Classless InterDomain Routing (CIDR)

Once upon a time when the IP addressing scheme was invented, the people who developed this thought it would be enough to have 3 different classes as we have seen so far, class A,B and C networks. There were only three subnet masks:

* Class A: 255.0.0.0 (16.777.216 addresses)
* Class B: 255.255.0.0 (65.536 addresses)
* Class C: 255.255.255.0 (256 addresses)

These networks are also known as **classful networks**.

When the internet started growing rapidly in the beginning of the 90’s this caused some problems.  Large companies received entire class A networks with millions of addresses. Here’s a [list on wikipedia](http://en.wikipedia.org/wiki/List_of_assigned_/8_IPv4_address_blocks) that gives you an idea what kind of companies got these class A networks.

Smaller companies could get a class B network with 65.536 addresses or class C networks with 256 addresses. Many addresses were wasted so something had to be done.

The solution to this problem is **classless interdomain routing**, in other words we stop working with the classful networks and start working with classless networks.

Classless networks means we don’t use the class A,B or C networks anymore but are **free to use any subnet mask we like**. Also instead of writing down the subnet mask like 255.255.255.0 we often use a “bit” notation like /24. This represents the number of bits that are used for the subnet mask.

For example:

* 192.168.1.0 with subnet mask 255.255.255.0 is the same thing as 192.168.1.0 /24.
* 172.16.0.0 with subnet mask 255.255.0.0 is the same thing as 172.16.0.0 /16.
* 10.0.0.0 with subnet mask 255.0.0.0 is the same thing as 10.0.0.0 /8.

Here’s a little overview with subnet masks and the CIDR notation: