FACULTY OF INFORMATION TECHNOLOGY CTU IN PRAGUE

Supervisor's statement of a final thesis

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Thesis title:	SFTP Proxy for AWS S3
Branch of the study:	Web and Software Engineering

Date: 25. 8. 2020

Evaluation criterion:	*The evaluation scale: 1 to 4.*
1. Fulfilment of the assignment	***1 = assignment fulfilled,*** *2 = assignment fulfilled with minor objections,* *3 = assignment fulfilled with major objections,* *4 = assignment not fulfilled*

Criteria description:
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.

Comments:

Matej fullfilled the assignment very well. The assignment fully meets the objectives set out at the beginning. In fact, Matej developed the thesis beyond the original assignment - the application is highly configurable to strike the right balance between buffer size and memory requirements. The pros/cons are clearly discussed in the text and detailed analysis of performance was also performed to access the overhead introduced by the proxy.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
2. Main written part	*95 (A)*

Criteria description:
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.

Comments:

The written part covers the subject at hand very well including both theoretical part as well as the practical part. I'd like to acknowledge that Matej made the extra effort to scrap the initial implementation and ultimately opted for integrating with the MINA library using standard Java APIs - this will makes the solution cleaner, easier to maintain and easier to upgrade in the future. Furthermore - the motivation for taking this route is well discussed in the written part. Second part I'd like to acknowledge is the section which covers performance of the application and compares it to other approaches. This part is very important and allows to draw meaningful conclutions at the end. It also proves that the impementation is not only functional but also performs well.

The level of english is very high (with only a very few typos and errors) and it reads very nicely. As far as I can tell, all the citations are clearly marked and linked to relevant sources in accordance with the standards. In terms of copyrighted software - the code is published under MIT licence (i.e. is opensource) and only depends on standard well established opensource Java libraries.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
3. Non-written part, attachments	*95 (A)*

Criteria description:
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.

Comments:

I am very happy with the SW work. The impementation fully meets the needs it was designed for. The quality of the code is at a very high level. The code is well designed and well structured. Moreover, the code comes with a suite of unit and integration tests which aided the development and ensures that everything works correctly.

In terms of technology used - the code is written in Java (as per the assignment) and uses standard well established Java libraries. It is highly extendable and highly configurable allowing to tweak the performance / memory complexity as necessary. It lends itself well to running in AWS as a Docker container which was the original motivation for the assignment.

The performance of the solution was tested and compared to other workflows. This way the overhead of the SW work was accessed in the repeatable way. Beyond that - it provides guidence to how to set a buffer sizes depnending on the expecting file-size being exchanged.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
4. Evaluation of results, publication outputs and awards	*100 (A)*

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:

The implementation results will be deployed in practice in Barclays before the end of this year. From the initial assignment deplayment to producation was the main goal and during the subsequent consultations with Matej we made sure that the SW is implemented such that it can be used in production. There thefore no doubt that deployment in practice is 100% possible.

The SW bridging SFTP and S3 does not exist as far as I am aware. It most definitely does not exist with the customized mappings and configurability and extendability of what Matej has implemented. As per my knowledge the SW is inovative and original. The details of this are discussed in the written part and do agree with the conclusions made by Matej.

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:

Independence: Matej worked on the SW and as well as the text independently. He has very strong critical thinking abilities. Obiously I provided consultations and feedback on some of his ideas but this is fully expected as part of FT.

Activity: Matej was diligent and even with the Coronavirus situation which made communication much more difficult we stayed in regular contact. Matej was aware of all the deadlines and made sure he'd complete the tasks before the deadline. There is perhaps a bit of room for improvement in this area but I don't really have anything substantial to complain about here. Since Matej worked very independently - he was able to proceed the SW as well as a writen part on time and without any issues.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
6. The overall evaluation	*95 (A)*

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:
Overall, I'd say the FT is at a very high level. The SW fully meets the goals set out in the assignment - it is original a very useful piece of software which will definitely be used in production (as originally intended). The written part has a very good level of english and I don't see any probles with the formal side of the text either. The most interesting sections of the written part are Implementation and Peformance which is discussed very well with very useful insights.

Signature of the supervisor: