

3. Preparation at home

The following tasks should be performed at home by each lab group (two students) before the lab session and a written report must be shown to the teachers to be approved prior starting the lab work. **Note that there is no enough time during the lab to do the preparatory work!**

1. In chapter 4 read subsection 4.4.2 in the book (pages 374-381 in 5th ed.) or (pages 364-371 in 6th ed.) about IP addressing. In the lab, we will create a network, with a 24-bit prefix and an 8-bit host part (aaa.bbb.ccc.ddd/24).
2. In order to practise subnetting, prepare by giving a fully worked answer for this home assignment.

A network has been given a CIDR block of IP addresses 198.77.48.0/23 to be assigned to hosts/interfaces connected within the network. Assume that the network will be divided into four equal-size subnets.

How many host addresses will be available for each subnet? Give in order the IP address of each of these four subnets. What is the subnet mask? Give the range of IP addresses of the second subnet in order.

3. Investigate the following commands which can be used for diagnosing a network; **route**, **ping**, **ipconfig** and **tracert**. What do they do? Try to explain their functionality in words such that another student who has never seen the commands can understand what they do and why/when he/she would use it.

These commands can be run on a Windows system (on Unix/Linux systems, **ifconfig** and **traceroute** are used instead of **ipconfig** and **tracert**). More information about the commands can be obtained on Windows by hitting “F1” (help) on the desktop or by typing; for example “**ping /?**” in a command window. On Unix/Linux systems, more information can be obtained from the on-line manuals; “**man ping**”.