

INGENIERIA DE SISTEMAS - SPTI 2021-1

LABORATORIO 2:

Análisis de Riesgos de Seguridad de la Información

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INTRODUCTION

In this laboratory we will learn to classify the assets of a company using tools such as Simple Risk, which helps us with the characteristics of the asset and its classification, we will also treat the risks and classify them from a scale where we will see or not affect our assets and we will observe through these scales the impact it can have on our company..

OBJECTIVES

GENERAL

Identify, analyze and evaluate the risks that can compromise the security for the assets, that are critical in the execution of a business process.

SPECIFIC:

- -Apply the OWASP Risk Rating Methodology to analyze and evaluate security risks.
- -Identify security controls/countermeasures/safeguards that can be needed to mitigate critical security risks.

1. SECTION ONE: SIMPLE RISK CONFIGURATION.

 Start a local instance of SimpleRisk following instructions in Laboratory I and log in using credentials admin/admin.

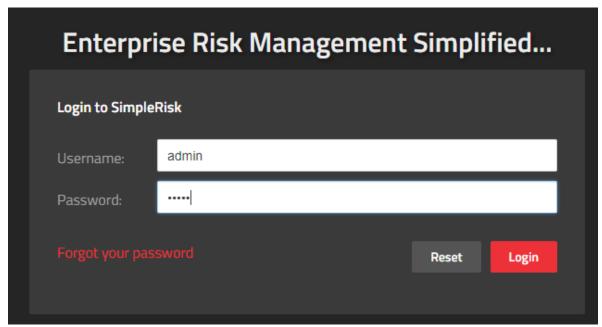


Ilustración 1: accomplished

 In configure, go to "Add and remove values" and in status delete all existing status and create the followings: Accepted, Avoided, Mitigated and Transferred.

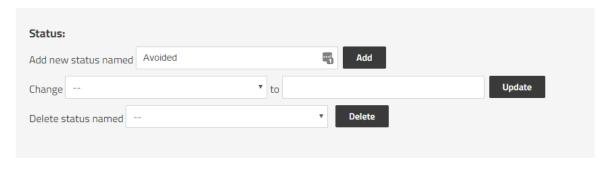


Ilustración 2: configuration to be made.

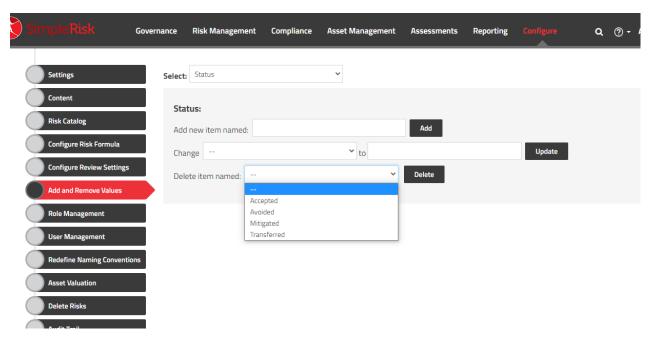


Ilustración 3: accomplished

2. SECTION TWO: ASSET INVENTORY

- Verify the asset information filled out in the "Asset Management" section in SimpleRisk. For each asset fill: Asset name, IP Address, Site/location, Team and Asset Details. In Asset Details you must place the following information:
 - Name of the owner
 - Name of the responsible
 - Name of the custodian
 - Asset users
 - Classification
 - Impact to availability
 - o Impact to confidentiality
 - Impact to Integrity
 - o Total Impact

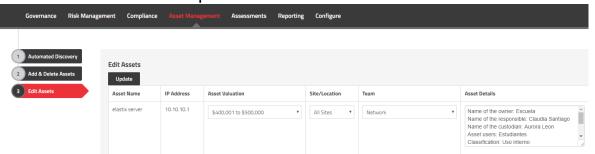


Ilustración 4: configuration to be made.

