What Will You Investigate Today?

RMLL 2013 - Xavier Mertens - Brussels

$ whoami

- Xavier Mertens (@xme)

- Consultant @ day

- Blogger @ night

/dev/random
Can't sleep, hackers will eat me!

- BruCON co-organizer

$ cat disclaimer.txt

"The opinions expressed in this presentation are those of the speaker and do not necessarily reflect those of past, present employers, partners or customers."

Agenda

- Introduction
- Interesting protocols
- Public resources
- Toolbox

Feeling This?

Me? Breached?

- In 66% of investigated incidents, detection was a matter of <u>months</u> or even more
- 69% of data breaches are discovered by <u>third</u> parties

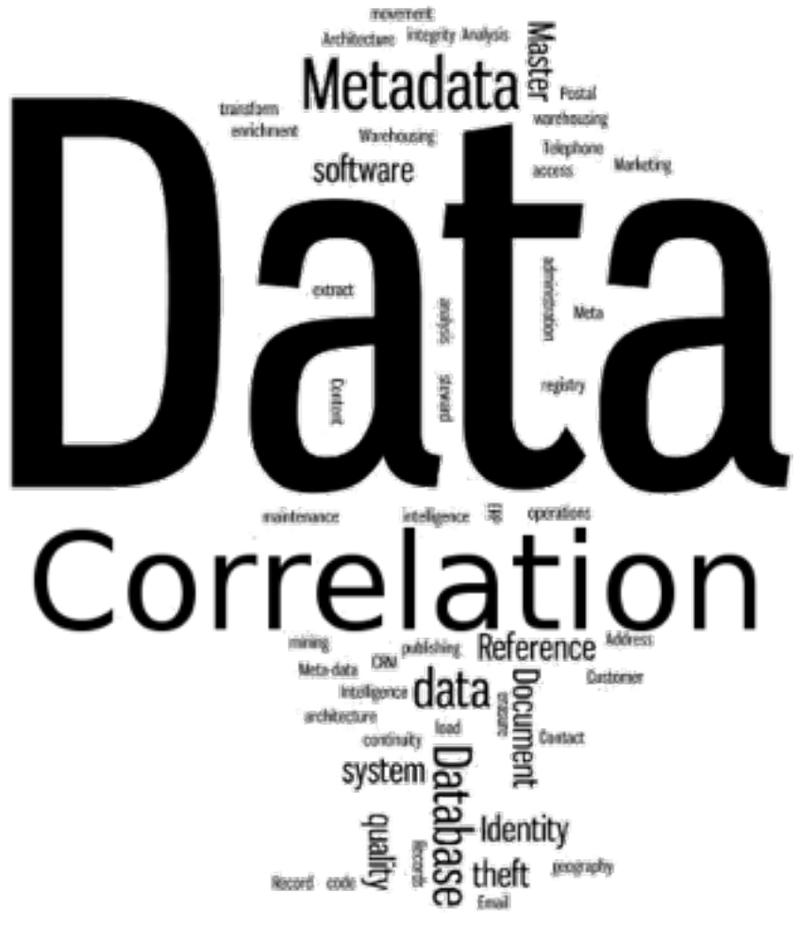
(Source: Verizon DBIR 2012)

“Grepping” for Gold

- Tracking users
- Suspicious traffic
- Out-of-business
- Compliance
- Exfiltration
- “Below the radar”

Sources

- OS / Applications Events
- Network protection (FW, ID(P)S, Proxies, etc)
- Users Credentials
- IP, Domains, URLs
- Digests (MD5, SHA1)
- Metadata



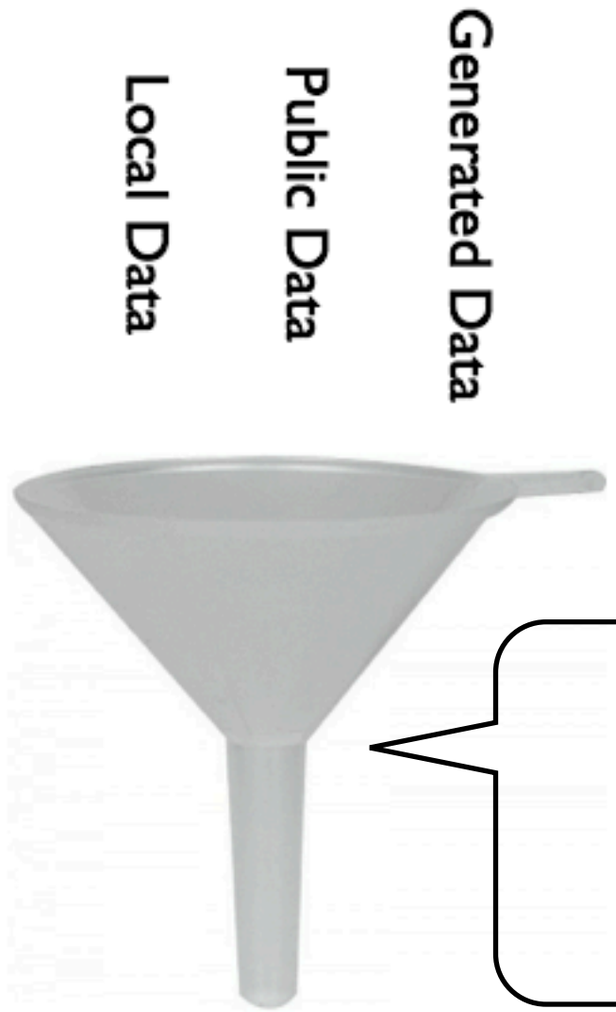
Multiple Sources

- Automatic (logfiles, events)
- Online repositories
- Internal resources
- Developers!

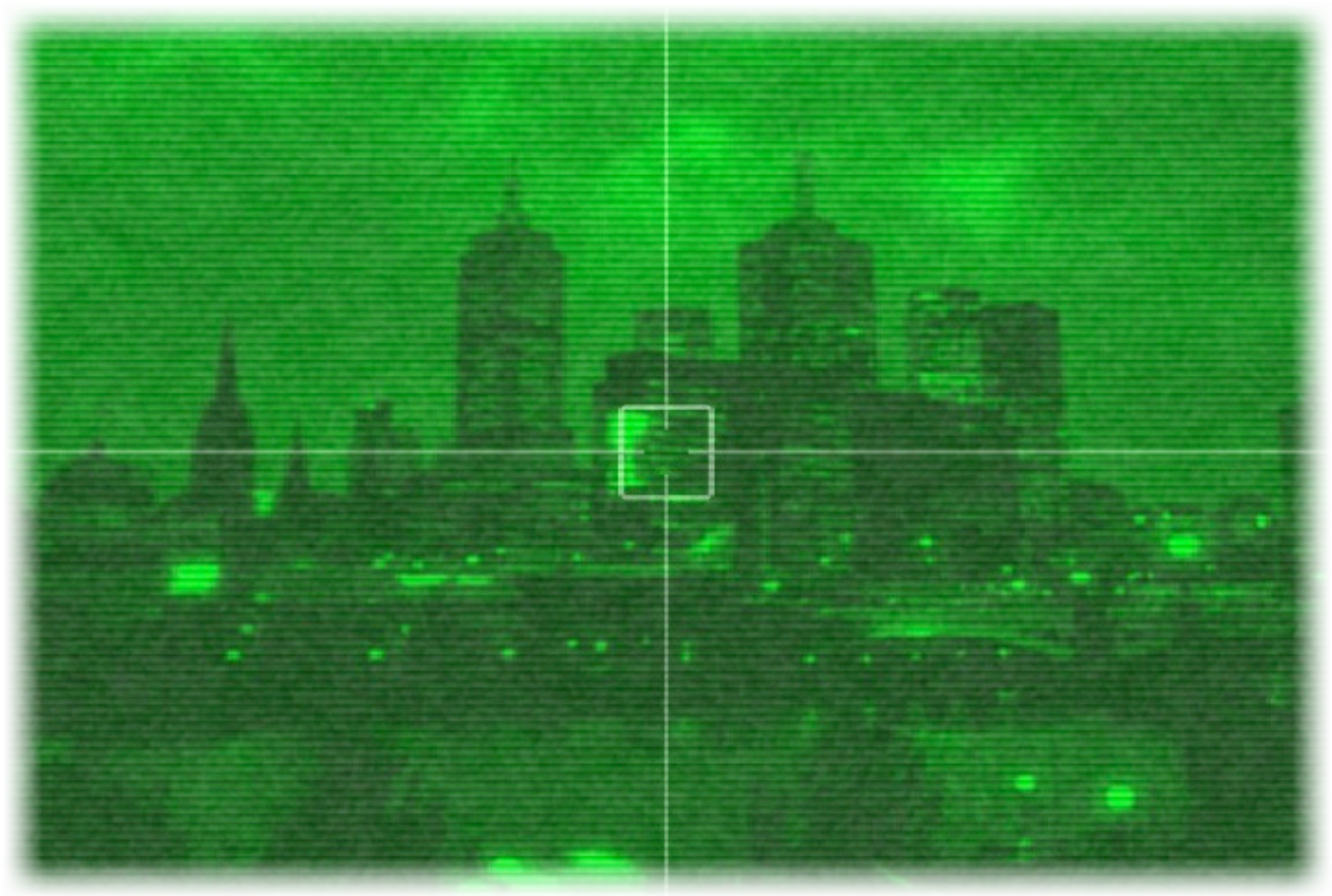
"Active" Lists

- Temporary or suspicious information to track and dynamically updated
- Examples:
  Contractors, Admins, Terminated Accounts, Countries (GeoIP)
- If grep(/$USER/, @ADMINS) { ... }

Correlation



Visibility!



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DNS

- No DNS, no Internet!
- Can help to detect data exfiltration, communications with C&C (malwares)
- Alert on any traffic to untrusted DNS
- Allow only local DNS as resolvers
- Investigate for suspicious domains

HTTP

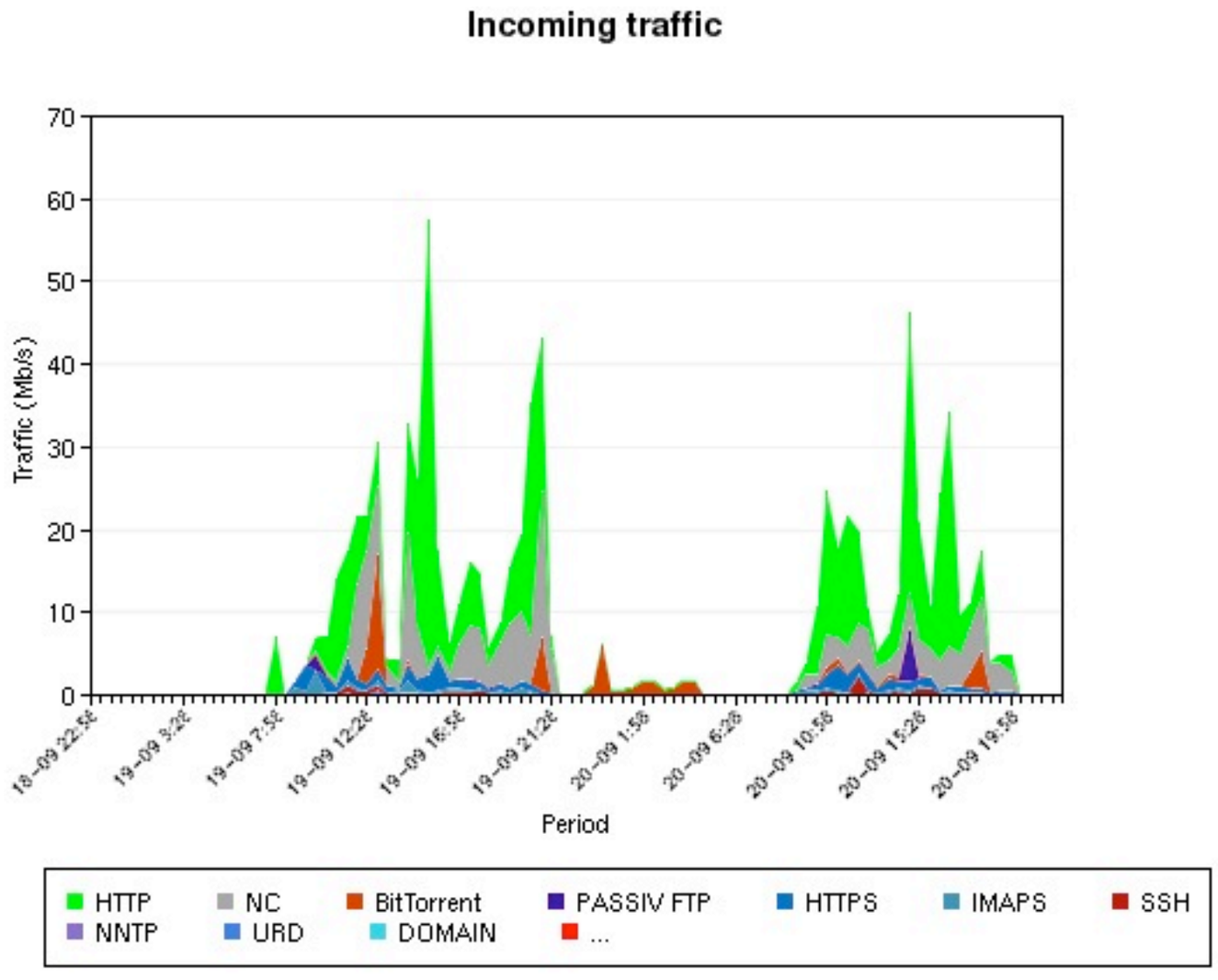
- HTTP is the new TCP
- Investigate for suspicious domains
- Inspect HTTPS
  (Check with your legal dept!)
- Search for interesting hashes

SMTP

- Track outgoing emails
- Investigate for suspicious domains

Netflow

- Analyze network flows
- Src Port
- Src IP
- Dst Port
- Dst IP
- Timestamp



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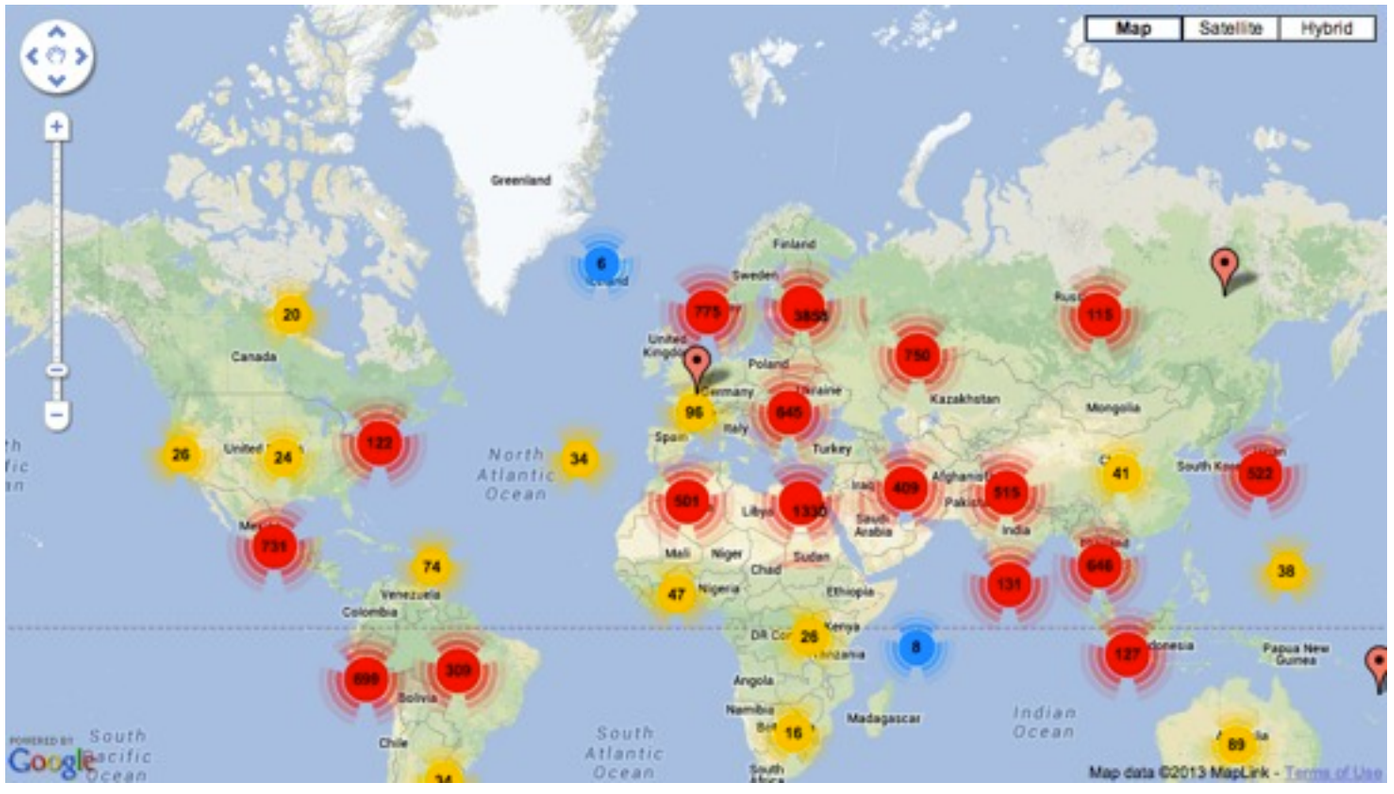
IP Addresses

- http://www.malwaredomainlist.com/hostslist/ip.txt
- Correlate your firewall logs
- GeoIP



Domains

- DNS-BH (malwaredomains.com)
  http://mirror1.malwaredomains.com/files/domains.txt

  http://mirror1.malwaredomains.com/files/spywaredomains.zones
  http://www.malwaredomainlist.com/hostslist/hosts.txt

- Correlate your resolver logs

URLs

- http://malwareurls.joxeankoret.com/normal.txt
- Google SafeBrowsing

```
use Net::Google::SafeBrowsing2;
use Net::Google::SafeBrowsing2::Sqlite;
my gsb = Net::Google::SafeBrowsing2->new(
key => “xxx”,
storage => Net::Google::SafeBrowsing2::Sqlite->new(file =>
“google.db”)
);
$gsb->update();
my $match = $gsb->lookup(url => “http://evil.com”);
if ($match eq MALWARE) { ... }
```

$ cat disclaimer2.txt

"Data are provided for 'free' but the right to us can be restricted to specific conditions (ex: cannot be re-used for commercial applications). Always read carefull the terms of use. Some services require prior registration and use of APIs"

OSINT

"Set of techniques to conduct regular reviews and/or continuous monitoring over multiple sources, including search engines, social networks, blogs, comments, underground forums, blacklists/whitelists and so on."

OSINT

- Think "out of the box"!
- What identify you on the Internet?
  - Domain names
  - IP addresses
  - Brand

