VULNERABILITY DEFENCES PROJECT

ASSESSMENT 1 for CP2423

Overview of the Team Design Project

In this assignment, your group is to select two different types of Metasploittable 2 vulnerabilities (types: operating system, malicious software, system applications, or web-application issues) and explore what reasonable security controls could be used to prevent, reduce or detect these vulnerabilities (without fixing them). Group will create a report discussing the possible security controls, available tools for implementing these controls and create a class demonstration of two different types of controls (tools).

Defence Challenge

In this assignment, you will work in a team of 3-4 students for a project to explore and design security controls that would be effective in the defence of existing vulnerabilities in the system that needs to be protected. The defenses are different security control mechanisms that help in dealing with vulnerabilities. Typically, we try to remove vulnerabilities, but unfortunately many remain hidden, and therefore IT security specialists will need to build multiple layers of safeguards to prepare for a range of possible issues. Suitable security controls can be selected from a range of control types: preventative, reductive, detective and repressive.

You will use a Kali Linux virtual machine as the hostile system, and the Metasploittable 2 as the target system. You can install additional VMs in your test lab setup as needed. You can change the configuration of the target system as well as install additional software, but in this exercise, you need to leave the selected vulnerabilities unchanged.

Assignment Activities and Deliverables

- Based on your interest, select two vulnerabilities in Metasploittable 2 (see: Metasploitable 2 Exploitability Guide | Metasploit Documentation (rapid7.com) for a list of vulnerabilities)
- Experiment and learn about the vulnerabilities by exploiting them using Kali
- Consider possible layered defences that would be effective, study and experiment with them
- Select 4 security controls to implement
- Create a demonstration to show the working of these controls
- As you work, create team meeting records to track the team's discussions, decisions and work (you can use the below templates).
- Create a report of your team's considerations for the suitable controls and include your justification for selections made
- Create a lab setup and instructions for running your demonstration, so that other classmates will be able to repeat your demonstration on their own.

Marking Criteria:

- Quality of team notes (10%)
- Report of considerations and recommendations for suitable security controls (30%)
- Demonstration of controls (30%
- Demonstration setup and instructions (30%)

Team Meeting Minutes Template

Name of Team:

Date of Meeting: Start Time: Finished Time:

Members present:

Members absent:

Meeting Chairperson:

Minutes taken by:

Summary of Meeting: (what have been discussed?)

Actions for Team members:

Actions to do	Who will do this work?	By When?

Next Meeting Date:

Next Meeting Time:

Meeting chairperson sign to approve of this meeting minute:

Name: Signature: Date:

Research notes and insights template

Research Notes by: Student Name

	Source:	**Insights:**
1	Samsung smart things, http://www.samsung.com/uk/smartthings/	A smart hub is used by Samsung to control different appliances at home, one of their objective is to create a safer home
2		
3		
4		

Further notes:

For example, further