Network Forensic

Analysis Report

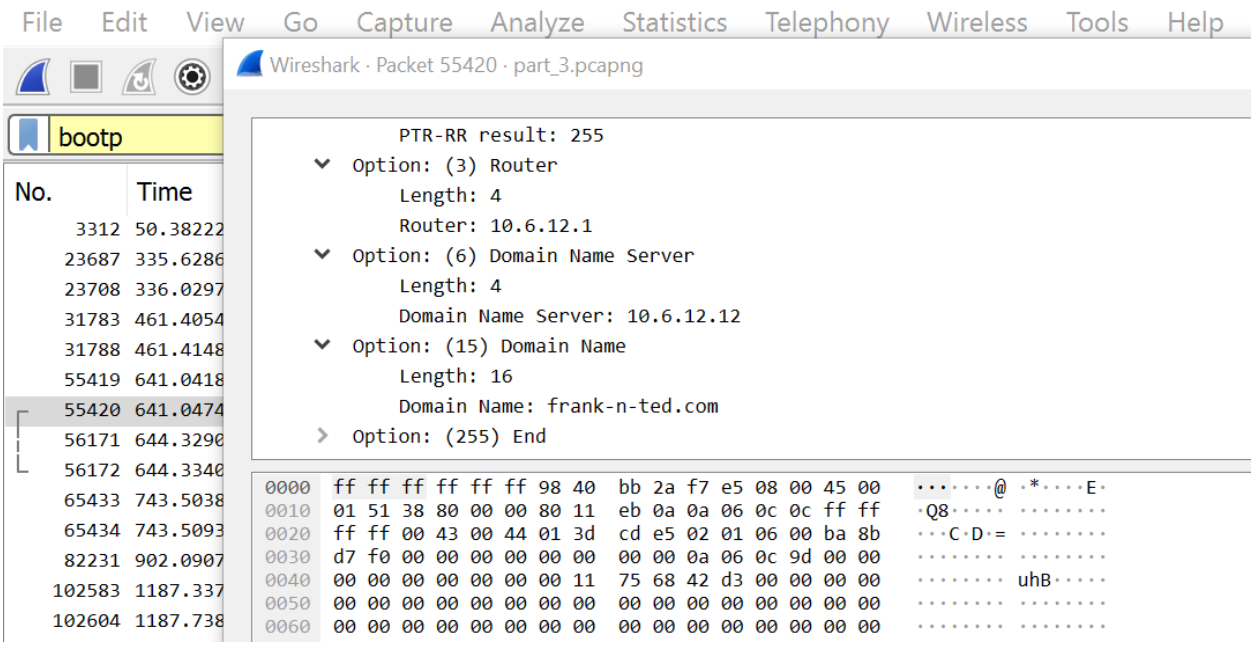
Submitted by: Bill, Matt, Shannon, Tanya

Time Thieves

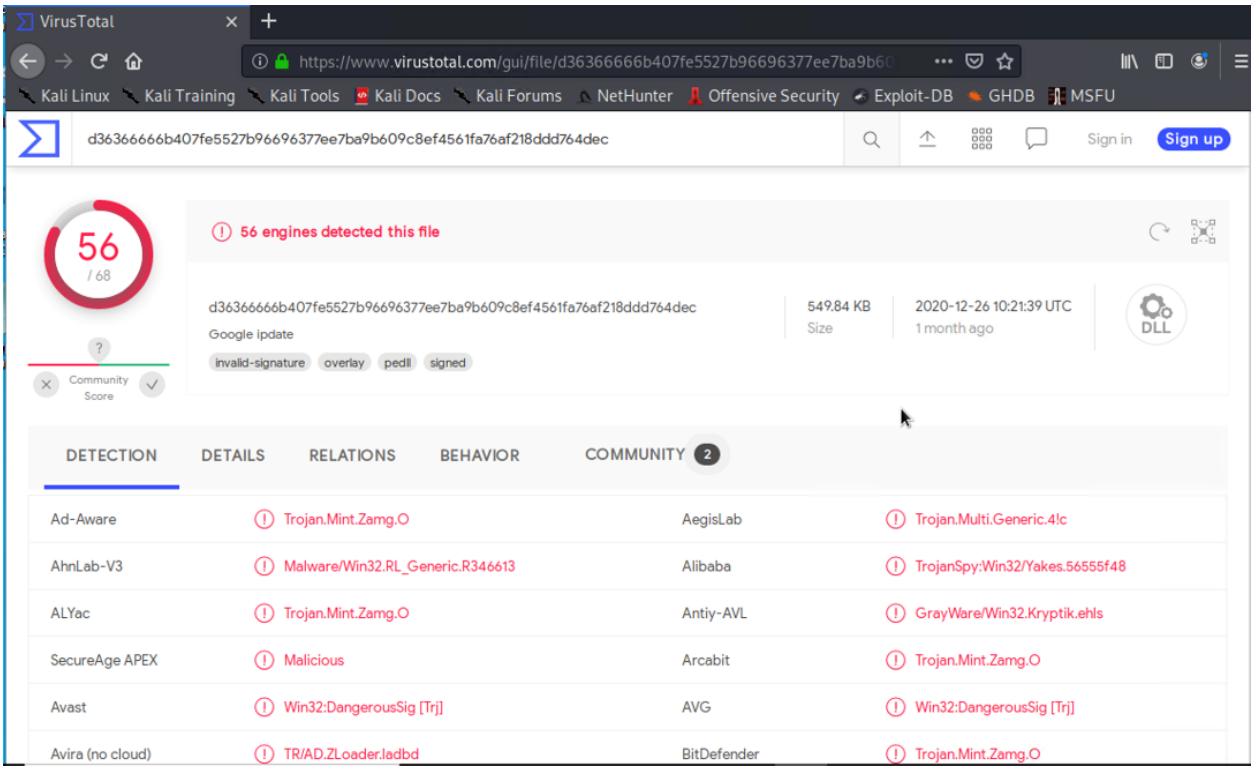
At least two users on the network have been wasting time on YouTube. Usually, IT wouldn't pay much mind to this behavior, but it seems these people have created their own web server on the corporate network. So far, Security knows the following about these time thieves:

- They have set up an Active Directory network.
- They are constantly watching videos on YouTube.
- Their IP addresses are somewhere in the range 10.6.12.0/24

Findings:



- Domain name of the users' custom site : **FRANK-N-TED.COM**
- IP address of the Domain Controller (DC) of the AD network : **10.6.12.12**
- Malware downloaded to the 10.6.12.203 machine: **june11.dll**
- Upload the file to VirusTotal.com and check



- Malware classification : **Trojan**

Vulnerable Windows Machine

The Security team received reports of an infected Windows host on the network. They know the following facts:

- Machines in the network live in the range 172.16.4.0/24.
- The domain mind-hammer.net is associated with the infected computer.
- The DC for this network lives at 172.16.4.4 and is named Mind-Hammer-DC.
- The network has standard gateway and broadcast addresses.

Finding the Infected Windows machine:

Wireshark Packet Analysis : Statistics

Ethernet · 30 | IPv4 · 808 | IPv6 · 2 | TCP · 1372 | UDP · 1977

Address	Port	Packets	Bytes	Tx Packets	Tx Bytes	Rx Packets	Rx Bytes
172.16.4.205	49249	30,344	26M	15,149	9831k	15,195	
185.243.115.84	80	30,344	26M	15,195	16M	15,149	

Ethernet · 30 | IPv4 · 808 | IPv6 · 2 | TCP · 1372 | UDP · 1977

Address	Packets	Bytes	Tx Packets	Tx Bytes	Rx Packets	Rx Bytes	Country
172.16.4.205	51,364	45M	21,973	10M	29,391	34M	—
185.243.115.84	30,344	26M	15,195	16M	15,149	9831k	—

Wireshark Packet Analysis : Filter by IP

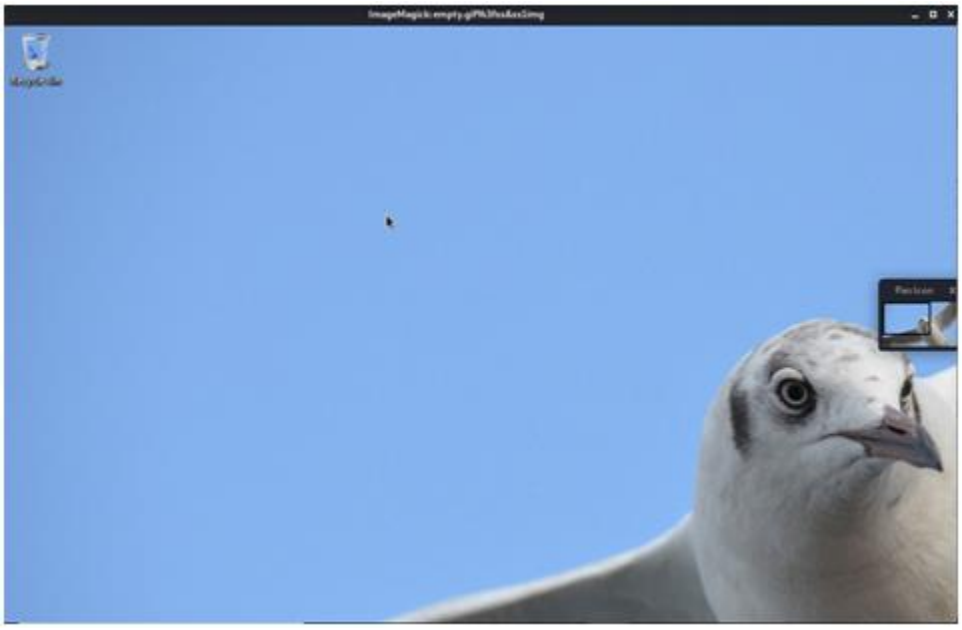
ip.addr == 172.16.4.205

Packet list | Narrow & Wide | Case sensitive | Display filter

No.	Time	Source	Destination	Protocol	Length	CNameString	Info
3195	49.803720100	172.16.4.205	172.16.4.4	KRB5	377	rotterdam-pc$	AS-REQ
3187	49.786544600	172.16.4.205	172.16.4.4	KRB5	297	rotterdam-pc$	AS-REQ
3440	50.894686000	172.16.4.4	172.16.4.205	KRB5	273	matthijs.devries	TGS-REP
3428	50.829698200	172.16.4.4	172.16.4.205	KRB5	150	matthijs.devries	TGS-REP
3417	50.770347900	172.16.4.4	172.16.4.205	KRB5	242	matthijs.devries	AS-REP

*Note: CNameString values for hostnames always end with a **$** (dollar sign), while user account names do not.*

1. Information about the infected Windows machine:
    - Host name : **ROTTERDAM-PC**
    - IP address : **172.16.4.205**
    - MAC address : **00:59:07:b0:63:a4**
2. Username of the Windows user whose computer is infected: **matthijs.devries**
3. IP addresses used in the actual infection traffic:
    - **31.7.62.214**
    - **185.243.115.84**
4. As a bonus, retrieve the desktop background of the Windows host.



Illegal Downloads

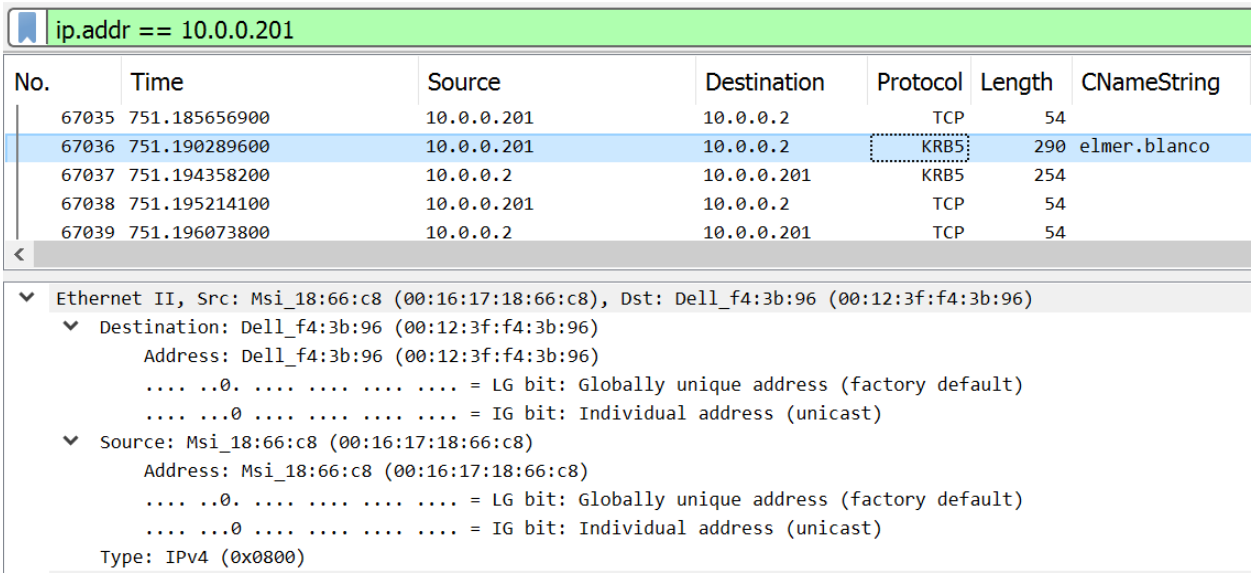
IT was informed that some users are torrenting on the network. The Security team does not forbid the use of torrents for legitimate purposes, such as downloading operating systems. However, they have a strict policy against copyright infringement.

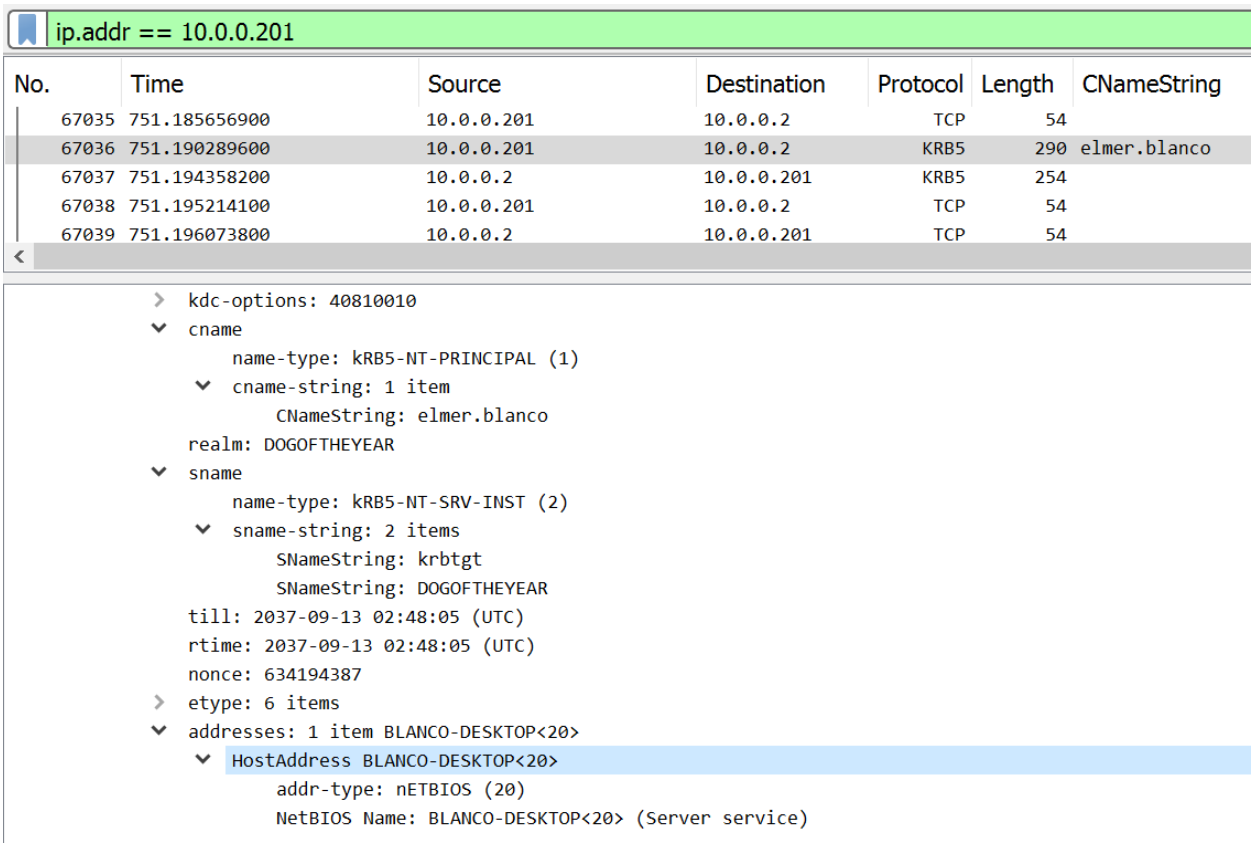
IT shared the following about the torrent activity:

- The machines using torrents live in the range 10.0.0.0/24 and are clients of an AD domain.
- The DC of this domain lives at 10.0.0.2 and is named DogOfTheYear-DC.
- The DC is associated with the domain dogoftheyear.net.

Findings:

1. Information about the machine with IP address 10.0.0.201:





ip.addr == 10.0.0.201

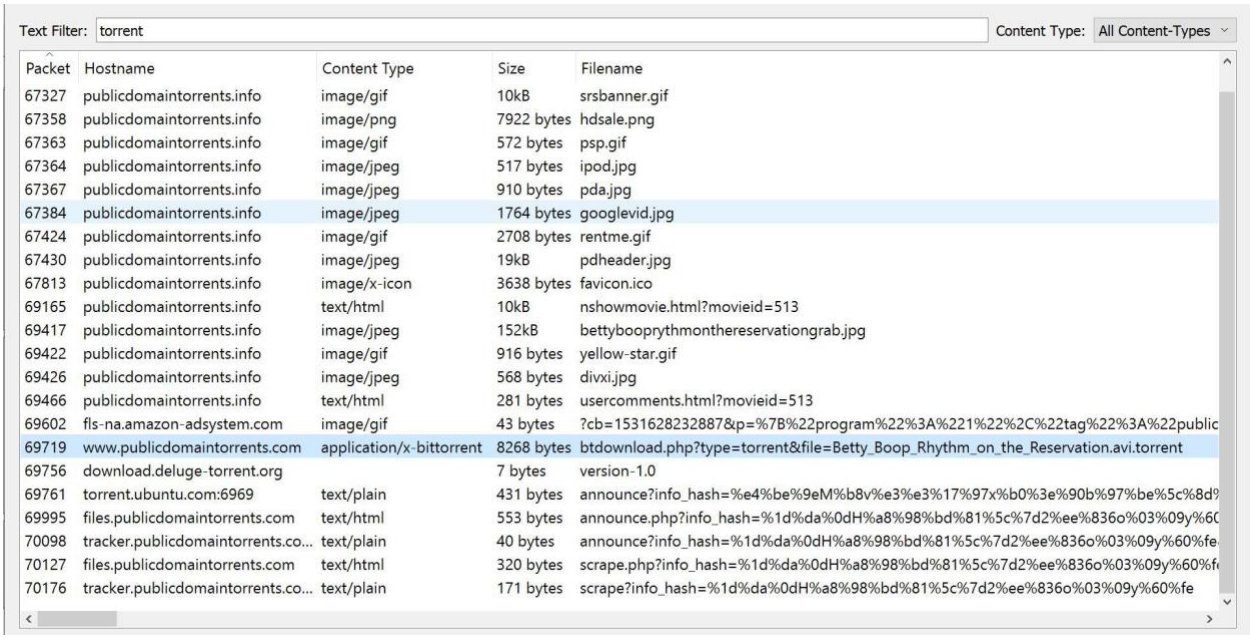
No.	Time	Source	Destination	Protocol	Length	CNameString
67035	751.185656900	10.0.0.201	10.0.0.2	TCP	54	
67036	751.190289600	10.0.0.201	10.0.0.2	KRB5	290	elmer.blanco
67037	751.194358200	10.0.0.2	10.0.0.201	KRB5	254	
67038	751.195214100	10.0.0.201	10.0.0.2	TCP	54	
67039	751.196073800	10.0.0.2	10.0.0.201	TCP	54	

```
> kdc-options: 40810010
v cname
    name-type: kRB5-NT-PRINCIPAL (1)
  v cname-string: 1 item
        CNameString: elmer.blanco
  realm: DOGOFTHEYEAR
v sname
    name-type: kRB5-NT-SRV-INST (2)
  v sname-string: 2 items
        SNameString: krbtgt
        SNameString: DOGOFTHEYEAR
  till: 2037-09-13 02:48:05 (UTC)
  rtime: 2037-09-13 02:48:05 (UTC)
  nonce: 634194387
> etype: 6 items
v addresses: 1 item BLANCO-DESKTOP<20>
  v HostAddress BLANCO-DESKTOP<20>
      addr-type: nETBIOS (20)
      NetBIOS Name: BLANCO-DESKTOP<20> (Server service)
```

- MAC address : ***Msi_18:66:c8 (00:16:17:18:66:c8)***
- Windows username : **elmer.blanco**
- OS version : ***Windows NT 10.0***

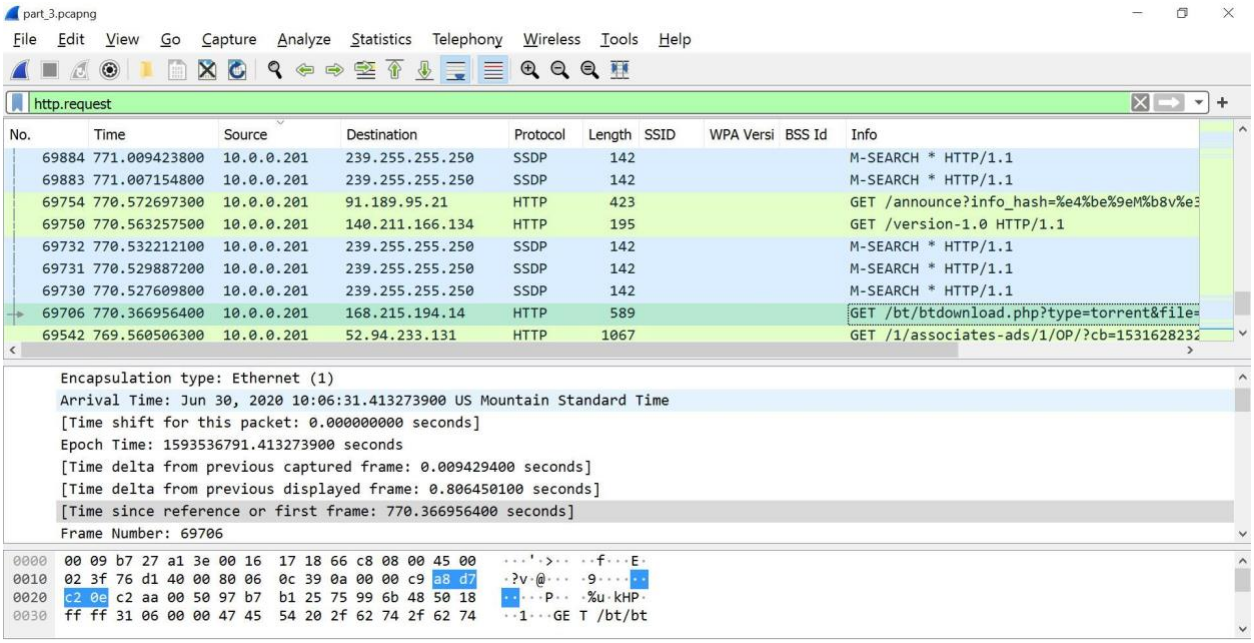
- Downloaded Torrent file details :

