Final Engagement

Attack, Defense & Analysis of a Vulnerable Network

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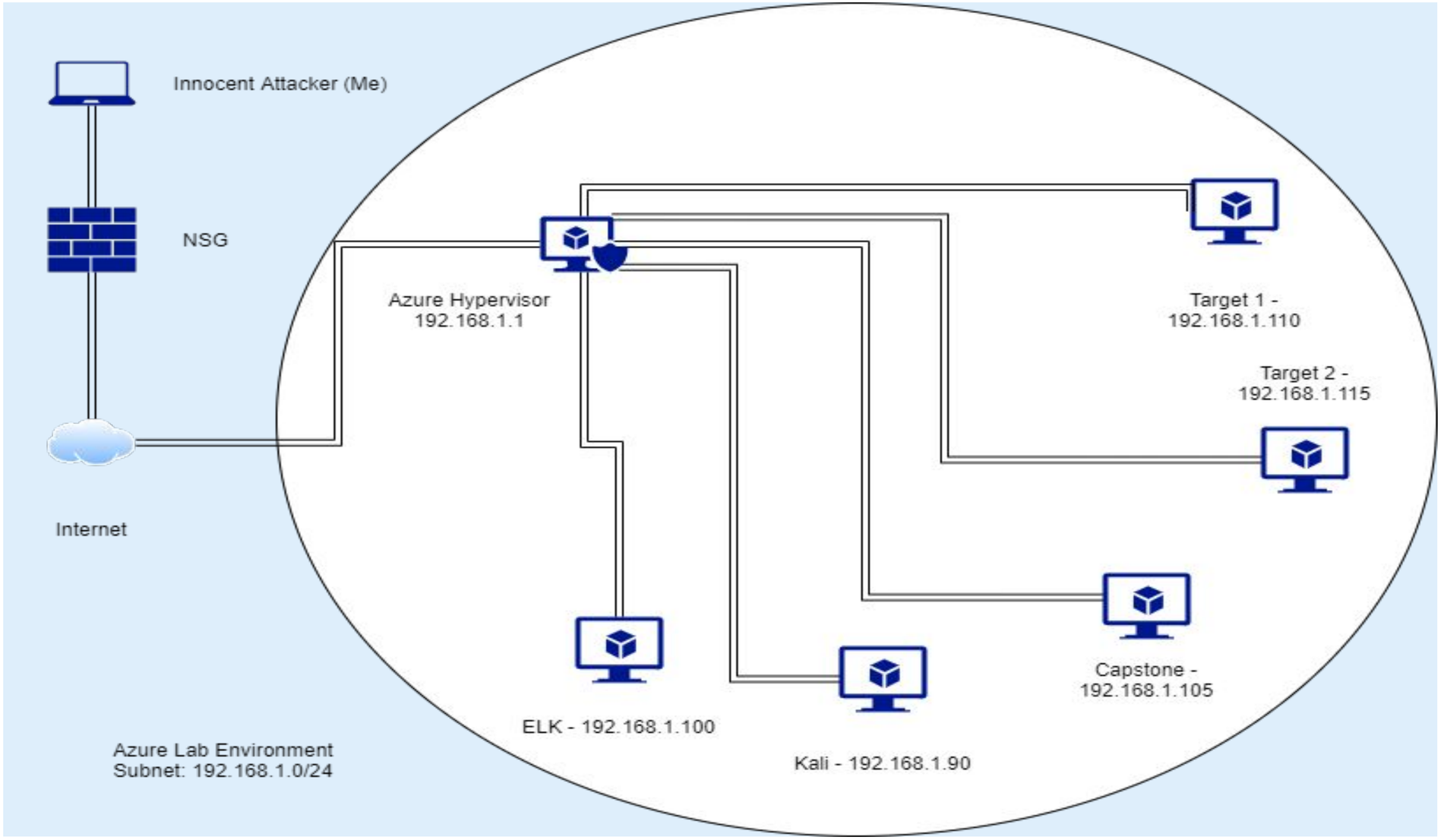
Network Topology
& Critical Vulnerabilities

Network Topology



Network
Address Range: 192.168.1.0/24
Netmask: 1
Gateway: 255

Machines
IPv4: 192.168.1.90
OS: Linux
Hostname: Kali

IPv4: 192.168.1.100
OS: Linux
Hostname: ELK

IPv4: 192.168.1.110
OS: Linux
Hostname: Target 1

IPv4: 192.168.1.115
OS: Linux
Hostname: Target 2

Traffic Profile

Traffic Profile

Our analysis identified the following characteristics of the traffic on the network:

Feature	Value	Description
Top Talkers (IP Addresses)	172.16.4.205/ 182.243.115.84/10.0.0.201	Machines that sent the most traffic.
Most Common Protocols	HTTP/SMB2/SMBA(AD)	Three most common protocols on the network.
# of Unique IP Addresses	804	Count of observed IP addresses.
Subnets	172.168.4.0/24/10.0.0/24/192. 168.1.0/24	Observed subnet ranges.
# of Malware Species	1identified _trojan “june11.dll”	Number of malware binaries identified in traffic.

Behavioral Analysis

Purpose of Traffic on the Network

Web browsing

“Normal” Activity

- Youtube, web browsing, web application usage (skype etc)

Suspicious Activity

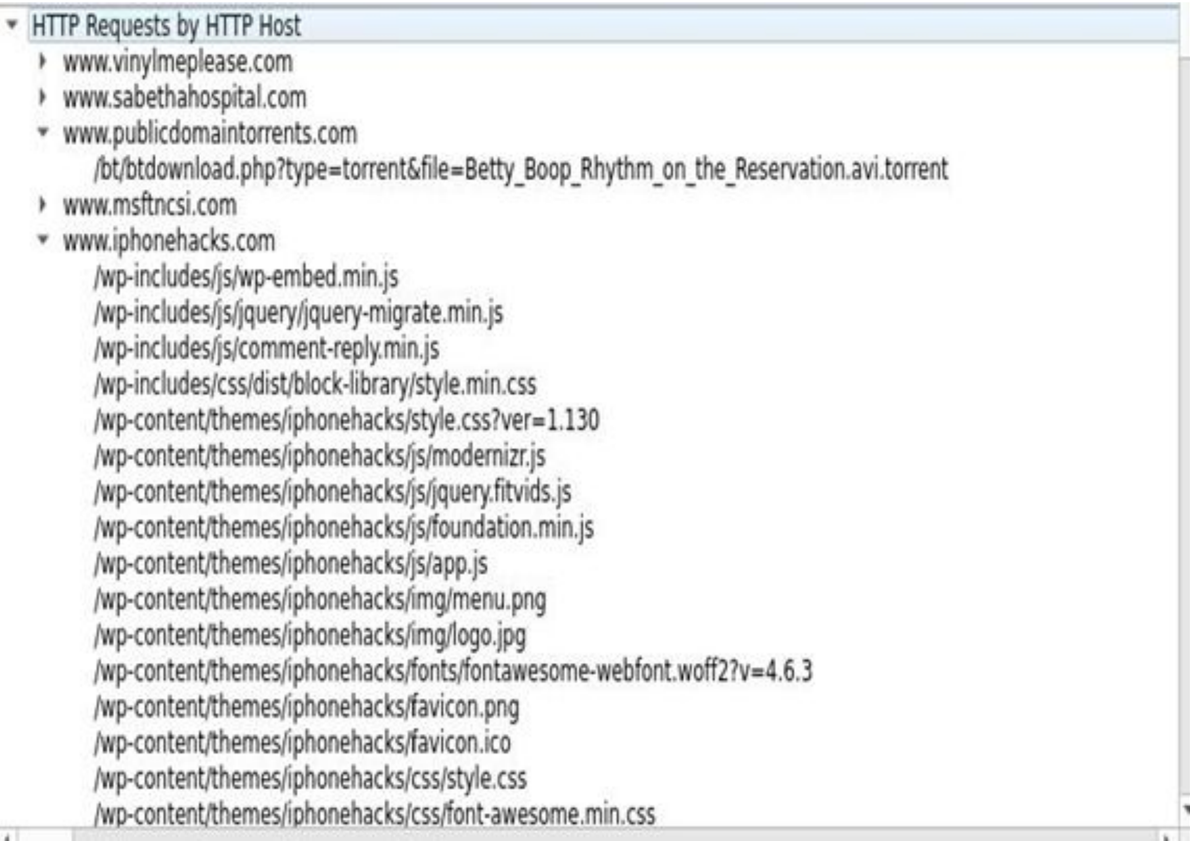
- Downloading malware, torrenting, sandboxing, and using cloud servers

Normal Activity

[Name of Normal Behavior 1]

Summarize the following:

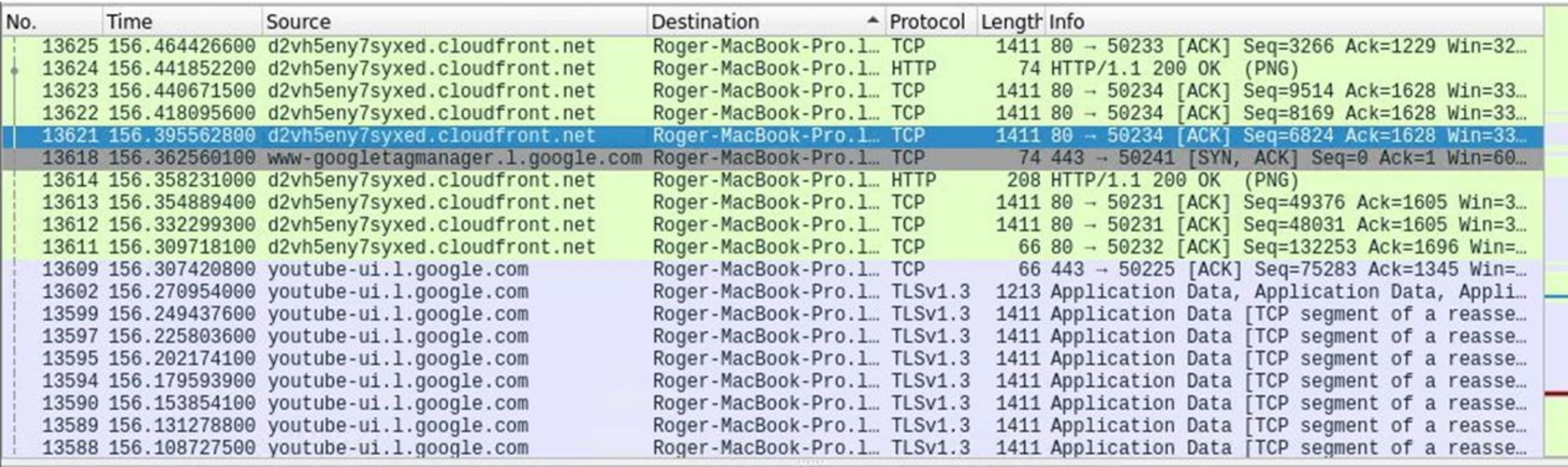
- What kind of traffic did you observe? Which protocol(s)? HTTP / TCP / DNS traffic
- What, specifically, was the user doing? Which site were they browsing? Etc.
  - Browsing websites, reading Angie's blogs, trying to jailbreak their iphone



[Name of Normal Behavior 2]

Summarize the following:

- What kind of traffic did you observe? HTTP, TCP, and DNS traffic Which protocol(s)?
  - Most packets in top 3 categories include: HTTP, TCP, & DNS traffic
- What, specifically, was the user doing? Which site were they browsing? Etc.
  - Interestingly Roger spent quite some time using Amazon CloudFront and Youtube



