XML structure for Set of RFC Descriptors
draft-otis-newtrak-rfc-set-02

Status of this Memo

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 aware will be disclosed, in accordance with Section 6 of BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

The list of current Internet-Drafts can be accessed at http://www.ietf.org/ietf/1id-abstracts.txt.

The list of Internet-Draft Shadow Directories can be accessed at http://www.ietf.org/shadow.html.

This Internet-Draft will expire on April 14, 2006.

Copyright Notice

Copyright (C) The Internet Society (2005).

Abstract

This document introduces a new document series called Set of RFC Documents (SRDs). SRDs will be distinguished by names and serial numbers. SRDs contain Extensible Markup Language (XML) which can automatically produce HTML and plaintext versions for human consumption.

With many RFC being updated, this creates difficulty when determining
which RFCs are necessary as references when implementing or using protocols. Grouping RFC into sets that embody a specific endeavour would permit stable references for those interested in discovering related details. The SRD name may also serve as a reference for topical information stored in a database that is made available.

Table of Contents

1. Introduction ........................................... 3
2. SRD Identification and References .................... 3
3. SRD Development ........................................... 3
4. XML Conversion Considerations ........................... 4
5. The srd element ........................................... 5
6. The srdref element ....................................... 6
7. The title element ........................................ 6
8. The description element .................................. 7
9. The srdDate element ..................................... 7
10. The core element ...................................... 7
11. The extensions element .................................. 7
12. The guidance element ................................... 8
13. The replaces element ................................... 8
14. The experimental element ............................... 8
15. The companion element .................................. 8
16. IANA Considerations .................................... 9
17. Security Considerations ................................. 9
18. References .............................................. 9
   18.1 Normative References ................................. 9
   18.2 Informative References ............................... 9
   Authors’ Addresses ....................................... 10
A. The SRD DTD ........................................... 10
B. Example SRD XSLT ....................................... 12
C. Example HTML output .................................... 18

Intellectual Property and Copyright Statements .......... 19
1. Introduction

It is becoming increasingly difficult to determine which RFCs are necessary as references when implementing or using protocols. The STD series defined in [RFC1311] is a guide, but often fails to list all the necessary RFCs. The Maturity Levels defined in [RFC2026] are increasingly confusing the picture by the need to update higher maturity documents with lower maturity revisions. It is hoped that by providing a coherent organization using sets of documents, along with relevant inter-operational information contained within a separate database, an easier-to-use alternative can be introduced. If this SRD strategy proves untenable or unuseful, it can be dropped, as it makes no other changes to current procedures.

This document proposes developing an Extensible Markup Language (XML) structure to define a set of RFCs related to a specific endeavour. The set SHOULD NOT encompass diverse applications which utilize a broad range of separable functions. The intent of this document is to provide an optimal means for locating relevant information made increasingly difficult by a growing number of RFCs, updates, and corrections. The eventual expectation might be that any RFC not found within some SRD is not relevant to any current endeavour.

2. SRD Identification and References

This document proposes a new document series called Set of RFC Documents ("SRD"). These documents contain Extensible Markup Language [W3C.REC-xml-20040204] structures used for generating outputs such as HTML, RSS, and plain-text outputs that link together the related RFCs. The SRD documents would be managed under the direction of the IESG, which may also establish procedures for updating the relevant topical information stored in a database that might also include overview of the RFC Editor’s Errata database.

The SRD is identified by a combination of name and number in the form of {srd-name.serial-number}. The name for each SRD is unique. Any references to an SRD within an SRD MUST include the serial-number. The initial SRD document serial-number starts at 0. As a general rule, when an HTML or database link excludes the serial, version, or iteration number, through the use of scripts, it will automatically reference the current document. This auto-generated link is to simplify link maintenance and to stabilize the SRD structures.

3. SRD Development

This document also proposes a version of the SRDs be used in the initial development process, to allow an overview of Work-In-Progress, WIP, which may involve an extended work and approval time period.
The WIP SRD is identified by a prefix added which does not interfere with automatic linking. The prefix used for an SRD, while it is being modified, would be:

{‘X’<iteration-number>‘-‘<group-identifier>‘-‘}

The group-identifier is an alpha-numeric string that represents a group identifier or possibly the name of an individual. If this document was modifying {foobar.1} by the working group ‘newtrk’, the first iteration would be:

X0-newtrk-foobar.1

When the document becomes accepted at some point, it would become {foobar.2}. The group identifier permits simultaneous WIP SRD documents to be pending for approval.

