

## Technology V11/S6: Virtual Private Networks

Virtual private networks are often referred to as VPNs. VPNs allow users to hide their locations, encrypt data, and prevent hacking. VPNs are becoming more common, but many people still do not know how they work.

### **How do VPNs work?**

In order to understand how VPNs work, we need to understand domain names, IP addresses, and servers. Domain names are easy-to-remember nicknames, such as Netflix.com or Facebook.com. IP addresses are the real names of these sites and are made up of a sequence of numbers. Servers process this information and send it back. When you visit a website, you are entering a domain name. When you click “enter”, the domain name is sent to the nearest server, where it is translated into the IP address. The server then directs you to the website you put in the domain name for. Your device’s IP address is connected to the data you requested, making your information vulnerable to hackers. A hacker is someone that breaks into networks and devices.

VPNs protect computers in a few different ways. One way is to add an extra server to the process of decoding. Before your request is sent to the server, it goes through the VPN’s server. Extra servers confuse hackers about the location of the information being requested. If a government or company tries to identify a particular device, they will be directed to the VPN’s server. VPNs also encrypt the information by “translating” it again, making it harder for hackers to understand. VPNs do not record which sites users visit, making it so their activity cannot be tracked.

### **How mainstream are VPNs becoming?**

Originally, VPNs were used by companies, organizations, and governments to keep their information private. Businesses that went remote during the Covid-19 pandemic relied on VPNs to secure sensitive information. VPNs are becoming popular for recreational purposes. Because VPNs hide the user's location, avid television and movie watchers can access international streaming services, such as Netflix.