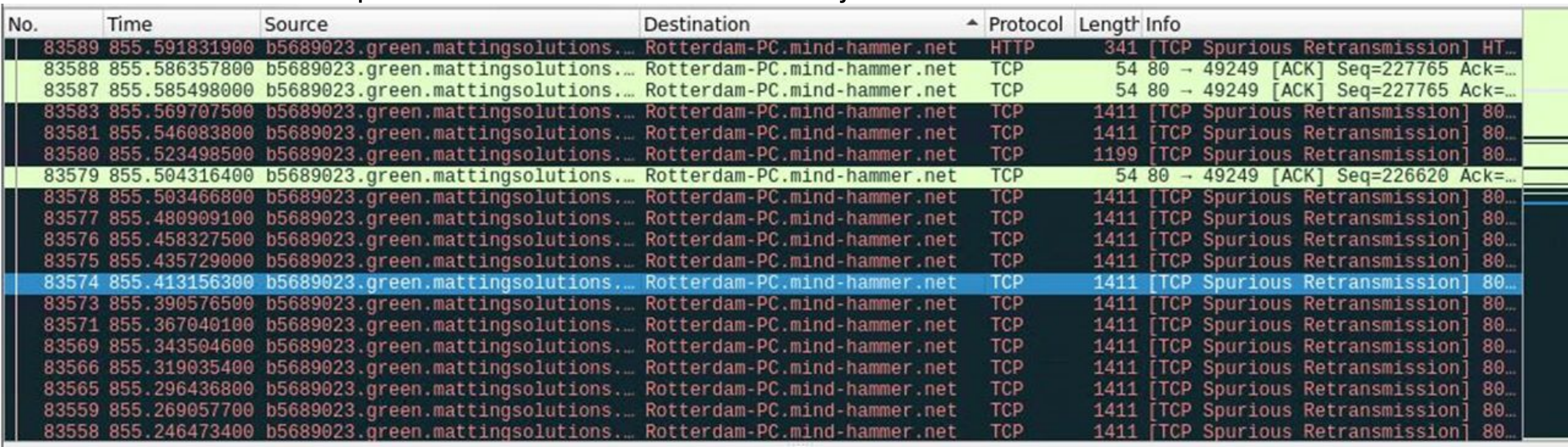
No.	Time	Source	Destination	Protocol	Length	Info
13625	156.464426600	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50233 [ACK] Seq=3266 Ack=1229 Win=32…
13624	156.441852200	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	HTTP	74	HTTP/1.1 200 OK (PNG)
13623	156.440671500	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50234 [ACK] Seq=9514 Ack=1628 Win=33…
13622	156.418095600	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50234 [ACK] Seq=8169 Ack=1628 Win=33…
13621	156.395562800	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50234 [ACK] Seq=6824 Ack=1628 Win=33…
13618	156.362560100	www-googletagmanager.l.google.com	Roger-MacBook-Pro.l…	TCP	74	443 → 50241 [SYN, ACK] Seq=0 Ack=1 Win=60…
13614	156.358231000	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	HTTP	208	HTTP/1.1 200 OK (PNG)
13613	156.354889400	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50231 [ACK] Seq=49376 Ack=1605 Win=3…
13612	156.332299300	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	1411	80 → 50231 [ACK] Seq=48031 Ack=1605 Win=3…
13611	156.309718100	d2vh5eny7syxed.cloudfront.net	Roger-MacBook-Pro.l…	TCP	66	80 → 50232 [ACK] Seq=132253 Ack=1696 Win=…
13609	156.307420800	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TCP	66	443 → 50225 [ACK] Seq=75283 Ack=1345 Win=…
13602	156.270954000	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1213	Application Data, Application Data, Appli…
13599	156.249437600	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13597	156.225803600	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13595	156.202174100	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13594	156.179593900	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13590	156.153854100	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13589	156.131278800	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…
13588	156.108727500	youtube-ui.l.google.com	Roger-MacBook-Pro.l…	TLSv1.3	1411	Application Data [TCP segment of a reasse…

Malicious Activity

[Name of Malicious Behavior 1]

Summarize the following:

- What kind of traffic did you observe? Which protocol(s)?
  - Most malicious activity found used TCP and HTTP traffic in large quantities
- What, specifically, was the user doing? Which site were they browsing? Etc.
  - An infected user's computer upon download of malicious payload began communication with attacker site in spades as an outward indicator of trojan infection