Normally, an SRD is not allowed to reference an Internet-Draft, but there would be an exception made for a WIP SRD. The WIP SRD can not receive approval until all referenced Internet-Drafts have also been accepted and replaced as RFCs.

During the introduction of SRDs, inclusion of a WIP SRD with an I-D submission is optional. The IESG should provide for a person to review necessary changes to SRDs. By default, this might be the appropriate Area Director. At some point, inclusion of the WIP SRD could be mandated by the IESG. The Area Director would then ensure the WIP version of all affected SRD documents accompany an Internet-Draft submitted to the Area Director for IESG action. The WIP SRD and the Internet-Draft would be considered together through all review stages. Of course, all referenced Internet-Draft acceptance MUST precede WIP SRD acceptance.

4. XML Conversion Considerations

XML and XSLT structures are used to create HTML, RSS, and Plain-Text outputs for establishing stable hyper-link references. When there are empty or missing elements within the SRD document, those elements would be excluded from the HTML page as well. The intent is to ensure a minimum amount of information is presented. To selectively include the Errata Database links, the related pages would then need to be regenerated when Errata is subsequently established for an RFC.

Writing an SRD document from scratch would follow a process similar to that described in [RFC2629] for use of the XML-to-RFC tool. The SRD XML declaration begins with a reference to the DTD, XSLT [W3C.REC-xslt-19991116], processing options, and the "srd" element:
5. The srd element

The "set" attribute included within the "<srd ...>" tag at the beginning of the document determines the name and serial number of the SRD output. If a "wip" attribute is included, this produces a WIP SRD that may include references to Internet-Drafts. When this "wip" attribute is removed and the serial number is advanced, a final SRD document is then produced. Although SRD serial numbers start at the value of 0, approved SRDs serial numbers will be 1 or greater.

Example of srd attributes declaring both base document and the group making changes:

<srd set="foobar.2" wip="0-newtrk">

The "set" attribute MUST be present and indicates both the set name and version. The "wip" attribute is optional, and specifies both the WIP iteration and the name of the group or person making a change.

The srd information includes a sequence of elements being the title, description, srdDate, core, extensions, guidance, replaces, experimental, and companion. The topical information database may provide a reference to an accountable entity for the SRD, where this is not included within the srd itself.
Example of srd content:

    <title>Example SRD Title</title>
    <description>XML structure for example SRDs.</description>
    <srdDate>2005-07-16</srdDate>
    <core>
      <srdref dt="RFC" dd="9876"/>
      <srdref dt="RFC" dd="9875"/>
    </core>
    <extensions>
      <srdref dt="RFC" dd="9912"/>
    </extensions>
    <guidance>
      <srdref dt="RFC" dd="9915"/>
    </guidance>
    <replaces>
      <srdref dt="RFC" dd="9811"/>
    </replaces>
    <experimental>
      <srdref dt="RFC" dd="9837"/>
    </experimental>
    <companion>
      <srdref dt="SRD" dd="example.1"/>
    </companion>

6. The srdref element

   The srdref element is empty, but includes reference attributes that take the form:

   <srdref dt="Document Type" dd="Document Designator"/>

   The Document Types are RFC, I-D, and SRD for RFCs, Internet-drafts and SRDs respectively.

7. The title element

   <title>
     Title describes the entire RFC set.
   </title>

   The title element represents the title for the entire SRD set. This supplements the simple label defined by the "set=" attribute which is used as the set reference. This element MUST be present.
8. The description element

```xml
<description>
  Description more fully describes the entire RFC set.
</description>
```

The description should be no more than a few sentences describing the SRD. This element MUST be present.

9. The srdDate element

```xml
<srdDate>
  YYYY-MM-DD
</srdDate>
```

The srdDate element provides the date when the SRD was published. The format for the date is specified as a complete date as specified in Date and Time Formats [W3C.NOTE-datetime-19980827]. The ‘YYYY’ represents the year. The ‘MM’ represents the numeric month. The ‘DD’ represents the numeric day. This element MUST be present.

