

Here are the TCP conversations window from the provided wireshark capture that shows the 5 iperf threads between the link partner and the SK board.

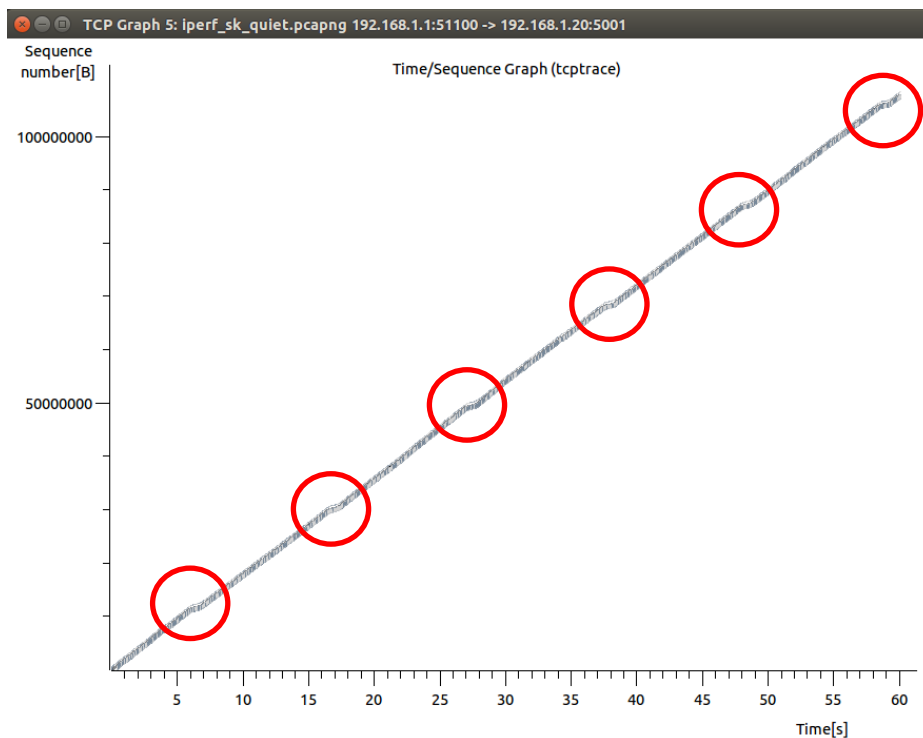
TCP Conversations: lperf_sk_quiet.pcapng

TCP Conversations: 5

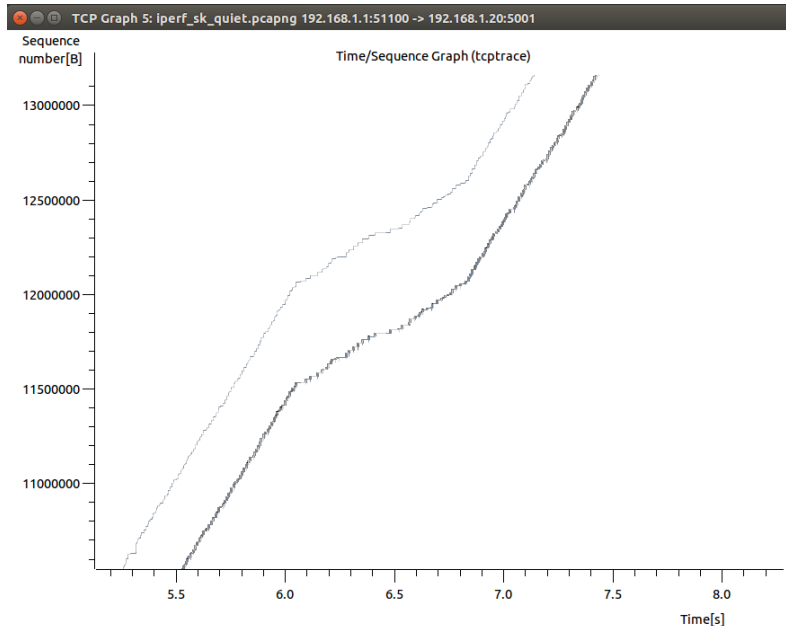
Address A	Port A	Address B	Port B	Packets	Bytes	Packets A	Bytes A→B	Packets A	Bytes A→B	Rel Start	Duration	bps A→B	bps A←B
192.168.1.1	51100	192.168.1.20	commpl	120 671	115 836 582	74 898	112 815 556	45 773	3 021 026	0.000000000	60.1021	15016521.02	402119.19
192.168.1.1	51098	192.168.1.20	commpl	125 997	124 445 610	80 631	121 451 470	45 366	2 994 140	0.002466000	60.0474	16180734.15	398903.23
192.168.1.1	51102	192.168.1.20	commpl	124 702	123 573 708	80 085	120 629 002	44 617	2 944 706	0.006458000	60.0534	16069573.32	392278.54
192.168.1.1	51104	192.168.1.20	commpl	120 565	115 698 490	74 807	112 678 478	45 758	3 020 012	0.006718000	60.0736	15005380.96	402174.68
192.168.1.1	51106	192.168.1.20	commpl	120 776	115 712 416	74 807	112 678 478	45 969	3 033 938	0.007697000	60.0829	15003061.09	403966.74

