LAB 2: UNDERSTANDING PERSISTENT AND NON-PERSISTENT HTTP CONNECTIONS

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SECTION : C

☯ EXPERIMENT 1:NON-PERSISTENT HTTP CONNECTIONS

No.	Time	Source	Destination	Protocol	Length	Info
6	5.505086001	10.228.215.77	10.228.215.62	HTTP	172	GET /index.html HTTP/1.0
8	5.506178887	10.228.215.62	10.228.215.77	HTTP	1013	HTTP/1.1 200 OK (text/html)
19	5.623237743	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%201.jpg HTTP/1.0
779	6.323504852	10.228.215.62	10.228.215.77	HTTP	162	HTTP/1.1 200 OK (JPEG JFIF image)
833	6.351640310	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%202.jpg HTTP/1.0
1269	6.755068388	10.228.215.62	10.228.215.77	HTTP	8261	HTTP/1.1 200 OK (JPEG JFIF image)
1300	6.781165987	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%203.jpg HTTP/1.0
1813	7.376961525	10.228.215.62	10.228.215.77	HTTP	23284	HTTP/1.1 200 OK (JPEG JFIF image)
1858	7.419922672	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%204.jpg HTTP/1.0
2444	8.028580879	10.228.215.62	10.228.215.77	HTTP	7266	HTTP/1.1 200 OK (JPEG JFIF image)
2485	8.064767038	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%205.jpg HTTP/1.0
2979	8.564149747	10.228.215.62	10.228.215.77	HTTP	16836	HTTP/1.1 200 OK (JPEG JFIF image)
3026	8.615604991	10.228.215.62	10.228.215.62	HTTP	189	GET /Image%20-%206.jpg HTTP/1.0
3603	9.180186864	10.228.215.62	10.228.215.77	HTTP	3029	HTTP/1.1 200 OK (JPEG JFIF image)
3649	9.219529720	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%207.jpg HTTP/1.0
4111	9.665270673	10.228.215.62	10.228.215.77	HTTP	6920	HTTP/1.1 200 OK (JPEG JFIF image)
4148	9.697038092	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%208.jpg HTTP/1.0
4733	10.186248170	10.228.215.62	10.228.215.77	HTTP	7416	HTTP/1.1 200 OK (JPEG JFIF image)
4769	10.230022693	10.228.215.77	10.228.215.62	HTTP	189	GET /Image%20-%209.jpg HTTP/1.0
5570	10.961077740	10.228.215.62	10.228.215.77	HTTP	16925	HTTP/1.1 200 OK (JPEG JFIF image)
5620	10.989910423	10.228.215.77	10.228.215.62	HTTP	190	GET /Image%20-%2010.jpg HTTP/1.0
6854	12.190861467	10.228.215.62	10.228.215.77	HTTP	13158	HTTP/1.1 200 OK (JPEG JFIF image)

tcp.flags.syn == 1 and tcp.flags.ack == 0 and tcp.port == 80

No.	Time	Source	Destination	Protocol	Length	Info
3	5.198115570	10.228.215.77	10.228.215.62	TCP	74	55826 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277045614 TSecr=0 WS=512
16	5.618737800	10.228.215.77	10.228.215.62	TCP	74	55830 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277046124 TSecr=0 WS=512
830	6.346897533	10.228.215.77	10.228.215.62	TCP	74	55846 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277046852 TSecr=0 WS=512
1297	6.776651232	10.228.215.77	10.228.215.62	TCP	74	55860 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277047282 TSecr=0 WS=512
1855	7.415208166	10.228.215.77	10.228.215.62	TCP	74	55874 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277047921 TSecr=0 WS=512
2482	8.058200787	10.228.215.77	10.228.215.62	TCP	74	55878 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277048564 TSecr=0 WS=512
3023	8.610585494	10.228.215.77	10.228.215.62	TCP	74	55894 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277049117 TSecr=0 WS=512
3646	9.215011096	10.228.215.77	10.228.215.62	TCP	74	55902 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277049722 TSecr=0 WS=512
4145	9.689625463	10.228.215.77	10.228.215.62	TCP	74	55904 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277050197 TSecr=0 WS=512
4766	10.225217816	10.228.215.77	10.228.215.62	TCP	74	55910 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277050732 TSecr=0 WS=512
5617	10.985058066	10.228.215.77	10.228.215.62	TCP	74	55912 → 80 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM TSval=3277051493 TSecr=0 WS=512

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	6	GET /index.html HTTP	5.505086001 s
End Time	6811	HTTP/ 200 OK (JPEG image) *(last image)*	12.190861467 s
Total Load Time	—	End – Start	6.7 s

☺ EXPERIMENT 2:PERSISTENT HTTP CONNECTIONS

Case 2A: 2 Persistent Connections

No.	Time	Source	Destination	Protocol	Length	Info
698	118.235731819	10.228.215.77	10.228.215.62	HTTP	407	GET /index.html HTTP/1.1
700	118.236592211	10.228.215.62	10.228.215.77	HTTP	1038	HTTP/1.1 200 OK (text/html)
703	118.473108995	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%201.jpg HTTP/1.1
710	118.482884404	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%202.jpg HTTP/1.1
1134	119.264936644	10.228.215.62	10.228.215.77	HTTP	8982	HTTP/1.1 200 OK (JPEG JFIF image)
1155	119.307062931	10.228.215.62	10.228.215.77	HTTP	14206	HTTP/1.1 200 OK (JPEG JFIF image)
1169	119.335386537	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%203.jpg HTTP/1.1
1200	119.354002699	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%204.jpg HTTP/1.1
1523	119.947055210	10.228.215.62	10.228.215.77	HTTP	1778	HTTP/1.1 200 OK (JPEG JFIF image)
1607	120.044131336	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%205.jpg HTTP/1.1
1659	120.185340154	10.228.215.62	10.228.215.77	HTTP	16204	HTTP/1.1 200 OK (JPEG JFIF image)
1687	120.280685539	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%206.jpg HTTP/1.1
1763	120.522634197	10.228.215.62	10.228.215.77	HTTP	24264	HTTP/1.1 200 OK (JPEG JFIF image)
1817	120.636362708	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%207.jpg HTTP/1.1
2073	121.071117305	10.228.215.62	10.228.215.77	HTTP	20168	HTTP/1.1 200 OK (JPEG JFIF image)
2135	121.160960221	10.228.215.62	10.228.215.77	HTTP	13961	HTTP/1.1 200 OK (JPEG JFIF image)
2148	121.172362417	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%208.jpg HTTP/1.1
2167	121.230973691	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%209.jpg HTTP/1.1
2346	121.670130676	10.228.215.62	10.228.215.77	HTTP	17284	HTTP/1.1 200 OK (JPEG JFIF image)
2400	121.797647700	10.228.215.77	10.228.215.62	HTTP	433	GET /Image%20-%2010.jpg HTTP/1.1
2844	122.606625102	10.228.215.62	10.228.215.77	HTTP	7541	HTTP/1.1 200 OK (JPEG JFIF image)
2903	122.728315249	10.228.215.77	10.228.215.62	HTTP	423	GET /favicon.ico HTTP/1.1
2915	122.729644918	10.228.215.62	10.228.215.77	HTTP/X…	1592	HTTP/1.1 404 Not Found
3010	122.948214312	10.228.215.62	10.228.215.77	HTTP	33818	HTTP/1.1 200 OK (JPEG JFIF image)

`tcp.flags.syn == 1 and tcp.flags.ack == 0 and tcp.port == 80`

o.	Time	Source	Destination	Protoco	Length	Info
695	118.2242…	10.228.215.77	10.228.215.62	TCP	66	56181 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
704	118.4731…	10.228.215.77	10.228.215.62	TCP	66	56182 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	698	`GET /index.html HTTP/1.1`	118.235731819 s
End Time	3010	`HTTP/1.1 200 OK (JPEG image)` *(last image)*	122.948214312 s
Total Load Time	–	End – Start	4.712482493 s

Case B: 4 persistant connections

No.	Time	Source	Destination	Protocol	Length	Info
469	116.418019...	10.228.215.77	10.228.215.62	HTTP	407	GET /index.html HTTP/1.1
471	116.418675...	10.228.215.62	10.228.215.77	HTTP	1038	HTTP/1.1 200 OK (text/html)
474	116.733247...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%201.jpg HTTP/1.1
490	116.747225...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%202.jpg HTTP/1.1
491	116.747301...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%203.jpg HTTP/1.1
492	116.747301...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%204.jpg HTTP/1.1
1650	118.875042...	10.228.215.62	10.228.215.77	HTTP	1682	HTTP/1.1 200 OK (JPEG JFIF image)
1734	118.966854...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%205.jpg HTTP/1.1
1843	119.093444...	10.228.215.62	10.228.215.77	HTTP	8366	HTTP/1.1 200 OK (JPEG JFIF image)
1934	119.206880...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%206.jpg HTTP/1.1
2009	119.312418...	10.228.215.62	10.228.215.77	HTTP	5401	HTTP/1.1 200 OK (JPEG JFIF image)
2122	119.458044...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%207.jpg HTTP/1.1
2137	119.467485...	10.228.215.62	10.228.215.77	HTTP	1779	HTTP/1.1 200 OK (JPEG JFIF image)
2227	119.583530...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%208.jpg HTTP/1.1
2884	120.218878...	10.228.215.62	10.228.215.77	HTTP	6744	HTTP/1.1 200 OK (JPEG JFIF image)
2937	120.317998...	10.228.215.62	10.228.215.77	HTTP	8669	HTTP/1.1 200 OK (JPEG JFIF image)
3011	120.388034...	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%209.jpg HTTP/1.1
3075	120.467394...	10.228.215.77	10.228.215.62	HTTP	433	GET /Image%20-%2010.jpg HTTP/1.1
3377	120.717969...	10.228.215.62	10.228.215.77	HTTP	5568	HTTP/1.1 200 OK (JPEG JFIF image)
3547	120.912080...	10.228.215.77	10.228.215.62	HTTP	423	GET /favicon.ico HTTP/1.1
3551	120.913801...	10.228.215.62	10.228.215.77	HTTP/X...	1592	HTTP/1.1 404 Not Found
3694	121.078317...	10.228.215.62	10.228.215.77	HTTP	9984	HTTP/1.1 200 OK (JPEG JFIF image)
4156	121.827193...	10.228.215.62	10.228.215.77	HTTP	1337	HTTP/1.1 200 OK (JPEG JFIF image)
4306	122.085536...	10.228.215.62	10.228.215.77	HTTP	14650	HTTP/1.1 200 OK (JPEG JFIF image)

`tcp.flags.syn == 1 and tcp.flags.ack == 0 and tcp.port == 80`

o.	Time	Source	Destination	Protoco	Length	Info
466	116.3886...	10.228.215.77	10.228.215.62	TCP	66	56249 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
475	116.7332...	10.228.215.77	10.228.215.62	TCP	66	56251 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
476	116.7332...	10.228.215.77	10.228.215.62	TCP	66	56252 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
477	116.7332...	10.228.215.77	10.228.215.62	TCP	66	56250 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	469	GET /index.html HTTP/1.1	**116.418019917 s**
End Time	4306	HTTP/1.1 200 OK (JPEG image) *(last image)*	**122.085536476 s**
Total Load Time	—	End - Start	**5.667516559 s**