10. The core element

```xml
<core>
  <srdref dt="RFC" dd="9876"/>
  <srdref dt="RFC" dd="9875"/>
</core>
```

The core element contains srdref elements that reference RFCs or I-Ds that encompass the definitions related to a specific endeavour. This element MUST be present and MUST include srdref elements. For WIP SRDs, a reference to an Internet-Draft would take the form:

```xml
<srdref dt="I-D" dd="housley-binarytime"/>
```

11. The extensions element

```xml
<extensions>
  <srdref dt="RFC" dd="9912"/>
</extensions>
```

The extensions element contains srdref elements that reference RFCs or I-Ds that encompass the definitions of optional enhancements to the basic definitions. Extension RFCs do not describe a separate endeavour, but are not an essential component of the endeavour encompassed by the SRD. This element should not be present unless srdref elements are included.
12. The guidance element

   <guidance>
     <srdref dt="RFC" dd="9815"/>
   </guidance>

   The guidance element contains srdref elements that reference RFCs or I-Ds that encompass the definitions of advice related to the deployment of the RFCs within the set. This element should not be present unless srdref elements are included.

13. The replaces element

   <replaces>
     <srdref dt="RFC" dd="9811"/>
   </replaces>

   The replaces element contains srdref elements that reference RFCs, I-Ds, or SRDs that encompass the definitions that have been updated or obsoleted and are no longer directly relevant except as a reference to the prior definitions. This element should not be present unless srdref elements are included.

14. The experimental element

   <experimental>
     <srdref dt="RFC" dd="9811"/>
   </experimental>

   The experimental element contains srdref elements that reference RFCs or I-Ds that encompass the definitions which are deemed experimental and relate to either core or extension RFCs. This element should not be present unless srdref elements are included.

15. The companion element

   <companion>
     <srdref dt="SRD" dd="srd-example.1"/>
   </companion>

   The companion element contains srdref elements that reference SRDs that encompass closely related endeavours, but which are not needed by other elements of the SRD. The intent of the companion element is to assist those attempting to locate definitions for a comprehensive application which typically includes these closely related endeavours. This element should not be present unless srdref elements are included.
16. IANA Considerations

There are no IANA considerations in this draft.

17. Security Considerations

This document specifies an administrative procedure for the IETF and hence does not raise any new issues about the security of the Internet. However, the availability of the type of document described here may provide a convenient mechanism and repository of vulnerabilities and other issues that are discovered after RFCs are issued, but that do not justify updating (or for which resources are not available to update) the relevant RFC. Having an obvious place to look for those notifications and discussions for relevant documents might enhance overall security somewhat.

18. References

18.1 Normative References


18.2 Informative References


Appendix A. The SRD DTD

<!-- DTD for SRD document series, draft-otis-newtrk-rfc-set-02  -->

<!-- Copyright (C) The Internet Society (2005). This document is subject to the rights, licenses and restrictions contained in BCP 78. -->

<!-- DTD data types: -->

<--
entity   description
======    ===============================================
DATE      numeric hyphen-separated YYYY-MM-DD
ATEXT     attribute line of text (no line-terminators)
TEXT      displayed character data
-->

<!ENTITY % DATE   "#PCDATA">
<!ENTITY % ATEXT  "CDATA">
<!ENTITY % TEXT   "#PCDATA">

The "set" attribute for the "srd" element is "srd-document.serial-number" where the serial-number is advanced when accepted, where the "wip" attribute is then removed. The "set"
attribute should only reference an approved SRD document or have a zero serial-number. The "wip" attribute is provided by the author in the form "<iteration-number>-<group-identifier>" where the ‘X’ wip prefix and the ‘-’ wip suffix is added by the scripts.

```xml
<!ELEMENT srd  (title,description,srdDate,core,extensions?,
guidance?,replaces?,experimental?,companion?)>
<!ATTLIST srd
  set          %ATEXT;            #REQUIRED
  wip          %ATEXT;            ""
>
<!ELEMENT title        (%TEXT;)>  
<!ELEMENT description  (%TEXT;)>  
<!ELEMENT srdDate      (%DATE;)>  
<!ELEMENT srdref       EMPTY>  
<!ATTLIST srdref
  dt            %ATEXT;            #REQUIRED
  dd            %ATEXT;            #REQUIRED
>
<!ELEMENT core         (srdref)+>
<!ELEMENT extensions   (srdref)+>
<!ELEMENT guidance     (srdref)+>
<!ELEMENT replaces     (srdref)+>
<!ELEMENT experimental (srdref)+>
<!ELEMENT companion    (srdref)+>
```
Appendix B. Example SRD XSLT

