



Welcome to

Traffic Inspection and Firewalls

Communication and Network Security 2019

Henrik Lund Kramshøj hk@zencurity.com

Slides are available as PDF, kramse@Github
3-Traffic-Inspection-and-Firewalls.tex in the repo security-courses



Indeholder typisk:

- Grafisk brugergrænseflade til konfiguration - er det en fordel?
- TCP/IP filtermuligheder - pakkernes afsender, modtager, retning ind/ud, porte, protokol, ...
- kun IPv4 for de kommercielle firewalls
- både IPv4 og IPv6 for Open Source firewalls: IPF, OpenBSD PF, Linux firewalls, ...
- foruddefinerede regler/eksempler - er det godt hvis det er nemt at tilføje/åbne en usikker protokol?
- typisk NAT funktionalitet indbygget
- typisk mulighed for nogle serverfunktioner: kan agere DHCP-server, DNS caching server og lignende

En router med Access Control Lists - kaldes ofte netværksfilter, mens en dedikeret maskine kaldes firewall

regelsæt fra OpenBSD PF



```
# hosts
router="217.157.20.129"
webserver="217.157.20.131"
# Networks
homenet=" 192.168.1.0/24, 1.2.3.4/24 "
wlan="10.0.42.0/24"
wireless=wi0

# things not used
spoofed=" 127.0.0.0/8, 172.16.0.0/12, 10.0.0.0/16, 255.255.255.255/32 "

block in all # default block anything
# loopback and other interface rules
pass out quick on lo0 all
pass in quick on lo0 all

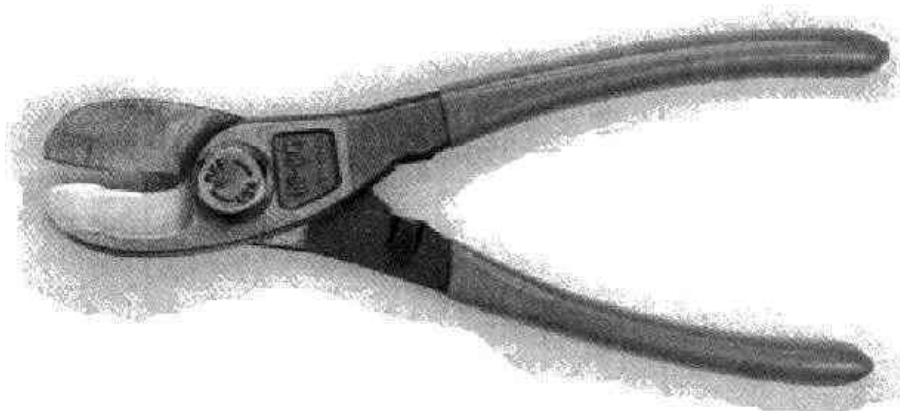
# egress and ingress filtering - disallow spoofing, and drop spoofed
block in quick from $spoofed to any
block out quick from any to $spoofed
```

```
pass in on $wireless proto tcp from $wlan to any port = 22
pass in on $wireless proto tcp from $homenet to any port = 22
pass in on $wireless proto tcp from any to $webserver port = 80
```

```
pass out quick proto tcp  from $homenet to any flags S/S keep state
pass out quick proto udp  from $homenet to any      keep state
pass out quick proto icmp from $homenet to any      keep state
```



netdesign - med firewalls



- Hvor skal en firewall placeres for at gøre størst nytte?
- Hvad er forudsætningen for at en firewall virker?
At der er konfigureret et sæt fornuftige regler!
- Hvor kommer reglerne fra? Sikkerhedspolitikken!
- Kan man lave en 100% sikker firewall? Ja selvfølgelig, se!

Kilde: <http://www.ranum.com/pubs/a1fwall/> The ULTIMATELY Secure Firewall