Help Copy Follow Stream Graph A→B Graph B→A Close

The time graph for the first thread since it had a lower total BW measurement. The circles in the graph highlight some subtle flat portions that look to affect BW.



Using a drag box zoom, you can zoom in on a flat portion of the traffic. You can point and click on the graph to select the actual traffic in the main wireshark window.



One of the locations referenced in the time sequence graph. One thing that catches your eyes is a TCP window adjustment from the iperf server that seems to affect the timing of the next packet coming from the client. This delay is over a milli-second and when compared to the rest of the packet traffic the packets are separated by less than a μ s.

When running the iperf test on another machine I noticed I do not have window adjustment packets where the customer provided one has several. My setup uses a Linux Ubuntu setup through a Gb switch to a am335x-evmsk.

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
174886	17.048968000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33066369 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174887	17.048969000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33067817 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174888	17.049071000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51104 [ACK] Seq=1 Ack=30277657 Win=523264 Len=0 TSval=9519784802 TSecr=4294951696
174889	17.049088000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51104 [ACK] Seq=1 Ack=30277657 Win=528640 Len=0 TSval=9519784802 TSecr=4294951696
174890	17.049090000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51106 [ACK] Seq=1 Ack=33066265 Win=111360 Len=0 TSval=9519784802 TSecr=4294951696
174891	17.049119000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51104 [ACK] Seq=1 Ack=30277657 Win=532736 Len=0 TSval=9519784802 TSecr=4294951696
174892	17.050255000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33066265 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174893	17.050256000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33067261 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174894	17.050258000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33073609 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174895	17.050258000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33073609 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174896	17.050258000	192.168.1.1	192.168.1.20	TCP	1514	51098 > complex-link [ACK] Seq=33073609 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978274
174897	17.050259000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30544145 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978325
174898	17.050259000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30545593 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978325
174899	17.050260000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30547041 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978325
174900	17.050260000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30548489 Ack=1 Win=29216 Len=1448 TSval=4294951696 TSecr=951978325
174101	17.050324000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51098 [ACK] Seq=1 Ack=33076505 Win=105984 Len=0 TSval=9519784803 TSecr=4294951696
174102	17.050344000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51106 [ACK] Seq=1 Ack=30549937 Win=532736 Len=0 TSval=9519784803 TSecr=4294951696
174103	17.050360000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Ack=33076505 Win=110080 Len=0 TSval=9519784803 TSecr=4294951696
174104	17.065637000	192.168.1.1	192.168.1.20	TCP	1514	51100 > complex-link [ACK] Seq=30408729 Ack=1 Win=29216 Len=1448 TSval=4294951697 TSecr=951978373
174105	17.065638000	192.168.1.1	192.168.1.20	TCP	1514	51100 > complex-link [ACK] Seq=30410177 Ack=1 Win=29216 Len=1448 TSval=4294951697 TSecr=951978373
174106	17.065639000	192.168.1.1	192.168.1.20	TCP	1514	51100 > complex-link [ACK] Seq=30411625 Ack=1 Win=29216 Len=1448 TSval=4294951697 TSecr=951978373
174107	17.065641000	192.168.1.1	192.168.1.20	TCP	1514	51102 > complex-link [ACK] Seq=32620273 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978205
174108	17.065641000	192.168.1.1	192.168.1.20	TCP	1514	51102 > complex-link [ACK] Seq=32621721 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978205
174109	17.065642000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30549937 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174110	17.065642000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30551385 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174111	17.065643000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30552833 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174112	17.065643000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30554201 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174113	17.065644000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30555729 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174114	17.065788000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51100 [ACK] Seq=1 Ack=30413073 Win=532736 Len=0 TSval=9519784818 TSecr=4294951697
174115	17.065814000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51102 [ACK] Seq=1 Ack=32623169 Win=111360 Len=0 TSval=9519784818 TSecr=4294951698
174116	17.065831000	192.168.1.20	192.168.1.1	TCP	66	complex-link > 51106 [ACK] Seq=1 Ack=30557177 Win=532736 Len=0 TSval=9519784818 TSecr=4294951698
174117	17.066252000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30557177 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325
174118	17.066253000	192.168.1.1	192.168.1.20	TCP	1514	51106 > complex-link [ACK] Seq=30558625 Ack=1 Win=29216 Len=1448 TSval=4294951698 TSecr=951978325