<!-- draft-otis-newtrk/rfc-set-02
    srd XSLT transformation to HTML
-->
<!-- Copyright (C) The Internet Society (2005).
    This document is subject to the rights, licenses and
    restrictions contained in BCP 78.
-->
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    version="1.0">
    <xsl:output method="html"/>
    <!--style similar to rfc2629.xslt by Julian F. Reschke -->
    <xsl:template name="srd-style">
        <xsl:param name="url-prefix-rfc" select="'http://www.ietf.org/rfc/rfc'"/>
        <xsl:param name="url-prefix-i-d" select="'http://www.ietf.org/internet-drafts/draft-'"/>
        <xsl:param name="url-prefix-srd" select="'http://www.ietf.org/srd/srd-'"/>
        <xsl:param name="url-prefix-errata" select="'http://www.rfc-editor.org/cgi-bin/errata.pl#rfc'"/>
        <xsl:param name="xml-refs-rfc" select="'references/rfc/reference.RFC.'"/>
        <xsl:param name="xml-refs-i-d" select="'references/i-d/reference.I-D.'"/>
        <xsl:param name="xml-refs-srd" select="'references/srd/reference.SRD.'"/>
        <xsl:param name="srd-title" select="normalize-space(/srd/title)"/>
        <xsl:param name="url-prefix-errata" select="'http://www.rfc-editor.org/cgi-bin/errata.pl#rfc'"/>
    </xsl:template>
</xsl:stylesheet>
<xsl:param name="srd-set" select="normalize-space(/srd/@set)"/>
<xsl:param name="srd-wip" select="normalize-space(/srd/@wip)"/>
<!-- set wip name -->
<xsl:param name="srd-wip-name" select="concat('X', $srd-wip,
'-', $srd-set)"/>
<xsl:param name="srd-date" select="normalize-space(/srd/srdDate)"/>
<!-- PI delimiters -->
<xsl:variable name="pi-delim">"'</xsl:variable>
<!-- p i for sorting <?srd sortrefs ="yes" ?> -->
<xsl:param name="sort-refs" select="substring-after(
translate(/processing-instruction('srd')
[contains(.,'sortrefs=')],
concat($pi-delim, ', ') , 'sortrefs='")"/>
<!-- p i for strict <?srd strict ="yes" ?> -->
<xsl:param name="srd-strict" select="substring-after(
translate(/processing-instruction('srd')
[contains(.,'strict=')],
concat($pi-delim, ', ') , 'strict='")"/>
<!-- Template for root element -->
<xsl:template match="srd">
<html lang="en">
<head>
<title>
<xsl:value-of select="$srd-title"/>
</title>
<style type="text/css" title="srd style">
<xsl:call-template name="srd-style"/>
</style>
</head>
<body>
<h1 class="title">
<xsl:if test="$srd-wip=''">
<xsl:value-of select="$srd-title" />
<br/>SRD:[<xsl:value-of
select="concat($srd-set,'] ')',$srd-date)"/>
</xsl:if>
<xsl:if test="$srd-wip=''">
<xsl:value-of select="$srd-title" />
<br/>SRD:[<xsl:value-of
select="concat($srd-wip-name,'] ')',$srd-date)" />
</xsl:if>
</h1>
<h2>
<xsl:value-of select="normalize-space(/srd/description)"/>
</h2>
<xsl:if test="$sort-refs='yes'">
<!-- sorted references -->
<xsl:call-template name="core"/>
</xsl:if>
Appendix C. Example HTML output

Example SRD Title SRD: [example.1] 2005-07-16
XML structure for example SRDs.

Core
[RFC9875] errata Overview Core Example for SRD testing
[RFC9876] errata Primary Core Example for SRD testing

Extensions
[RFC9912] errata Extension Example for SRD testing

Guidance
[RFC9915] errata The Guidance Example for SRD testing

Replaces
[RFC9811] errata The replace Example for SRD testing

Experimental
[RFC9837] errata The Experimental Example for SRD testing

Companion
[SRDexample.1] The SRD Example for SRD testing
Intellectual Property Statement

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in BCP 78 and BCP 79.

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at http://www.ietf.org/ipr.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at ietf-ipr@ietf.org.

Disclaimer of Validity

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Copyright Statement

Copyright (C) The Internet Society (2005). This document is subject to the rights, licenses and restrictions contained in BCP 78, and except as set forth therein, the authors retain all their rights.

Acknowledgment

Funding for the RFC Editor function is currently provided by the Internet Society.