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Find Code Related to an Internet-Draft or RFC

Abstract

   Code related to existing IETF standards and ongoing standardization
   efforts may exist and be publicly accessible in many places. This
   document provides a set of practices to make it easier to identify
   and to find such code.

Discussion Venues

   This note is to be removed before publishing as an RFC.

   Discussion of this document takes place on the Evolvability,
   Deployability, & Maintainability mailing list (edm@iab.org), which
   is archived at https://mailarchive.ietf.org/arch/browse/edm/.

   Source for this draft and an issue tracker can be found at https://
   github.com/eckelcu/draft-eckel-edm-find-code.

Status of This Memo

   This Internet-Draft is submitted in full conformance with the
   provisions of BCP 78 and BCP 79.

   Internet-Drafts are working documents of the Internet Engineering
   Task Force (IETF). Note that other groups may also distribute
   working documents as Internet-Drafts. The list of current Internet-
   Drafts is at https://datatracker.ietf.org/drafts/current/.

   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."

   This Internet-Draft will expire on 10 January 2022.

Copyright Notice

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1. **Introduction**

   Code related to existing IETF standards and ongoing standardization
   efforts may exist and be publicly accessible in many places. One
   common place is GitHub, but there are many others. The relationship
   of the code to corresponding IETF standards efforts may be direct,
   as in the case of a client or server that supports protocol defined
   by an Internet-Draft (I-D). It may be indirect, as in a utility that
   helps analyze network traffic corresponding to this same protocol.
   The maturity and status of the code may vary considerably, including
   something written quickly as a proof of concept during a hackathon,
   a well established and supported implementation, or a legacy project
   no longer actively developed or maintained. The code must be
   publicly available, and preferably open source, though other terms
   of use may exist as well. In all cases, the code is potentially of
   interest and beneficial to people contributing to the definition,
   implementation, or deployment of an existing or evolving IETF
   standard. This document provides a set of practices make it easier
   to identify and to find such code.

2. Existing IETF Processes and Procedures

The idea that code related to IETF standards is valuable is not new.
Most IETF participants are familiar with the phrase "rough consensus
and running code" from the IETF Tao. The existence of multiple
independently developed and interoperable implementations was
explicitly required by [RFC1264] for internet standards on routing
protocols. Subsequent updates relaxed this requirement, but the
value of running code is still appreciated, and several current RFCs
define processes and procedures related to running code.

2.1. Implementation Status

A simple process that allows authors of I-Ds to record the status of
known implementations by including an Implementation Status section
is defined [RFC7942]. The goal of this section is to allow the read
to assign due consideration to I-Ds that have the benefit of running
code, which may serve as evidence of valuable experimentation and
feedback that make the protocols and corresponding documents more
mature. However, it is stated that the Implementation Status section
should be removed from I-Ds before they are published as RFCs. As a
result, the value of the code is limited to that required to develop
the standard, and the mechanism does not help find the code once the
RFC is published.

2.2. GitHub

The IETF chartered the GitHub Integration and Tooling (GIT) working
group to establish and document practices and policies for use of
GitHub by working groups for managing their work. This resulted in
[RFC8874], which provides a set of guidelines for working groups
that choose to use GitHub for their work, and [RFC8875], which
specifies a set of administrative processes and conventions for such
working groups. Within the working group, the concept of work is
limited to the development of I-Ds that may eventually become RFCs.
Any concept of code is limited to that which appears as text within
these documents. In many cases, there is additional code that is
closely associated with the documents but not contained within them.
This code may be of interest to the community of people contributing
to the development of the documents or to the implementation or
deployment of eventual standards defined by them.

2.3. Hackathon

The IETF Hackathon [I-D.ietf-shmoo-hackathon] encourages the IETF
community to collaborate on running code related to existing and
evolving Internet standards. Each Hackathon has a wiki that provides
a brief description of each project. It is common for there to be
one of more I-Ds or RFCs associated with each project, and for there

to be one or more related code repositories. These resources are
often listed on the wiki, but they are documented and shared with
project teams in other ways as well. After the Hackathon, the wiki
remains available, but the information within it is typically not
updated or maintained.

3. Proposal

This section specifies a set of practices that use existing
mechanisms to associate code with an I-D or RFC. Following these
practices makes it easier for others working with the I-D or RFC to
find such code.

3.1. Datatracker

The IETF [Datatracker](#) supports the association of Additional
Resources with a Document (e.g., an I-D or RFC) or a Group (e.g.,
[working group](#), [research group](#)). An Additional Resource can be, among
others things, a [GitHub Organization](#) or a [GitHub Repository](#).

It is recommended that this Datatracker mechanism be used to
associate an appropriate GitHub organization and repository with an
I-D. Ideally these are setup per the guidelines in [[RFC8874](#)] and
[[RFC8875](#)]. In the event the working group or research group is not
using GitHub, or the I-D has not yet been adopted by the group,
another GitHub organization or repository may be used instead. A
GitHub organization is associated with the I-D using the github_org
tag. A GitHub repository is associated with the I-D using the
github_repo tag.

3.2. GitHub Repository

A GitHub repository should be setup for an I-D as outlined in
[Section 3.2 of RFC 8874](#). The [i-d-template](#) can be used to get
started. It provides useful features, including integration with the
Datatracker. The resulting repository should be associated with the
I-D using the Datatracker github_repo tag. This should be done even
if GitHub is not to be used to collaborate on the I-D.

A GitHub repository typically exists within a GitHub organization.
This is not always the case (e.g., a repository in a personal GitHub
account), and even when it is, the GitHub organization may not be
appropriate to associated with the I-D. In the event there is an
appropriate GitHub organization, it should be associated with the I-
D using the Datatracker github_org tag.

3.3. README

The GitHub repository associated with the I-D should include a
[README](#). The README should include information about the repository,

whether or not it is being used to collaborate on the I-D, and any
code associated with the I-D. The latter may be achieved by
including direct links to such code or by including links to other
resources that include information about such code. These resources
may be a file, folder, or wiki within the GitHub repository or the
GitHub organization associated with the I-D. The QUIC WG's
Implementations wiki is an example.

3.4. Implementation Status

An Implementation Status section, as defined [RFC7942], should be
added to an I-D. It should include any GitHub organization or GitHub
repository associated with the I-D.

3.5. Errata

In the event an I-D becomes an RFC, people looking for code are less
likely to reference the Datatracker, and the Implementation Status
section is likely to have been removed. Any GitHub organization or
GitHub repository associated with the RFC should be made available
as inline errata.

4. Implementation Status

The practices proposed in this document are followed by draft-ietf-
shmoo-hackathon.

5. Security Considerations

TBD.

6. IANA Considerations

This document has no IANA actions.

7. Informative References

[I-D.ietf-shmoo-hackathon]
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Acknowledgments

Vijay Gurbani started the discussion that inspired this effort.

Robert Sparks highlighted a datatracker mechanism to add a reference to a GitHub repository or organization using the github_repo or github_org tag, respectively.

Martin Thompson created the i-d-template repository can be used to setup a GitHub repository for an I-D.

Spencer Dawkins pointed out the RFC editor's ability to inline errata and noted that something similar could be done to point to code.

Adam Roach played in important role in enabling the RFC editor's ability to inline errata.

Mark Nottingham provided an illustrative examples of how the QUIC working group uses wiki pages to track early implementations.

Many other people shared thoughts on the email lists for WG Chairs and EDM about how to make it easier to find code. These helped shape the practices outlined in this document.

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