Here the filter is set to look for window update messages. The filter was gotten from the wireshark website that provides possible filters to use. When I run the test on my machine I don't see any window update messages, while I see good throughput.

Wireshark 1.10.6 (v1.10.6 from master-1.10)

Filter: `tcp.analysis.window_update` Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
66900	6.675981000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51100 [ACK] Seq=1 Acl
66908	6.676586000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51100 [ACK] Seq=1 Acl
66917	6.679864000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51104 [ACK] Seq=1 Acl
66930	6.684516000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51106 [ACK] Seq=1 Acl
66944	6.685407000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51106 [ACK] Seq=1 Acl
66954	6.688763000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51104 [ACK] Seq=1 Acl
66957	6.688939000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51104 [ACK] Seq=1 Acl
66975	6.690523000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51102 [ACK] Seq=1 Acl
66982	6.690994000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51102 [ACK] Seq=1 Acl
66987	6.691355000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51102 [ACK] Seq=1 Acl
67011	6.695736000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51100 [ACK] Seq=1 Acl
67017	6.698775000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67024	6.699233000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67032	6.699644000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67041	6.700242000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67048	6.700451000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67053	6.700709000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51098 [ACK] Seq=1 Acl
67068	6.703693000	192.168.1.20	192.168.1.1	TCP	66	[TCP Window Update] complex-link > 51106 [ACK] Seq=1 Acl

▶Frame 64501: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface 0

▶Ethernet II, Src: D-LinkIn 5f:57:a6 (90:94:e4:5f:57:a6), Dst: TexasIns 84:47:ef (d4:94:a1:84:47:ef)

▶Internet Protocol Version 4, Src: 192.168.1.20 (192.168.1.20), Dst: 192.168.1.1 (192.168.1.1)

▼Transmission Control Protocol, Src Port: complex-link (5001), Dst Port: 51098 (51098), Seq: 1, Ack: 12642305, Len: 0

- Source port: complex-link (5001)
- Destination port: 51098 (51098)
- [Stream index: 1]
- Sequence number: 1 (relative sequence number)
- Acknowledgment number: 12642305 (relative ack number)
- Header length: 32 bytes
- ▶Flags: 0x010 (ACK)
- Window size value: 299
- [Calculated window size: 76544]
- [Window size scaling factor: 256]
- ▶Checksum: 0xc975 [validation disabled]
- ▶Options: (12 bytes), No-Operation (NOP), No-Operation (NOP), Timestamps
- ▼[SEQ/ACK analysis]
- ▼[TCP Analysis Flags]
- ▼[This is a tcp window update]
- ▶[Expert Info (Chat/Sequence): Window update]