Transparent Proxy with Suricata

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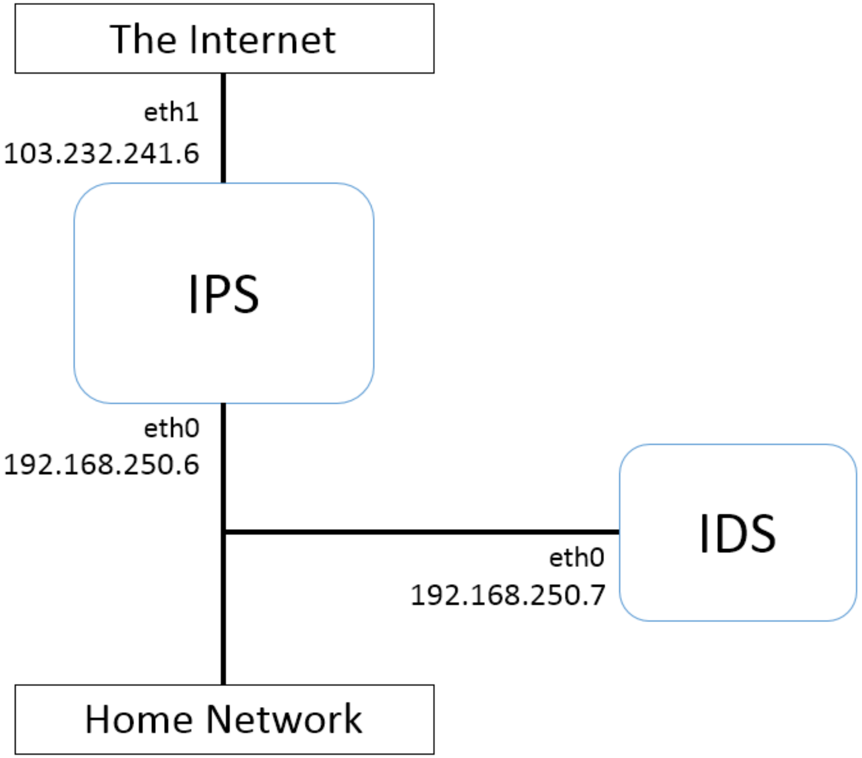
Network Diagram



- Two Installations of Suricata
- First running on the same machine as the squid proxy, working in IPS mode.
- Second getting the mirrored traffic for running in IDS mode.
- All traffic from home network reaches the second machine.

Mirror Traffic to IDS Machine

We want to send all data coming to IPS machine to IDS machine before it gets processed for both incoming and outgoing.

Enter:

```
iptables -I PREROUTING -t mangle -i eth0 -j TEE  --gateway 192.168.250.7

iptables -I POSTROUTING -t mangle -j TEE --gateway 192.168.250.7
```

Configure Squid

We configure squid server in IPS Machine (192.168.250.6:3129)

Reason: Direct home traffic to IPS Machine.

No caching.

Alternative: Routing rules in campus network.

Future: No Squid – Install Suricata in Gateway Router

Log Comparison

Squid Log: /var/log/squid3/access.log - **Suricata Log**: /var/log/suricta/http.log

No. of requests logged are same. Sample:

Squid Log

```
424467883.995 263 172.16.3.43 TCP MISS/200 2675 GET http://upload.wikimedia.org/wikipedia/meta/2/27/Wikisource-logo sister 1x.png - HIER
DIRECT/208.80.154.240 image/png

1424467884.287 263 172.16.3.43 TCP MISS/200 1869 GET http://upload.wikimedia.org/wikipedia/meta/a/af/Wikiversity-logo sister 1x.png - HIER
DIRECT/208.80.154.240 image/png
```

Suricata Log

```
02/21/2015-03:01:23.994598 upload.wikimedia.org [**] /wikipedi-a/meta/2/27/Wikisource-logo sister 1x.png [**] Mozilla/5.0(Windows NT 6.3; WOW64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/40.0.2214.111 Safari/537.36 [**] 103.232.241.6:40958− > 208.80.154.240:80

02/21/2015-03:01:24.286601 upload.wikimedia.org [**] /wikipedi-a/meta/a/af/Wikiversity-logo sister 1x.png [**] Mozilla/5.0(Windows NT 6.3; WOW64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/40.0.2214.111 Safari/537.36 [**] 103.232.241.6:40958 − > 208.80.154.240:80
```

Formal Log Comparison

Python Script to Compare logs:

We compare hits for domain names in each log and output the domain names that are in squid log[`access.log`] and not in Suricata log[`http.log`].

Results:

On comparing a session of 30 minutes with around 5000 requests we see that the output is empty i.e. there is no connection that Suricata misses. It monitors every connection.

Documentation

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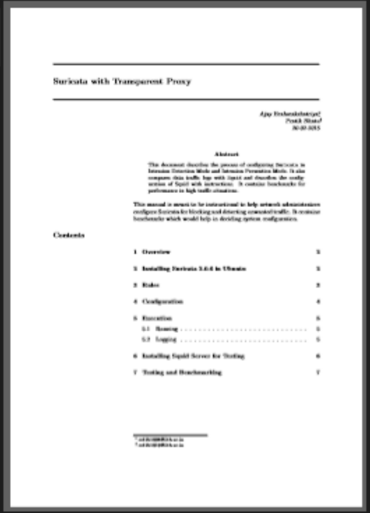

Suricata with Transparent Proxy

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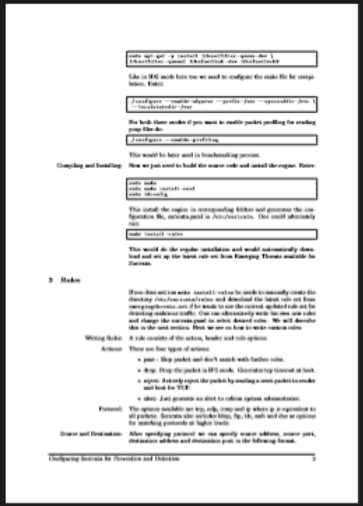

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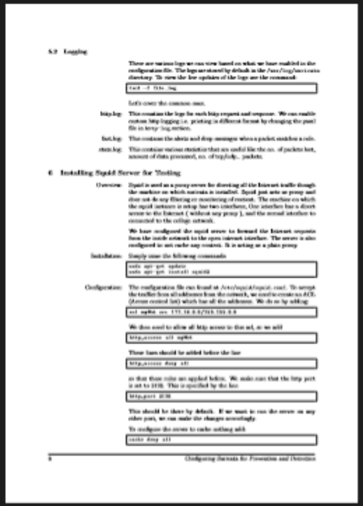

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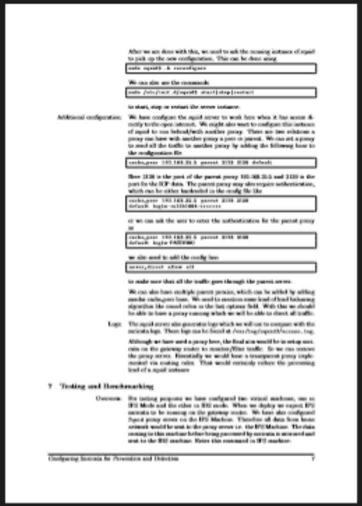

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