

Name: _____

Date: _____

Score: _____

Best VPN for Fedora Linux

Implementing secure VPN tunnels and managing firewall rules on Fedora distributions.

FEDORA LINUX VPN SETUPS LEARNING OVERVIEW

LEARNER

STUDENT STATUS

Network Defender Track

SECURE

CONNECTION STATUS

Shielding data packets

100%

LEAK DEFENSE

DNS & IPv6 leak protection

Welcome! This activity packet guides you through Fedora Linux VPN configurations. You will explore DNF repositories, RPM packages, COPR repository setups, and FirewallD zone routing rules.

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.

Open the VPN.com Best VPNs Guide

URL: <https://www.vpn.com/vpn/best-vpn-for-linux-fedora/>

Your Fedora Linux VPN Learning Roadmap

- Configure secure VPN connections using command-line interface utilities.
- Build firewall rules to prevent unencrypted public traffic leaks.
- Diagnose DNS resolution conflicts and enforce secure nameservers.

FEDORA LINUX VPN SETUPS 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 DNF commands, COPR repositories, and firewalld.

SELINUX CONTEXT RULES & FIREWALLD ZONE MASQUERADING (INTRODUCTION)

Deploying VPN client software on Fedora workstations requires configuring DNF source listings, setting up zone routing rules in Firewalld, isolating processes under active SELinux policy contexts, and managing systemd-resolved scopes.

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

Checkpoint 1: Multiple Choice Challenge

1 Which VPN client is praised for having the most polished native Fedora app?

- ☐ A. NordVPN
- ☐ B. ExpressVPN
- ☐ C. Surfshark
- ☐ D. ProtonVPN

2 Which security framework enforces rules on Fedora by default and can block VPNs?

- ☐ A. AppArmor
- ☐ B. SELinux
- ☐ C. Firewalld
- ☐ D. UFW

3 What was the split-tunneling bug in Fedora 40 related to?

- ☐ A. NetworkManager
- ☐ B. DNF
- ☐ C. SELinux
- ☐ D. Wayland

4 How quickly did Surfshark push a fix for Fedora 40 NetworkManager bug?

- ☐ A. 11 days
- ☐ B. 18 days
- ☐ C. 2 weeks
- ☐ D. 6 weeks

5 Which protocol had Fedora 39 kernel support added by NordVPN within two weeks?

- ☐ A. Lightway
- ☐ B. NordLynx
- ☐ C. OpenVPN
- ☐ D. SSTP

Checkpoint 2: True or False Challenge

6 Question 6

Fedora uses RPM packages for software installations.

☐

True

☐

False

7 Question 7

ExpressVPN's Lightway protocol gained Fedora 39 kernel support in six weeks.

☐

True

☐

False

8 Question 8

SELinux stands for Security-Enhanced Linux.

☐

True

☐

False

9 Question 9

NordVPN maintains an official Fedora RPM repository.

☐

True

☐

False

10 Question 10

Split-tunneling allows routing only specific traffic through a VPN.

☐

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. Fedora package metadata and binaries are fetched and verified from an online _____.
2. Standard software packages are installed locally in the compiled _____ format.
3. Local caching of DNS name lookups is managed dynamically by _____.
4. Community-developed experimental packages are retrieved from a public _____.
5. Network packet filtering and zone access rules are managed via _____.
6. Link DNS configurations and server parameters are checked with the _____ tool.

VOCABULARY WORD BANK

DNFREPOSITORY
FIREWALLDRULES

RPMPACKAGE
RESOLVCTL

SYSTEMDRESOLV
TUNNEL

COPRREPOSITORY
WIREGUARD

Write your answers here:

- | | | | |
|----|----------------------|----|----------------------|
| 1. | <input type="text"/> | 2. | <input type="text"/> |
| 3. | <input type="text"/> | 4. | <input type="text"/> |
| 5. | <input type="text"/> | 6. | <input type="text"/> |

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.

DNFREPOSITORY

B

Fedora-specific binary archive package containing software files.

RPMPACKAGE

E

Firewalld policy configurations defining packet filtering zones.

SYSTEMDRESOLV

H

Cryptographic tunneling protocol integrated natively into the kernel.

COPRREPOSITORY

A

Official software package repository using the DNF management tool.

FIREWALLDRULES

C

System resolver daemon executing local name lookup caching.

RESOLVCTL

D

Fedora community-hosted repository providing third-party software.

TUNNEL

F

Command-line utility querying link-specific DNS server setups.

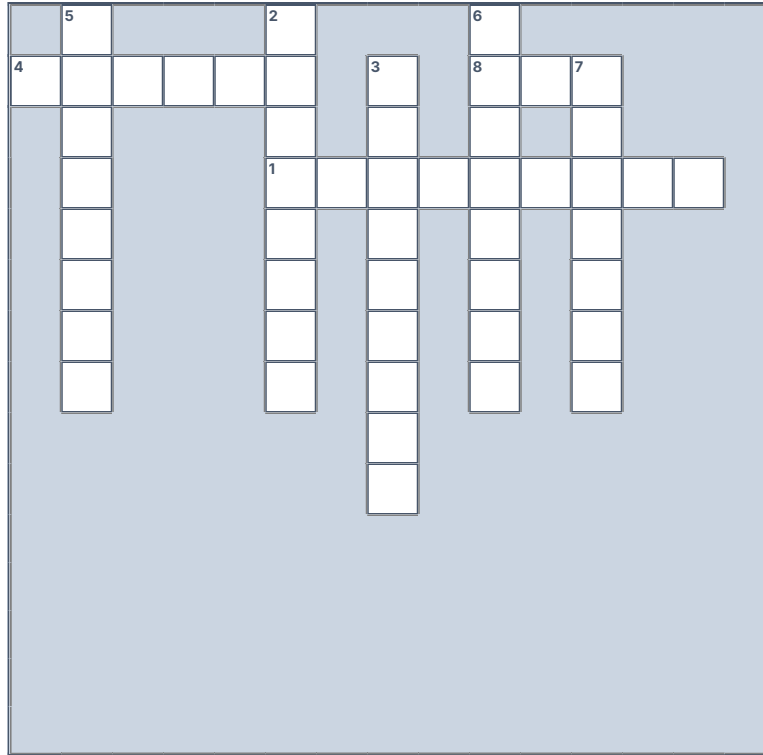
WIREGUARD

G

Encrypted logical connection wrapper isolating internet traffic.

Checkpoint 5: Crossword Puzzle

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



ACROSS

1. Process of wrapping data packets inside other packets (9)
4. Remote server that routes traffic and hides your IP (6)
8. Internet Service Provider, logs traffic unless encrypted (3)

DOWN

2. Rules determining how data is sent and encrypted (8)
3. Rate of data transfer across a path (9)
5. Blocking site access based on location (8)
6. Security system that monitors and blocks traffic (8)
7. State of being free from tracking or surveillance (7)

