

Reflection on Framework of Solving a Problem for Cloud Security Issues

Abstract

Throughout the research of the cloud security problem, it has been encountered that there were not many solutions that contains the specified method to resolve the current privacy issue, thus decided to compose a paper that mostly demonstrates about the privacy weakness in cloud security. This reflection will mainly discuss about the reflection of my previously written paper, "Framework of Solving a Problem for Cloud Security Issues", within the commentary section where two other people provided, to furtherly commentates about the strong and weak aspects about the previous paper. These will allow to polish the paper with different perspectives, and to improve on the quality of the content.

Introduction

This paper will be analysing on the previously written paper, "Framework of Solving a Problem for Cloud Security Issues". Cloud Security is the next generation technology, which allows the user to store their data for any services in anywhere that can be accessed to the internet. However, due to the early implementation of the system, it is still not certain to protect the stored data from variety of attacks, such as Dos (Denial of Service Attacks), hacking and hijacking. These problems are mandatory issue to be solved in these days as the loss of privacy is arising as the biggest concern in current society. Therefore, the use of encryption algorithms has shown as the significant methods that need to be implemented. Throughout the paper, various encryption methods were shown with the in-depth analysis to support its way. Few of the experiments were also demonstrated to prove that these methods are viable in nowadays. Additionally, this paper was also reviewed by external members with different perspectives, and provided their thoughts on the paper, within the self-reflection that has been made by the author.

Review Responses

Review 1:

These following reviews were commented by Zi En Tham, the first reviewer who has shared her thoughts about the paper, with the following strong and weak aspects of the content-wise.

Strong Aspects

Comment 1: *"The importance of ensuring cloud security is discussed thoroughly and there are mentions of cases or scenarios where the cloud security is breached. This brings out the consequences if the cloud security is threatened and the needs to secure it."*

Response: This comment came across with the part that I spent most of my time on. The importance of ensuring the cloud security is the main point that I wanted to deliver throughout the report and is the most time-consuming part to highlight.

Comment 2: *“The concept of cloud computing is explained well and in as much layman’s term as possible. This makes reading and understanding easier for a novice reader. The reader can understand the underlying problem better when the basic concept of cloud computing is understood.”*

Response: The use of layman’s term worked as intended, as I tried to help readers to understand everything that I was listing throughout the report, especially for the readers who are not expert at cloud knowledge.

Comment 3: *“Each proposed encryption algorithm is explained in detail. The feature and the execution process of each algorithm is described along with a flowchart. A slight comparison between each encryption algorithm is given as well. The reader can understand the process flow of an encryption algorithm.”*

Response: The use of flowchart and diagrams was the parts that I spent most of time throughout the research, and something that I guess is worked very well according to this comment. Also, it was mentioned here that the provider of slight comparison helped readers to understand the difference between each encryption algorithm.

Weak Aspects

Comment 4: *“There is a vague of explanation on how the different encryption algorithm helps in overcoming different security threats. This causes the reader to not know the purpose of implementation of such algorithm”*

Response: This clearly states the lacking part of the paper, where I used a lot of vague explanation on encryption algorithms. This is due to the limitation of knowledge to determine which algorithm is more beneficial to implement in the current society.

Comment 5: *“The difference between the encryption algorithm is difficult to summarise and digest. It may result in reader having a hard time differentiating each algorithm”*

Response: This is a similar issue with the comment 4, as it is required to acknowledge the advanced knowledge of each algorithm, which is not done perfectly as the given time was not enough to gain the deep knowledge of the mathematical terms.

Comment 6: *“Lack of image description. It may cause reader to have a difficulty on understanding what is the purpose of a particular figure attached”*

Response: This suggestion is very appreciated as personally it was enough to contain this number of images, however from others’ perspective, it was not enough to describe all terms. This will be applied into future work.

Review 2:

These following reviews were commented by Charlie Huang, the second reviewer who has shared her thoughts about the paper, with the following strong and weak aspects of the content-wise.

Strong Aspects

Comment 1: *"The main idea is to explain the various features and steps involved in the implementation of an encryption algorithm. It also shows a comparison between the different implementations in detail"*

Response: Like Zi En Tham's Comment 1, which was the focus that I tried to convey importance of ensuring the cloud security. The comparison was also the part that I invested long time to polish in a good term as it can deliver the wrong information to the reader if it is written confusingly.

Comment 2: *"The paper provides an overview of the various tools used in the experiment. The layout of the document was very well planned"*

Response: The explanation of different methods to overcome the security issue, was done correctly according to this comment, as well as the layout design. Layout is something that I spent time at the end of the polishing section, and I tried my best to make it as neat as possible.

Comment 3: *"The paper also provides a well-written and easy-to-understand explanation of the concept of cloud computing. This makes it easier for novice readers to understand the underlying technology"*

Response: This is again the most time spent part where I tried to shorten the term of cloud computing and tried to deliver to the reader within a paragraph. According to this comment, it seems like it is done in a correct way and successfully delivered in a easy term.

Weak Aspects

Comment 4: *"The lack of an image description makes it hard for the reader to identify the purpose of the figure shown in the report"*

Response: Again, I was thinking that it was enough about the number of images I provided, however not from others' perspective. I will apply this comment on the next paper.