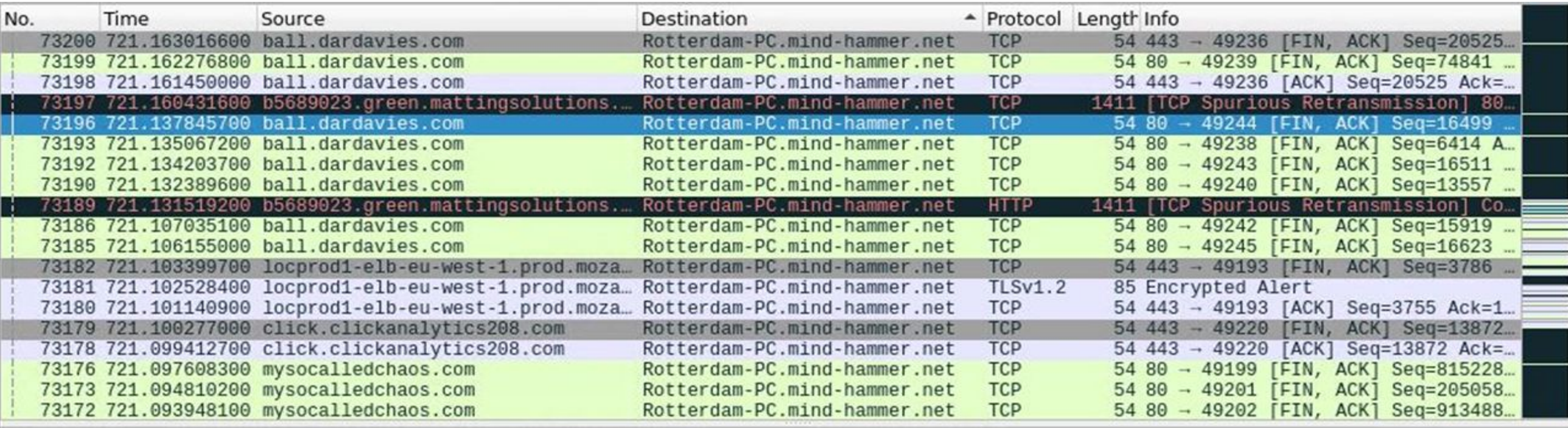


No.	Time	Source	Destination	Protocol	Length	Info
83589	855.591831900	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	HTTP	341	[TCP Spurious Retransmission] HT…
83588	855.586357800	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49249 [ACK] Seq=227765 Ack=…
83587	855.585498000	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49249 [ACK] Seq=227765 Ack=…
83583	855.569707500	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83581	855.546083800	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83580	855.523498500	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1199	[TCP Spurious Retransmission] 80…
83579	855.504316400	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49249 [ACK] Seq=226620 Ack=…
83578	855.503466800	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83577	855.480909100	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83576	855.458327500	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83575	855.435729000	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83574	855.413156300	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83573	855.390576500	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83571	855.367040100	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83569	855.343504600	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83566	855.319035400	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83565	855.296436800	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83559	855.269057700	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
83558	855.246473400	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…

[Name of Malicious Behavior 2]

Summarize the following:

- What kind of traffic did you observe? Which protocol(s)? HTTP / TCP
- What, specifically, was the user doing? Which site were they browsing? Etc.
  - After being infected with trojan, it appears user attempted to isolate infected files using online sandbox site ball.dardavies.com and while waiting for results he was visiting Angie's public blog at mysocalledchaos.com



No.	Time	Source	Destination	Protocol	Length	Info
73200	721.163016600	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49236 [FIN, ACK] Seq=20525…
73199	721.162276800	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49239 [FIN, ACK] Seq=74841 …
73198	721.161450000	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49236 [ACK] Seq=20525 Ack=…
73197	721.160431600	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	TCP	1411	[TCP Spurious Retransmission] 80…
73196	721.137845700	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49244 [FIN, ACK] Seq=16499 …
73193	721.135067200	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49238 [FIN, ACK] Seq=6414 A…
73192	721.134203700	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49243 [FIN, ACK] Seq=16511 …
73190	721.132389600	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49240 [FIN, ACK] Seq=13557 …
73189	721.131519200	b5689023.green.mattingsolutions.…	Rotterdam-PC.mind-hammer.net	HTTP	1411	[TCP Spurious Retransmission] Co…
73186	721.107035100	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49242 [FIN, ACK] Seq=15919 …
73185	721.106155000	ball.dardavies.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49245 [FIN, ACK] Seq=16623 …
73182	721.103399700	locprod1-elb-eu-west-1.prod.moza…	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49193 [FIN, ACK] Seq=3786 …
73181	721.102528400	locprod1-elb-eu-west-1.prod.moza…	Rotterdam-PC.mind-hammer.net	TLSv1.2	85	Encrypted Alert
73180	721.101140900	locprod1-elb-eu-west-1.prod.moza…	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49193 [ACK] Seq=3755 Ack=1…
73179	721.100277000	click.clickanalytics208.com	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49220 [FIN, ACK] Seq=13872…
73178	721.099412700	click.clickanalytics208.com	Rotterdam-PC.mind-hammer.net	TCP	54	443 → 49220 [ACK] Seq=13872 Ack=…
73176	721.097608300	mysocalledchaos.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49199 [FIN, ACK] Seq=815228…
73173	721.094810200	mysocalledchaos.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49201 [FIN, ACK] Seq=205058…
73172	721.093948100	mysocalledchaos.com	Rotterdam-PC.mind-hammer.net	TCP	54	80 → 49202 [FIN, ACK] Seq=913488…

The End