

1 08:28:29.166721 IP 130.206.169.222.4391 > 130.206.158.134.http: S 60936803:60936803(0) win 5840 <mss 1460>
 2 08:28:29.270150 IP 130.206.158.134.http > 130.206.169.222.4391: S 3932451824:3932451824(0) ack 60936804 win 5792 <mss 1460>
 3 08:28:29.270509 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 1 win 5840
 4 08:28:29.270650 IP 130.206.169.222.4391 > 130.206.158.134.http: P 1:121(120) ack 1 win 5840
 5 08:28:29.374155 IP 130.206.158.134.http > 130.206.169.222.4391: . 1449(1448) ack 121 win 362
 6 08:28:29.374193 IP 130.206.158.134.http > 130.206.169.222.4391: . 1449:2897(1448) ack 121 win 362
 7 08:28:29.374979 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 1449 win 8688
 8 08:28:29.375476 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 2897 win 1584
 9 08:28:29.478151 IP 130.206.158.134.http > 130.206.169.222.4391: P 2897:4345(1448) ack 121 win 362
 10 08:28:29.478185 IP 130.206.158.134.http > 130.206.169.222.4391: . 4345:5793(1448) ack 121 win 362
 11 08:28:29.478198 IP 130.206.158.134.http > 130.206.169.222.4391: . 5793:7241(1448) ack 121 win 362
 12 08:28:29.478997 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 4345 win 14480
 13 08:28:29.479477 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 5793 win 17376
 14 08:28:29.479505 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 7241 win 20272
 15 08:28:29.582161 IP 130.206.158.134.http > 130.206.169.222.4391: . 8689:10137(1448) ack 121 win 362
 16 08:28:29.582191 IP 130.206.158.134.http > 130.206.169.222.4391: P 10137:11585(1448) ack 121 win 362
 17 08:28:29.582205 IP 130.206.158.134.http > 130.206.169.222.4391: P 11585:13033(1448) ack 121 win 362
 18 08:28:29.582216 IP 130.206.158.134.http > 130.206.169.222.4391: . 14310:14310(0) ack 121 win 362
 19 08:28:29.583459 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 7241 win 20272
 20 08:28:29.583464 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 7241 win 20272
 21 08:28:29.583468 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 7241 win 20272 ← 3^{er} ACK DUP.
 22 08:28:29.583474 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 7241 win 20272
 23 08:28:29.686162 IP 130.206.158.134.http > 130.206.169.222.4391: . 7241:8689(1448) ack 121 win 362
 24 08:28:29.686193 IP 130.206.158.134.http > 130.206.169.222.4391: P 13033:14310(1277) ack 121 win 362
 25 08:28:29.687457 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 13033 win 23168
 26 08:28:29.687463 IP 130.206.169.222.4391 > 130.206.158.134.http: . ack 14311 win 26064
 27 08:28:29.690822 IP 130.206.169.222.4391 > 130.206.158.134.http: R 121:121(0) ack 14311 win 26064

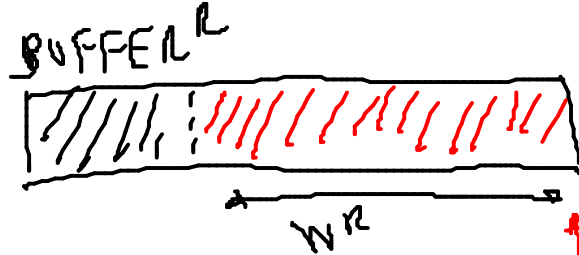
cwnd
2
3
4
5
6

• $\min(cwnd, WR) = 1448 \cdot 2 \approx 2896$

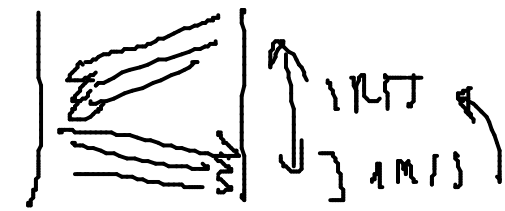
ed 1 - 14309

	CLIENTE		SERVER		VENTANA DISPONIBLE
	cwnd	WR	cwnd	WR	
1	1	5792	1	5840	
2	"	"	"	"	
4	1 MSS	5792 (1 MSS - 120)	2 MSS	"	(2 - 1 = 1 MSS)
5			"	"	(2 - 2 = 0 MSS)
6			"	"	

b) $MSS = MTU - \text{cwnd}_{TCP} - \text{cwnd}_{TCP}$
 $1448 = 1500 - 20 - 32$
 c) 1st



$$\text{win} = \text{WR} = 0$$



S → C

cwnd Ssthresh

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```

2

3

5

2

3

8

11

1

8

1

1

1

1

1

1

$$\min(7, 8) / 2 = 3.5$$

$$3 > 3.5$$