

Panel 1

Last time:

Congestion control (vs. flow control)

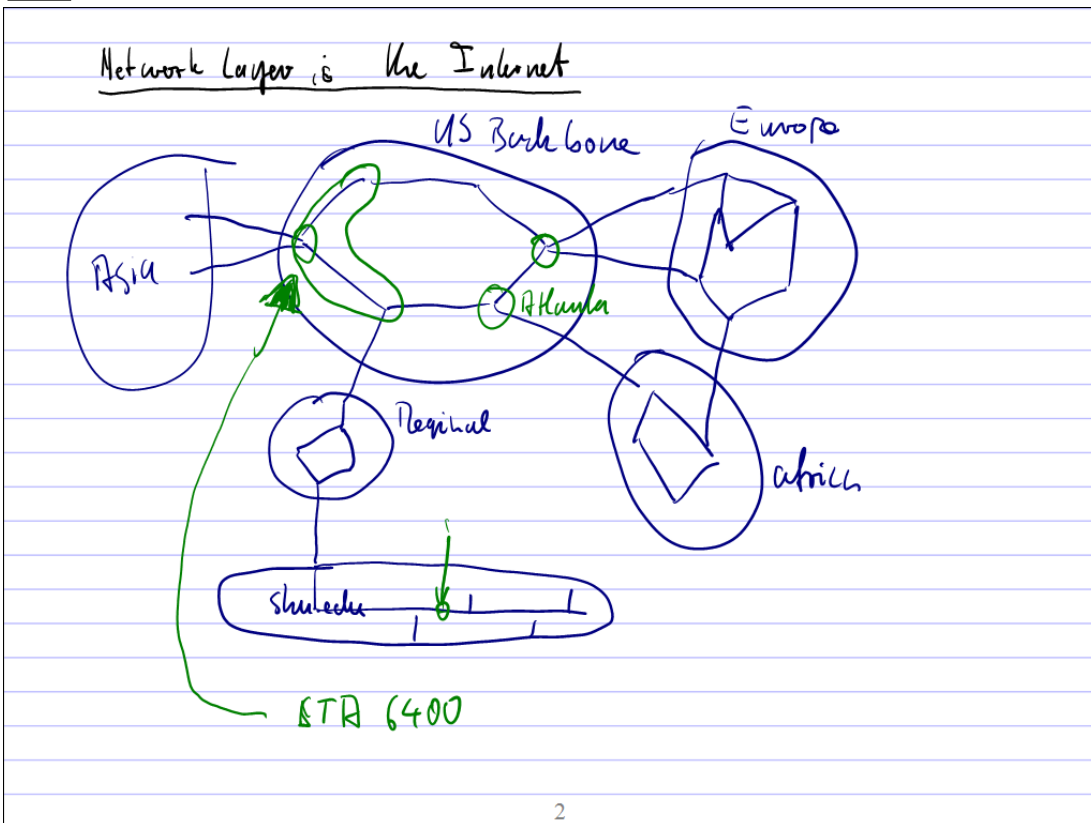
Open / Closed loop solutions

Traffic shaping

- Leaky Bucket
- Token Bucket

1

Panel 2





Panel 5

Version	IHL	Type of service	Total length				
Identification			DF	MF	Frag. offset		
Time to live		Protocol		Header checksum			
Source address							
Destination address							
Options							

total length: total # of bytes in the corresponding datagram  
max size 65535

2<sup>n</sup>-1 large enough

ID: Datagrams can be fragmented.  
Different fragments of same datagram have same ID

DF: Don't Fragment

MF: More fragments (last fragment has MF = 0)

5

Panel 6

Version	IHL	Type of service	Total length				
Identification			DF	MF	Frag. offset		
Time to live		Protocol		Header checksum			
Source address							
Destination address							
Options							

Frag offset: which piece of frag. datagram

Fragmentation

Time to live: counts # of hops, if 0 => discard  
255 max

Protocol: Which protocol to use at transport level. Number as specified in RFC 1700

Header checksum: applies to header only, recomputed at each router

6

Panel 7