Comment 5: *"There is a vague of explanation on how the different encryption algorithm helps in overcoming different security threats. This causes the reader to not know the purpose of implementation of such algorithm"*

Response: The explanation of the encryption algorithm was not done clearly, as the time given was not enough to fully understand the mathematical terms to apply into the cloud security. This can be resolved by having a deeper understanding in the future.

Comment 6: *“The difference between the encryption algorithm is difficult to summarise and digest. It may result in reader having a hard time differentiating each algorithm”*

Response: Again, lack of time caused this problem. The reviewer’s point of finding difficult to summarise and digest can be done in the future by writing a more knowledgeable summary of each algorithms’ definitions and their use, also to provide the pros and cons of each of them.

Summary of Reviews

The two reviews that I received from individuals were very helpful and useful to provide me a future guideline to fix the issues they have given. Most of the feedbacks were overlapping between two reviews, as they are the straightforward strong and weak aspects that can be recognised. From the reviews, it was issued that the explanation of different methods to overcome the security issue, was done correctly. It was the main point that I wanted to deliver throughout the report and was the most time-consuming part to be written. The comparison between two main points was also addressed on both comments as it was the part that I invested long time to polish to not convey the wrong information in a confusing way. The use of layman’s term, and a detailed description was mentioned as strong aspect on both reviews as intended, since I tried to help readers to understand everything that I was listing throughout the report, especially for the readers who are not expert at cloud knowledge. Besides these, the neat layout design was also complimented. In terms of weak aspects, both reviewers listed the explanation of encryption methods as a weak aspect. This is due to the lack of time that is given, which was not enough to research a mathematical terms and theory behind, thus it was lacking in terms of the definition, and comparison of the method. This can be resolved by having a deeper understanding in the future. The use of diagrams was also not enough to convey the visual information of each method. The use of vague explanation in encryption methods also interrupted reader to determine which algorithm is more beneficial to implement in the current society. This point is very important as a future reference, to fix the way of explaining the term in vague way, instead I need to make it more specific. Overall, most of the problems of the paper were covered and highlighted, and it will help in the future writing to improve the quality of the paper.

Self-Reflection

The experience of this research program has been helpful to enhance the writing skill and can be used as a future reference for the honours project that is upcoming within 2 years. As an IT student who is willing to step into the cloud path, it was meaningful time to spend time on researching at the self-chosen topic. However, it was also challenging to finish each report, total of 4 reports every fortnight consecutively. The first assignment of identifying the problem encountered as an easiest part out of all assignments. Since the task is to identify any real-world problem based on the already existing report, it did not offer a long time to finalise writing the report as it was just to summarise the topic and to point out my own thought based on them. Throughout this, it provided experience on researching reports that are related to the certain topic, which essentially helped to work on the following assignments. Furthermore, it helped to understand the basic of cloud computing topic for the future study. In the second assignment, it required to point out with the problem that the researched topic experiences. Since I have briefly identified the current problem about the cloud

security in assignment one, it was not harsh to finalise this assignment. Also, since cloud security is a major topic nowadays, it was not difficult to find the resources, which saved my time so much. There were not many challenges that I faced while working on this assignment, however due to the consecutive workload of writing report, time management was the main problem whilst working on it. The third assignment encapsulated the ability to figure out the current solutions against the chosen problem. This was the most difficult part out of the subject as it requires the dedicated solution to overcome the current issue, with the evidence provided. As my topic was constantly about cloud computing and security for all assignments, I could manage to do everything without the problem besides the evidence. Thus, to do this I have decided to make a flowchart and utilise Linux to demonstrate the theoretical and practical evidence to prove my solutions. I have also included the images of SaaS (Software as a Service), to provide the basic process of cloud computing, and the diagram to visually show where the storage is in the cloud system. Throughout this, I could manage to gain the further knowledge on formatting the report, as well as creating diagrams and charts. Additionally, it was a pleasant and thoughtful experience to consider about the solution against the certain issue. There were many challenges that I have encountered during the assignment three, but it was mainly about how to apply mathematical methods into the cloud field, define and analysing them without the advanced knowledge about the mathematical field. This was resolved by researching about the encryption method's mathematical analysis from different papers, which I still do not think I am expert at it yet. Within all this work, I could successfully manage to serve my solution to cloud security issue report.

Summary

There were a lot of positive outcomes that I gained throughout the subject. The opportunity to deeply consider about using mathematical methods also enhanced my knowledge about how to apply any type of mathematic related study into different areas. However, the biggest challenge that I have encountered was the time management. Since all assignments are compacted in limited time, it was difficult to get an expert knowledge after the researching, especially during assignment 3. However, since this subject does not require a deeply advanced level in terms of quality of diagrams, it was manageable to finalise on time. The result of choosing the problem as 'Cloud Security' was a great selection as it allows to provide multiple ways of methods to overcome, since it is a newly developed technology. In conclusion, this subject taught me to produce a better quality of research papers, as well as how to overview, identify, and provide solution against the problem.

The table below contains the pros and cons about the overall subject.

Pros	Cons
The tutor was helping in a friendly manner, and always keen to help the students. The use of tools was also demonstrated in detail.	Assignments are way too stacked; it was difficult to manage the time when the next assignment starts a day after the due date of the previous assignment.
Communication with peers in the studio helped to gain an enlightenment of anything that I cannot figure out myself.	Although my chosen topic is common topic, it was not easy to find the related resources.