksson, J., "An Experimental Encapsulation of IP Datagrams on Top of ATM",
RFC 1926, April 1 1996.

.ti 3
[RFC1927] Rogers, C., "Suggested Additional MIME Types for Associating Documents", RFC
1927, April 1 1996.
```

# There's lots more functionality.

- Spell check
- Automatic creation table of contents
- Expiration calculator
- Ability to convert from text to nroff

For more information:

<http://aaa-sec.com/nroffedit/nroffedit/faqbugs.html>

# Demo

1. nroff to text
2. text to nroff

# What is xml2rfc?

A tool that:

- Converts an XML source file into a text, HTML, nroff, unpaginated text, or expanded XML file.
- Creates a document in the format of an Internet-Draft (or RFC).
- Is available from <http://xml.resource.org> as a web-based service or for download.

# Why use xml2rfc?

This tool:

- creates an Internet-Draft in the proper format
- inserts boilerplate text
- formats reference entries
- outputs various formats including HTML, PDF, and ePub (experimental version)

You will have a source file that:

- can be used to exchange comments with coauthors
- can be used for metadata extraction
- the RFC Editor can edit

# Initial Setup: Choices

- Use the tool on the web or install it locally.
- Use the citation libraries online or maintain a local copy.
- Edit in your favorite editor or use an XML editor such as XMLmind.
- With XMLmind, use Bill's add-on that provides a WYSIKN (What You See Is Kinda Neat) interface

<http://code.google.com/p/xml2rfc-xxe/>

# Quick-Start Guide

- Use the tool online.
- Use the citation libraries online.
- Use your favorite text editor and edit raw XML.
- Start with a template.



# Templates

- Available here:  
<http://tools.ietf.org/tools/templates>
- Recommend starting with:
  - For a generic draft:  
draft-davies-template-bare.xml
  - For a draft containing a MIB:  
mib-doc-template-xml.txt

# XML Basics

<outer>

...

<inner>

...

</inner>

...

</outer>

- **Elements** are nested
- Matching start and end tags  
(or simply an empty tag, e.g., <organization />)
- **Attributes** have quoted values
- Case-sensitive `<author initials="J." surname="Joyce">`
- Use &lt; for < and &amp; for &
- See “XML basics” for more details

[http://xml.resource.org/authoring/draft-mrose-writing-rfcs.html#xml\\_basics](http://xml.resource.org/authoring/draft-mrose-writing-rfcs.html#xml_basics)

# Overall Document Structure

<rfc>

front

author

abstract

middle

See the DTD for details!

section

t, list, figure

back

references

</rfc>

# Creating an Internet-Draft

- Make an author element for yourself
- `<t>` tags around paragraphs
- `<figure><artwork>` around figures
- Enter references as  
`<xref target="RFCXXXX" />`
- Use citation libraries for references

# Setting the ipr attribute

The transition to new copyright (see <http://trustee.ietf.org/license-info/>), led to new options for the ipr attribute for use with v1.34pre3 (<http://xml.resource.org/experimental.html>):

```
<rfc category="info" docName="draft-example-00"  
  ipr="trust200902">
```

- trust200811
- noModificationTrust200811
- noDerivativesTrust200811
- **trust200902** *\*commonly used*
- noModificationTrust200902
- noDerivativesTrust200902
- **pre5378Trust200902** *\*used to add 6.c.iii paragraph*

# Author Info

Template for author info block:

```
<author initials="" surname="" fullname="" role="" >  
  <organization></organization>  
  <address>  
    <postal>  
      <street></street>  
      <city></city>  
      <country></country>  
    </postal>  
    <phone></phone>  
    <email></email>  
    <uri></uri>  
  </address>  
</author>
```

# Using Lists

Use the style attribute of the list element:

`style="empty"`: simply indents list items. (default)

`style="numbers"`: 1., 2., 3.

`style="letters"`: a., b., c.

`style="symbols"`: bulleted with o, o, o

nested lists are bulleted with \*, then +

`style="hanging"`: for text indented under a term

(using `hangText` attribute of `<t>` tag)

`style="format %d"`: for customized lists

# Customized Lists

(1)

(2) is `<list style="format (%d)">`

(3)

(a)

(b) is `<list style="format (%c)">`

(c)

REQ1:

REQ2: is `<list style="format REQ%d:">`

REQ3:



# What is CDATA for?

A CDATA block is left alone by xml2rfc. It does not try to parse XML inside of a CDATA block. (For example, if a figure contains "<", you don't have to use &lt;) It is useful for including XML examples in the document.

```
<figure><artwork><![CDATA[
```

Here is a figure that mentions XML elements such as <xref>.

```
]]></artwork></figure>
```

# Citing References

All are cited textually in the same way: using xref elements with the target set to the anchor of the reference element, e.g.,

XML	text
<code>&lt;xref target="RFC2119" /&gt;</code>	<code>[RFC2119]</code>
<code>&lt;xref target="I-D.ietf-sip-gruu"/&gt;</code>	<code>[I-D.ietf-sip-gruu]</code>
<code>&lt;xref target="IEEE.802-11H.2003"/&gt;</code>	<code>[IEEE.802-11H.2003]</code>

# Inserting References

Use the citation libraries!

(available from <http://xml.resource.org>)

<b>citation library</b>	<b>retrieve entire directory as a file</b>	<b>retrieve entire directory using <code>wget -r -l 1 -A .xml -nd -nc ...</code></b>	<b>rss feed</b>	<b>rsync</b>
RFC	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://xml.resource.org/public/rfc/bibxml/">http://xml.resource.org/public/rfc/bibxml/</a>	<a href="#">rss 1.0</a>	yes
Internet-Draft	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://xml.resource.org/public/rfc/bibxml3/">http://xml.resource.org/public/rfc/bibxml3/</a>	<a href="#">rss 1.0</a>	yes
W3C	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://xml.resource.org/public/rfc/bibxml4/">http://xml.resource.org/public/rfc/bibxml4/</a>	<a href="#">rss 1.0</a>	yes
JSF	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://www.xmlpp.org/extensions/refs/">http://www.xmlpp.org/extensions/refs/</a>	<a href="#">rss 0.92</a>	no
3GPP	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://xml.resource.org/public/rfc/bibxml5/">http://xml.resource.org/public/rfc/bibxml5/</a>	<a href="#">rss 1.0</a>	yes
Miscellaneous	<a href="#">zip</a> or <a href="#">tgz</a>	<a href="http://xml.resource.org/public/rfc/bibxml2/">http://xml.resource.org/public/rfc/bibxml2/</a>	no	yes

# Inserting References

## 3 ways to use the citation libraries

(details to follow)

### 1. The Short Way

Use a PI in the references section: `<?rfc include="reference.RFC.2119.xml"?>`

### 2. The Long Way

Define an ENTITY at the top and use `&rfc2119;` in the references section.

### 3. The Really Long Way

Include the complete reference element.

ALL yield the same text output:

→ `[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.`

# (1) The Short Way

Use a PI in the references section.

```
<?rfc include="reference.RFC.2119.xml"?>
```

→ [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

```
<?rfc include="reference.I-D.ietf-sip-gruu.xml"?>
```

→ [I-D.ietf-sip-gruu] Rosenberg, J., "Obtaining and Using Globally Routable User Agent (UA) URIs (GRUU) in the Session Initiation Protocol (SIP)", draft-ietf-sip-gruu-15 (work in progress), October 2007.

```
<?rfc include="reference.IEEE.802-11H.2003.xml"?>
```

→ [IEEE.802-11H.2003] "Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks  
- Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications - Amendment 5: Spectrum and Transmit Power Management Extensions in the 5 GHz band in Europe", IEEE Standard 802.11h, Oct 2003,  
<<http://standards.ieee.org/getieee802/download/802.11h-2003.pdf>>.

## (2) The Long Way

Define an ENTITY inside the DOCTYPE reference at the top.

```
<!DOCTYPE rfc SYSTEM "rfc2629.dtd" [  
<!ENTITY rfc2119 SYSTEM "http://xml.resource.org/public/rfc/bibxml/  
reference.RFC.2119.xml">  
<!ENTITY sip-gruu SYSTEM "http://xml.resource.org/public/rfc/bibxml3/  
reference.I-D.ietf-sip-gruu.xml">  
<!ENTITY 80211H SYSTEM "http://xml.resource.org/public/rfc/bibxml2/  
reference.IEEE.802-11H.2003.xml">  
>
```

Then in the references section:

```
&rfc2119;  
&sip-gruu;  
&80211H;
```

# (3) The Really Long Way

Include the complete reference element.

```
<reference anchor='RFC2119'>
  <front>
    <title abbrev='RFC Key Words'>Key words for use in RFCs to Indicate Requirement Levels</title>
    <author initials='S.' surname='Bradner' fullname='Scott Bradner'>
      <organization>Harvard University</organization>
      <address> [snip] </address>
    </author>
    <date year='1997' month='March' />
    <area>General</area>
    <keyword>keyword</keyword>
    <abstract>
      [snip]
    </abstract>
  </front>

  <seriesInfo name='BCP' value='14' />
  <seriesInfo name='RFC' value='2119' />
  <format type='TXT' octets='4723' target='http://www.rfc-editor.org/rfc/rfc2119.txt' />
  <format type='HTML' octets='17491' target='http://xml.resource.org/public/rfc/html/rfc2119.html' />
  <format type='XML' octets='5777' target='http://xml.resource.org/public/rfc/xml/rfc2119.xml' />
</reference>
```

# A Reference from Scratch

```
<reference anchor="" target="">
  <front>
    <title></title>
    <author initials="" surname="" fullname="">
      <organization />
    </author>
    <date month="" year="" />
  </front>
  <seriesInfo name="" value="" />
</reference>
```

Note: It's preferable that you use the citation libraries esp. for RFCs and Internet-Drafts.



# Reference Tags

- How to get numbered refs instead of symbolic (e.g., [1] instead of [RFC2119]):  
Use the PI `<?rfc symrefs="no" ?>`  
(Note: “yes” is the default for xml2rfc v1.33)
- How to get names instead of RFC numbers (e.g, [IKEv2] instead of [RFC4306]):  
Insert the complete reference element and change the anchor attribute.  
`<reference anchor="IKEv2">`  
Also, update any corresponding xref targets.

# Inserting a table

The `texttable` element contains `ttcol` elements to define the columns and `c` elements to hold the contents of each cell.

```
<texttable anchor="table_ex" title="IETF Meetings in 2005">
  <ttcol align="center">IETF #</ttcol>
  <ttcol align="center">City</ttcol>
  <ttcol align="center"># of Attendees</ttcol>
  <c>62</c><c>Minneapolis</c><c>1133</c>
  <c>63</c><c>Paris</c><c>1450</c>
  <c>64</c><c>Vancouver</c><c>1240</c>
  <postamble>Data from http://www.ietf.org/meeting/past.html</postamble>
</texttable>
```

yields:

62	Minneapolis	1133
63	Paris	1450
64	Vancouver	1240

(figure/artwork elements are another option.)

Data from <http://www.ietf.org/meeting/past.html>

Table 1: IETF Meetings in 2005

# Dos and Don'ts

- Do use xref for references.
- Do use xref for section cross-references.
- Do use list elements for lists.
- Don't hard-code your references.
- Don't hard-code a section number (to refer within a document).
- Don't insert a list as a figure.

# Put your XML file to work

- Share comments/edits with your coauthors.
- Upload it to the I-D Submission Tool when you post your draft  
<https://datatracker.ietf.org/idst/upload.cgi>
- Send it to the RFC Editor if your draft is approved for publication as an RFC. (They will already have it if you uploaded it.)
- Create and post HTML version. Check out Julian Reschke's XSLT for an alternative to xml2rfc's HTML output.

# If submitting your XML file to the RFC Editor

- If you used multiple files, consolidate your XML source into one file.
- Run the file using `xml2rfc` as available online. Make sure it creates a text file.
- If using a local citation library, run `xml2xml` to get the references in-line.
- If using PIs that are local or specific to alternate XML converters, please note they will be ignored by `xml2rfc`.

# How do I control whitespace?

(a.k.a. How do I get blank lines between list items?)

Use the PIs compact and subcompact. We recommend compact="yes" and subcompact="no".

- compact="yes" will not start each main section on a new page.
- subcompact="no" will put one blank line between list items.
- This should minimize the need for vspace.

# There's lots more functionality. For more information:

HOW TO (a.k.a. unofficial successor to RFC 2629):

<http://xml.resource.org/authoring/draft-mrose-writing-rfcs.html>

contains descriptions of elements & attributes, and the DTD

README: <http://xml.resource.org/authoring/README.html>

contains instructions for installing xml2rfc locally

contains full list of processing instructions (PIs) & their descriptions

xml2rfc FAQ: <http://www.rfc-editor.org/rfc-editor/xml2rfcFAQ.html>

xml2rfc mailing list:

<http://lists.xml.resource.org/mailman/listinfo/xml2rfc>

# Demos

1. Classic: editing in your favorite editor and formatting via the web page
2. rfc2629.xslt and Firefox



# Questions?

NroffEdit:

Stefan Santesson, [sts@aaa-sec.com](mailto:sts@aaa-sec.com)

xml2rfc:

Join the xml2rfc mailing list:

<http://lists.xml.resource.org/mailman/listinfo/xml2rfc>

RFC Editor:

[rfc-editor@rfc-editor.org](mailto:rfc-editor@rfc-editor.org) or stop by the desk this week