

Private Networks and SNAT

What is a private network?

A private network is a network that uses private address space. When a set of computers are connected to a router, the router will have the public IP address and all the computers will have private IP addresses.

A public IP address is that someone from the other end of the internet can see. And the public IP address is unique. Private IP addresses are not unique. If a computer connected to a router sends a packet then, the router performs Network Address Translation (NAT) before sending over the internet. And when information comes back to the router, it reverses the change (changes public IP to a private IP) and forwards the packet back to the computer. The private addresses are known as non-routable addresses. Private networks are more secure than public networks. A router assigns private IP's to all its connected computers and all the private IP's in the network which are assigned by a single router are unique. The Use of private networks slows down the process of exhausting IP addresses.

Some IP's are reserved for private networks

- ❑ 192.168.0.0 - 192.168.255.255 (65,536 IP addresses)
- ❑ 172.16.0.0 - 172.31.255.255 (1,048,576 IP addresses)
- ❑ 10.0.0.0 - 10.255.255.255 (16,777,216 IP addresses)

Virtual Private Network:

A virtual private network extends a private network across a public network and allows users to exchange data in public networks as if they were connected in a private network. A virtual private network provides online privacy and anonymity. It uses tunneling protocols to encrypt and decrypt the data.

SNAT (Source Network Address Translation):

When a router is forwarding a packet from a private network to the internet it replaces the source address of the packet with its own public IP address. This process is called Source Network Address Translation.