

## 12.14: Virtual Private Networks (VPNs)

### Learning Objectives

- Discuss how businesses can use Virtual Private Networks (VPNs) to manage information

A **virtual private network (VPN)** extends a private network (intranet) across a public network (Internet), and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. Applications running across a VPN may therefore benefit from the functionality, security, and management of the private network while taking advantage of the flexibility of the Internet. In a business setting, remote-access VPNs allow employees to access their company's intranet from home or while traveling outside the office. Site-to-site VPNs allow employees in geographically separated offices to share one cohesive virtual network.

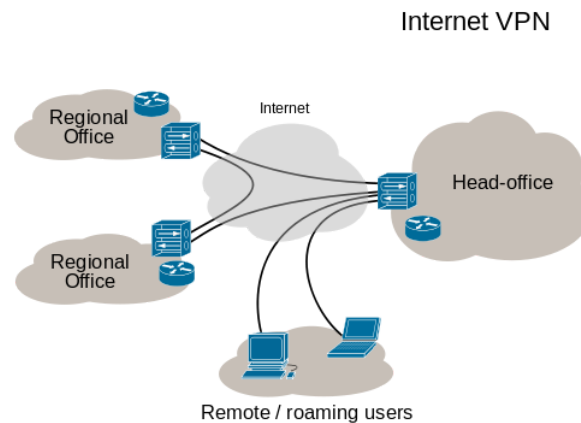


Figure 12.14.1: Internet VPN

To ensure security, the VPN connection is established using encryption protocols and VPN users use authentication methods, including passwords or certificates, to gain access to the VPN.

Although VPNs cannot make online connections completely secure, they can increase privacy and security. For example, to prevent disclosure of private information, VPNs typically allow only authenticated remote access using encryption techniques.

Some of the security advantages of a VPN include the following:

- even if the network traffic is accessed, an attacker would see only encrypted data
- sender authentication is required to prevent unauthorized users from accessing the VPN
- the VPN messaging is designed to detect instances of tampering with transmitted messages

As security concerns continue to grow in the digital age, more and more companies are emerging to serve the growing demand for VPN services. Which service a business chooses will be determined by its planned uses for the VPN.

### ? Practice Question

<https://assessments.lumenlearning.co...essments/11102>

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