

Homework #4

(Due on 12:00am, Thursday, Nov. 19th, 2009)

What kind of switching fabrics are there and how do they work?

When and where does buffering occur? What are its effects?

When and where does head-of-line blocking occur?

In an IP datagram: what is the header checksum for and where is it calculated?

Where does IP fragmentation occur?

Assume you have a 2,000 byte long datagram which needs to be fragmented for a 1,000 bytes MTU. Please fill the following table with the data of the resulting datagrams.

Datagram nr.	Length	Frag. Flag	Offset

Convert the following IP addresses into their binary notion:

- 66.135.207.138
- 192.35.225.7

Convert the following IP addresses into their decimal notion:

- 10000110010011000101000100011001
- 11011000100111100101011100010111

A provider has been assigned the network 128.30.0.0/17 and wants to divide it into four subnets. Please fill the following table with the data of the resulting sub networks.

Subnet no.	Network address	Netmask	Host range	No. of hosts
1				
2				
3				
4				

What is the “NAT traversal problem” and how can it be solved?

What are the main differences between IPv4 and IPv6?

How can an IPv4 host communicate with an IPv6 host?