

# COMPARE WINDOW SIZES AND SEQUENCE NUMBERS OF AT LEAST 5 DIFFERENT OS , COMPARE GOBACK N, SR

Comparing the window size and the Seq number in different OS listed below:

S.No	Operating system	Window size	Sequence number
1	Linux Ubuntu OS	501	1450552613

```

Transmission Control Protocol, Src Port: 44296, Dst Port: 5228, Seq: 1, Ack: 1, Len: 0
  Source Port: 44296
  Destination Port: 5228
  [Stream index: 5]
  [TCP Segment Len: 0]
  Sequence Number: 1      (relative sequence number)
  Sequence Number (raw): 1450552613
  [Next Sequence Number: 1      (relative sequence number)]
  Acknowledgment Number: 1      (relative ack number)
  Acknowledgment number (raw): 4255225996
  1000 .... = Header Length: 32 bytes (8)
  Flags: 0x010 (ACK)
  Window: 501
  [Calculated window size: 501]
  [Window size scaling factor: -1 (unknown)]
  Checksum: 0x4ae2 [unverified]
  
```

## COMPARING GOBACK N, SR:

	GBN	SR	Remarks
Efficiency	$N / (1 + 2a)$	$N / (1 + 2a)$	GBN and SR give better performance than the stop and waits protocol.
Window size	Sender window size = N Receiver window size = 1	Sender window size = N Receiver window size = N	Due to large window size in the SR. We require large buffer to store. Even complexity is more in

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			SR than the GBN
Minimum number of Sequence numbers required	$N + 1$	$2 N$	SR requires larger number bits in seq number field
Retransmission	We need to send the entire window if any packet is lost	We need to send the only missed or lost packet	SR is better than GBN in retransmission
Bandwidth	It requires more bandwidth as it is sending the entire window once again if the packet is lost.	It is moderate in this case.	
CPU Usage	Moderate CPU usage	It requires more CPU usage as sorting and comparing the packets need to have more PCU usage.	GBN is better than SR in CPU usage.
Channel utilization	Full duplex	Full duplex	

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