

WIFI Security

VPN or Cellular

Arnold Silver

Protect Your Computer, Tablet, Phone In Public Places

- We assume our home WIFI is secure if we use a good password
- Public WIFI is *public*, definitely *not private*
- Connection is subject to eaves-droppers and other malicious players that can capture passwords and data, install malware, etc.
- Protection is available
 - VPN (Virtual Private Network)
 - Use cellular connection on phone our tablet
Assumes telephone connection is secure
 - Use cellular on laptop
 - Requires smart phone (or tablet) to set up your own private WIFI hot spot

A Virtual Private Network (VPN) is a network technology that creates a secure network connection over a public network such as the Internet or a private network owned by a service provider. Large corporations, educational institutions, and government agencies use VPN technology to enable remote users to securely connect to a private network

Point-To-Point Tunneling Protocol (PPTP) is another tunneling protocol used to connect a remote client to a private server over the Internet. PPTP is one of the most widely used VPN protocols because of its straightforward configuration and maintenance and also because it is included with the Windows operating system.

VPN technology employs sophisticated encryption to ensure security and prevent any unintentional interception of data between private sites. All traffic over a VPN is encrypted using algorithms to secure data integrity and privacy. VPN architecture is governed by a strict set of rules and standards to ensure a private communication channel between sites. Corporate network administrators are responsible for deciding the scope of a VPN, implementing and deploying a VPN, and ongoing monitoring of network traffic across the network firewall. A VPN requires administrators to be continually be aware of the overall architecture and scope of the VPN to ensure communications are kept private.

Advantages & Disadvantages

A VPN is an inexpensive effective way of building a private network. The use of the Internet as the main communications channel between sites is a cost effective alternative to expensive leased private lines. The costs to a corporation include the network authentication hardware and software used to authenticate users and any additional mechanisms such as authentication tokens or other secure devices. The relative ease, speed, and flexibility of VPN provisioning in comparison to leased lines makes VPNs an ideal choice for corporations who require flexibility. For example, a company can adjust the number of sites in the VPN according to changing requirements.

There are several potential disadvantages with VPN use. The lack of Quality of Service (QoS) management over the Internet can cause packet loss and other performance issues. Adverse network conditions that occur outside of the private network is beyond the control of the VPN administrator. For this reason, many large corporations pay for the use of trusted VPNs that use a private network to guarantee QoS. Vendor interoperability is another potential disadvantage as VPN technologies from one vendor may not be compatible with VPN technologies from another vendor. Neither of these disadvantages have prevented the widespread acceptance and deployment of VPN technology.

Virtual Private Network

- VPN is a service that directs all transmissions through the VPN server
 - VPN service encrypts all transmissions and hides your location for privacy
- Many VPN hosts available for phone, tablet, laptops
 - Both free and subscription (fee) available
 - Probably slows internet speed
- Trade-off between convenience and security
- VPN service encrypts all transmissions for privacy
- Many VPN hosts available for phone, tablet, laptops
 - Both free and subscription fee
 - Could slow internet speed

VPN +/-

Plus

- Encrypts all data
- “Cloaks” your location
- May defeat some subscription restrictions (?)

Minus

- Requires you to select among hundreds of VPN choices
- Slows data stream
- May slow setup and may require some manual action
- May require paid subscription (strongly suggested)

Cellular and Cellular Hot Spot

- Not free
- Cost will depend on your data plan
- Requires smart phone or tablet to provide Hot Spot for laptop

Demonstration of Cloak VPN on MacAir Laptop, iPad, and iPhone