Network Systems Security [CMP3821] Mini Project

Date:09 April 2025 Due Date: 09 May 2025

Instructions:

1. The assignment is to be done in teams according to the table below.
2. Each team has a team leader. The highlighted names are on the list.
3. Every team member is expected to participate, team leaders are responsible for assigning tasks to other members and keeping track of progress on those activities.
4. Marks will be awarded on meeting the minimum requirements of the scenario as well as the innovations of the proposed solution.

Teams:

Team 1
Wilfried Mweneni Nendongo
Alzira Cindykile Dongua
Frans Booye Ashikoto
Victoria Namene Kulula
Alma Ndeunongonona Haihambo

Team 2
Kosmas Frans
Raphael Mbambangandu Thikusho
Aune Ndevatungila Ndinalange Kamati
Betuel Verizemburuka Ngarukwe
Absalom Ndinomwene Shishiveni

Team 3
Rosalia Ndahambelela Helao
Festus Helao Shatipamba
Nehemia Nehemia
Michael Dwight Nanub
Nestor Kondjeni Hekandjo

Team 4
Aina Shalongo Iiyehela
Helemana Mbute Nakwenye Rabanus
Frans Luhenge
Wilhelm Namwenyo
Salomo Tukuna Benjamen

Team 5
Alessandro Demitrio Van Rooy
Petrus Shatyoohamba Nghuumbwa
Vevangee Mukungu
Fiina Nelago Amupolo
Justino Iipumbu Herman David

Team 6
Petrina Helena Rejoice Ihuhwa
Matheus Kudumo Junior Kalihonda
Gundjileni Nahogandja
Simon Ndiipanda Iileka
Fhulufhelo Karlyn Ramphaga
Twindileni Amandla Owetu Shitaleni

Team 7
Leonard Mpula David
Jackson Erastus Filippus
Ananias Gabriel Shilongo
Mbitjita Ndjambi Kamapunga
Quincy Beukes
Beata Ndinelago Kashuna

Team 8
Renathe Mwengere Kayunde
Benjamin Intja Hairungu
Samuel Shakusheka Kanganzi
Simon Panduleni Nashini
Dian Winnie Jakob

Team 9
Denias Nafimanetate Nghiwedua
Bkay Libangosi Sepo
Ewaldine Eises
Oscar Shitaleni Pandapala Amulungu
Elizabeth Stela Goncalves Tchikenge
Sisekelo Zwane

Team 10
Thurston Junior Somseb
Righteous Wasambo
Shaunn-John Kandiwapa Namuandi
Abisai Tangi Haiduwa
Vyshalani Briyanka Mouton

Scenario:
NamZone is a local Namibian company that deals in connecting sellers of second-hand goods with potential buyers. The company currently operates using a range of social media platforms, such as Facebook Market Place, to get sellers and potential buyers. The company employs five people who verify listings and normally share files such as images, proof of payments, proof of residence, identity documents, etc. via a WhatsApp group only accessible to them and the owner of the company.

They have enlisted your company, Glamourous Technologies, to digitalise their operations by developing a secure platform, such as a website, to conduct these transactions. The task has been given to you and your fellow UNAM fourth-year students to come up with a secure solution that will enable sellers to list items and the company to verify the items before listing them on the website to potential buyers.

The company recently purchased three servers: x1 Rocky Linux server with two Network Interface Cards (NIC), x1 Ubuntu server with one NIC, and x1 Windows Server with one NIC. Currently, internet access to the organisation's LAN is via the Rocky Linux server connected to the internet on one NIC, but it also acts as an internet gateway to the other two servers and end devices on the second NIC connected.

Part A: Infrastructure (25 Marks)
Using virtual machines (VM), simulate the above-mentioned server infrastructure by installing VMs with the said Operating Systems and NICs.

Part B: Services (25 Marks)
Host the following services and more on the servers based on the most appropriate service for the server, keeping in mind factors such as required access and security:

- Website
- Database
- File Sharing server
- VPN server
- Active Directory

Part C: Security Services (30 Marks)
Given that the website and some services will be accessible from outside, there is a need to have security services to reduce cybersecurity risks and likehoods of attacks. Configure these services on the servers based on the desired access to the server for maintenance and the services the server offers to the LAN and Internet.

Part D: Documentation (20 Marks)

- Perform and document a vulnerability assessment of the infrastructure based on what you have done.
- Perform a cybersecurity risk assessment of NamZone's operations and IT assets.
- Draft a policy governing the cybersecurity operations of NamZone to improve or maintain a positive cybersecurity posture.
- Come up with a 10-minute presentation of the work carried out.

Team leaders should upload these files on Moodle