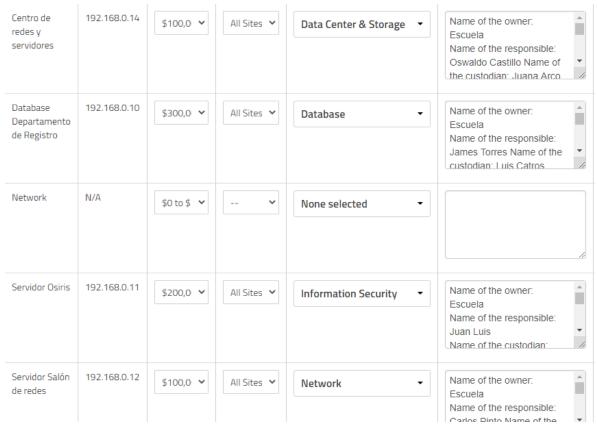


Ilustración 5: accomplished

3. SECTION THREE: RISK ASSESSMENT

 In the "Assessment" section in Simple Risk start the "Critical Security Controls" and fill out and submit the questionnaire composed of 21 questions without thinking in an asset but the area or the process:

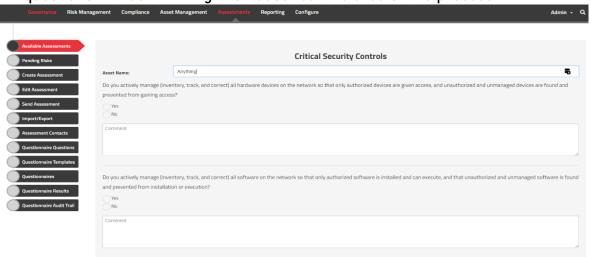


Ilustración 6: configuration to be made.

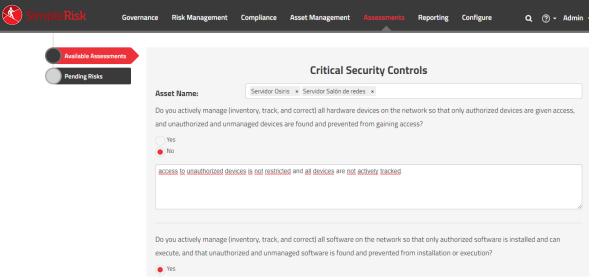


Ilustración 7: accomplished

 After submit the questionnaire, all the suggested risk will appear in the "Pending risks" section.

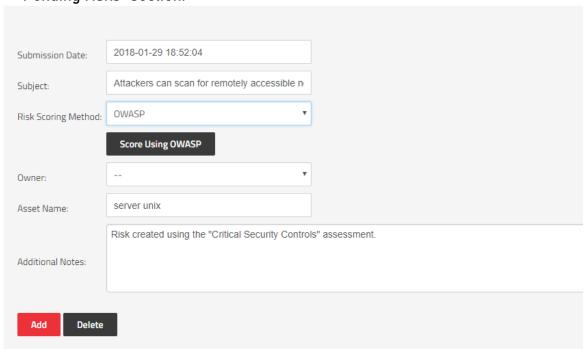


Ilustración 8 : configuration to be made.

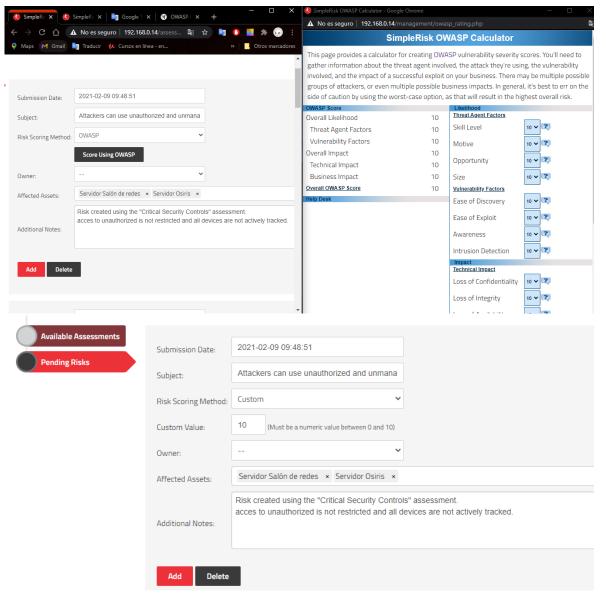


Ilustración 9: accomplished

 Analyze each risk reviewing: 1) The asset over which the risk applies and 2) The risk score using a Risk Scoring Methodology. SimpleRisk can use 4 Risk Scoring Methodology: OWASP, CVSS, DREAD and Classic.

