

Comunicações e Redes

“Exercises about IP Network Level”

Grupo 1

02/01/2012

Ex. 4.4a) : Consider sending a 3000 byte datagram into a link that has a MTU of 500 bytes. Suppose the original datagram is stamped with the identification number 422. How many fragments are generated? What are their characteristics?

São gerados 7 fragmentos com as seguintes características:

length=500 | id=422 | fragflag=1 | offset = 0
length=500 | id=422 | fragflag=1 | offset = 60
length=500 | id=422 | fragflag=1 | offset = 120
length=500 | id=422 | fragflag=1 | offset = 180
length=500 | id=422 | fragflag=1 | offset = 240
length=500 | id=422 | fragflag=1 | offset = 300
length=140 | id=422 | fragflag=0 | offset = 360

Ex. 4.4b) : Suppose an application generates chunks 40 bytes of data every 20 msec, and each chunk gets encapsulated in a TCP segment and then an IP datagram. What percentage of each datagram will be overhead and what percentage will be application data?

Total = 40 bytes de data + 20 bytes de cabeçalho segmento TCP + 20 bytes de cabeçalho do Datagrama IP = 80 bytes

Overhead = 20 bytes de cabeçalho segmento TCP + 20 bytes de cabeçalho do Datagrama IP = 40 bytes

Porcentagem = $40/80 \times 100\% = 50\%$

Porcentagem de overhead é 50% e a porcentagem de data da aplicação é também 50%