Case C: 6 persistant connections

Time	Source	Destination	Protocol	Length	Info
140 56.930478168	10.228.215.62	95.216.195.133	HTTP	154	GET /nm-check.txt HTTP/1.1
143 57.544673847	95.216.195.133	10.228.215.62	HTTP	270	[TCP Retransmission] HTTP/1.1 200 O
259 61.639531217	2401:4900:950b:a70d…	2a01:4f9:c010:2636:…	HTTP	174	GET /nm-check.txt HTTP/1.1
268 61.877974380	2a01:4f9:c010:2636:…	2401:4900:950b:a70d…	HTTP	290	HTTP/1.1 200 OK (text/plain)
301 81.104840729	10.228.215.77	10.228.215.62	HTTP	407	GET /index.html HTTP/1.1
303 81.105814527	10.228.215.62	10.228.215.77	HTTP	1038	HTTP/1.1 200 OK (text/html)
305 81.247919310	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%201.jpg HTTP/1.1
318 81.257767943	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%202.jpg HTTP/1.1
350 81.300802495	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%203.jpg HTTP/1.1
351 81.300803834	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%204.jpg HTTP/1.1
366 81.304066088	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%205.jpg HTTP/1.1
392 81.325573671	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%206.jpg HTTP/1.1
2120 83.190627472	10.228.215.62	10.228.215.77	HTTP	462	HTTP/1.1 200 OK (JPEG JFIF image)
2147 83.253349318	10.228.215.62	10.228.215.77	HTTP	6077	HTTP/1.1 200 OK (JPEG JFIF image)
2198 83.315708341	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%207.jpg HTTP/1.1
2259 83.375132033	10.228.215.62	10.228.215.77	HTTP	4838	HTTP/1.1 200 OK (JPEG JFIF image)
2287 83.413236521	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%208.jpg HTTP/1.1
2399 83.516825944	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%209.jpg HTTP/1.1
2453 83.565922533	10.228.215.62	10.228.215.77	HTTP	2946	HTTP/1.1 200 OK (JPEG JFIF image)
2649 83.734409921	10.228.215.77	10.228.215.62	HTTP	433	GET /Image%20-%2010.jpg HTTP/1.1
3190 84.311013883	10.228.215.62	10.228.215.77	HTTP	3865	HTTP/1.1 200 OK (JPEG JFIF image)
3445 84.510839612	10.228.215.77	10.228.215.62	HTTP	423	GET /favicon.ico HTTP/1.1
3452 84.513476554	10.228.215.62	10.228.215.77	HTTP/XML	1592	HTTP/1.1 404 Not Found
3479 84.528637477	10.228.215.62	10.228.215.77	HTTP	2659	HTTP/1.1 200 OK (JPEG JFIF image)
3910 84.936964204	10.228.215.62	10.228.215.77	HTTP	3908	HTTP/1.1 200 OK (JPEG JFIF image)
4201 85.218795607	10.228.215.62	10.228.215.77	HTTP	5896	HTTP/1.1 200 OK (JPEG JFIF image)
4349 85.391469060	10.228.215.62	10.228.215.77	HTTP	11557	HTTP/1.1 200 OK (JPEG JFIF image)
4620 85.776975369	10.228.215.62	10.228.215.77	HTTP	24950	HTTP/1.1 200 OK (JPEG JFIF image)

298 81.09578…	10.228.215.77	10.228.215.62	TCP	66	56305 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
308 81.24926…	10.228.215.77	10.228.215.62	TCP	66	56306 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
323 81.27140…	10.228.215.77	10.228.215.62	TCP	66	56307 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
324 81.27149…	10.228.215.77	10.228.215.62	TCP	66	56308 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
333 81.27906…	10.228.215.77	10.228.215.62	TCP	66	56309 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
344 81.28953…	10.228.215.77	10.228.215.62	TCP	66	56310 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	301	GET /index.html HTTP/1.1	**81.104840729 s**
End Time	4620	HTTP/1.1 200 OK (JPEG image) *(last image)*	**85.776975369 s**
Total Load Time	–	End – Start	**4.628568079 s**

