Module 04: Quiz

- Due Feb 14 at 11:59pm
- Points 10
- Questions 5
- Time Limit 10 Minutes

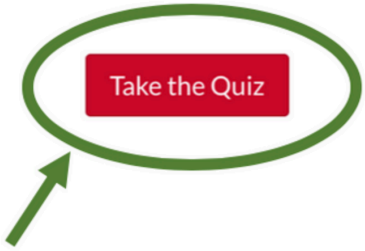
Instructions

Purpose

This quiz is over the materials for Module 04. This quiz focuses on understanding network attack point scenarios (including what network layers a bad actor can attack based on where they are positioned in relation to the victim), defining the vulnerability types, and applying information about both to classify and determine where an attack fits within the taxonomy of network-based vulnerabilities.

Task

DO NOT HIT THE BUTTON UNTIL YOU'RE READY TO TAKE THE QUIZ.



- You may **not** work in groups or with another person.
- You may only take this quiz once.
- Make sure you will not be interrupted so you can focus on completing the quiz.
- Make sure you have a reliable internet connection.
- You have 10 minutes to complete this quiz. Once you start the quiz, you cannot stop the timer.
  - **Pay attention to the time.** The time remaining is located on a timer on the right sidebar.
  - The quiz will *automatically* submit after your time is up or if it hits the due date (whichever comes first).
  - If you accidentally navigate away from the quiz but have time remaining, you should be able to pick up where you left off.

- For multiple select questions (e.g., the 'select all that apply' questions with checkboxes), Canvas auto-grading will reduce the overall score for incorrectly selected options. Unselected options will not alter the score (you won't gain or lose points for not selecting a statement or option, regardless of whether it is correct or incorrect). Be mindful when selecting options for this style of question. Please review the **FAQs page (https://canvas.iastate.edu/courses/116478/pages/frequently-asked-questions#GradingQ7)** for scoring information on these types of problems.
- Open book/notes/internet - but answers must be your own. Do not copy and do not plagiarize.
- Don't hit the button until you're ready to take the quiz!

Grading Criteria

To complete this assignment, you will answer all of the questions for this assignment. Canvas will show your scores upon submission. If you have questions about what you missed, please contact your TA.

Solutions

You will be able to see your quiz responses after submitting the quiz. Canvas will show answers with feedback. Please note this feedback and any corrections; you will only see this screen once.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	9 minutes	10 out of 10

ⓘ Correct answers are hidden.

Score for this quiz: 10 out of 10
Submitted Feb 14 at 4:26pm
This attempt took 9 minutes.

There are several different attack points in the network model. Consider Alice and Bob, who are on two different networks and are communicating with each other. For the next two questions, select all correct attack information based on where the attacker is located (some questions may have more than one correct answer - pick **all** correct ones).

Note: Canvas auto-grading will reduce the overall score on these problems for incorrectly selected network layers. Unselected network layers will not alter the score (you won't gain or lose points for not selecting a statement, regardless of whether it is correct or incorrect).

Question 1
2 / 2 pts
If the bad actor is located on Bob's network, which network layer(s) on Bob's computer can be attacked? Select all that apply.

- [x] Physical Layer

Correct.

- [x] Network Layer

Correct.

- [x] Transport Layer

Correct.

- [x] Application Layer

Correct.

- [x] User Layer

Correct

- [ ] None of the layers can be attacked

All layers can be attacked in this scenario.

Question 2
2 / 2 pts
Which network layers on your computer can an attacker sitting somewhere on the Internet attack?

- [ ] Physical Layer
- [x] Network Layer

Correct

- [x] Transport Layer

Correct

- [x] Application Layer

Correct

- [x] User Layer

Correct

- [ ] None of the layers can be attacked

The network, transport, application, and user layers can be attacked in this scenario. The physical layer cannot be attacked since the routers replace that header in the packet along the way as part of the routing protocol.

Question 3

1 / 1 pts

True or False: If an attacker gains access to Bob's network but not his computer, the attacker can read/decipher the encrypted data sent between Alice and Bob.

- ○ True
- ◉ False

Correct

Question 4

1 / 1 pts

Match the information and example to the type of vulnerability listed below.

Implementation vulnerabilities

What it is: very difficult to find, may or may not be easy to fix once discovered

Example: misinterpretation in the protocol specification

Answer 1:

not be easily mitigated, may require mitigation in higher-layer protocols

system set up incorrectly or system default are used

very difficult to find, may or may not be easy to fix once discovered

Correct. very difficult to find, may or may not be easy to fix once discovered

Answer 2:

not considering security ramifications in the protocol

misinterpretation in the protocol specification

Correct

system default passwords are not changed

Question 5

4 / 4 pts

For the following attacks, match the name to its description and to its type of security vulnerability within the network taxonomy.

Address Spoofing

What it is: changing an address in the packet to an incorrect value

Where it is in the taxonomy: [Select]

SYN Flood

What it is: [Select]

Where it is in the taxonomy: Protocol-Based Vulnerability

Answer 1:

capture all of the traffic on a network

changing an address in the packet to an incorrect value

Correct

reassembly buffer overflow

repeated, unfinished TCP three-way handshake connections

Answer 2:

Authentication-Based Vulnerability

Correct

Header-Based Vulnerability

Protocol-Based Vulnerability

Traffic-Based Vulnerability

Answer 3:

capture all of the traffic on a network

changing an address in the packet to an incorrect value

reassembly buffer overflow

repeated, unfinished TCP three-way handshake connections

Correct

Answer 4:

Authentication-Based Vulnerability

Header-Based Vulnerability

Protocol-Based Vulnerability

Correct

Traffic-Based Vulnerability

Quiz Score: 10 out of 10