<table>
<thead>
<tr>
<th>Can you recognise a valid IP address?</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.128.3.111</td>
</tr>
<tr>
<td>1.2.3.4</td>
</tr>
<tr>
<td>333.333.333.333</td>
</tr>
<tr>
<td>1.1.1.1</td>
</tr>
<tr>
<td>10.10.10.10</td>
</tr>
<tr>
<td>222.222.222.222</td>
</tr>
<tr>
<td>123.456.789.10</td>
</tr>
</tbody>
</table>
- IP = Internet Protocol
- 4 octets
- In the form of x.x.x.x
- Each octet is equal to 1 byte
- Therefore, IP address is 32 bits long
- But why do devices need IP addresses?
Private Ranges:

Class A: 10.0.0.0 - 10.255.255.255
128 possible networks x 16,777,216 hosts each

Class B: 172.16.0.0 - 172.31.255.255
16,384 possible networks x 65,536 hosts each

Class C: 192.168.0.0 - 192.168.255.255
2,097,152 possible networks x 256 hosts each

Public Ranges:

All the rest
Working with Binary

128  64  32  16  8  4  2  1

The Lockdown Market
Binary in Networking

- IP address --> 4 octets
- Each octet equals 1 byte (8 bits)
- 8 bits --> 8 binary ones --> 11111111 --> 255
It is the process of dividing a big network into smaller networks called subnets. But why?
Subnet Mask

It is the critical component to identify the scope of a network range. In binary: a series of consecutive 1s (network part) followed by a series of consecutive 0s (hosts part).

Example 1
Network IP address: 10.0.0.0
Subnet mask: 255.255.255.0

Example 2
Network IP address: 10.0.0.0
Subnet mask: 255.255.255.128
Subnetting 2 - VLSM

Various Length Subnet Mask

10.0.0.0 - 10.0.7.255

- Marketing (25)
- Accounting (12)
- HR (10)
- IT (34)
- Finance (21)
- Research (68)

Subnetting 101 Page 9
Classless Inter-Domain Routing
It is a different way to communicate the subnet scope (size).
This is the IP address of the subnet's router. It has to be on the same subnet as all the client devices.

10.0.1.0/24 10.0.2.0/24
Resources

Windows Command Line:
ipconfig/all

http://jodies.de/ipcalc

I hope this has been informative for you. Thank you for joining me!

linkedin.com/in/gal-evan