Case D: 8 Persistant connections

tcp.flags.syn == 1 and tcp.flags.ack == 0 and tcp.port == 80

No.	Time	Source	Destination	Protocc	Length	Info
439	98.33960…	10.228.215.77	10.228.215.62	TCP	66	56409 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
477	98.50784…	10.228.215.77	10.228.215.62	TCP	66	56410 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
479	98.51209…	10.228.215.77	10.228.215.62	TCP	66	56411 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
481	98.51296…	10.228.215.77	10.228.215.62	TCP	66	56412 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
486	98.52193…	10.228.215.77	10.228.215.62	TCP	66	56413 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
488	98.52574…	10.228.215.77	10.228.215.62	TCP	66	56414 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
490	98.52708…	10.228.215.77	10.228.215.62	TCP	66	56415 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
498	98.56551…	10.228.215.77	10.228.215.62	TCP	66	56416 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM

http

No.	Time	Source	Destination	Protocol	Length	Info
444	98.349137…	10.228.215.77	10.228.215.62	HTTP	407	GET /index.html HTTP/1.1
447	98.350189…	10.228.215.62	10.228.215.77	HTTP	1038	HTTP/1.1 200 OK (text/html)
474	98.503317…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%201.jpg HTTP/1.1
499	98.565531…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%202.jpg HTTP/1.1
501	98.565529…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%203.jpg HTTP/1.1
503	98.565531…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%205.jpg HTTP/1.1
504	98.565531…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%204.jpg HTTP/1.1
505	98.565533…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%207.jpg HTTP/1.1
507	98.565547…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%206.jpg HTTP/1.1
555	98.598863…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%208.jpg HTTP/1.1
2898	100.89320…	10.228.215.62	10.228.215.77	HTTP	462	HTTP/1.1 200 OK (JPEG JFIF image)
3026	100.98381…	10.228.215.62	10.228.215.77	HTTP	809	HTTP/1.1 200 OK (JPEG JFIF image)
3076	101.03934…	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%209.jpg HTTP/1.1
3193	101.12580…	10.228.215.77	10.228.215.62	HTTP	433	GET /Image%20-%2010.jpg HTTP/1.1
3295	101.20505…	10.228.215.62	10.228.215.77	HTTP	2705	HTTP/1.1 200 OK (JPEG JFIF image)
3471	101.36622…	10.228.215.77	10.228.215.62	HTTP	423	GET /favicon.ico HTTP/1.1
3475	101.36858…	10.228.215.62	10.228.215.77	HTTP/…	1592	HTTP/1.1 404 Not Found
3606	101.48783…	10.228.215.62	10.228.215.77	HTTP	6165	HTTP/1.1 200 OK (JPEG JFIF image)
3767	101.61778…	10.228.215.62	10.228.215.77	HTTP	1481	HTTP/1.1 200 OK (JPEG JFIF image)
3964	101.82406…	10.228.215.62	10.228.215.77	HTTP	2039	HTTP/1.1 200 OK (JPEG JFIF image)
4066	101.93021…	10.228.215.62	10.228.215.77	HTTP	7470	HTTP/1.1 200 OK (JPEG JFIF image)
4440	102.31432…	10.228.215.62	10.228.215.77	HTTP	1126	HTTP/1.1 200 OK (JPEG JFIF image)
4758	102.71663…	10.228.215.62	10.228.215.77	HTTP	4933	HTTP/1.1 200 OK (JPEG JFIF image)
5014	103.11738…	10.228.215.62	10.228.215.77	HTTP	3106	HTTP/1.1 200 OK (JPEG JFIF image)

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	444	GET /index.html HTTP/1.1	98.349137674 s
End Time	5014	HTTP/1.1 200 OK (JPEG image) *(last image)*	103.117383284 s
Total Load Time	—	End – Start	4.76824561 s

Case E: 10 persistant connections:

```
tcp.flags.syn == 1 and tcp.flags.ack == 0 and tcp.port == 80
```

No.	Time	Source	Destination	Protocol	Length	Info
210	47.693528180	10.228.215.77	10.228.215.62	TCP	66	56457 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
220	47.853988935	10.228.215.77	10.228.215.62	TCP	66	56458 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
222	47.858965229	10.228.215.77	10.228.215.62	TCP	66	56459 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
227	47.862193017	10.228.215.77	10.228.215.62	TCP	66	56460 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
229	47.875244106	10.228.215.77	10.228.215.62	TCP	66	56461 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
230	47.875280963	10.228.215.77	10.228.215.62	TCP	66	56463 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
231	47.875285462	10.228.215.77	10.228.215.62	TCP	66	56462 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
242	47.882915680	10.228.215.77	10.228.215.62	TCP	66	56464 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
250	47.894230482	10.228.215.77	10.228.215.62	TCP	66	56465 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM
252	47.899733046	10.228.215.77	10.228.215.62	TCP	66	56466 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=1460 WS=256 SACK_PERM

```
http
```

