IP Classes

Subnet Size

- The bigger the host portion of the network, the more hosts we can have
- If the subnet mask is `/8`, we have 24 bits available to allocate to hosts, for example
- Unfortunately, when `IPv4` was created, the designers didn't realise how big the internet was going to get, and they didn't create a big enough address space. The long term solution to this, is `IPv6` which has a much bigger address space.

Class	Mask	Valid address	Nets	Hosts
`A`	8	`1.0.0.0`, `126.0.0.0`	126	1677214
`A`				

Class A

- Assigned to networks with a very large number of hosts.
- The first bit in a class `A` address is always set to zero.
- `0.0.0.0/8` is reserved and signifies *this network*
- `0.0.0.1` to `0.255.255.255` are not valid host addresses.
- `127.0.0.0/8` in the Class `A` is reserved as the *loopback* address for testing the local computer.
- `127.0.0.1` to `127.255.255.255` are not valid host addresses.
- This wipes out 33554428 $(2 * (2^{8*3} - 2))$ addresses from the global address pool.