Name: _____ Date: _____ Score: _____

NordVPN Security

Examining NordVPN security features including NordLynx protocol, Double VPN, Onion Over VPN, Threat Protection, zero-logs audits, and AES-256 encryption.

NORDVPN SECURITY LEARNING OVERVIEW

LEARNER
STUDENT STATUS
Network Defender Track

SECURE
CONNECTION STATUS
Shielding data packets

ON
LEAK PROTECTION
DNS & IPv6 leak protection

Welcome! This activity packet guides you through NordVPN's security features. You will explore proprietary NordLynx, diskless RAM nodes, Double VPN cascades, and independent zero-logs audits.

WORKSHEET CHECKPOINTS

- [ ] **Part 1-4: Master VPN and network security configurations.**
- [ ] **Part 5-7: Solve crossword & word search puzzles.**
- [ ] **Part 8-9: Solve case studies & cipher challenge.**
- [ ] **Part 10: Review basic & advanced FAQ pages.**
- [ ] **Part 11: Explore 10 interesting real-world facts.**
- [ ] **Bonus: Think Fast challenge.**

Open the VPN.com Best VPNs Guide

URL: https://www.vpn.com/vpn/nordvpn/security/

Your NordVPN Security Learning Roadmap

- Analyze the technical architecture and configuration rules of NordVPN Security.
- Configure client settings to prevent IP, DNS, and WebRTC traffic leaks.
- Compare custom pricing, trial, and performance features against standard models.

NORDVPN SECURITY GUIDE INSTRUCTIONS

Answer the multiple choice and true/false questions, complete the fill-in-the-blank sentences using the word bank, match definitions, and solve the crossword and word search puzzles. Apply your knowledge to proprietary encryption protocols and RAM-only server nodes. Finish with the Bonus Activity: Think Fast.

PROPRIETARY NORDLYNX PROTOCOL & VULNERABILITY MITIGATIONS

NordVPN's custom NordLynx protocol integrates WireGuard with a double NAT system, designed for speed without storing user data. Its servers run on diskless RAM hardware, and PwC and Deloitte have verified its no-logs policy six times.

(INTRODUCTION)

NordVPN's custom NordLynx protocol integrates WireGuard with a double NAT system, designed for speed without storing user data. Its servers run on diskless RAM hardware, and PwC and Deloitte have verified its no-logs policy six times.

READ EACH CHECKPOINT CAREFULLY AND SELECT OR WRITE THE CORRECT RESPONSE.

Checkpoint 1: Multiple Choice Challenge

1. **1. What is NordVPN's proprietary connection protocol?**
   - A) OpenVPN
   - B) NordLynx
   - C) IKEv2
   - D) Lightway

2. **2. Which architecture runs servers strictly in volatile RAM?**
   - A) Dual NAT
   - B) Meshnet
   - C) Diskless RAM Tiers
   - D) Split Tunneling

3. **3. Which feature blocks ads, trackers, and malware domains?**
   - A) Double VPN
   - B) NordLynx
   - C) Threat Protection
   - D) Onion Over VPN

4. **4. How does Double VPN enhance transmission security?**
   - A) Chains Two Servers
   - B) Doubles Bandwidth
   - C) Compresses Packets
   - D) Bypasses ISP Taxes

5. **5. Which independent firm audited NordVPN's zero-logs policy?**
   - A) BDO
   - B) KPMG
   - C) Ernst & Young
   - D) Deloitte / PwC

Checkpoint 2: True or False Challenge

6 Question 6

6. NordLynx is built directly on top of the WireGuard protocol.

○ True ○ False

7 Question 7

7. Threat Protection Pro requires an active VPN connection to run.

○ True ○ False

8 Question 8

8. A Dedicated IP gives one user an address no one else shares.

○ True ○ False

9 Question 9

9. The App Kill Switch blocks system-wide traffic if a tunnel drops.

○ True ○ False

10 Question 10

10. NordVPN chose diskless RAM servers over hard-drive servers.

○ True ○ False

Checkpoint 3: Key Term Insertion

Read each sentence below and fill in the blank with the correct term from the Word Bank.

1. The custom WireGuard-based connection protocol is named _____ by NordVPN.
2. Data is protected from local hardware seizure using diskless _____ nodes.
3. Malware and invasive trackers are blocked using the built-in _____ feature.
4. Routing traffic through two encryption nodes is achieved via _____ tunnels.
5. PwC and Deloitte validated NordVPN's strict, zero-retention _____ policy.
6. Internet access is cut immediately during tunnel drops via the _____ failsafe.
7. Safe LAN-like connections can be built across devices using _____ routing.
8. Data payload security is enforced using AES-256 and ChaCha20 _____ encryption.

VOCABULARY WORD BANK

CIPHERS DOUBLE VPN KILL SWITCH MESHNET NO-LOGS NORDLYNX RAM-ONLY THREAT PROTECTION

Write your answers here:

1.
2.
3.
4.
5.
6.
7.
8.

Checkpoint 4: VPN & Network Concept Match

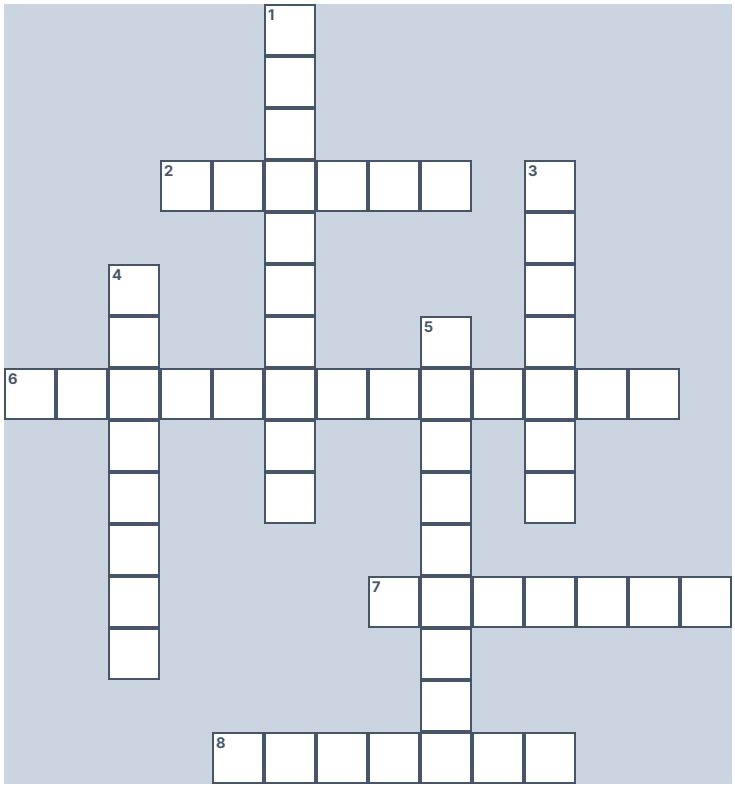
DEFINITION MATCHING

Match each vocabulary term on the left with its correct definition on the right by writing the corresponding letter (A-H) in the fillable input box.

☐	1. NORDLYNX	A	A decentralized routing tool to connect devices directly.
☐	2. RAM-ONLY	B	A local security suite that blocks trackers, ads, and malware.
☐	3. THREAT PROTECTION	C	Cryptographic algorithms used to secure payload data.
☐	4. DOUBLE VPN	D	Volatile memory server hardware that retains no data upon restart.
☐	5. NO-LOGS	E	Chaining two VPN servers to encrypt data twice.
☐	6. KILL SWITCH	F	NordVPN's custom protocol built on the WireGuard standard.
☐	7. MESHNET	G	A strict data retention standard verified by external audits.
☐	8. CIPHERS	H	A safety feature that cuts traffic when a VPN drops.

Checkpoint 5: Crossword Puzzle

Solve the crossword puzzle by typing letters into the active white boxes. The numbers correspond to the clues below.



ACROSS CLUES

2. A strict data retention standard verified by external audits (6)

6. A local security suite that blocks trackers, ads, and malware (13)

7. A decentralized routing tool to connect devices directly (7)

8. Volatile memory server hardware that retains no data upon restart (7)

DOWN CLUES

1. A safety feature that cuts traffic when a VPN drops (10)

3. Cryptographic algorithms used to secure payload data (7)

4. NordVPN's custom protocol built on the WireGuard standard (8)

5. Chaining two VPN servers to encrypt data twice (9)

Checkpoint 5 Alternative: Accessible Crossword Clues

Screen-reader and keyboard users can type the crossword answers directly in the text fields below.

ACROSS CLUES

2 Across: A strict data retention standard verified by external audits (6 letters):

6 Across: A local security suite that blocks trackers, ads, and malware (13 letters):

7 Across: A decentralized routing tool to connect devices directly (7 letters):

8 Across: Volatile memory server hardware that retains no data upon restart (7 letters):

DOWN CLUES

1 Down: A safety feature that cuts traffic when a VPN drops (10 letters):

3 Down: Cryptographic algorithms used to secure payload data (7 letters):

4 Down: NordVPN's custom protocol built on the WireGuard standard (8 letters):

5 Down: Chaining two VPN servers to encrypt data twice (9 letters):

Checkpoint 6: Hidden Word Search

Find the 8 key vocabulary terms hidden in the grid below. Words can be horizontal, vertical, or diagonal.

C I P H E R S D S Z V C Z W F
K H Z D N D Q O X P N C U B A
H T Z N D K A U D O O D F H I
C E D R Q M E B I R R Z S F Q
T N V F A A Q L O N D P T X Q
I H K R U S D E N Y L B F S X
W S W J A R Z V Y Y Y L G I M
S E R J M L T P O R N H Q Q H
L M Z A O V G N U A X B Y R Y
L B H L Z G J O P M N W C M Z
I T H R E A T P R O T E C T Y
K G Y O W U K V P N B N V T M
G V N O L O G S D L Y U K R B
X Z Y M R Q X I P Y D A D J Q
V W W L J H T H G B E I K T S

VOCABULARY WORD LIST

NORDLYNX RAMONLY THREATPROTECT DOUBLEVPN NOLOGS KILLSWITCH MESHNET CIPHERS

Checkpoint 6 Alternative: Accessible Vocabulary Matching

Match each of the 8 vocabulary terms from the Word Search to its correct definition by writing the letter (A-H) in the blank space.

VOCABULARY TERMS
A. NORDLYNX
B. RAMONLY
C. THREATPROTECT
D. DOUBLEVPN
E. NOLOGS
F. KILLSWITCH
G. MESHNET
H. CIPHERS

DEFINITIONS & MATCH FIELDS

1. _____ Cryptographic algorithms used to secure payload data.
2. _____ A safety feature that cuts traffic when a VPN drops.
3. _____ A decentralized routing tool to connect devices directly.
4. _____ A local security suite that blocks trackers, ads, and malware.
5. _____ Chaining two VPN servers to encrypt data twice.
6. _____ NordVPN's custom protocol built on the WireGuard standard.
7. _____ A strict data retention standard verified by external audits.
8. _____ Volatile memory server hardware that retains no data upon restart.

Checkpoint 7: Scrambled Word Challenge

Unscramble the letters below to reveal key Virtual Private Network (VPN) concepts and terms. Write your answers in the input boxes provided.

1. NDLNYOXR
2. CAHTRTEPTOTRE
3. NLOSGO
4. TENHEMS
5. NYOMRLA
6. PBOVEDLNU
7. ILKIWTCHSL
8. IHSCREP

Bonus Activity: Think Fast

3 ITEMS FROM EACH CATEGORY. FIRST PERSON TO COMPLETE THE LIST WINS.

1	Signs your VPN connection is slow			
2	Ways to make a strong password			
3	Apps you would use together with NordVPN			
4	Reasons to choose NordVPN			
5	Countries where you'd want NordVPN servers			
6	Types of VPN leaks			
7	VPN protocols you know			
8	Things an audit can check			
9	Features you look for in NordVPN			
10	Countries known for strong privacy laws			
11	Questions for NordVPN customer support			
12	Security features in NordVPN			
13	Threats on public Wi-Fi			
14	Settings you turn on for extra security			
15	Things encryption protects			

Checkpoint 8: VPN & Network Case Studies

Apply the concepts you have learned to solve the real-world scenarios below.

CASE STUDY 1: DOUBLE ENCRYPTION DEPLOYMENT

Scenario: A journalist needs to transmit highly sensitive documents from a high-censorship country.

Discussion Question: Which NordVPN server profile should they use to maximize encryption safety?

CASE STUDY 2: MALWARE PREVENTION ON SHARED NETWORKS

Scenario: A remote company wants to prevent employees from downloading malicious files over public Wi-Fi.

Discussion Question: What feature should they keep running in the NordVPN client at all times?

Checkpoint 9: Decrypting the Cipher

A network engineer secures routing channels and client tunnels. Use the Letter-to-Number key below to decrypt the message by writing the matching letters in the blank spaces.

