

Kind	Trace-1		Trace-2		Trace-3	
	Attacks	Packets (k)	Attacks	Packets (k)	Attacks	Packets (k)
Other	1,917 (46)	19,118 (38)	1,985 (51)	25,305 (32)	2,308 (49)	17,192 (28)
In-Addr Arpa	1,230 (29)	16,716 (33)	1,105 (28)	24,645 (32)	1,307 (27)	26,880 (43)
Broadband	394 (9.4)	9,869 (19)	275 (7.1)	13,054 (17)	375 (7.9)	8,513 (14)
Dial-Up	239 (5.7)	956 (1.9)	163 (4.2)	343 (0.44)	276 (5.8)	1,018 (1.6)
IRC Server	110 (2.6)	461 (0.91)	88 (2.3)	2,289 (2.9)	111 (2.3)	6,476 (10)
Nameserver	124 (3.0)	453 (0.89)	84 (2.2)	2,796 (3.6)	90 (1.9)	451 (0.72)
Router	58 (1.4)	2,698 (5.3)	76 (2.0)	4,055 (5.2)	125 (2.6)	682 (1.1)
Web Server	54 (1.3)	393 (0.77)	64 (1.7)	5,674 (7.3)	134 (2.8)	730 (1.2)
Mail Server	38 (0.91)	156 (0.31)	35 (0.90)	71 (0.09)	26 (0.55)	292 (0.47)
Firewall	9 (0.22)	7 (0.01)	3 (0.08)	3 (0.00)	2 (0.04)	1 (0.00)

Table 6: Breakdown of victim hostnames.

The majority of attacks are not classified by this scheme, either because they are not matched by our criteria (shown by “other”), or more likely, because there was no valid reverse DNS mapping (shown by “In-Addr Arpa”).

