

Bachelor Thesis

Visualization tool for IETF RFCs

Currently there are more than 5600 RFCs that have been published by the IETF [1]. When you have to understand a particular topic, e.g., TCP you usually will start with RFC 793 [2] which specifies the transport layer protocol. But this is not enough. To get the full and up-to-date information about TCP you also have to read RFC 1122 [3] and RFC 3168 [4] that update the original RFC. Further on, RFC 1122 [3] is updated by RFC 4379 [5], which is updated by RFC 5462 [6]. So you see, the RFCs have several interdependencies. Several of these interdependencies are apparent as each RFC defines which other RFCs are either updated or deprecated by this document while others are a little bit more hidden.

We developed a tool RFC-Browser to create a dependency graph where the edges represent updates or deprecation. The prototype works well, but we like to have an interactive tool to browse the graph resp. show particular subgraphs given a set of conditions.

Objectives

- Get familiar with the prototype implementation
- Add feature to visualize all references (not just updates and deprecations)
- Develop interactive tool
- Write a layout engine that is suited for our application scenario

References

- [1] The Internet Engineering Task Force. <https://www.ietf.org/>
- [2] RFC 793. Transmission Control Protocol. September 1981. <https://tools.ietf.org/html/rfc793>
- [3] RFC 1122. R. Braden. Requirements for Internet Hosts – Communication Layers. October 1989. <https://tools.ietf.org/html/rfc1122>
- [4] RFC 3168. K. Ramakrishnan, S. Floyd, D. Black. The Addition of Explicit Congestion Notification (ECN) to IP. September 2001. <https://tools.ietf.org/html/rfc3168>
- [5] RFC 4379. K. Kompella, G. Swallow. Detecting Multi-Protocol Label Switched (MPLS) Data Plane Failures. February 2006. <https://tools.ietf.org/html/rfc4379>
- [6] RFC 5462. L. Andersson, R. Asati. Multiprotocol Label Switching (MPLS) Label Stack Entry: "EXP" Field Renamed to "Traffic Class" Field. February 2009. <https://tools.ietf.org/html/rfc5462>

Project type Bachelor Thesis
Duration 1 Semester

Contact Marian Buschsieweke
E-Mail marian.buschsieweke@ovgu.de
Room G29-314