

BITS2413 2022 Project

Learning Objectives:

1. Completing the assigned lab activity using the hardware in the lab
2. Demonstrating tests or verifications of the assigned lab activity in the lab
3. Proposing a secure network that extends the security infrastructure configured in (1)
4. Designing and configuring the proposed network in (4) in a suitable network simulator / emulator program
5. Presenting the works done in (4) via online means
6. Reporting the lab activity in (1) and the proposed network in (4)

Project Requirement

This project is divided into two parts.

In **Part A**, you are required to complete the **lab activity** assigned to your group using the lab equipment. Document the configurations and the answers to the questions in the lab sheet in the project report. Demonstrate the testing / verification of the configurations in the lab.

In **Part B**, you are required to **design and implement a secure network** that implements the security configurations you did in Part A in another network. The network that you propose must be scaled up to cater a minimum of 5 times the number of devices in Part A. Use any suitable network simulator or emulator program such as Packet Tracer, GNS3, PNETLab, EVE-NG, etc. Document your work in a report. Present your work orally and visually by making a video.

Task Due Dates, Deliverables & Mark Allocation (Total marks: 150)

Part A only

Item	Description	Due	Mark (Full mark Part A only: 20)	Penalty for late delivery
Part A: Demonstration in the lab	Plan and conduct your demo: <ul style="list-style-type: none"> Recommended duration is 10 to 30 minutes per group Briefly introduce the lab activity Demonstrate how test / verifications are done and their result 	W13 Tuesday 31 May 2022, Lab time	<ul style="list-style-type: none"> 10 marks for testing and result 10 marks for demo flow Total = 20 marks 	-10 per week

Part B only

Item	Description	Due	Mark (Full mark Part B only: 50)	Penalty for late delivery
Part B: Submit simulation / emulation file	Simulation / emulation file must: <ul style="list-style-type: none"> Clearly show the proposed network design (if different from what proposed, state the changes in the final report). Completely implemented with the specified security configs. 	W15 Friday 17 June 2022, 09:00	<ul style="list-style-type: none"> 10 marks for network design 20 marks for configs Total = 30 marks 	-10 per week
Part B: Submit video link	Video should show: <ul style="list-style-type: none"> The network design diagram with description Demonstration of testing the security configs and their results 	W15 Friday 17 June 2022, 09:00	<ul style="list-style-type: none"> 5 marks for network design + explanation 15 marks for demo Total = 20 marks 	-10 per week

Part A&B

Item	Description	Due	Mark (Full mark Part A&B: 80)	Penalty for late delivery
Part A&B: Submit project proposal	<p>A document (max: 5 pages) that contains:</p> <ul style="list-style-type: none"> Team number and lab group (e.g.: Team 3 S1G2) Task assignment for each team member Introduction to the security infra done in Part A – its importance to secure the network Proposal for Part B: a network scenario that implements the security infra above, with number of devices being minimum 5 times the number of devices in the lab activity. The network design diagram and addressing scheme 	W11 Wednesday 18 May 2022, 09:00	<ul style="list-style-type: none"> 5 marks for task assignments 2 marks for intro to your assigned sec infra 8 marks for network design and scenario Total = 15 marks 	-5 per week
Part A&B: Submit report	<p>A document that reports:</p> <ul style="list-style-type: none"> Part A: <ul style="list-style-type: none"> Logical network design (diagram) and physical network design (photo of the actual lab devices) IP address table. Record of configs done as diagram / snapshots Result of tests / verifications. Answers to questions in the lab sheet. Part B: <ul style="list-style-type: none"> The network scenario (you can copy from the proposal if there is no change) Record of configs done as diagram / snapshots Result of tests / verifications. List of references 	<p>W13 Tuesday 31 May 2022, Lab time (Before demo) Draft for Part A</p> <p>W15 Friday 17 June 2022, 09:00 Overall Final Report (Part A +B)</p>	<ul style="list-style-type: none"> 20 marks for Part A 20 marks for Part B 5 marks for references + report presentation Total = 45 marks 	-10 per week
Part A&B: Submit self and peer evaluation	Fill in the form provided by giving each of your group members a mark of 0 to 20	W15 Friday 17 June 2022, 09:00	<ul style="list-style-type: none"> 20 marks 	-10 per week

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