Uncover the Missing Link

Creating clear linkage between open source and standards

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FOSDEM 2023
Standards

- Standards play key role in most major industries
  - E.g., communications, transportation, networking, …

- Industry demand standards compliance from vendors
  - Ensure interoperability, avoid lock-in

- Vendors work together to define standards
  - Establish credibility for products
  - Ensure interoperability with partners and competitors
Challenges with Standards

Standards formed over several years

Become interoperable over next few years

Products and services built on these standards

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Challenges with Standards

- Standards formed over several years
- Become interoperable over next few years
- Products and services built on these standards

Photo credit: https://play.google.com/store/apps/details?id=com.mobilerise.hourglass
Open Source

• Fuel industry transformation
• Engage a vast community
• Innovate at rapid pace
• Demanded by industry
• Result in de facto standard
Challenges with open source

- Some assembly required
- Poor documentation
- Moving target
- Projects fade away
- Fragments
Combine Open Source with Standards

- Bring speed and collaborative spirit of open source to standards
- Validate correctness and completeness of evolving specifications
- Add support for key standards to open source projects
- Speed adoption by providing usable code together with standards
Network automation

Open Source

ONAP

OpenStack

OpenDaylight

OpenContrail

OpenConfig

Open Container Initiative

OpenSwitch

Linux

OVS

DPDK

OpenStack Foundation

ARIA

MANO

Standard

Cloud Native Computing Foundation

tmforum

MEF

ETSI

NIST

DMTF

IETF

ITU

IEEE

Open Networking Foundation

ONAP

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IETF

- Internet Engineering Task Force
- Founded in 1986
- Goal – Make the Internet Work Better
- Definition of Internet Drafts (I-Ds) and RFCs
- Networking protocols, e.g., TCP/IP, DNS, DHCP, HTTP, TLS, QUIC, SIP, YANG, NETCONF, RESTCONF, …

We reject kings, presidents and voting. We believe in rough consensus and running code.

- David Clark, Tao of the IETF
Developer friendly standards process

https://datatracker.ietf.org/wg/git/about/

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<th>WG</th>
<th>Name</th>
<th>GitHub Integration and Tooling</th>
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<td>Additional resources</td>
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**Personnel**

- **Chairs**: Christopher A. Wood, Paul E. Hoffman
- **Area Director**: Alissa Cooper

**Mailing list**

- **Address**: ietf-and-github@ietf.org
- **To subscribe**: https://www.ietf.org/mailman/listinfo/ietf-and-github
- **Archive**: https://mailarchive.ietf.org/arch/browse/ietf-and-github/

**Final Charter for Working Group**

Many IETF working groups use external code repository services, primarily GitHub, in managing their work. Individual working groups, while continuing to operate within IETF guidelines for working group activity, have developed their own policies and practices for how they use these services. These policies and practices cover aspects such as: managing discussion between working group mailing lists and GitHub issues and pull requests; how text contributions are expected to be made; labeling and naming conventions; maintaining readable draft snapshots; using tooling and automation; informing participants about IETF policies; and others.

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IETF Hackathons

• Advance pace and relevance of IETF standards
  • Flush out ideas, feed back into working groups

• Attract developers, universities
  • Team newcomers with veterans
  • Reduce time to meaningful contribution

• Free, open to everyone
• Collaborative
Code in Hands of Developers

https://github.com/ietf-hackathon
Links to standards and code in wikis

SRv6 Data-Plane Visibility

- Champion(s)
  - Thomas Graf (thomas.graf at swisscom.com)
  - Benoit Claise (benoit.claise at huawei.com)
  - Alex Huang-Feng (alex.huang-feng at insa-lyon.fr)

- Draft(s)

- Project info
  - Develop and validate running code. Extend IPFIX export in VPP at FD.io and on Huawei VRP. Establish SRv6 network topology with network telemetry data-collection and data mesh. Validate exported and transformed IPFIX data.
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 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.
related-implementations

- For individual drafts, authors can add code as “Additional resources”
- For working group drafts and RFCs, working group chairs can edit
related-implementations

• For individual drafts, authors can add code as “Additional resources”

• For working group drafts and RFCs, working group chairs can edit

Additional Resources

github_repo https://github.com/eckelcu/draft-eckel-edm-find-code
(GitHub repository to collaborate on draft)
related_implementations https://datatracker.ietf.org/doc/rfc9311/
(Example implementation in RFC 9311)

Format: ‘tag value (Optional description)’. Separate multiple entries with newline. When the value is a URL, use https:// where possible.
Links to standards and code in wikis

SRv6 Data-Plane Visibility

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Export of Segment Routing over IPv6 Information in IP Flow Information Export (IPFIX)
draft-ietf-opsawg-ipfix-sr6-srh-06

Status
IESG evaluation record  IESG writeups  Email expansions  History

Versions:
00 01 02 03 04 05 06

draft-tgraf-opsawg-ipfix-sr6-srh 03 0.03 04 05
draft-ietf-opsawg-ipfix-sr6-srh 00 01 02 04 05 06

Document Type
Active Internet-Draft (opsawg WG)

Authors
Thomas Graf ☞, Benoit Claise ☞, Pierre Francois ☞

Last updated
2023-01-06 (Latest revision 2023-01-05)

Replaces
draft-tgraf-opsawg-ipfix-sr6-srh

RFC stream
Internet Engineering Task Force (IETF)

Intended RFC status
Proposed Standard

Formats
[txt | html | xml | htmlized | pdf | bibtex]

Additional resources
Related Implementations
Mailing list discussion

Stream
WG state  Submitted to IESG for Publication
Export of Segment Routing over IPv6 Information in IP Flow Information Export (IPFIX)
draft-ietf-opsawg-ipfix-srv6-srh-06

Status: IETF evaluation record, IETF writeups, Email expansions, History

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Formats: text, html, xml, htmlized, pdf, bibtex

Additional resources:

Related Implementations
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Stream: WG state

Submitted to IESG for Publication

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VPP topologies

This repository has the vpp configurations for the following POCs in VPP:

- draft-tgraf-opsawg-ipfix-srv6-srh
- draft-tgraf-opsawg-ipfix-on-path-telemetry

Dependencies

- VPP fork repository: INSA-unity-pp
- Tested in ubuntu/focal64 using Vagrantfile
CALL TO ACTION!
Make it easy to find and use code related to standards

Create links between open source and standards

Make standards consumable by developers

Make open source consumable by industry
Thank you!