



# Supervisor's statement of a final thesis

**Student:** Balaji Subramani  
**Supervisor:** Ing. Viktor Černý  
**Thesis title:** Performance of MultiPath TCP on OpenWRT  
**Branch of the study:** Computer Systems and Networks

**Date:** 27. 8. 2018

<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
<b>1. Fulfilment of the assignment</b>	<b><u>1 = assignment fulfilled,</u> 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled</b>
<i>Criteria description:</i> Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.	
<i>Comments:</i> The main purpose of this thesis was to investigate properties of the MultipathTCP protocol. All main properties of this protocol were successfully tested and compared with a conventional TCP protocol. The complexity of this thesis meets the criteria.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
<b>2. Main written part</b>	<b>65 (D)</b>
<i>Criteria description:</i> Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies? Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 26/2017, Art. 3. Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.	
<i>Comments:</i> The length and content of the textual part of this thesis is sufficient. The text is well structured. However some details significantly decrease the quality of the final text. At first there is a lot of typographical mistakes: some references are not correctly translated from original Latex source into final PDF and the text contains some strange characters instead of apostrophes and some other characters. The work with references is not ideal too. The student found a lot of resources, however he didn't use them properly in his work. There are some unreferenced statements and pictures. The whole section about MultipathTCP is taken from RFC but it is mentioned in the beginning of the chapter and the RFC document is not listed in the references list. At least two references have swapped numbers. The most important parts are referenced sufficiently.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
<b>3. Non-written part, attachments</b>	<b>90 (A)</b>
<i>Criteria description:</i> Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.	
<i>Comments:</i> The practical part of this thesis is much better than text. The experiments make sense, they are very well documented and they can be fully recreated. As a supervisor I have to point out that student put a lot of effort into his work. The topic was completely his idea. He struggled with a lack of documentation and unfortunately he spent too much time with getting a working configuration. He even contacted some of the authors, however they didn't help much because all implementations are under heavy development thus the authors didn't want to spend too much time with documentation at that time. As a result there was not too much time for experiments however the student was able to conduct the most interesting ones.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>

**4. Evaluation of results, publication outputs and awards**

80 (B)

*Criteria description:*

Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.

*Comments:*

All results brought a good analysis of the current state of MultipatTCP protocol. Some results are not well explained (for example delay and congestion experiments), they are only commented, so the reader needs to find a conclusion by himself.

*Evaluation criterion:*

*The evaluation scale: 1 to 5.*

**5. Activity and self-reliance of the student**

5a:

**1 = excellent activity,**

2 = very good activity,

3 = average activity,

4 = weaker, but still sufficient activity,

5 = insufficient activity

5b:

1 = excellent self-reliance,

2 = very good self-reliance,

**3 = average self-reliance,**

4 = weaker, but still sufficient self-reliance,

5 = insufficient self-reliance.

*Criteria description:*

From your experience with the course of the work on the thesis and its outcome, review the student's activity while working on the thesis, his/her punctuality when meeting the deadlines and whether he/she consulted you as he/she went along and also, whether he/she was well prepared for these consultations (5a). Assess the student's ability to develop independent creative work (5b).

*Comments:*

We had meetings ones or twice per week and the student always arrived well prepared.

*Evaluation criterion:*

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

**6. The overall evaluation**

78 (C)

*Criteria description:*

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.

*Comments:*

The final mark is heavily influenced by the textual part of the thesis. Despite the student did a very good practical work and since the topic was about experimenting and investigation, the final textual report is more important. In this case the text is the weakest point of the whole project. If the student had a more time for writing, the result would be much better.

Signature of the supervisor: