Public versus Private IP Addresses

Public IP Addresses

- Original Design of Internet
- "Registered" Public IP Addresses
- Assigned by an ISP to a Business or Home
- Must be Globally Unique
  - Web Servers
  - DNS Servers
  - Routers
- By the Early 1990s, the World was Running out of Public IP Addresses
- Private IP Addresses & Network Address Translation (NAT) were Born!

Private IP Addresses

- "Unregistered" – Free for Use by Anybody!
- Designed for Use within Private Internal Networks
- Can Be Used Over and Over Again
- Cannot be Used or Routed on a Public Network
- Utilizes NAT to "Speak" to Public Networks, i.e., the Internet!

Private IP Address Ranges

Class	IP Address Range	Network ID(s) (CIDR Notation)	Number of Addresses
A	10.0.0.0 – 10.255.255.255	10.0.0.0 /8 • 1 Private Class A Network	16,777,216 IP Addresses Per Network ID
B	172.16.0.0 – 172.31.255.255	172.16.0.0 – 172.31.0.0 /16 • 16 Private Class B Networks	65,534 IP Addresses Per Network ID
C	192.168.0.0 – 192.168.255.255	192.168.0.0 – 192.168.255.0 /24 • 256 Private Class C Networks	254 IP Addresses Per Network ID