OWASP Risk Rating Methodology calculates the Overall OWASP risk score using the Likelihood and the Impact. The Likelihood depends on the Threat agent and the Vulnerability Factors, and Impact depends on the Technical Impact and the Business Impact. You can click on the interrogation symbol to understand the meaning of the scale values:

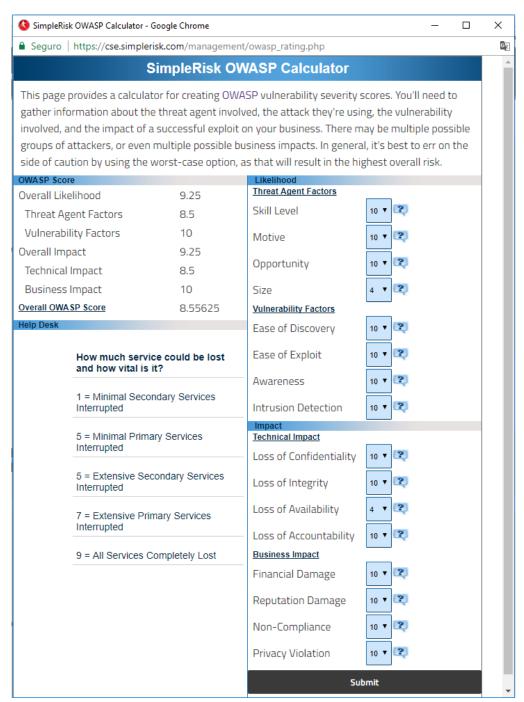


Ilustración 10: configuration to be made.

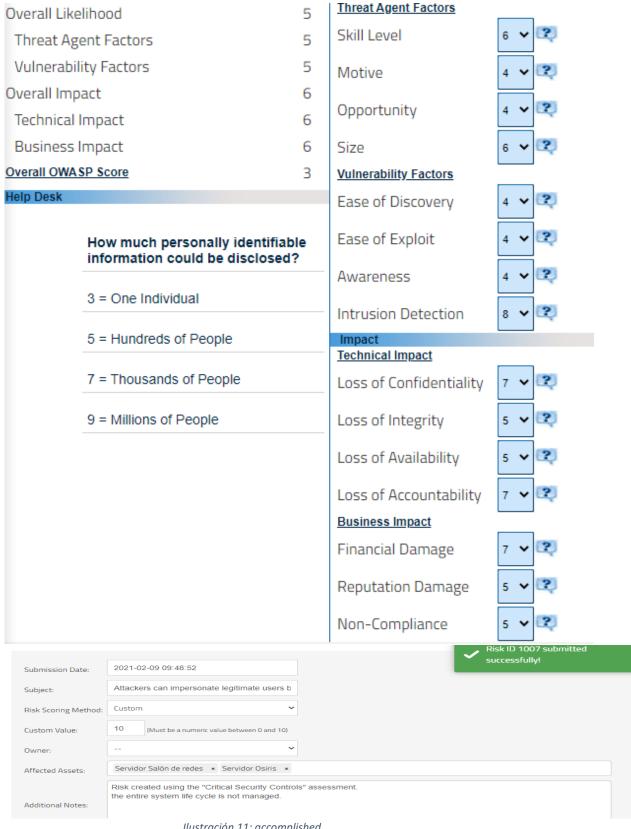


Ilustración 11: accomplished

 This Overall Owasp Score (8.55) correspond to a High risk according to the heat map:

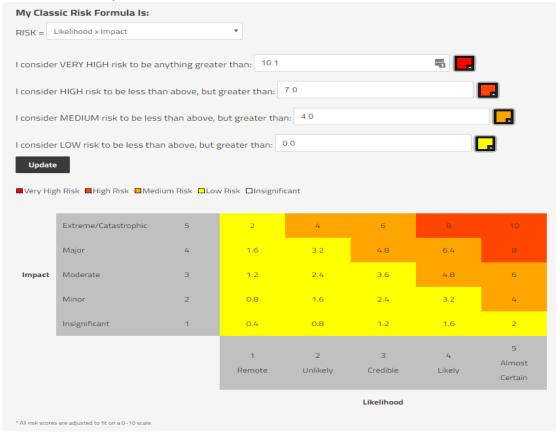


Ilustración 12: configuration to be made.



