Competency Assessment

Introduction   Assessment   Rubric and Minimum Submission Requirements

This competency assessment assesses the following Outcome(s):

IT331M6-6: Formulate a network security design.

GEL-1.02: Demonstrate college-level communications through the composition of original materials in Standard English.

GEL-8.03: Apply critical thinking to formulate a logical solution to a problem.

The purpose of this assessment is to test your knowledge and understanding of the concepts of the module.

Assessment Instructions

This assessment has two parts. Complete both parts and place both in the same word document below the cover page.

Assessment Part 1

Complete the following questions in an MS Word Document in APA format. Double space your work and use current APA formatting (Sans Serif Fonts. Example Arial 11-point font). You must include both a separate cover and reference page.

Scenario: You have been tasked with creating a training document on security for the BIO Corporation.

1. Discuss the differences between external and internal threats as they relate to network security. Identify the threat which is most difficult to defend against and note the reasons why. List the protections that would be used specifically related to internal threats. Include why it is important for organizations to have a written security policy.
2. Discuss "Pretty Good Privacy" (PGP). What is it? Why has it stood the test of time? In your opinion, will it be good enough in the future? Why or why not? Compare it to Kerberos encryption. Include a key encryption that you consider to be better than PGP.
3. Identify and compare the two primary and currently used techniques to secure wireless communications. How safe are your data communications when using a typical wireless hotspot (public)? How can you improve your data security when using one of these services?

Assessment Part 2

Using the following information infrastructure network project scenario and the guidelines you will find below this scenario:

- Analyze this network and create an assessment of its current operation. Keep security considerations at the forefront of your analysis.
- Use your assessment to determine what changes should be made to the network in order to better meet the needs of those who utilize that network. Use a problem/solution format table to highlight your findings. Use one table with at least five problem solution combinations.
- How would you solve the problems of this network? Write a proposal to make three or more changes to the network. Keep security considerations at the forefront of your proposal.

Project Scenario

Information Infrastructure Network Project Scenario

Current Network

My cousin, Kyle Gavotte, owns and manages a specialty products manufacturing company, Gifts of Fortune Enterprises. The one-story, 1,200 sq. ft. building warehouse is located in Midtown. He has 20 employees, five in the main office and 15 in the warehouse. His current network supports five desktop computers in the main office, one laptop, and a connected dot matrix printer in the warehouse. Each computer is running Windows 7 Pro. One laser printer is connected to the computer of Kyle's assistant. The other employees often email the assistant their print jobs. They usually get their printouts within four hours of the request.

Kyle and his assistant's computers are the only ones with Internet connection directly from the router switch provided by the ISP, Nation Online (NOL). An older (from 1999) 8-port switch connects all of the workstations and the laptop so that they can share files in a peer-to-peer network configuration. In terms of security, Kyle makes sure to lock the doors at night; other than that, he has not considered security for his operations. He thinks there may be a firewall on the router supplied by the ISP but is not sure what it does. He is very concerned that competitors might steal his customer and product information.

New Network Needs

Things are going very well for Gifts of Fortune Enterprises. Kyle wants to expand his business to include an e-commerce website and school fundraiser division. With the increase in sales, he will need to find 14 more warehouse employees, two more office staff employees, and three field sales reps who can place orders electronically. The school fundraiser division will need to have a separate warehouse/office location as space is tight now in the current location. Kyle will expand his operations in the warehouse next to the current location. He is prepared to spend money to bring his network into a high-performance state that will easily facilitate his employees' efforts and all his business processes.

Kyle has a contract signed with an application development consultant to develop a CRM database/application that will be used to track customers and fulfill orders. He also plans to add an integrated central accounting application. He has been told that he will need new servers but is not sure what they are or how to build a network around them. Currently, his applications are a combination of single-user access databases and Excel spreadsheets. He is not sure about Cloud-based services and SAAS, but he feels that they lack security. He hesitates to use them and wants his own network, including private email and access control features.

He needs your help in upgrading the company network. He looks forward to your complete analysis as well as a comprehensive proposal, including some detailed cost breakdowns on equipment.

You decide to apply what you know about ITIL to ensure your cousin gets the service he deserves.

Assessment Instructions

Submit the network assessment, the problem/solution table, and the project proposal to the Dropbox in a single APA formatted Word document, which includes both the cover page and references.

Part A: Network Assessment

Give a thorough assessment of the network. The assessment should compile, update, and synthesize your information about the network. It should include details of the network's current usage and configuration (media, devices, addressing, and communications).

Assessment Guidelines

Network Assessment Guidelines

1. Identify the primary types of media employed. Be sure to include both how the computers individually connect to the network devices as well as how network devices interconnect and how the connection to the Internet is achieved. Briefly explain the purpose of each type of media employed in the network.
2. Identify at least two specific points where you think noise or other signal integrity issues may impact the infrastructure. For each, identify at least one appropriate strategy for error prevention to address the issue.
3. Identify all network devices utilized, describe them, and explain the purpose of each in the network.

4. Identify all items (peripheral devices, data, applications, access points, etc.) being shared by users on the network. Explain how each is shared.
5. Identify the connection to the Internet WAN. Identify the media, devices, and service providers involved in establishing this connection. Describe what protocols/services are being implemented over this connection.
6. Identify the forms of security utilized. Be sure to consider physical as well as electronic security. For electronic security, be sure to include items like virus checks, firewalls, and encryption protocols employed in addition to any access controls. Explain how each helps to secure the network.

Part B: Problem/Solution Table

Your problem solution table should highlight the major deficiencies with the current network and provide a concise solution for each. Include future considerations in relation to the New Network Needs section of the scenario in problem/solution format. Especially consider all aspects of security for the network and infrastructure.

Part C: Proposal Document

The proposal should address the problems or deficiencies identified in the network assessment and meet specific, assessable project goals. The proposal should contain the following sections.

Project Justification: Explain why this project is important for best meeting user needs. Be sure to explain why the current infrastructure is inadequate to meet the user needs in addition to explaining the needs and their importance in general.

Project Goals: Include three goals. Be sure that each of your goals is specific. Explain how each relates to the overall need. Explain the success criteria for identifying if the goal is met.

Solution Summary: Briefly describe how the solutions for each goal fit together and how they fit into the overall infrastructure. Also, provide a cost estimate and project schedule estimate for implementing all of these solutions.

Impact: Describe how this infrastructure change will impact the network infrastructure overall as it relates to all user needs not just to the need specifically addressed by the goals of this project. Are there any additional benefits? Are there any areas where functionality is impaired, or other issues may arise?

IT Infrastructure Library (ITIL): Identify and add what ITIL management practice was helpful in the project.

Directions for Submitting Your Assessment

Submit Part 1 as well as Part 2, the network assessment, the problem/solution table, and the project proposal to the Dropbox in a single APA formatted Word document that includes both cover page and references. Save it as IT331 YourName_M6_Assessment and submit it to the Dropbox for Module 6 by the deadline.

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