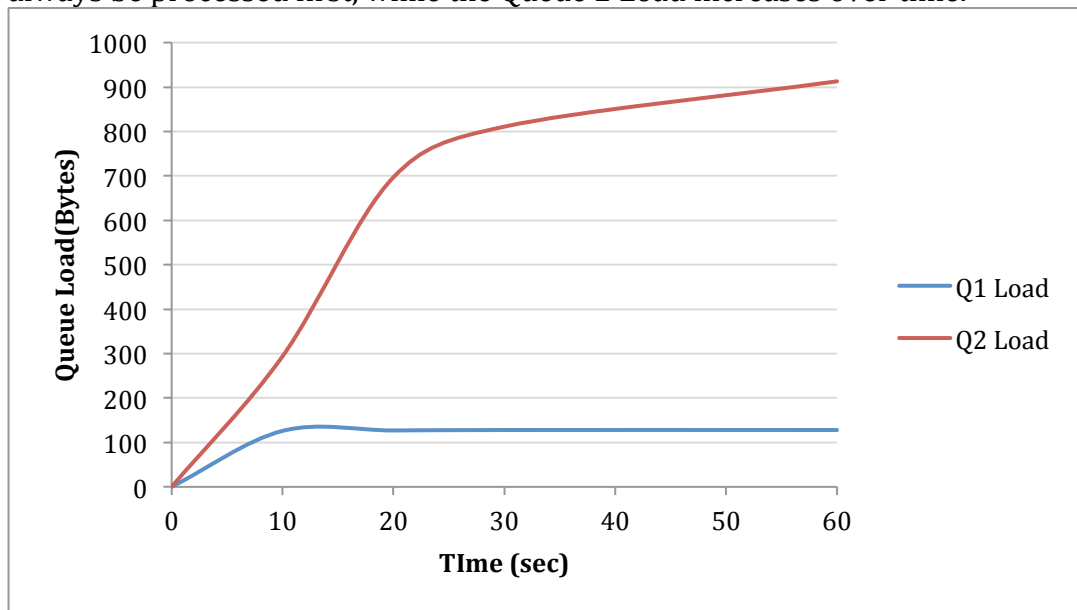


## Project 3 Writeup

### Step 1

- 1) The Sender would wait until it receives ACK for that packet before advancing to sending the next packet. If no ACK is received and the `recvfrom()` call timed-out, then it'll resend the packet however many times before an ACK is received.
- 2)
- 3)
- 4) The load for Queue 1 seems to stay low since it has higher priority and would always be processed first, while the Queue 2 Load increases over time.



### Step 2

- 1)
- 2)
- 3)

## Project 3 Writeup

### Step 3

59	37.650559000	127.0.0.1	127.0.0.1	UDP	160 Source port: 30000 Destination port: 55435
60	41.532750000	10.142.178.13	255.255.255.255	DB-LSP-DI	146 Dropbox LAN sync Discovery Protocol
61	41.533060000	10.142.178.13	10.142.179.255	DB-LSP-DI	146 Dropbox LAN sync Discovery Protocol
62	43.261851000	127.0.0.1	127.0.0.1	UDP	160 Source port: 64711 Destination port: 30000
63	43.262046000	127.0.0.1	127.0.0.1	UDP	160 Source port: 30000 Destination port: 61067
64	44.448869000	127.0.0.1	127.0.0.1	UDP	160 Source port: 65040 Destination port: 30000
65	44.448869000	127.0.0.1	127.0.0.1	UDP	160 Source port: 30000 Destination port: 55435

[Coloring Rule String: udp]

- Null/Loopback

```
Internet Protocol Version 4, Src: 127.0.0.1 (127.0.0.1), Dst: 127.0.0.1 (127.0.0.1)
```

Version: 4

Header Length: 20 bytes

▼ Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-Capable Transport))

0000 00.. = Differentiated Services Codepoint: Default (0x00)

.... ..00 = Explicit Congestion Notification: Not-ECT (Not ECN-Capable Transport) (0x00)

Total Length: 156

Identification: 0x3142 (12610)

▼ Flags: 0x00

0... .. = Reserved bit: Not set

```
.0.. .... = Don't fragment: Not set
```

```
..0. .... = More fragments: Not set
```

Fragment offset: 0

Time to live: 64

Protocol: UDP (17)

▼ Header checksum: 0x0000 [validation disabled]

[Good: False]

```
[Bad: False]
```

Source: 127.0.0.1 (127.0.0.1)

```
Destination: 127.0.0.1 (127.0.0.1)
```

[Source GeoIP: Unknown]

[Destination GeoIP: Unknown]

- 1) I ran the program on address 127.0.0.1 (loopback). But from other packets that went through, I know my IP is **10.142.178.13**
- 2) **UDP (17)**
- 3) **20 bytes** in IP header. Total length = 150 bytes, so  $156 - 20 = \mathbf{136 \text{ bytes}}$  payload.
- 4) Data **not fragmented**, because the "More fragments" field is 0.

57	36.465383000	127.0.0.1	127.0.0.1	UDP	160 Source port: 30000 Destination port: 61067
58	37.650357000	127.0.0.1	127.0.0.1	UDP	160 Source port: 65040 Destination port: 30000
59	37.650559000	127.0.0.1	127.0.0.1	UDP	160 Source port: 30000 Destination port: 55435
60	41.532750000	10.142.178.13	255.255.255.255	DB-LSP-DI	146 Dropbox LAN sync Discovery Protocol
61	41.532060000	10.142.178.13	10.142.178.255	DB-LSP-DI	146 Dropbox LAN sync Discovery Protocol

[Source GeoIP: Unknown]

[Destination GeoIP: Unknown]

```
7 User Datagram Protocol, Src Port: 65040 (65040), Dst Port: 30000 (30000)
```

Source Port: 65040 (65040)

Destination Port: 30000 (30000)

Length: 136

Checksum: 0xfe9b [validation disabled]

[Good Checksum: False]

```
[Bad Checksum: False]
```

[Stream index: 3]

```
7 Data (128 bytes)
```

[illegible]

[Length: 128]

```

000 02 00 00 00 00 45 00 00 9c 31 42 00 00 40 11 00 00 .....E...1B...@...
010 7f 00 00 00 01 7f 00 00 01 fe 10 75 30 00 88 fe 9b .....uo...
020 32 37 37 37 37 37 00 00 00 00 00 00 00 00 00 00 2777777...
030 00 00 00 00 00 00 00 00 00 00 10 fb fe ff 7f 00 00 .....n...
040 65 dc cb 0e 06 33 9c 3e 25 97 02 60 6a 28 29 1d 0e e...3.>%...()

```

- 5) Source Port – 2 bytes – 65040(sender port)  
Destination Port – 2 bytes – 30000(router port)  
Length – 2 bytes – 136(8 bytes header + 128 bytes data)  
Checksum – 2 bytes – 0xfe9b [validation disabled]
- 6)