No.	Time	Source	Destination	Protocol	Length	Info
213	47.699576898	10.228.215.77	10.228.215.62	HTTP	407	GET /index.html HTTP/1.1
215	47.700452593	10.228.215.62	10.228.215.77	HTTP	1038	HTTP/1.1 200 OK (text/html)
217	47.847645351	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%201.jpg HTTP/1.1
240	47.882838931	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%202.jpg HTTP/1.1
241	47.882839673	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%203.jpg HTTP/1.1
256	47.905357684	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%206.jpg HTTP/1.1
257	47.905366574	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%204.jpg HTTP/1.1
259	47.905419108	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%205.jpg HTTP/1.1
262	47.905458602	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%207.jpg HTTP/1.1
283	47.909623140	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%208.jpg HTTP/1.1
303	47.935996348	10.228.215.77	10.228.215.62	HTTP	432	GET /Image%20-%209.jpg HTTP/1.1
308	47.947558517	10.228.215.77	10.228.215.62	HTTP	433	GET /Image%20-%2010.jpg HTTP/1.1
3566	50.497111813	10.228.215.62	10.228.215.77	HTTP	190	HTTP/1.1 200 OK (JPEG JFIF image)
3842	50.686424365	10.228.215.77	10.228.215.62	HTTP	423	GET /favicon.ico HTTP/1.1
3848	50.687412910	10.228.215.62	10.228.215.77	HTTP/XML	1592	HTTP/1.1 404 Not Found
4183	50.898996272	10.228.215.62	10.228.215.77	HTTP	882	HTTP/1.1 200 OK (JPEG JFIF image)
4599	51.194153615	10.228.215.62	10.228.215.77	HTTP	5809	HTTP/1.1 200 OK (JPEG JFIF image)
5094	51.612105684	10.228.215.62	10.228.215.77	HTTP	2405	HTTP/1.1 200 OK (JPEG JFIF image)
5145	51.642470832	10.228.215.62	10.228.215.77	HTTP	3361	HTTP/1.1 200 OK (JPEG JFIF image)
5211	51.726616884	10.228.215.62	10.228.215.77	HTTP	225	HTTP/1.1 200 OK (JPEG JFIF image)
5346	51.874739762	10.228.215.62	10.228.215.77	HTTP	8930	HTTP/1.1 200 OK (JPEG JFIF image)
5376	51.915494913	10.228.215.62	10.228.215.77	HTTP	159	HTTP/1.1 200 OK (JPEG JFIF image)
5684	52.280757984	10.228.215.62	10.228.215.77	HTTP	8642	HTTP/1.1 200 OK (JPEG JFIF image)
5820	52.471334551	10.228.215.62	10.228.215.77	HTTP	26415	HTTP/1.1 200 OK (JPEG JFIF image)

EVENT	PACKET NO.	DESCRIPTION	TIME (SECONDS)
Start Time	213	GET /index.html HTTP/1.1	47.699576898 s
End Time	5820	HTTP/1.1 200 OK (JPEG image) *(last image)*	52.471334551 s
Total Load Time	–	End – Start	4.771768612 s

Observation Table:

CONNECTION TYPE	PERSISTENT CONNECTIONS	START TIME (S)	END TIME (S)	LOAD TIME (S)
Non-Persistent	0	**5.505086001**	**12.190861467**	**6.7**
Persistent	2	118.235731819	122.948214312	4.712482493
Persistent	4	116.418019917	122.085536476	5.667516559
Persistent	6	81.104840729	85.776975369	4.628568079
Persistent	8	98.349137674	103.117383284	4.76824561
Persistent	10	47.699576898	52.471334551	4.771768612

Graph: