



I E T F[®]

Making the Internet work better

Author tools web services re-implementation

A Request for Proposals issued on 2021-05-31

IETF Executive Director
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Overview

The IETF provides a set of web services for authors of Internet-Drafts and RFCs that provide interfaces to common authoring tools that otherwise only have command line interfaces. The web services provide both a web API and an interactive web page that uses the API. These web services and corresponding tools are:

1. Two web services, legacy and experimental, for the xml2rfc tool for converting documents in RFC XML format (both v2 and v3) into other formats.
2. A web service for the id2xml tool for converting documents in the plain text RFC format into RFC XML format.
3. A web service for the kramdown-rfc2629 tool for converting documents in a specific dialect of markdown to RFC XML.
4. A web service for the svgcheck tool for checking that SVG documents meet the SVG Tiny 1.2 specification as used by RFC XML documents.

The IETF seeks a contractor to replace these services with a new web service and new functional APIs that wrap the existing tools. The chosen solution will be built on modern infrastructure components and designed for cloud deployment.

Timeline

31 May 2021	RFP Issued
14 June 2021	Questions and Inquiries deadline
21 June 2021	Answers to questions issued and RFP updated if required
28 June 2021	Bids due
12 July 2021	Preferred bidder selected and negotiations begin
26 July 2021	Contract execution and work begins

RFP Process

The process for the RFP is as follows:

1. The RFP is publicly issued, posted to our website¹ and announced to the RFP Announcement mailing list², which anyone can subscribe to.

¹ <https://www.ietf.org/about/administration/rfps-and-contracts/>

² <https://www.ietf.org/mailman/listinfo/rfp-announce>

2. Potential bidders have until 14 June 2021 to submit any questions by email to ietf-rfps@ietf.org. Questions will be treated as anonymous but not private, as explained below. If you do not receive confirmation that your questions have been received within 24 hours then resend until you do.
3. A written response to all questions is provided on or before 21 June 2021, direct to those parties that sent questions, by email to the RFP Announcement Mailing List and posted on our website³. The response will include the questions asked and the answers, but will not identify the company asking the question. If required, the RFP may be updated to correct or clarify any issues identified.
4. Bids are due by **28 June 2021** by email to ietf-rfps@ietf.org. If you do not receive confirmation that your bid has been received within 24 hours then please resend until you do. The bid should include the following information:
 - a. Executive summary
 - b. Project approach including any assumptions.
 - c. Project plan and schedule including when the work will begin and end, and any other milestones, as well as any dependencies that may delay delivery.
 - d. Fee and payment schedule. Fixed priced bids are preferred but if that is not possible then a maximum fee must be specified.
 - e. Warranty including a proposal for fee reduction/refund due to late- or non-delivery
5. The IETF Administration LLC and designated contractors and volunteers will select a preferred bid and notify the bidder by 12 July 2021. The selection process may include questions by email and/or conference call.
6. The IETF Administration LLC then enters into contract negotiation with the preferred bidder, based on its standard contract and using the relevant sections of the Statement of Work below. If contract negotiation fails then a different preferred bidder may be chosen.
7. Contract negotiation is anticipated to complete by 26 July 2021 and result in the award of the contract. All RFP contract awards are posted on our website and announced to the RFP Announcement mailing list. The terms of the contract are later posted publicly on our website, with the fee information and signatures (where possible) redacted. In addition any Conflict of Interest

³ <https://www.ietf.org/about/administration/rfps-and-contracts/>

declarations required of the preferred bidder are also posted publicly on our website. This transparency is non-negotiable.

8. Work generally begins immediately after award of the contract, unless specified otherwise in the Statement of Work or negotiated contract.

Jay Daley
IETF Executive Director
IETF Administration LLC

Statement of Work: Author tools web services re-implementation

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The IETF seeks a contractor to replace these services with a new web service and new functional APIs that wrap the existing tools. The chosen solution will be built on modern infrastructure components and designed for cloud deployment.

Deliverables

The required deliverables for this project are:

1. One or more authenticated web APIs that provide document validation services.
2. One or more authenticated web APIs that provide document conversion validation services.
3. A public interactive web page providing an interface to all web APIs.
4. A web service deployment that serves the web APIs and the interactive web page.
5. An automated CI/CD process.
6. A centralised single log of all access.

7. Full documentation of the APIs suitable to be published for use by third party developers.
8. Full source code, licensed as specified and stored in the specified code repositories.

