

to reduce false +/- in SIEM,  
need to adjust rules

### email headers

- sender addr
- servers carrying message

mail user agent MUA

mail delivery agent MDA

mail transfer agent MTA

geo-info of email

- Spam checks

performed by message transfer agents

MTA

NXLog - open source central logging tool

similar to SIEM

Similar to SIEM

- alert
- aggregation
- normalization
- correlation
- retention

**Syslog** - logging tool but doesn't have advanced features,

**Journalctl** - querying and displaying logs in Linux systems

**test access point TAP** - device that copies signals from physical layer to data-link layer

to data-link layer.

No frame loss because no network  
or transport logic needed

packet monitoring

Sensor to install w/ IDS

Switched port analyzer SPAN - feature  
of many network switches

port mirroring

copy of net traffic sent to other  
port

frames w/ errors will be dropped

SNMP trap - push data to SIEM

Mobile metadata

.. CRK

## Mobile metadata

- call detail records CDR
- data transfer volume

## Email metadata

- sender/receiver addr
- spam checks
- server transfer info

## website metadata

- cookies
- data type of resource
- authorization info

## file metadata

- created / accessed / modified
- ACL
- copyright
- tags for indexing

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**OSSEC** - HIDS that can collect  
DNS server logs for trend anal  
crosscheck w/ malicious domains

can perform frequency-based trend  
analysis on NXDomain errors  
by comparing to baseline

## **Authentication attacks**

- SIEM
- auth logs
- app logs

SPAN is not hardware

TAP can be either active or passive

SPAN = active