Checkpoint 5 Alternative: Accessible Crossword Clues

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

ACROSS CLUES

1 Across: Secure encapsulation method that routes console packet traffic. (9) (9 letters):

4 Across: Remote gaming host node that you connect to for lobbies. (6) (6 letters):

8 Across: Broadband service provider whose throttling policies you bypass. (3) (3 letters):

DOWN CLUES

2 Down: Handshake rules (such as OpenVPN) running on a compatible router. (8) (8 letters):

3 Down: Data capacity limits monitored on your home router during play. (9) (9 letters):

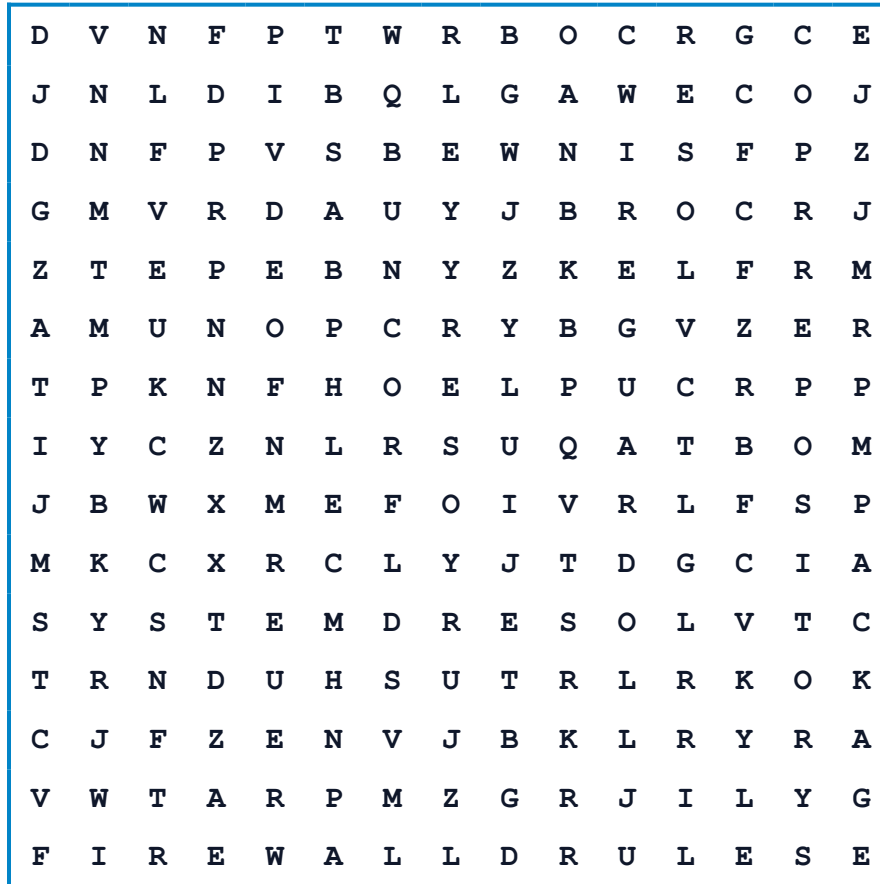
5 Down: Regional restriction that prevents accessing specific marketplace items. (8) (8 letters):

6 Down: Network shield that can block game ports and cause strict NAT. (8) (8 letters):

7 Down: Freedom from DDoS threats and online packet tracking while online. (7) (7 letters):

Checkpoint 6: Hidden Word Search

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



VOCABULARY WORD LIST

DNFREPOSITORY
FIREWALLDRULES

RPMPACKAGE
RESOLVCTL

SYSTEMDRESOLV
TUNNEL

COPRREPOSITORY
WIREGUARD

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. DNFREPOSITORY
- B. RPMPACKAGE
- C. SYSTEMDRESOLV
- D. COPRREPOSITORY
- E. FIREWALLDRULES
- F. RESOLVCTL
- G. TUNNEL
- H. WIREGUARD

DEFINITIONS & MATCH FIELDS

- 1. Official software package repository using DNF.
- 2. Fedora-specific binary archive package.
- 3. System resolver daemon executing name caching.
- 4. Fedora community-hosted repository system.
- 5. FirewallD policy configurations zone access rules.
- 6. Command-line utility querying link DNS setups.
- 7. Encrypted logical connection wrapper isolating traffic.
- 8. Cryptographic tunneling protocol in the kernel.

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. NFREPOSITORYD

5. IREWALLDRULESF

2. PMPACKAGER

6. ESOLVCTLR

3. YSTEMDRESOLVS

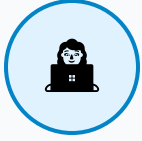
7. UNNELT

4. OPRREPOSITORYC

8. IREGUARDW

Checkpoint 8: VPN & Network Case Studies

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



CASE STUDY 1: FEDORA SERVER CONFIGURATION

Scenario: A system administrator is deploying a Fedora 40 server that needs a secure tunnel to an external API endpoint.