Requirements

Development

1. The service must be written in Python 3 for any application code and Javascript/HTML/CSS for the interactive web page, built on modern infrastructure components and designed for maintainability.
2. The new service must use a high quality, reliable, well maintained, well documented, actively supported and suitably licensed web services/microservices framework. The IETF uses Django as its web services framework but is open to the use of different frameworks for this RFP.
3. The IETF uses Bootstrap for front-end web development but is open to the use of different frameworks provided it is fully featured, high quality, reliable, well maintained, well documented, actively supported and suitable licensed.
4. Development of the web services must use a public github repository under the IETF Tools Organisation⁴.
5. Source code for the web services must be provided, with ownership assigned to the IETF Trust and licensed under the IETF Trust specified code component license⁵, which is compatible with the Modified BSD License. The licensing of any frameworks or libraries that are used must not affect this license.

CI/CD Pipeline

6. The web service must be delivered as a single Dockerfile image that can be configured to serve any or all of the web APIs and the interactive web page.
7. Early on in the development a CI/CD pipeline must be added such that commits to the repository will build the image and run tests in a container based on that image, and when tests pass, will deploy a container on a staging site.
8. The CI/CD pipeline must be implemented in GitHub.

⁴ <https://github.com/ietf-tools/>

⁵ <https://trustee.ietf.org/documents/trust-legal-provisions/tlp-5/> (section 4)

9. The image must support use in either a production or development (including staging and testing) environment.
10. The web service should assume deployment behind a CDN. Our current CDN is Cloudflare.
11. While we anticipate deploying this web service as a single instance, it must support being deployed through the CI/CD pipeline as multiple instances, with load distribution between instances the responsibility of the IETF.

Authentication

12. The interactive web page must detect the current Datatracker login status, display that to the user and offer them the option to login, but not require them to be logged in.
13. The interactive web page functionality for a logged-in user and not-logged-in user is to be identical but it is possible that future projects may add new functionality only available to logged in users and so the service must be designed with this in mind.
14. The APIs must require authentication with an API key. The service must support personal API keys issued by the Datatracker as well as manually provisioned keys for use by applications, including the interactive web page.

Service functionality

15. Design of the APIs, including full feature definition will be part of the project.
16. The APIs must use the existing tools of xml2rfc, id2xml, kramdown-rfc2629 and svgcheck for carrying out the conversion and validation.
17. The APIs must support all of the conversion and validation functionality of the existing tools, with the exception that conversion from v2 RFC XML should use the legacy formatter of xml2rfc for text output, with all other formats to be produced using the built-in v2-to-v3 converter.
18. The design of the APIs should plan for the possibility that new tools may be added for new conversions or existing tools replaced.
19. The conversion API must allow the creation and download of more than one output at a time.

20. Not all of the existing tools support being run in validation-only mode and so for the validation API they will need to be run as converters and the output discarded with only the error messages and status returned.
21. The svgcheck tools supports being run in two modes, one where the input is checked and reported on and the other where the input is also modified and returned corrected. The latter should be treated as a conversion.
22. When used for converting a file into a single new output format, the interactive web page must allow users to choose between the following modes:
 - a. The resulting file is downloaded and any warnings or error messages are displayed on screen
 - b. The resulting file is displayed within the browser along with any warnings or error messages.

Data collection

23. The interactive web page must support the inclusion of scripts needed to support the Matomo web analytics tool.
24. The centralised log must provide at least the following visibility:
 - a. Log of each request including the original document type, whether the request was via the interactive web page or direct to the API and which options were chosen.
 - b. Log of all errors and a reasonable summary of error information, when available.
25. The centralised log must aggregate information from potentially many instances of the distributed service.

Additional Details

Non-requirements

For completeness, the following are not requirements of this RFP:

- Replicating the documentation on the existing interactive web pages.
- Migration of any Subversion/Trac information for an existing web service, as this is the subject of another RFP.

- The XML citation (BibXML) web service on the existing interactive web pages is the subject of a separate RFP.

RFC XML

RFC XML is used both for RFCs and Internet-Drafts and is documented in two RFCs, the v3 schema in RFC 7991⁶ and the v2 schema in RFC 7749⁷.

Datatracker

The IETF has developed a public facing document and workflow management tool called the Datatracker⁸. This is developed in Python on Django. The datatracker supports OpenID Connect⁹, but not dynamic registration. The Datatracker manages personal API keys for access to Datatracker APIs¹⁰ but does not currently provide an API for third party applications to validate API keys and so one will be added to support this project.

xml2rfc

The xml2rfc tool is the main authoring tool for the IETF and is actively developed and supported by the IETF. Its primary purpose is to convert documents written in RFC XML into other formats and it is highly configurable. It provides significant functionality that is not relevant to this RFP.