Current as of: Tue Oct 25 16:03:26 EST 2011

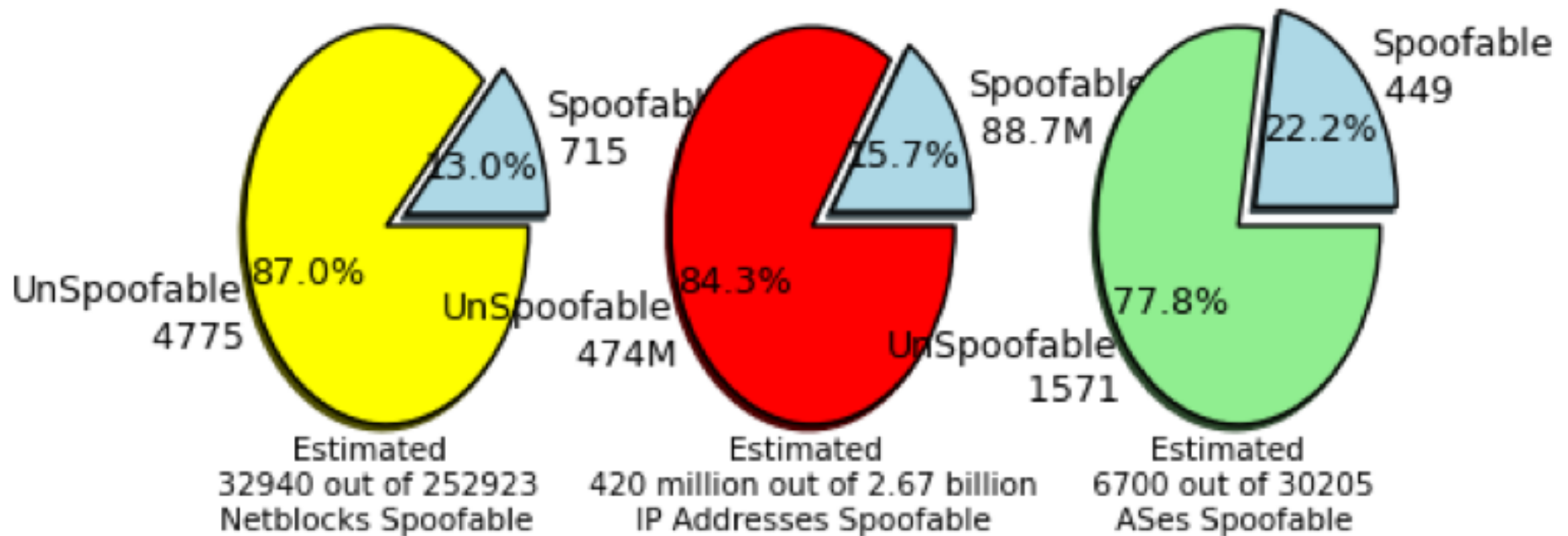
Total Tests: 26954

Unique Client Sessions: 17822

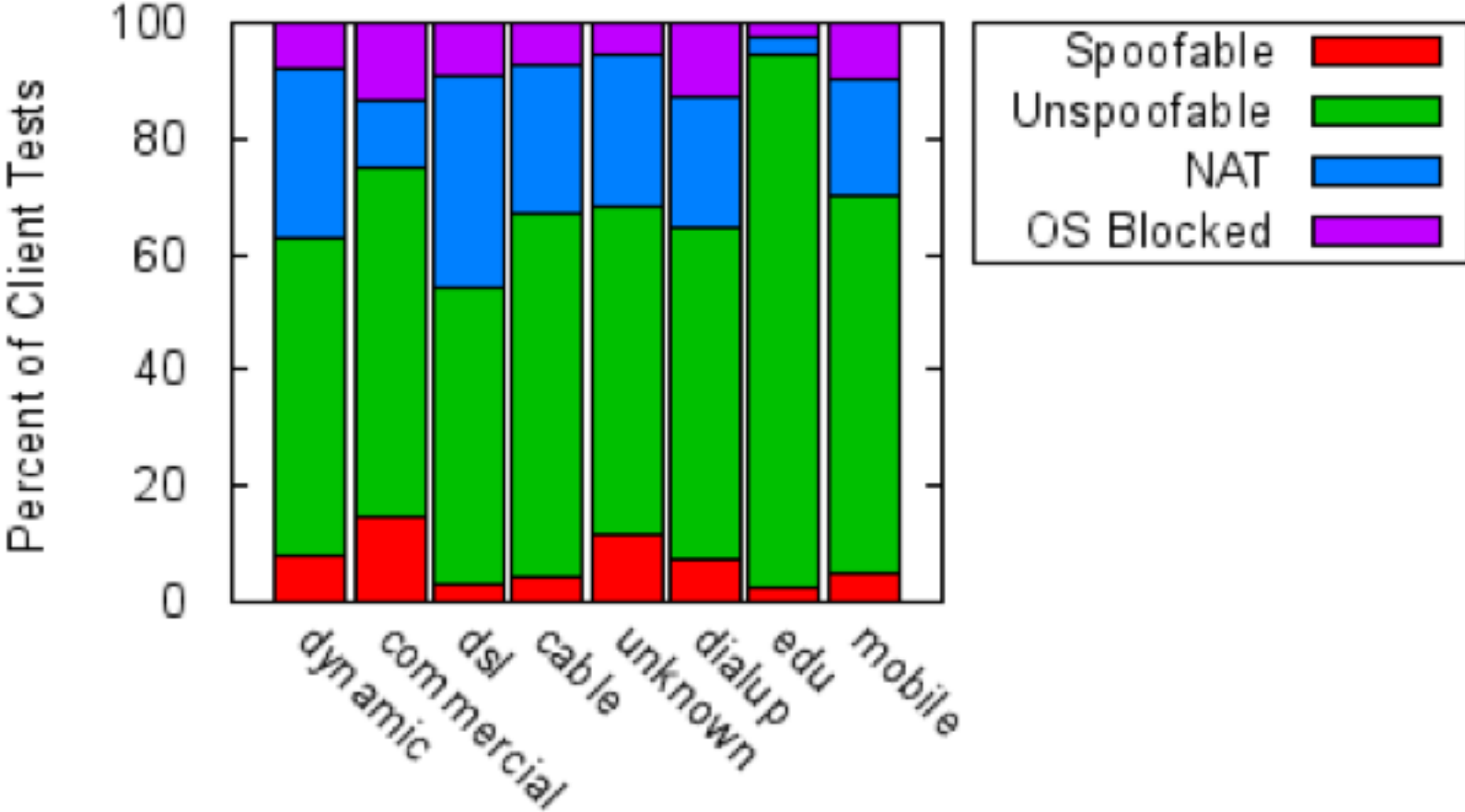
Netblocks

