NGFW - Next Generation Firewalls

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since 1996

Open Source Software: Linux, SAMBA, verinice.

Information Security: GDPR, ISO 27001

IT Security: Firewalls, VPN

Interoperability: Linux, Mac, Windows
firewalls

- packet filter firewalls: IP:Port
  - almost gone: 21, 23, 25, 80, 110, 143
  - still alive: 53, 123, 443, 465, 587

- Proxy: rule based, pattern based, subscription based
  - user, time, AV pattern, block lists, heuristics
  - lots of snake oil AV or questionable helping block lists

- reverse Proxies: WAF against injection, XSS, ...

- Open Source firewalls: no secrets!
UTM: Unified Threat Management is a threat

- UTM firewall: everything build on top of one OS kernel:
  - firewall
  - ALG & Proxy
  - Mail
  - Anti Virus
  - VPN
  - Web
  - Wifi
  - IDS & IPS
compliant firewall setup

- different machines, different OS, complex architecture
- external Firewall: border control
- internal Firewall: screened subnets
- a bunch of DMZ or LAN networks for:
  - VPN (client access)
  - VPN (site2site)
  - Proxies
  - Mailer
  - Webserver
  - Database
challenges

- internet of platforms
- more and more services via port 443
- the Browser is the new OS (DoH)
- zero days
- DDoS
- phishing and other social engineering
Next Gen Firewalls: UTM reloaded
problems with current NGFW

- UTM: everything on one kernel connecting internet and LAN
  - full awareness: packet – application – session – identities

- GDPR issues
  - identity management: corporate compliance based on Active Directory
  - SSL decryption

- closed source OS and applications
  - no public bug tracking
  - Fortinet, Juniper, Sophos, Cisco:
    CVE score 10 entry every year, each of them

- no open source solutions in sight :-(
what to do

- build firewall sandwiches, multi tiered
- protect and observe your NGFW
- utilize your ISMS, reflect and implement controls and measures
- know your information security and data protection officers
- carefully evaluate cloud services for firewalls (better don’t use them)
- collaborate on open source solutions!
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references: https://danielmiessler.com, SOPHOS, misc vendors