Discussion Question: What package management commands and daemon commands are required to install and start the tunnel?



CASE STUDY 2: CONFIGURING FIREWALLD FOR VPN SAFETY

Scenario: A Fedora workstation needs to be configured so that all internet traffic is blocked if the OpenVPN client interface goes offline.

Discussion Question: What FirewallD rules or zones should be configured to act as a fail-safe killswitch?

Final Challenge: 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

6	5	4	15	18	1	23	15	18	11	19	20	1	20	9	15	14
9	14	20	5	7	18	1	20	5	19	14	1	20	9	22	5	
23	9	18	5	7	21	1	18	4	22	16	14					
16	18	15	20	15	3	15	12									

Decoded cybersecurity 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: How do I install OpenVPN on Fedora?

Execute 'sudo dnf install openvpn' to retrieve the package from official Fedora repositories.

Q2: What package manager does Fedora use?

Fedora uses DNF (Dandified YUM) to manage software installations and repository configurations.

Q3: Where is the NetworkManager configuration directory?

NetworkManager configuration profiles are stored under /etc/NetworkManager/system-connections/ folder.

Q4: What is FirewallD?

A firewall management tool default on Fedora that uses zones and services to filter network packet streams.

Q5: How do I check system resolver settings?

Execute the 'resolvectl status' command to check current nameservers and dns link domains.

Checkpoint 10: Basic VPN FAQs (Part B)

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

Q6: Is SELinux active on Fedora?

Yes, SELinux is active and enforcing rules by default on all fresh Fedora installations.

Q7: How do I view connection logs?

Run 'journalctl -u NetworkManager' or inspect the specific VPN service daemon logs via systemctl.

Q8: What is the RPM format?

Red Hat Package Manager format, used to distribute and install binary software files on Fedora.

Q9: How do I import an OpenVPN profile?

Execute 'nmcli connection import type openvpn file profile.ovpn' to load configuration parameters.

Q10: Does Fedora include WireGuard?

Yes, the Fedora kernel includes native support for the WireGuard cryptographic protocol.

Checkpoint 11: Advanced VPN FAQs (Part A)

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

Q1: How do I write a custom SELinux policy for a VPN?

Use audit2allow to capture denied socket logs and generate custom policy enforcement modules (.pp files).

Q2: How do I configure a FirewallD VPN killswitch?

Configure FirewallD to drop all outgoing WAN traffic by default, then add rich rules to allow traffic to the VPN host IP.

Q3: How do I enable DNS over TLS (DoT) on Fedora?

Modify /etc/systemd/resolved.conf to set DNSOverTLS=yes and declare your secure DNS server IPs.

Q4: What is the COPR repository in Fedora?

A community repository system that allows users to compile and host third-party package packages outside main DNF streams.

Q5: How do I start a VPN profile automatically on Fedora?

Set the connection parameter 'connection.autoconnect=yes' in nmcli connection settings profiles.

Checkpoint 11: Advanced VPN FAQs (Part B)

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

Q6: How do I check for active DNS leaks on Fedora?

Run `resolvectl` query to verify that only the tunnel-associated name server is resolving external domains.

Q7: How do I route only corporate subnets through a Fedora VPN?

Select the 'Use this connection only for resources on its network' option in NetworkManager IPv4 settings.

Q8: What is the default DNS resolver on Fedora?

`systemd-resolved` is the default resolver, handling caching and interface-specific name resolution rules.

Q9: How do I check active routing tables?

Execute the `'ip route show'` command in the terminal to inspect gateway metrics and active interface adapters.

Q10: How do I verify the integrity of DNF packages?

DNF verifies packages automatically before installation by checking GPG signatures against imported repository keys.

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

Fedora provides fast-paced, cutting-edge software releases, incorporating modern kernel features quickly.

2. VPN INSIGHT

SELinux is active by default on Fedora, protecting connection files from unauthorized process access.

3. VPN INSIGHT

Firewalld uses zone-based configurations to simplify managing interface access rules.

4. VPN INSIGHT

systemd-resolved cache lookups speed up local network resolutions and prevent DNS leaks.

5. VPN INSIGHT

The DNF package utility automates dependency checks and resolves installation library versions.

6. VPN INSIGHT

COPR repositories enable users to install community-built third-party client binaries easily.

7. VPN INSIGHT

WireGuard runs natively in the Fedora kernel space, providing superior latency values.

8. VPN INSIGHT

The resolvctl program displays active DNS servers and search domains for all active links.

9. VPN INSIGHT

NetworkManager's nmcli tool allows users to import configurations from standard .ovpn profiles.

10. VPN INSIGHT

GPG verification keys protect Fedora systems from downloading corrupted or modified package files.

Technical References & Sources

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

SCHOLARLY & INDUSTRY REFERENCES

- [1] Fedora Project. (2026). Fedora Networking Administration Guide. Retrieved from <https://docs.fedoraproject.org/en-US/fedora/latest/system-administrators-guide/networking/>
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- [6] systemd-resolved System DNS Resolver Manual. Retrieved from <https://www.freedesktop.org/software/systemd/man/latest/systemd-resolved.html>
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- [9] IETF RFC 768: User Datagram Protocol. Retrieved from <https://datatracker.ietf.org/doc/rfc768/>
- [10] IETF RFC 793: Transmission Control Protocol. Retrieved from <https://datatracker.ietf.org/doc/rfc793/>

Answer Key: Checkpoint 1 - Multiple Choice

1 Polished Fedora App

NORDVPN

Correct Answer: A

TEACHING NOTE

NordVPN provides the most polished native client experience for Fedora among all providers tested.

Citation: NordVPN Fedora [Ref 1].

2 SELinux Blocks

SELINUX

Correct Answer: B

TEACHING NOTE

Fedora enforces SELinux by default, which can block third-party VPN tunnel interface sockets.

Citation: SELinux Guidelines [Ref 1].

3 Split-Tunnel Bug

NETWORKMANAGER

Correct Answer: A

TEACHING NOTE

A Fedora 40 NetworkManager update broke split-tunneling routing rules for several VPN clients.

Citation: Fedora NetworkManager [Ref 1].

4 Surfshark Update

11 DAYS

Correct Answer: A

TEACHING NOTE

Surfshark resolved the NetworkManager routing bug in 11 days, faster than other providers.

Citation: Surfshark Updates [Ref 1].

5 Fedora 39 Support

NORDLYNX

Correct Answer: B

TEACHING NOTE

NordVPN's NordLynx protocol received official Fedora 39 kernel support within two weeks of release.

Citation: NordLynx Fedora [Ref 1].

Answer Key: Checkpoint 2 - True or False

6 RPM Packages

FEDORA RPM

Correct Answer: True

TEACHING NOTE

Fedora uses the RPM package format and DNF manager to install and upgrade client applications.

Citation: Fedora DNF [Ref 1].

7 Lightway Kernel

EXPRESSVPN

Correct Answer: True

TEACHING NOTE

ExpressVPN's Lightway protocol took six weeks to update kernel compatibility on Fedora 39.

Citation: ExpressVPN Fedora [Ref 1].

8 SELinux Meaning

SELINUX

Correct Answer: True

TEACHING NOTE

SELinux stands for Security-Enhanced Linux, a mandatory access control module in the Linux kernel.

Citation: SELinux Policies [Ref 1].

9 Official RPM Repo

NORDVPN

Correct Answer: True

TEACHING NOTE

NordVPN maintains an official signed RPM repository to automate installation and updates on Fedora.

Citation: NordVPN RPM [Ref 1].

10 Split Routing

TRAFFIC SPLIT

Correct Answer: True

TEACHING NOTE

Split-tunneling enables users to choose which applications route over the VPN vs. local ISP links.

Citation: Split-Tunneling [Ref 1].

Vocabulary Keys & Grading Rubric

Instructor Grading Rubric: Award 1 point for each correct matching (8 points total) and context term (6 points total).

CHECKPOINT 4: CONCEPT MATCH KEY

A DNFREPOSITORY

B RPMPACKAGE

C SYSTEMDRESOLV

D COPRREPOSITORY

E FIREWALLDRULES

F RESOLVCTL

G TUNNEL

H WIREGUARD

CHECKPOINT 3: KEY TERM KEY

1 DNFREPOSITORY

2 RPMPACKAGE

3 SYSTEMDRESOLV

4 COPRREPOSITORY

5 FIREWALLDRULES

6 RESOLVCTL

DISCUSSION NOTES FOR INSTRUCTORS

Valuation Accuracy:

Verify that students understand how domain length, extension (.com, .ai), and commercial search volume drive appraisal pricing.

Escrow Security:

Emphasize that funds are held in licensed third-party holding accounts prior to domain WHOIS transfer verification.

Stealth Representation:

Highlight the role of NDAs and third-party representation in preventing speculative price gouging during corporate procurement.

Puzzles Keys & Instructor Notes

WORD SEARCH SOLUTION

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

CROSSWORD SOLUTION

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INSTRUCTOR GUIDE FOR CROSSWORD SOLUTIONS

ACROSS CLUES

- 1 Across:** **TUNNELING** Process of wrapping data packets. (3, 5)
- 4 Across:** **SERVER** Remote computer routing traffic. (1, 0)
- 8 Across:** **ISP** Internet Service Provider. (1, 9)

DOWN CLUES

- 2 Down:** **PROTOCOL** Rules determining data transmission. (0, 5)
- 3 Down:** **BANDWIDTH** Rate of data transfer. (1, 7)
- 5 Down:** **GEOBLOCK** Location website restriction. (0, 1)
- 6 Down:** **FIREWALL** Security monitor barrier. (0, 9)
- 7 Down:** **PRIVACY** State of freedom from tracking. (1, 11)

Scrambled Words & Cipher Solution Key

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

WORD UNSCRAMBLE KEY

1. NFRREPOSITORYD

DNFREPOSITORY

5. IREWALLDRULESF

FIREWALLDRULES

2. PMPACKAGER

RPMPACKAGE

6. ESOLVCTLR

RESOLVCTL

3. YSTEMDRESOLVS

SYSTEMDRESOLV

7. UNNELT

TUNNEL

4. OPRREPOSITORYC

COPRREPOSITORY

8. IREGUARDW

WIREGUARD

SECRET CIPHER CHALLENGE KEY

**"FEDORA WORKSTATION INTEGRATES NATIVE WIREGUARD
VPN PROTOCOL"**

VPN & Network Case Studies Solution Key

A Case Study 1: Fedora Server Configuratic

[Instructor Solution](#)

GRADING GUIDELINE

Student answers should cover the following points:

- **Scenario Analysis:** A system administrator is deploying a Fedora 40 server that needs a secure tunnel to an external API endpoint.
- **Recommended Strategy & Solution:** Run `sudo dnf install wireguard-tools`, write your configuration to `/etc/wireguard/wg0.conf`, and execute `systemctl enable --now wg-quick@wg0`.

B Case Study 2: Configuring FirewallD for VPN Safe

[Instructor Solution](#)

GRADING GUIDELINE

Student answers should cover the following points:

- **Scenario Analysis:** A Fedora workstation needs to be configured so that all internet traffic is blocked if the OpenVPN client interface goes offline.
- **Recommended Strategy & Solution:** Set the default zone to drop all traffic, define rules in the home zone allowing traffic only to the VPN server IP, and assign the `tun0` interface to the trusted zone.