- **Current web service.** There are two existing web services, the legacy service¹¹ and the experimental service¹². The previous version of the web service¹³ is not part of this RFP. Recent advances in the capability of xml2rfc, particularly options made available as part of the v3 format work, are not all available through the legacy web service though a few are available through the experimental web service.
- **Source repository.** There is a single Subversion repository¹⁴ for the xml2rfc tool with the web service in the /website/ sub-directory¹⁵ of that. The ticketing system is in Trac¹⁶. The same trac instance contains tickets for other tools that

⁶ <https://www.rfc-editor.org/rfc/rfc7991>

⁷ <https://www.rfc-editor.org/rfc/rfc7749>

⁸ <https://datatracker.ietf.org/>

⁹ <https://datatracker.ietf.org/api/openid/>

¹⁰ <https://datatracker.ietf.org/api/>

¹¹ <https://xml2rfc.tools.ietf.org> also through <https://xml2rfc.ietf.org>

¹² <http://xml2rfc.tools.ietf.org/experimental.html>

¹³ <https://xml2rfc.tools.ietf.org/old.html>

¹⁴ <http://svn.ietf.org/svn/tools/xml2rfc/>

¹⁵ <http://svn.ietf.org/svn/tools/xml2rfc/website/>

¹⁶ <https://trac.ietf.org/tools/xml2rfc/trac/>

are not part of this RFP. There are two mailings lists, one for users¹⁷ and one for developers¹⁸.

- **Documentation.** The command line options and configuration files for the tool can be found in the appendices of the schema documentation¹⁹.
- **Conversion.** This tool converts a document in RFC XML, both v2 and v3, into a variety of output formats.
- **Validation.** This tool validates both v2 and v3 RFC XML against a compact RelaxNG specification²⁰ with further validation provided by application-specific code. It does not support validation only.

id2xml

The id2xml tool converts plain text RFCs and Internet-Drafts into RFC XML. This tool is supported by the IETF.

- **Current web service.** This web service is available through a form on the main xml2rfc web service.
- **Source repository.** This code is part of the ietfdb Subversion repository²¹ with ticketing in the ietfdb Trac instance²².
- **Documentation.** The main documentation is provided by the tool itself with limited documentation at the PyPi page²³.
- **Conversion.** This tool converts plain text RFCs and Internet-Drafts into v3 RFC XML.
- **Validation.** This is done internally in application-specific code

kramdown-rfc2629

kramdown-rfc2629 is a tool developed and maintained by a third party open source contributor that is used by RFC and Internet Draft authors who prefer to use Markdown for authoring. The tool takes documents written in its own dialect of Markdown and converts them into RFC XML.

- **Current web service.** This web service is available through a form on the xml2rfc experimental service.
- **Source repository and Documentation.** This is on GitHub²⁴.
- **Conversion.** This tool converts documents in a dialect of Markdown into v2 or v3 RFC XML.

¹⁷ <https://www.ietf.org/mailman/listinfo/xml2rfc>

¹⁸ <https://www.ietf.org/mailman/listinfo/xml2rfc-dev>

¹⁹ <https://xml2rfc.tools.ietf.org/xml2rfc-doc.html>

²⁰ <https://github.com/rfc-format/v3grammar>

²¹ <https://trac.ietf.org/tools/ietfdb/browser/branch/elft/id2xml/>

²² <https://trac.ietf.org/trac/ietfdb>

²³ <https://pypi.org/project/id2xml/>

²⁴ <https://github.com/cabo/kramdown-rfc2629>

- **Validation.** This is done internally in application-specific code

svgcheck

svgcheck takes an SVG or RFC XML document and compares all of the SVG elements with the schema defined in RFC 7996 bis²⁵. The tool has the option of modifying and writing out a version of the input that passes the defined schema. This tool is supported by the IETF but is currently unmaintained.

- **Current web service.** This web service is available through a form on the xml2rfc experimental service.
- **Source repository and Documentation.** These are on GitHub²⁶. This tool is also documented on the PyPi page²⁷.
- **Conversion.** This tool accepts documents in SVG and converts them to tidied SVG Tiny format.
- **Validation.** This tool validates SVG Tiny 1.2 documents using application-specific code.

ENDS

²⁵ <https://datatracker.ietf.org/doc/draft-7996-bis/>

²⁶ <https://github.com/ietf-tools/RfcEditor/tree/master/svgcheck>

²⁷ <https://pypi.org/project/svgcheck/>