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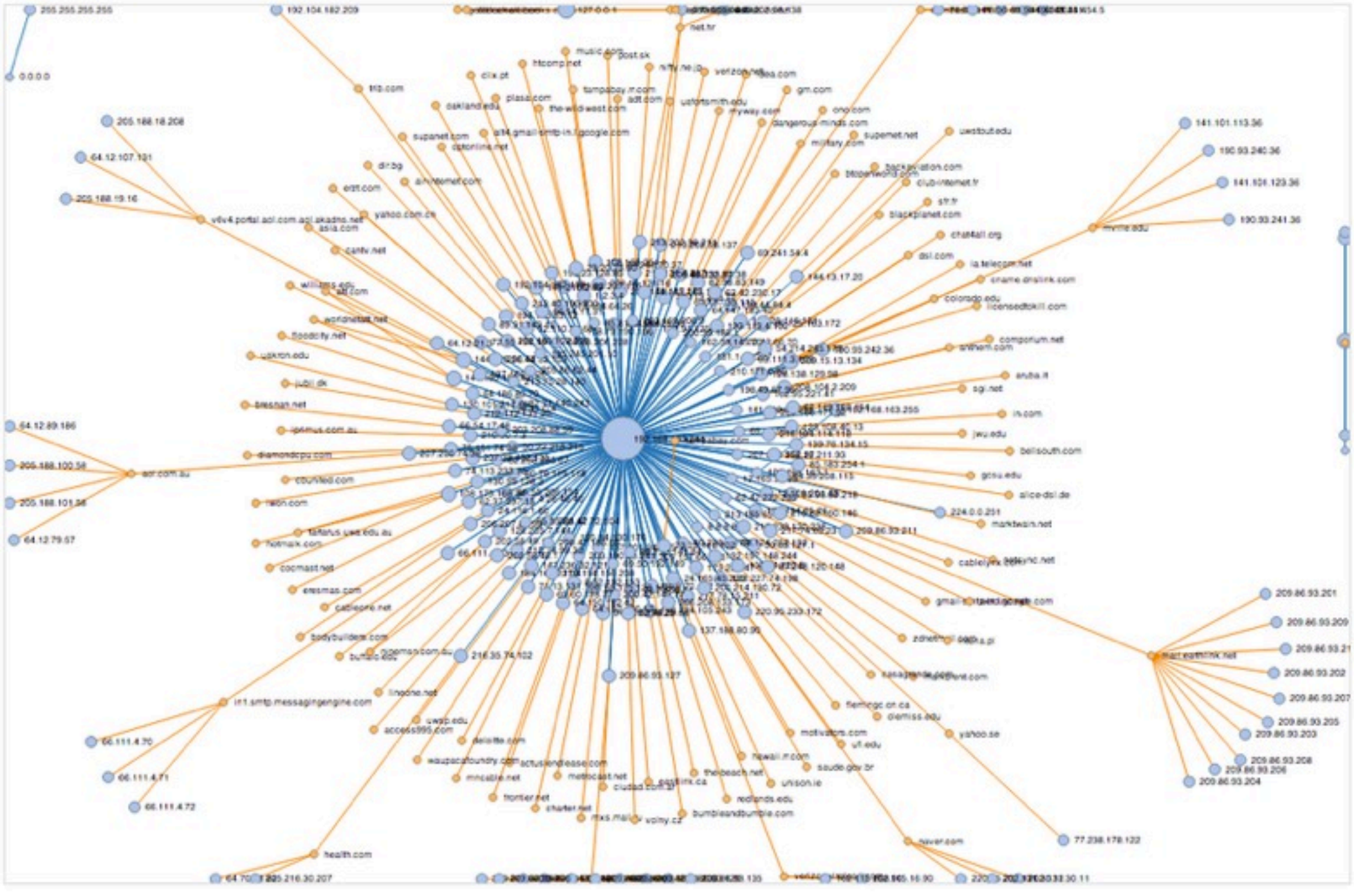
pastebin.com

- A gold mine for exfiltrated data!
- Tool: pastemon.pl
- https://github.com/xme/pastemon

Data Parsers

- d3.js Javascript library
- Example of implementation: malcom (Malware Communications Analyzer)
- https://github.com/tomchop/malcom

Data Parser


fbsf
Filter: ip and not host 127.0.0.1 and not host 192.168.39.1 and not host 192.168.39.135 and not host 192.168.163.133
Start
Stop
Get .pcap
Info
Sessions
fbsf

The Conductor

- OSSEC
- Log Management
- Active-Response
- Powerful alerts engine

Online Tools

- http://urlquery.net
- http://www.scumware.org/index.scumware
- http://bgpranking.circl.lu/
- https://malwr.com/
- http://www.informatica64.com/foca.aspx
- http://virustotal.com

Conclusions

- Know your environment
- You have plenty of useful (big)data
- Free software can help you (but the project is not free)

Questions?

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