Ilustración 13: accomplished

 After setting the Owasp Risk score you can add the risk. In the Risk Management tab you can view the available risks:

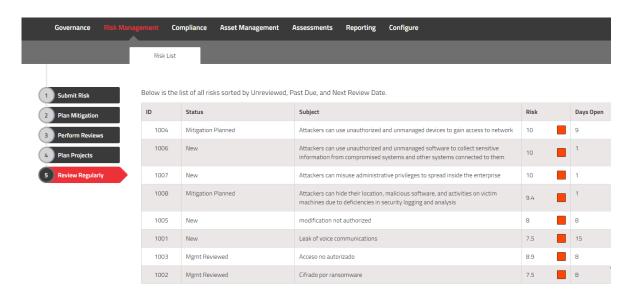


Ilustración 14: configuration to be made.

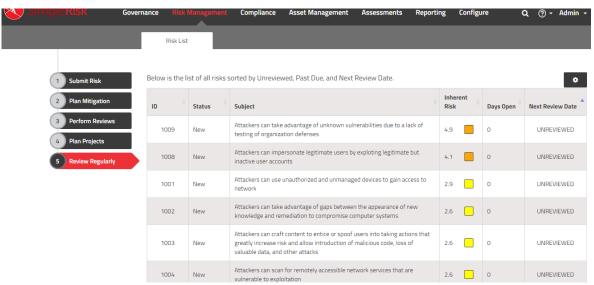
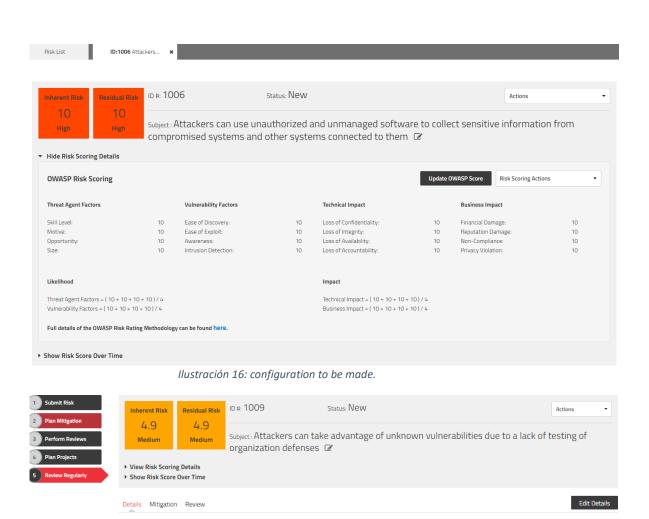


Ilustración 15: accomplished

Get in on of the risk and you will see the most important information:



Submitted By: Admin

Additional Notes: Risk created using the "Critical Security

no, these simulations are performed.

Risk Source:

Risk Scoring Method: OWASP

Risk Assessment:

Supporting Documentation: None

Ilustración 17: accomplished

Risk Mapping:

Category: Site/Location:

External Reference ID:

Control Regulation:

Control Number:

Technology:

Submission Date: 02/09/2021

Affected Assets: Servidor Osiris

Servidor Salón de redes

 In mitigation tab you can select edit mitigation and select the controls that currently apply to the asset (the existing controls):

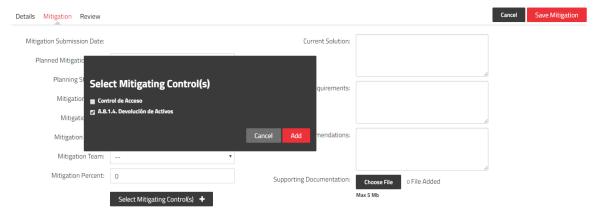


Ilustración 18: configuration to be made.

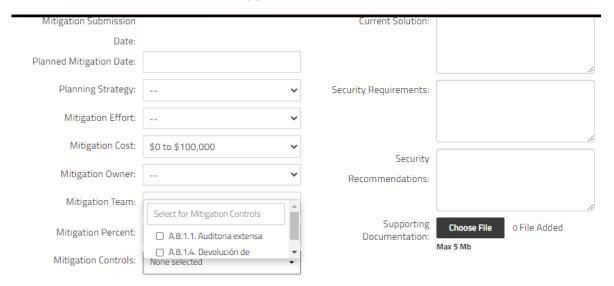


Ilustración 19: accomplished

 Before selecting a control, you must create it in the tab Governance, going to controls and pressing the plus (+) button:



Ilustración 20: configuration to be made.



Ilustración 21: accomplished

 After selecting the controls, you must choose the "Mitigation percent" [0-100%] which represent how much the selected control reduce the risk. Additionally you must fill out the "current solution".

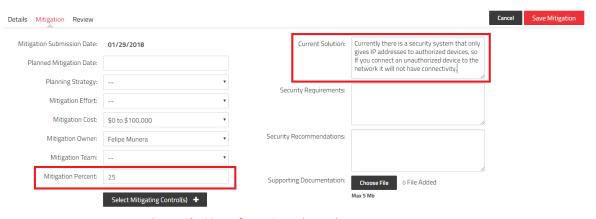


Ilustración 22: configuration to be made.

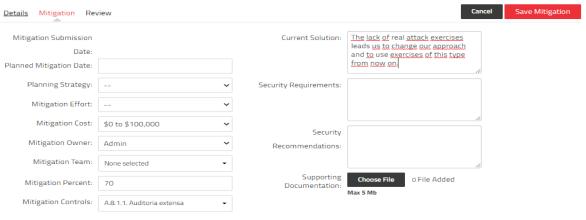


Ilustración 23: accomplished

After refreshing the page, you will see that residual risk gets reduce:

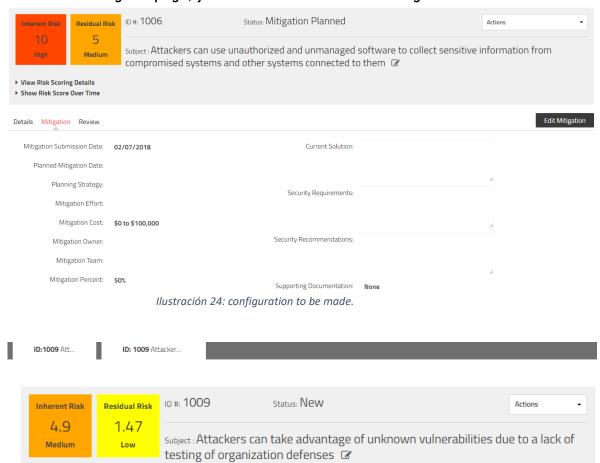


Ilustración 25: accomplished

View Risk Scoring DetailsShow Risk Score Over Time

After all risks have been set you should be able to see the resume in the "review regularly" section:



Ilustración 26: configuration to be made.

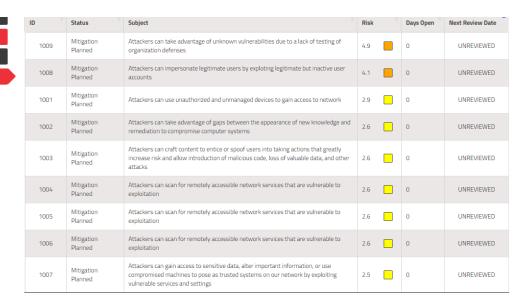


Ilustración 27:accomplished

Then you must review all the risks to decide what to do next. The treatment option can be:

- Mitigate: Apply an additional control to reduce the Residual Risk.
- Accept: Accept the risk because the Residual Risk is under the Acceptable Risk Threshold, or because the cost of implementing the control is more expensive that the asset value.
- Avoid: Eliminate the origin of the Risk (for example replace the asset for a new one with the vulnerability and in this way, eliminate the origin of the risk).
- Transfer: Pass the Residual Risk to a third party (for example an insurance company).

