



Review report of a final thesis

Student: Bc. Matěj Židek
Reviewer: RNDr. Radek Krejčí
Thesis title: Unified configuration interface for NEMEA collectors
Branch of the study: Web and Software Engineering

Date: 1. 6. 2018

<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 5.</i>
1. Difficulty and other comments on the assignment	<i>1 = extremely challenging assignment, 2 = rather difficult assignment, 3 = assignment of average difficulty, 4 = easier, but still sufficient assignment, 5 = insufficient assignment</i>
<i>Criteria description:</i> Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)	
<i>Comments:</i> The assignment is quite complex and requires understanding of several different technologies. It covers designing a YANG module, to describe configuration and status data of the NEMEA framework, implementing or modifying backend tools to connect NEMEA system with the web GUI and designing and implementing the web GUI itself. The thesis extends open source NEMEA project and a deep understanding of its internals is crucial to fulfill the assignment.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
2. Fulfilment of the assignment	<i>1 = assignment fulfilled, 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled</i>
<i>Criteria description:</i> Assess whether the thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.	
<i>Comments:</i> First, the created YANG schema module is not well designed. The version described in the text differs from the version actually present on the enclosed CD. Although the version on CD is much better (removed meaningless choice nodes, fixed paths in some when statements, ...), there are still issues to solve (invalid paths in when statements). Also the overall design of the schema could be much better. The proposed schema template to describe specific module/instance parameters is not a good solution. There is actually no way to force developers to use it and it does not connect this specific configuration with the generic NEMEA part which really complicates any automation. For example including this configuration data into the web GUI in a generic way would be quite challenging. Better use of augmentation would be more appropriate approach in this case. Second, as stated by the author himself, the web GUI is "imperfect". The user interface actually looks like an alpha version and it is obvious that the time for design and implementation of the web GUI was underestimated. Some of the buttons hide on changing window resolution and separated tabs for presenting and editing module/instance details is impractical.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
3. Size of the main written part	<i>1 = meets the criteria, 2 = meets the criteria with minor objections, 3 = meets the criteria with major objections, 4 = does not meet the criteria</i>
<i>Criteria description:</i> Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.	
<i>Comments:</i> The thesis meets all requirements.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>

4. Factual and logical level of the thesis

60 (D)

Criteria description:

Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.

Comments:

The text flows logically without unnecessary repetition.

The described disadvantages of the ways to link custom module configuration in section 2.1.4 are inappropriate. The disadvantages in case of the first approach are not valid and missing important disadvantage for the second approach is a limited automation. The configuration subtrees are not connected, so it is necessary to add additional logic into other layers while it could be automatically covered by augmentation and standard YANG restriction statements.

Figure 3.2 is incorrect in description of the threads used to handle callback requests for sysrepo. An additional thread for processing sysrepo requests is created already during the supervisor initiation when it subscribes to the sysrepo daemon. The same thread is later used to process the incoming callback requests from sysrepo, and the thread is persistent until supervisor unsubscribes.

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

5. Formal level of the thesis

89 (B)

Criteria description:

Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspects, see Dean's Directive No. 26/2017, Article 3.

Comments:

The text is fluently readable and clear. I appreciate to chose English as the language of the text since it can be then reused for the needs of the open source projects like NEMEA. On the other hand, the way how the YANG schemas are presented is bad. I understand that it is not possible to print the whole schema in YANG language, but just removing a lot of subtrees and other information is not a solution. For this purpose, YANG schemas can be presented in tree format, which provides important information in easy-to-understand format. Therefore, it is also used in all RFC documents presenting a YANG schema.

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

6. Bibliography

100 (A)

Criteria description:

Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

Comments:

Student works correctly with the sources and they are reasonably selected.

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

7. Evaluation of results, publication outputs and awards

50 (E)

Criteria description:

Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

Comments:

The most usable and successful result of the work is re-implementation of the NEMEA supervisor. The NEMEA YANG module needs some changes and better approach to connect with the custom module data, but it can be taken as a starting point for further work. Similarly, the web GUI has a lot of features to do (which is agreed by the author) and the design must be improved to be usable and friendly to end users.

Evaluation criterion:

No evaluation scale.

8. Applicability of the results

Criteria description:

Indicate the potential of using the results of the thesis in practice.

Comments:

The results can be mostly used only as a starting point for the further development.

Evaluation criterion:

No evaluation scale.

9. Questions for the defence

Criteria description:

Formulate any question(s) that the student should answer to the committee during the defence (use a bullet list).

Questions:

Personally for you and your future work, what is the main outcome (lesson learned) from the thesis?

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

10. The overall evaluation

59 (E)

Criteria description:

Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

Comments:

The thesis is acceptable, but the usability of the result is limited and requires further work.

Signature of the reviewer: