Lab #1: Assessment Worksheet

Part A – List of Risks, Threats, and Vulnerabilities

Commonly Found in an IT Infrastructure

Course Name: IAA202

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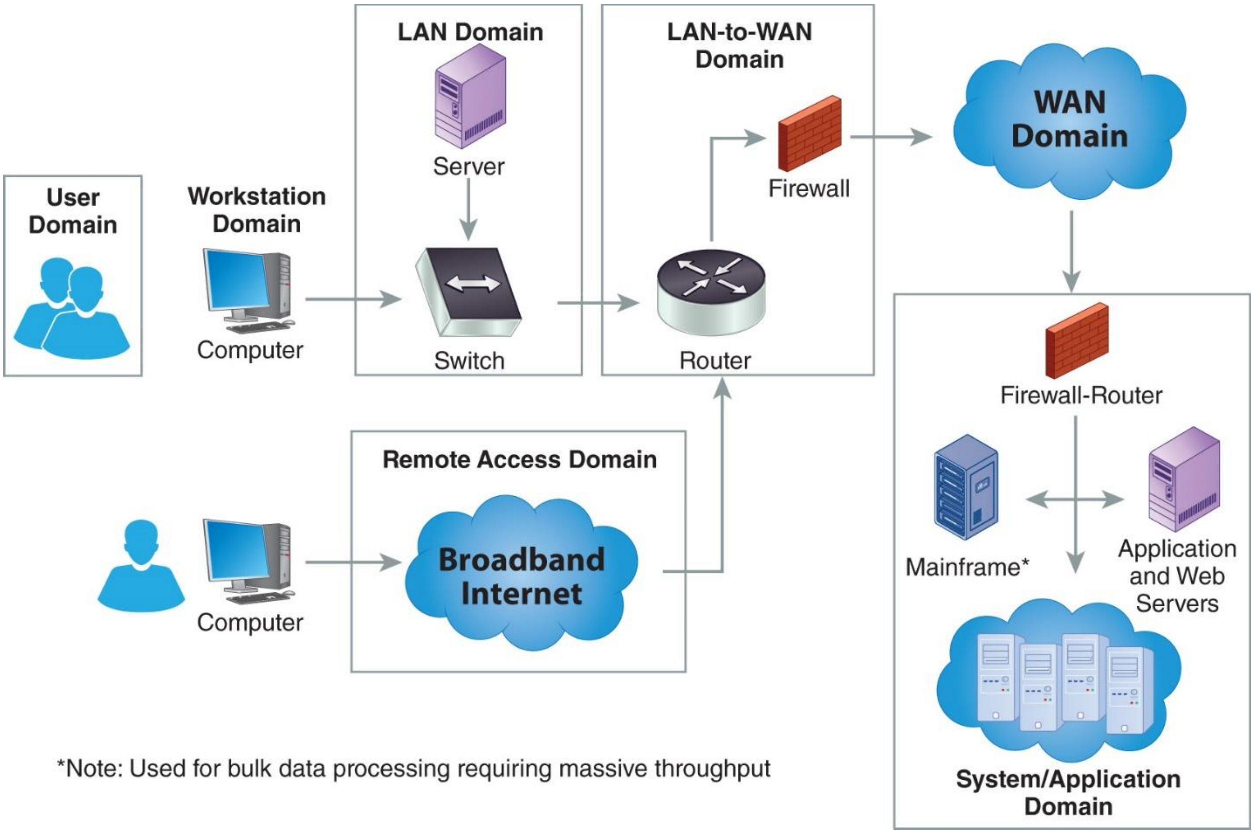
Lab Due Date: 09/11/2024

Overview

The following risks, threats, and vulnerabilities were found in a healthcare IT infrastructure servicing patients with life-threatening situations. Given the list, select which of the seven domains of a typical IT infrastructure is primarily impacted by the risk, threat, or vulnerability.



Risk – Threat – Vulnerability	**Primary Domain Impacted**
Unauthorized access from public Internet	Remote Access Domain
User destroys data in application and deletes all files	System/Application Domain
Hacker penetrates your IT infrastructure and gains access to your internal network	LAN-to-WAN Domain
Intra-office employee romance gone bad	User Domain
Fire destroys primary data center	System/Application Domain
Communication circuit outages	WAN Domain
Workstation OS has a known software vulnerability	Workstation Domain
Unauthorized access to organization owned Workstations	Workstation Domain
Loss of production data	System/Application Domain
Denial of service attack on organization e-mail Server	LAN-to-WAN Domain
Remote communications from home office	Remote Access Domain
LAN server OS has a known software vulnerability	LAN Domain
User downloads an unknown e –mail attachment	User Domain
Workstation browser has software vulnerability	Workstation Domain
Service provider has a major network outage	WAN Domain
Weak ingress/egress traffic filtering degrades Performance	LAN-to-WAN Domain
User inserts CDs and USB hard drives with personal photos, music, and videos on organization owned computers	User Domain
VPN tunneling between remote computer and ingress/egress router	LAN-to-WAN Domain
WLAN access points are needed for LAN connectivity within a warehouse	LAN Domain
Need to prevent rogue users from unauthorized WLAN access	LAN Domain

Lab #1: Assessment Worksheet

Identify Threats and Vulnerabilities in an IT Infrastructure

Course Name: IAA202

Student Name: Phạm Thành Long

Instructor Name: Mai Hoàng Đỉnh

Lab Due Date: 09/11/2024

Overview

One of the most important first steps to risk management and implementing a risk mitigation strategy is to identify known risks, threats, and vulnerabilities and organize them. The purpose of the seven domains of a typical IT infrastructure is to help organize the roles, responsibilities, and accountabilities for risk management and risk mitigation. This lab requires students to identify risks, threats, and vulnerabilities and map them to the domain that these impact from a risk management perspective.

Lab Assessment Questions

Given the scenario of a healthcare organization, answer the following Lab #1 assessment questions from a risk management perspective:

1. Healthcare organizations are under strict compliance to HIPPA privacy requirements which require that an organization have proper security controls for handling personal healthcare information (PHI) privacy data. This includes security controls for the IT infrastructure handling PHI privacy data. Which one of the listed risks, threats, or vulnerabilities can violate HIPPA privacy requirements? List one and justify your answer in one or two sentences.
   Risk/Threat/Vulnerability: Unauthorized access from public Internet
   Justification: Unauthorized access from the public Internet could expose personal healthcare information (PHI), which would directly violate HIPAA privacy requirements. This is a significant risk because attackers might gain access to sensitive patient data, leading to potential data breaches and compromising patient confidentiality.
2. How many threats and vulnerabilities did you find that impacted risk within each of the seven domains of a typical IT infrastructure?
   User Domain: **3**

   Workstation Domain: **3**

   LAN Domain: **3**

   LAN-to-WAN Domain: **4**

   WAN Domain: **2**

   Remote Access Domain: **2**

System/Application Domain: **3**

3. Which domain(s) had the greatest number of risks, threats, and vulnerabilities?
   LAN-to-WAN Domain
4. What is the risk impact or risk factor (critical, major, minor) that you would qualitatively assign to the risks, threats, and vulnerabilities you identified for the LAN-to-WAN Domain for the healthcare and HIPPA compliance scenario?

Risk – Threat – Vulnerability	Risk Impact/Risk Factor
Hacker penetrates your IT infrastructure and gains access to your internal network	Critical
Denial of service attack on organization e-mail Server	Major
Weak ingress/egress traffic filtering degrades Performance	Major
VPN tunneling between remote computer and ingress/egress router	Critical
Intra-office employee romance gone bad	Minor

5. Of the three Systems/Application Domain risks, threats, and vulnerabilities identified, which one requires a disaster recovery plan and business continuity plan to maintain continued operations during a catastrophic outage?
   Fire destroys the primary data center because as the primary there is no other backup.
6. Which domain represents the greatest risk and uncertainty to an organization?
   User Domain
7. Which domain requires stringent access controls and encryption for connectivity to corporate resources from home?
   User Domain
8. Which domain requires annual security awareness training and employee background checks for sensitive positions to help mitigate risk from employee sabotage?
   User Domain, Workstation Domain
9. Which domains need software vulnerability assessments to mitigate risk from software vulnerabilities?
   Workstation Domain, LAN Domain, System/Application Domain, LAN-to-WAN Domain
10. Which domain requires AUPs to minimize unnecessary User initiated Internet traffic and can be monitored and controlled by web content filters?
    Workstation Domain, WAN Domain
11. In which domain do you implement web content filters?
    LAN-to-WAN Domain
12. If you implement a wireless LAN (WLAN) to support connectivity for laptops in the Workstation Domain, which domain does WLAN fall within?
    LAN Domain
13. A bank under Gramm-Leach-Bliley-Act (GLBA) for protecting customer privacy has just implemented their online banking solution allowing customers to access their accounts and perform transactions via their computer or PDA device. Online banking servers and their public Internet hosting would fall within which domains of security responsibility?
    WAN Domain
14. Customers that conduct online banking using their laptop or personal computer must use HTTPS:, the secure and encrypted version of HTTP: browser communications. HTTPS:// encrypts webpage

data inputs and data through the public Internet and decrypts that webpage and data once displayed on your browser. True or False.

True

HTTPS (Hypertext Transfer Protocol Secure) encrypts data transmitted between a user's browser and the website, ensuring that any data inputs, like login credentials or financial information, are securely encrypted over the public Internet. This encryption is decrypted once the data reaches its destination, protecting it from being intercepted by unauthorized parties.

15. Explain how a layered security strategy throughout the 7-domains of a typical IT infrastructure can help mitigate risk exposure for loss of privacy data or confidential data from the Systems/Application Domain.

    Each domain checks and balances other domains. There are coverage overlaps that ensure that there is going to be no gaps. Software upgrades would help out workstation, LAN, and System/Application domain.