Option	Residual risks	Status	What to to in SimpleRisk?	
Mitigate	i) When 10 > Residual	Mitigated	Add additional	Change risk
the risk	risks > 4		controls in the	status to
	AND		"Mitigation Tab"	Mitigated
			or/and adjust the	
	ii) It is possible to implement a control to mitigate it		"Mitigation Percent" so the Residual Risk can be < 4	

Accept the risk	i) When 4 > Residual risks > 0 OR ii) When the cost of implementing the control is more expensive that the asset value.	Accepted	Do nothing because the risk is low	Change risk status to Accepted
Transfer the risk	i) When 10 > Residual risks > 4ANDii) It is NOT possible to implement a control to mitigate it	Transferred	In "Security Recommendations" explain how to transfer the risk	Change risk status to Transferred
Avoid the risk	 i) When 10 > Residual risks > 4 AND ii) It is NOT possible to implement a control to mitigate it 	Avoided	In "Security Recommendations" explain how to avoid the risk	Change risk status to Avoided

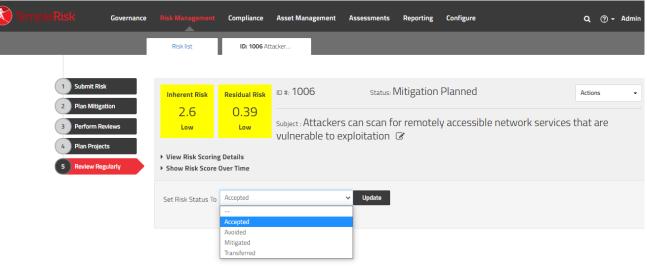


Ilustración 28: accomplished

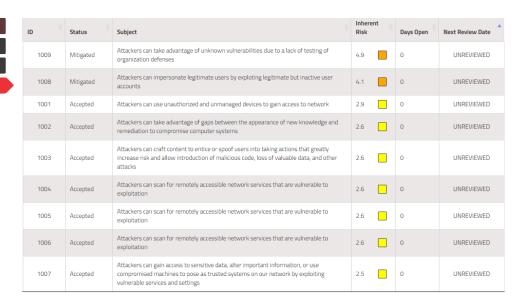


Ilustración 29: accomplished

4. SECTION FOUR:

 Executive Summary: Prepare an Executive Summary where you can resume the most important aspect of the risk analysis that you have just done. You can use graphs, tables, figures or any other element obtained from SimpleRisk. The executive summary must help help to explain to the manager: the higher risks in the company, how many risks where transferred/avoided/accepted/mitigated and the change in the risk value before controls (total risk) and after controls (residual risk).

Some interesting figures can be obtained from the "Reporting" Tab in SimpleRisk:

- o Mitigated vs unmitigated
- o Level of risks [Very High, High, Medium, Low] from the Risk Dashboard
- Risk status [Accepted, Avoided, Mitigated, Transferred] from the Risk Dashboard
- o Risk source [External, People, Process, System] from the Risk Dashboard
- Risk by Asset
- High Risk Report



Ilustración 30: Executive summary

CONCLUSIONS

In the course of this laboratory we learned the use of different tools for the identification of risks, their classifications and impacts in the business field, as well as we learned to use Simple Risk to be able to carry out the steps in risk mitigation, thus lowering its criticality.

REFERENCES

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- Samsungmobile, securityupdate
 https://security.samsungmobile.com/securityUpdate.smsb
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- Ncsc, cyberaware, https://www.ncsc.gov.uk/cyberaware/home
- BBC, technology, https://www.bbc.com/news/technology
- OWASP, OWASP Risk Rating Methodology, https://www.owasp.org/index.php/OWASP_Risk_Rating_Methodology