COL334 - Assignment 1
Internet Architecture

Akshay Kumar Gupta	Barun Patra	Haroun Habeeb
2013CS50275	2013CS10773	2013CS10225

Q4a. List of applications generating background traffic:

- Adobe Creative Cloud
- Pushbullet
- WifiAgent
- TextMate
- Spotify

Q4b. Analysis of internal IITD webpage download after clearing local DNS cache:

- Servers for which a DNS query was launched: 10.10.1.2 or 10.7.174.111
- Number of HTTP requests generated: 60
- Number of TCP connections opened: 7
- Time taken for downloading webpage: $\sim$ 1 second
- No. of TCP losses / retransmits: 0

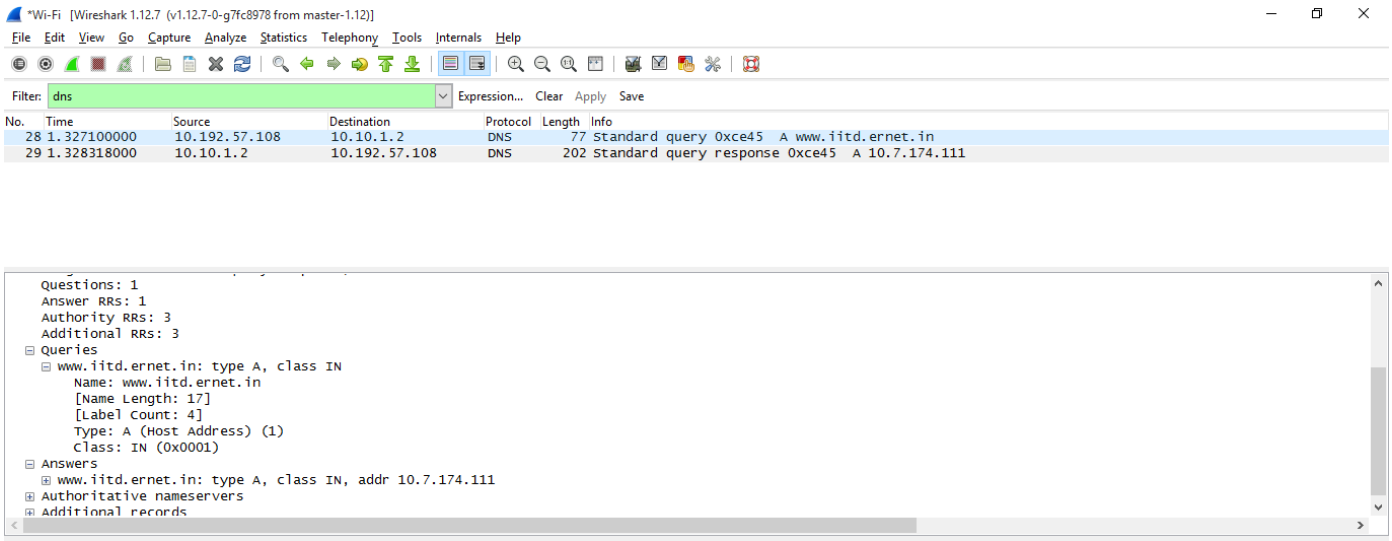

Figure 1: DNS Query

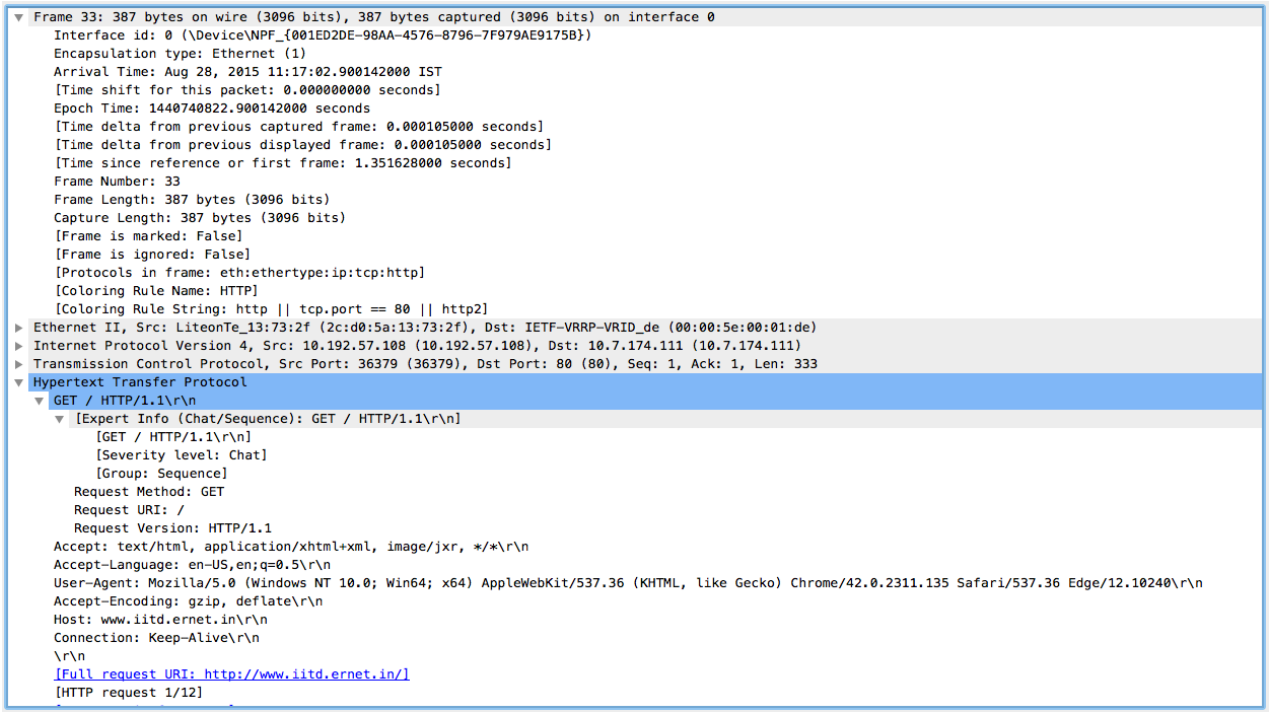

Figure 2: HTTP Get Request

Topic / Item	Count	Average	Min val	Max val	Rate (ms)	Percent	Burst rate	Burst start
Total HTTP Packets	122				0.0563	100%	0.9300	1.954
Other HTTP Packets	2				0.0009	1.64%	0.0100	0.137
HTTP Response Packets	60				0.0277	49.18%	0.4600	1.956
???: broken	0				0.0000	0.00%	-	-
5xx: Server Error	0				0.0000	0.00%	-	-
4xx: Client Error	0				0.0000	0.00%	-	-
3xx: Redirection	0				0.0000	0.00%	-	-
2xx: Success	60				0.0277	100.00%	0.4600	1.956
200 OK	60				0.0277	100.00%	0.4600	1.956
1xx: Informational	0				0.0000	0.00%	-	-
HTTP Request Packets	60				0.0277	49.18%	0.4700	1.954
GET	60				0.0277	100.00%	0.4700	1.954

Figure 3: Number of HTTP requests

```
▼ Frame 35: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface 0
    Interface id: 0 (\Device\NPF_{001ED2DE-98AA-4576-8796-7F979AE9175B})
    Encapsulation type: Ethernet (1)
    Arrival Time: Aug 28, 2015 11:17:03.491118000 IST
    [Time shift for this packet: 0.000000000 seconds]
    Epoch Time: 1440740823.491118000 seconds
    [Time delta from previous captured frame: 0.589734000 seconds]
    [Time delta from previous displayed frame: 0.589734000 seconds]
    [Time since reference or first frame: 1.942604000 seconds]
    Frame Number: 35
    Frame Length: 1514 bytes (12112 bits)
    Capture Length: 1514 bytes (12112 bits)
    [Frame is marked: False]
    [Frame is ignored: False]
    [Protocols in frame: eth:ethertype:ip:tcp]
    [Coloring Rule Name: HTTP]
    [Coloring Rule String: http || tcp.port == 80 || http2]
▶ Ethernet II, Src: Cisco_c4:09:40 (60:73:5c:c4:09:40), Dst: LiteonTe_13:73:2f (2c:d0:5a:13:73:2f)
▶ Internet Protocol Version 4, Src: 10.7.174.111 (10.7.174.111), Dst: 10.192.57.108 (10.192.57.108)
▼ Transmission Control Protocol, Src Port: 80 (80), Dst Port: 36379 (36379), Seq: 1, Ack: 334, Len: 1460
    Source Port: 80 (80)
    Destination Port: 36379 (36379)
    [Stream index: 3]
    [TCP Segment Len: 1460]
    Sequence number: 1    (relative sequence number)
    [Next sequence number: 1461    (relative sequence number)]
    Acknowledgment number: 334    (relative ack number)
    Header Length: 20 bytes
  ▼ .... 0000 0001 0000 = Flags: 0x010 (ACK)
      000. .... .... = Reserved: Not set
      ...0 .... .... = Nonce: Not set
      .... 0... .... = Congestion Window Reduced (CWR): Not set
      .... .0.. .... = ECN-Echo: Not set
      .... ..0. .... = Urgent: Not set
      .... ...1 .... = Acknowledgment: Set
      .... .... 0... = Push: Not set
      .... .... .0.. = Reset: Not set
      .... .... ..0. = Syn: Not set
```

Figure 4: TCP Header

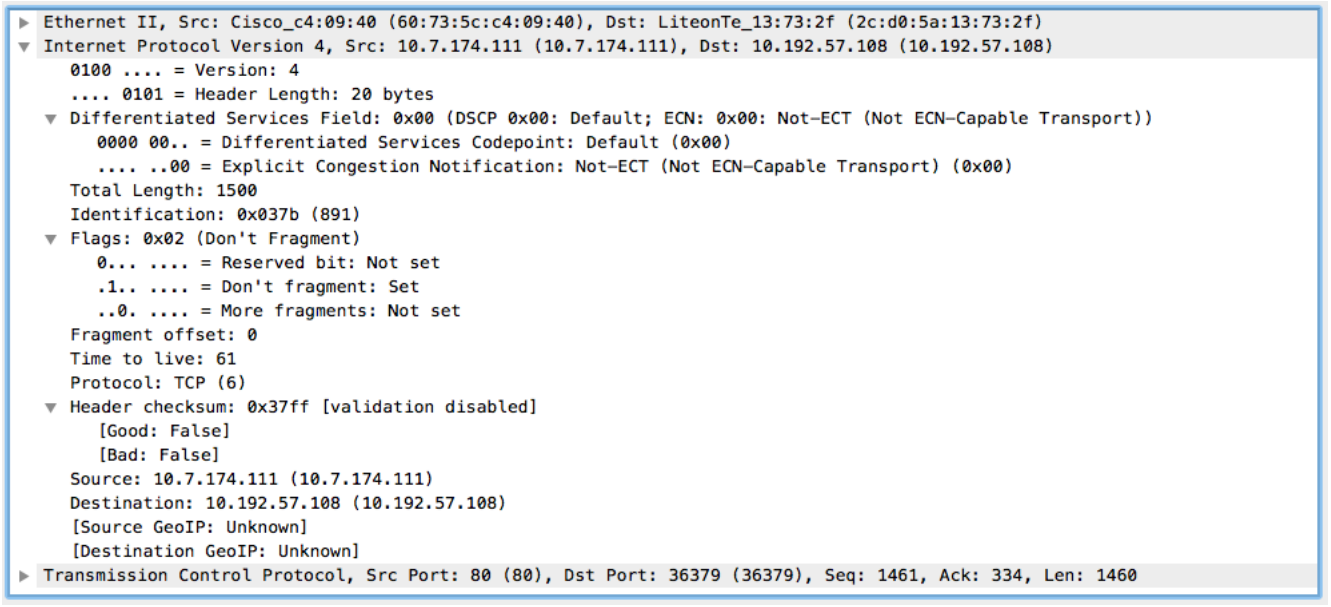

Figure 5: IP Header

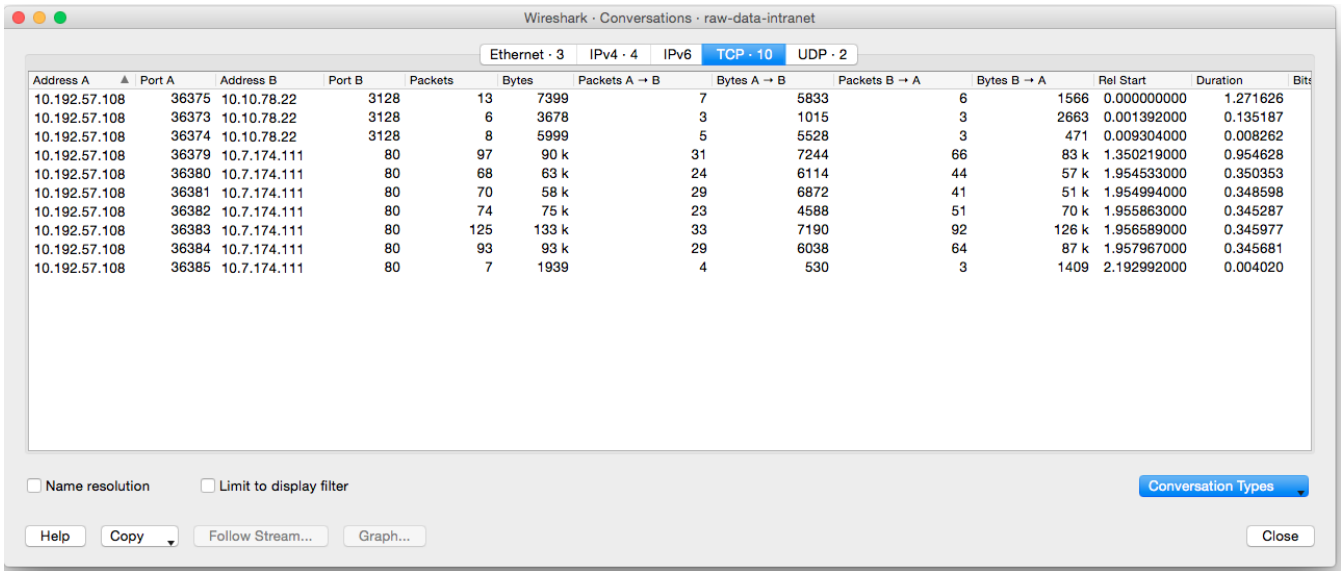

Figure 6: TCP Connections