LETTER-TO-NUMBER ENCRYPTION KEY

A=1 B=2 C=3 D=4 E=5 F=6 G=7 H=8 I=9 J=10 K=11 L=12 M=13

N=14 O=15 P=16 Q=17 R=18 S=19 T=20 U=21 V=22 W=23 X=24 Y=25 Z=26

14 15 18 4 12 25 14 24 14 1 20 9 22 5 12 25

9 14 3 15 18 16 15 18 1 20 5 19 20 8 5

23 9 18 5 7 21 1 18 4 19 5 3 21 18 9 20 25

16 18 15 20 15 3 15 12

Decoded message:

TIP: EACH NUMBER REPRESENTS THE POSITION OF THAT LETTER IN THE ALPHABET (E.G. 1 = A, 2 = B, 26 = Z).

Checkpoint 10: Basic VPN FAQs (Part A)

Review the most common questions and answers regarding Virtual Private Networks (VPNs) and tunneling.

Q1: What is NordLynx?

NordVPN's custom protocol built on WireGuard, optimized for speed and security.

Q2: Does NordVPN store logs?

No, NordVPN maintains a strict zero-logs policy audited by Deloitte and PwC. [2]

Q3: What is Threat Protection?

An integrated tool that blocks ads, trackers, and scans downloads for malware.

Q4: What is Double VPN?

A feature that routes your traffic through two separate VPN servers for double encryption.

Q5: How does the kill switch work?

It blocks your device from accessing the internet if the VPN connection drops.

Checkpoint 10: Basic VPN FAQs (Part B)

Review the most common questions and answers regarding Virtual Private Networks (VPNs) and tunneling.

Q6: Are NordVPN servers diskless?

Yes, NordVPN operates a diskless, RAM-only server network to protect user data.

Q7: Where is NordVPN based?

NordVPN is based in Panama, which has no mandatory data retention laws.

Q8: What encryption cipher is used?

AES-256 is used for OpenVPN/IKEv2, while ChaCha20 is used for NordLynx.

Q9: What is Onion Over VPN?

A feature that routes traffic through NordVPN and then the Tor network.

Q10: Does NordVPN protect against leaks?

Yes, NordVPN has DNS leak protection; VPN.com found no DNS leaks in testing. [7]

Checkpoint 10: Advanced VPN FAQs (Part C)

Explore advanced technical aspects of VPN tunneling protocols, mobile client integrations, and enterprise deployment.

Q1: How does NordLynx solve privacy?

It uses a double NAT system to assign secure temporary IPs without storing user data on servers. [8]

Q2: How secure is RAM-only hardware?

Since RAM loses all data on reboot, server seizure yields no historical traffic logs.

Q3: What is the App Kill Switch?

Unlike the internet kill switch, it terminates only specified applications if the VPN drops.

Q4: Are NordVPN servers collocated?

Yes, NordVPN is increasing its collocated server count, meaning they own the hardware directly.

Q5: How are security audits conducted?

PwC reviewed its no-logs setup in 2018 and 2020; Deloitte has done so yearly since 2022. [3]

Checkpoint 10: Advanced VPN FAQs (Part D)

Explore advanced technical aspects of VPN tunneling protocols, mobile client integrations, and enterprise deployment.

Q6: What is the Threat Protection Lite?

An earlier name for the DNS-based blocker, now called Scam and phishing protection.

Q7: How does Meshnet secure routing?

It creates encrypted point-to-point tunnels between user devices using NordLynx keys.

Q8: Does NordVPN support obfuscation?

Yes, obfuscated servers bypass firewalls by masking VPN traffic as HTTPS packets.

Q9: Is WebRTC leakage prevented?

WebRTC can expose IPs in browsers; keep the VPN connected and run a leak test to confirm.

Q10: How does PAN jurisdiction help?

Panama is outside 5/9/14-Eyes alliances and has no legislation forcing data retention.

Part 11: 10 Real-World VPN Facts & Insights

Review real-world facts regarding VPN encryption speeds, protocol audits, mobile connectivity, and enterprise remote work.

1. VPN INSIGHT
NordLynx is NordVPN's proprietary protocol built directly around WireGuard core code. [1]

2. VPN INSIGHT
Panama's jurisdiction has no mandatory data retention laws, preserving user privacy.

3. VPN INSIGHT
Deloitte has independently audited and verified NordVPN's zero-logs implementation. [9]

4. VPN INSIGHT
Threat Protection Pro runs on the device to block malicious files, ads, and trackers. [4]

5. VPN INSIGHT
Double VPN routes packets through two nodes, encrypting the data payload twice.

6. VPN INSIGHT
RAM-only server hardware prevents persistent storage of operational logs or keys. [5]

7. VPN INSIGHT
NordVPN utilizes AES-256-GCM and ChaCha20 ciphers to protect user traffic.

8. VPN INSIGHT
Obfuscated servers mask VPN packet headers to bypass restrictive national firewalls.

9. VPN INSIGHT
Meshnet builds encrypted peer-to-peer networks using local NordLynx configurations.

10. VPN INSIGHT
App-level kill switches terminate selected background processes if a tunnel drops.

Technical References & Sources

The study guide and interactive puzzles are compiled from global technical standards, specifications, and regulatory frameworks.

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Answer Key: Checkpoint 1 - Multiple Choice

1 Question 1

Correct Answer: B

TEACHING NOTE

NordLynx is NordVPN's own protocol, built on WireGuard with a double NAT system.

2 Question 2

Correct Answer: C

TEACHING NOTE

Diskless RAM servers keep everything in volatile memory, which is wiped when power is cut.

3 Question 3

Correct Answer: C

TEACHING NOTE

Threat Protection blocks ads, trackers, and malicious domains; the Pro version also scans downloads.

4 Question 4

Correct Answer: A

TEACHING NOTE

Double VPN chains two VPN servers so traffic is encrypted twice before reaching the web.

5 Question 5

Correct Answer: D

TEACHING NOTE

PwC Switzerland (2018, 2020) and Deloitte (2022–2025) verified NordVPN's no-logs policy.

Answer Key: Checkpoint 2 - True or False

6 Question 6

Correct Answer: True

TEACHING NOTE

True: NordLynx is built on WireGuard, adding a double NAT system for privacy.

7 Question 7

Correct Answer: False

TEACHING NOTE

False: Threat Protection Pro works even when the VPN is off.

8 Question 8

Correct Answer: True

TEACHING NOTE

True: a Dedicated IP is assigned to one user only, unlike shared VPN IP addresses.

9 Question 9

Correct Answer: False

TEACHING NOTE

False: the App Kill Switch closes only chosen apps; the Internet Kill Switch blocks all traffic.

10 Question 10

Correct Answer: True

TEACHING NOTE

True: NordVPN says it chose diskless RAM servers, which keep no data after power-off.

Vocabulary Keys & Grading Rubric

Instructor Grading Rubric: Award 1 point for each correct matching (8 points total) and context term (8 points total).

CHECKPOINT 4: CONCEPT MATCH KEY

F 1. NORDLYNX	D 2. RAM-ONLY	B 3. THREAT PROTECTION	E 4. DOUBLE VPN
G 5. NO-LOGS	H 6. KILL SWITCH	A 7. MESHNET	C 8. CIPHERS

CHECKPOINT 3: KEY TERM KEY

1 NORDLYNX	2 RAM-ONLY	3 THREAT PROTECTION	4 DOUBLE VPN
5 NO-LOGS	6 KILL SWITCH	7 MESHNET	8 CIPHERS

CHECKPOINT 6 ALTERNATIVE: VOCABULARY MATCH KEY

1 H – CIPHERS	2 F – KILLSWITCH	3 G – MESHNET	4 C – THREATPROTECT
5 D – DOUBLEVPN	6 A – NORDLYNX	7 E – NOLOGS	8 B – RAMONLY

DISCUSSION NOTES FOR INSTRUCTORS

Key Terms:
Check that students can explain NORDLYNX, RAM-ONLY and THREAT PROTECTION in their own words and give an example of each.

Case Studies:
Ask students to support their recommendations with facts from the worksheet rather than assumptions.

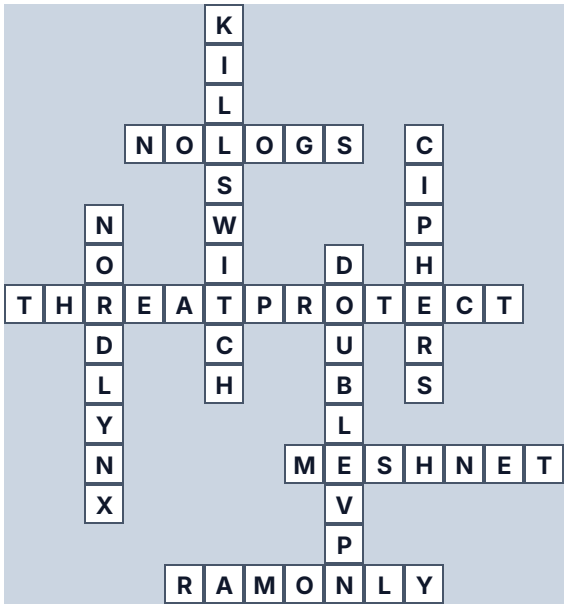
Source Evaluation:
Have students verify at least one claim against the worksheet references, and discuss why figures, prices and rules can change over time.

Puzzles Keys & Instructor Notes

WORD SEARCH SOLUTION

C	I	P	H	E	R	S	D	S	Z	V	C	Z	W	F
K	H	Z	D	N	D	Q	O	X	P	N	C	U	B	A
H	T	Z	N	D	K	A	U	D	O	O	D	F	H	I
C	E	D	R	Q	M	E	B	I	R	R	Z	S	F	Q
T	N	V	F	A	A	Q	L	O	N	D	P	T	X	Q
I	H	K	R	U	S	D	E	N	Y	L	B	F	S	X
W	S	W	J	A	R	Z	V	Y	Y	Y	L	G	I	M
S	E	R	J	M	L	T	P	O	R	N	H	Q	Q	H
L	M	Z	A	O	V	G	N	U	A	X	B	Y	R	Y
L	B	H	L	Z	G	J	O	P	M	N	W	C	M	Z
I	T	H	R	E	A	T	P	R	O	T	E	C	T	Y
K	G	Y	O	W	U	K	V	P	N	B	N	V	T	M
G	V	N	O	L	O	G	S	D	L	Y	U	K	R	B
X	Z	Y	M	R	Q	X	I	P	Y	D	A	D	J	Q
V	W	W	L	J	H	T	H	G	B	E	I	K	T	S

CROSSWORD SOLUTION



INSTRUCTOR GUIDE FOR CROSSWORD SOLUTIONS

ACROSS CLUES

2 Across: NOLOGS A strict data retention standard verified by external audits (6 letters)

6 Across: THREATPROTECT A local security suite that blocks trackers, ads, and malware (13 letters)

7 Across: MESHNET A decentralized routing tool to connect devices directly (7 letters)

8 Across: RAMONLY Volatile memory server hardware that retains no data upon restart (7 letters)

DOWN CLUES

1 Down: KILLSWITCH A safety feature that cuts traffic when a VPN drops (10 letters)

3 Down: CIPHERS Cryptographic algorithms used to secure payload data (7 letters)

4 Down: NORDLYNX NordVPN's custom protocol built on the WireGuard standard (8 letters)

5 Down: DOUBLEVPN Chaining two VPN servers to encrypt data twice (9 letters)

Scrambled Words & Cipher Solution Key

Grading key for the vocabulary word unscramble activity and Secret Cipher Challenge.

WORD UNSCRAMBLE KEY

1. NDLNYOXR — **NORDLYNX**
2. CAHTRTEPTOTRE — **THREATPROTECT**
3. NLOSGO — **NOLOGS**
4. TENHEMS — **MESHNET**
5. NYOMRLA — **RAMONLY**
6. PBOVEDLNU — **DOUBLEVPN**
7. ILKIWTCHSL — **KILLSWITCH**
8. IHSCREP — **CIPHERS**

SECRET CIPHER CHALLENGE KEY

"NORDLYNX NATIVELY INCORPORATES THE WIREGUARD SECURITY PROTOCOL"

Case Studies Solution Key

A CASE STUDY 1: DOUBLE ENCRYPTION DEPLOYMENT

Instructor Solution

GRADING GUIDELINE

Student answers should cover the following points:

- Scenario Analysis: A journalist needs to transmit highly sensitive documents from a high-censorship country.
- Recommended Strategy & Solution: Enable the Double VPN profile to encrypt data through two distinct server nodes.

B CASE STUDY 2: MALWARE PREVENTION ON SHARED NETWORKS

Instructor Solution

GRADING GUIDELINE

Student answers should cover the following points:

- Scenario Analysis: A remote company wants to prevent employees from downloading malicious files over public Wi-Fi.
- Recommended Strategy & Solution: Keep the Threat Protection feature enabled to scan downloads and block malware.