

# Introduction to Networking

## CHEAT SHEETS

### Physical Connectivity



RJ45



RJ11 (Phone lines)



Rear ports of a router

### Network Devices

**Routers** – gateway to the Internet

**Switches** – create local networks

**Access Points** – a bridge between wired and wireless networks

**Modems** – used for phone (PSTN) lines

**Hubs** – not in use, not as good as switches

**Firewalls** – designed for your security.

A SOHO (Small Office Home Office) device combines a lot of services: it can be a router with a built-in switch and access point ("wireless router")



A Firewall



A wireless Router

### CMD commands

**cmd** – access the command line interface box in Windows

**ipconfig** – check your IP address

**ping** – verify basic connectivity

**tracert** – check all hops to a destination

```
C:\Windows\system32\cmd.exe
C:\Users\Admin>ping yahoo.com

Pinging yahoo.com [98.138.253.109] with 32 bytes of data:
Reply from 98.138.253.109: bytes=32 time=150ms TTL=50
Reply from 98.138.253.109: bytes=32 time=148ms TTL=50
Reply from 98.138.253.109: bytes=32 time=149ms TTL=50
Reply from 98.138.253.109: bytes=32 time=148ms TTL=50

Ping statistics for 98.138.253.109:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 148ms, Maximum = 150ms, Average = 148ms
C:\Users\Admin>_
```

### Websites and applications that you need to know

[www.speedtest.net](http://www.speedtest.net) – check how fast your Internet connection is

[www.ping.eu](http://www.ping.eu) – a set of tools (ping, speedtest, traceroute...)

[www.acrylicwifi.com](http://www.acrylicwifi.com) – a powerful WIFI scanner

[www.canyouseeme.org](http://www.canyouseeme.org) – check your public IP address and open ports