  Betty_Boop_Rhythm_on_the_Reservation.avi.torrent



Text Filter: torrent Content Type: All Content-Types

Packet	Hostname	Content Type	Size	Filename
67327	publicdomaintorrents.info	image/gif	10kB	srsbanner.gif
67358	publicdomaintorrents.info	image/png	7922 bytes	hdsale.png
67363	publicdomaintorrents.info	image/gif	572 bytes	psp.gif
67364	publicdomaintorrents.info	image/jpeg	517 bytes	ipod.jpg
67367	publicdomaintorrents.info	image/jpeg	910 bytes	pda.jpg
67384	publicdomaintorrents.info	image/jpeg	1764 bytes	googlevid.jpg
67424	publicdomaintorrents.info	image/gif	2708 bytes	rentme.gif
67430	publicdomaintorrents.info	image/jpeg	19kB	pdheader.jpg
67813	publicdomaintorrents.info	image/x-icon	3638 bytes	favicon.ico
69165	publicdomaintorrents.info	text/html	10kB	nshowmovie.html?movieid=513
69417	publicdomaintorrents.info	image/jpeg	152kB	bettybooprythmonthereservationgrab.jpg
69422	publicdomaintorrents.info	image/gif	916 bytes	yellow-star.gif
69426	publicdomaintorrents.info	image/jpeg	568 bytes	divxi.jpg
69466	publicdomaintorrents.info	text/html	281 bytes	usercomments.html?movieid=513
69602	fls-na.amazon-adsystem.com	image/gif	43 bytes	?cb=1531628232887&p=%7B%22program%22%3A%221%22%2C%22tag%22%3A%22public
69719	www.publicdomaintorrents.com	application/x-bittorrent	8268 bytes	btdownload.php?type=torrent&file=Betty_Boop_Rhythm_on_the_Reservation.avi.torrent
69756	download.deluge-torrent.org		7 bytes	version-1.0
69761	torrent.ubuntu.com:6969	text/plain	431 bytes	announce?info_hash=%e4%be%9eM%b8v%e3%e3%17%97x%b0%3e%90b%97%be%5c%8d%
69995	files.publicdomaintorrents.com	text/html	553 bytes	announce.php?info_hash=%1d%da%0dH%a8%98%bd%81%5c%7d2%ee%836o%03%09y%60
70098	tracker.publicdomaintorrents.co...	text/plain	40 bytes	announce?info_hash=%1d%da%0dH%a8%98%bd%81%5c%7d2%ee%836o%03%09y%60%fe
70127	files.publicdomaintorrents.com	text/html	320 bytes	scrape.php?info_hash=%1d%da%0dH%a8%98%bd%81%5c%7d2%ee%836o%03%09y%60%f
70176	tracker.publicdomaintorrents.co...	text/plain	171 bytes	scrape?info_hash=%1d%da%0dH%a8%98%bd%81%5c%7d2%ee%836o%03%09y%60%fe



part_3.pcapng

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http.request

No.	Time	Source	Destination	Protocol	Length	SSID	WPA Versi	BSS Id	Info
69884	771.009423800	10.0.0.201	239.255.255.250	SSDP	142				M-SEARCH * HTTP/1.1
69883	771.007154800	10.0.0.201	239.255.255.250	SSDP	142				M-SEARCH * HTTP/1.1
69754	770.572697300	10.0.0.201	91.189.95.21	HTTP	423				GET /announce?info_hash=%e4%be%9eM%b8v%e3
69750	770.563257500	10.0.0.201	140.211.166.134	HTTP	195				GET /version-1.0 HTTP/1.1
69732	770.532212100	10.0.0.201	239.255.255.250	SSDP	142				M-SEARCH * HTTP/1.1
69731	770.529887200	10.0.0.201	239.255.255.250	SSDP	142				M-SEARCH * HTTP/1.1
69730	770.527609800	10.0.0.201	239.255.255.250	SSDP	142				M-SEARCH * HTTP/1.1
69706	770.366956400	10.0.0.201	168.215.194.14	HTTP	589				GET /bt/btdownload.php?type=torrent&file=
69542	769.560506300	10.0.0.201	52.94.233.131	HTTP	1067				GET /1/associates-ads/1/OP/?cb=1531628232

```
Encapsulation type: Ethernet (1)
Arrival Time: Jun 30, 2020 10:06:31.413273900 US Mountain Standard Time
[Time shift for this packet: 0.000000000 seconds]
Epoch Time: 1593536791.413273900 seconds
[Time delta from previous captured frame: 0.009429400 seconds]
[Time delta from previous displayed frame: 0.806450100 seconds]
[Time since reference or first frame: 770.366956400 seconds]
Frame Number: 69706
```

```
0000  00 09 b7 27 a1 3e 00 16  17 18 66 c8 08 00 45 00   ···'·>·· ··f···E·
0010  02 3f 76 d1 40 00 80 06  0c 39 0a 00 00 c9 a8 d7   ·?v·@··· ·9·····
0020  c2 0e c2 aa 00 50 97 b7  b1 25 75 99 6b 48 50 18   ·····P·· ·%u·kHP·
0030  ff ff 31 06 00 00 47 45  54 20 2f 62 74 2f 62 74   ··1···GE T /bt/bt
```