

FYP2 — FYP2 TASK 1: SECURE NETWORK DESIGN

SECURE NETWORK DESIGN — C700
PERFORMANCE ASSESSMENT — FYP2

TASK OVERVIEW

SUBMISSIONS

SCORE REPORTS

COMPETENCIES

4027.1.7 Troubleshooting Network Problems

The graduate performs root cause analysis to determine the source of network-related problems and propose solutions.

4027.1.8 Secure Network Architecture

The graduate designs secure network architectures based on industry best practices and the principles of secure network design.

INTRODUCTION

Secure network design is a critical component for protecting resources, processes, and business continuity. Effective network design involves evaluating existing network problems and potential threats, considering secure architectures based on industry best practices and secure design principles, and proposing secure network design solutions that address the business needs of the organization.

For this task, you will access the "Performance Assessment Lab Area" within the course of study to run Zenmap and OpenVAS. Screenshots saved for submission must include your name and student ID. Your final network drawing should be in a Microsoft Visio format.

SCENARIO

Company A is a property and casualty insurer underwriting multiple types of insurance. Company A is acquiring Company B, a financial services organization, in order to diversify and increase market share. Company B conducts business in the same geographical area as Company A and delivers business and individual financial planning services. Both companies provide services from their respective offices and at the customer's site. Both companies use broadband connectivity.

You are the IT director for Company A and will be the chief information officer (CIO) for the merged organization. You are tasked with analyzing, designing, and presenting the proposed IT integration project. Company A has clear IT infrastructure documentation, including a logical diagram, an organizational chart, and a recent security risk analysis. Company B does not have any IT infrastructure documentation, and several security and integration issues are evident. Company B outsources any IT-related needs to a consultant. Leadership for the merged organization has allocated a limited budget of \$35,000 for this project and will expect justification for recommended expenditures.

Integration project requirements include following secure network design principles, selecting or repurposing secure network components, assuring secure communication channels, addressing relevant regulatory compliance, minimizing potential network problems and security threats, delivering integration cost savings, and aligning IT to meet the business needs of the post-merger organization. This post-merger organization will reflect one corporate office and a branch office.

REQUIREMENTS

Your submission must be your original work. No more than a combined total of 30% of the submission and no more than a 10% match to any one individual source can be directly quoted or closely paraphrased from sources, even if cited correctly. An originality report is provided when you submit your task that can be used as a guide.

You must use the rubric to direct the creation of your submission because it provides detailed criteria that will be used to evaluate your work. Each requirement below may be evaluated by more than one rubric aspect. The rubric aspect titles may contain hyperlinks to relevant portions of the course.

Existing Network Architecture

A. Describe the network problems Company A has with infrastructure and network security using details from the attached "Company A Organizational Chart," "Company A Risk Analysis," and "Company A Visio Diagram."

Note: You may have to do independent research regarding the devices used in the attached "Company A Visio Diagram."

B. Run Zenmap and OpenVAS on Company B's network using the "Performance Assessment Lab Area" web link. Submit the output of *both* tools, including your name and student ID as part of your submission of *each* output.

C. Describe network security and infrastructure problems, including potential impact, of Company B using details from the outputs of Zenmap and OpenVAS.

Note: You may have to do independent research in order to interpret the details from OPenVAS and ZenMAP.

Proposed Network Infrastructure Plan

D. Propose a network topology diagram using Microsoft Visio that represents the merging requirements of Company A and Company B and would remediate *all* existing infrastructure issues.

E. Justify the retention or deletion of existing components, and the possible addition of new components as suggested in your proposed network topology diagram, including how *each* component's retention, deletion, or addition addresses *both* security and budgetary concerns included in the scenario.

Network Architecture Summary

F. Explain how you included secure network design principles in the proposed network topology diagram, including specific examples where these principles are applied.

G. Explain how you integrated secure hardware components into the proposed network topology diagram to address the needs of the merged organization.

H. Explain how you implemented secure communication channels for various communication types in the proposed network topology diagram.

I. Explain how the proposed network topology diagram addresses relevant regulatory compliance requirements for the merged organization.

J. Summarize security threats and potential network problems that would become a risk as part of the implementation of the proposed network topology diagram and how those problems should be managed or mitigated.

K. Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

L. Demonstrate professional communication in the content and presentation of your submission.

RUBRIC

A:COMPANY A'S NETWORK PROBLEMS

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The submission describes Company A's security and infrastructure problems accurately. The submission includes appropriate details of the network security and infrastructure problems found in the attached "Company A Organizational Chart," "Company A Risk Analysis," and "Company A Visio Diagram."

B:ZENMAP AND OPENVAS

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The output reports of both Zenmap and OpenVAS are provided, including the student name and ID.

C:COMPANY B'S NETWORK PROBLEMS

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The description of Company B's network security and infrastructure problems, including potential impact, is accurate and includes appropriate details from Zenmap and OpenVAS.

D:MERGED NETWORK TOPOLOGY

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The merged network topology diagram using Microsoft Visio is accurate and remediates all existing infrastructure issues.

E:JUSTIFICATION OF MERGED NETWORK TOPOLOGY

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The justification of the retention or deletion of existing components and the possible addition of new components appropriately reflect the candidate's proposed network topology diagram. The justification includes how each component addresses both the relevant security and budgetary concerns found in the scenario.

F:SECURE NETWORK DESIGN PRINCIPLES

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The explanation includes relevant secure design principles and is supported by specific examples where these principles are applied.

G:SECURE HARDWARE COMPONENTS

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The explanation of how secure hardware components are integrated into the proposed network topology diagram is provided and addresses the relevant needs of the merged organization.

H:COMMUNICATION CHANNELS

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The explanation accurately addresses how secure communication channels for various communication types are implemented in the proposed network topology diagram.

I:REGULATORY COMPLIANCE REQUIREMENTS

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The explanation of how the proposed network topology diagram addresses relevant regulatory compliance requirements is accurate and addresses how the compliance requirements are relevant for the merged organization.

J:INTEGRATION PROBLEMS

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The summary of security threats and potential network problems that would become a risk as part of the implementation of the proposed network topology diagram is relevant, and how those problems could be managed or mitigated is accurate.

K:SOURCES or
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The submission includes in-text citations for sources that are properly quoted, paraphrased, or summarized and a reference list that accurately identifies the author, date, title, and source location as available. Or the candidate does not use sources.

L:PROFESSIONAL COMMUNICATION fol-
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Content reflects attention to detail, is organized, and focuses on the main ideas as prescribed in the task or chosen by the candidate. Terminology is pertinent, is used correctly, and effectively conveys the intended meaning. Mechanics, usage, and grammar promote accurate interpretation and understanding.

WEB LINKS

[Performance Assessment Lab Area](#)

SUPPORTING DOCUMENTS

[Company A Organization Chart.pdf](#)

[Company A Risk Analysis.docx](#)

[Company A Visio Diagram.pdf](#)