IP Addresses

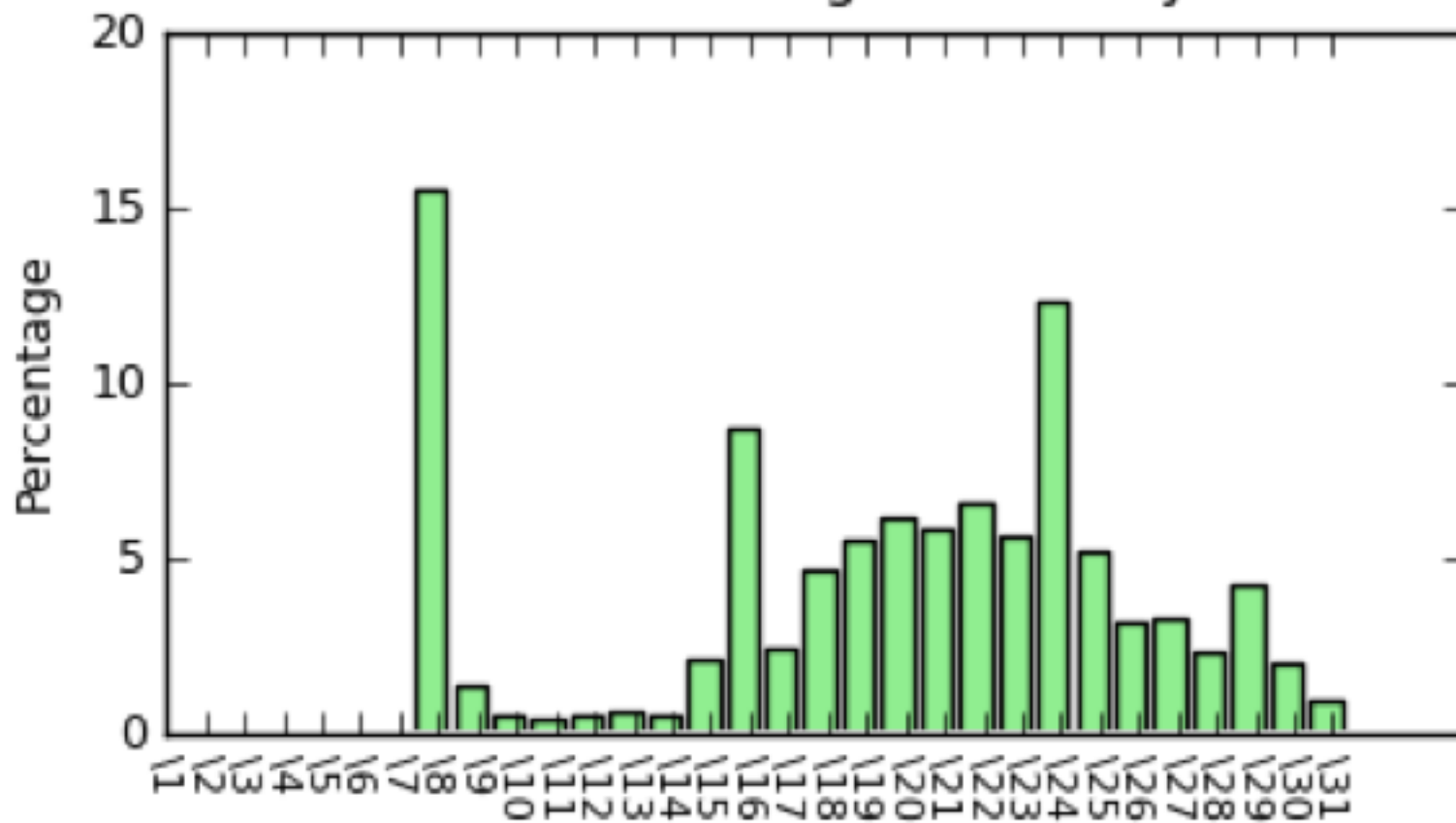
Autonomous Systems

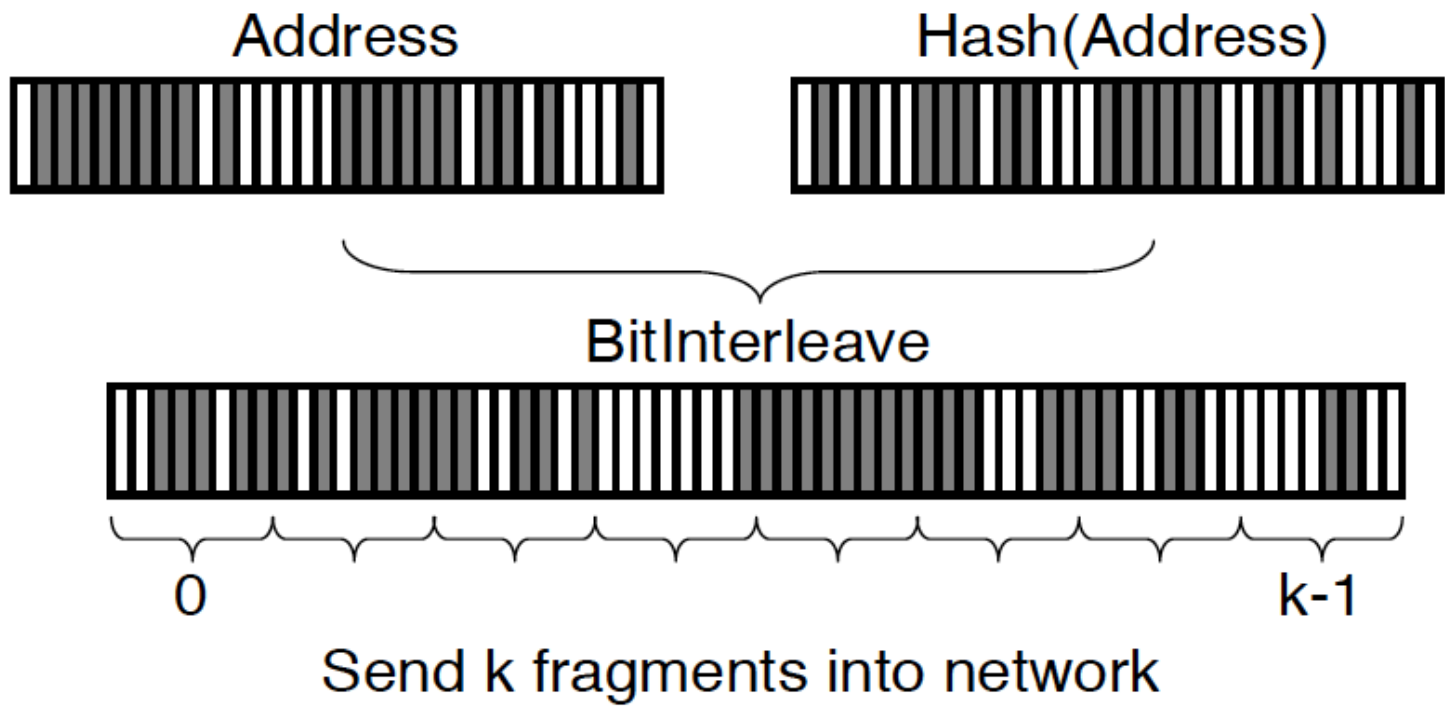


Client Class Statistics

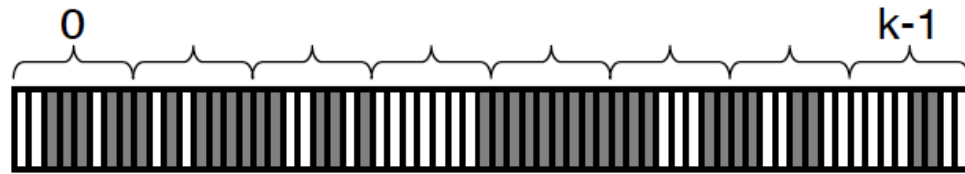


PDF of Filtering Granularity





Combine k fragments from network



BitDeinterleave



Address?

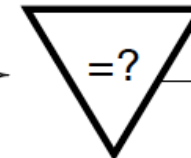


Hash(Address)?

Hash



Hash(Address?)



No

Reject

Yes



Address

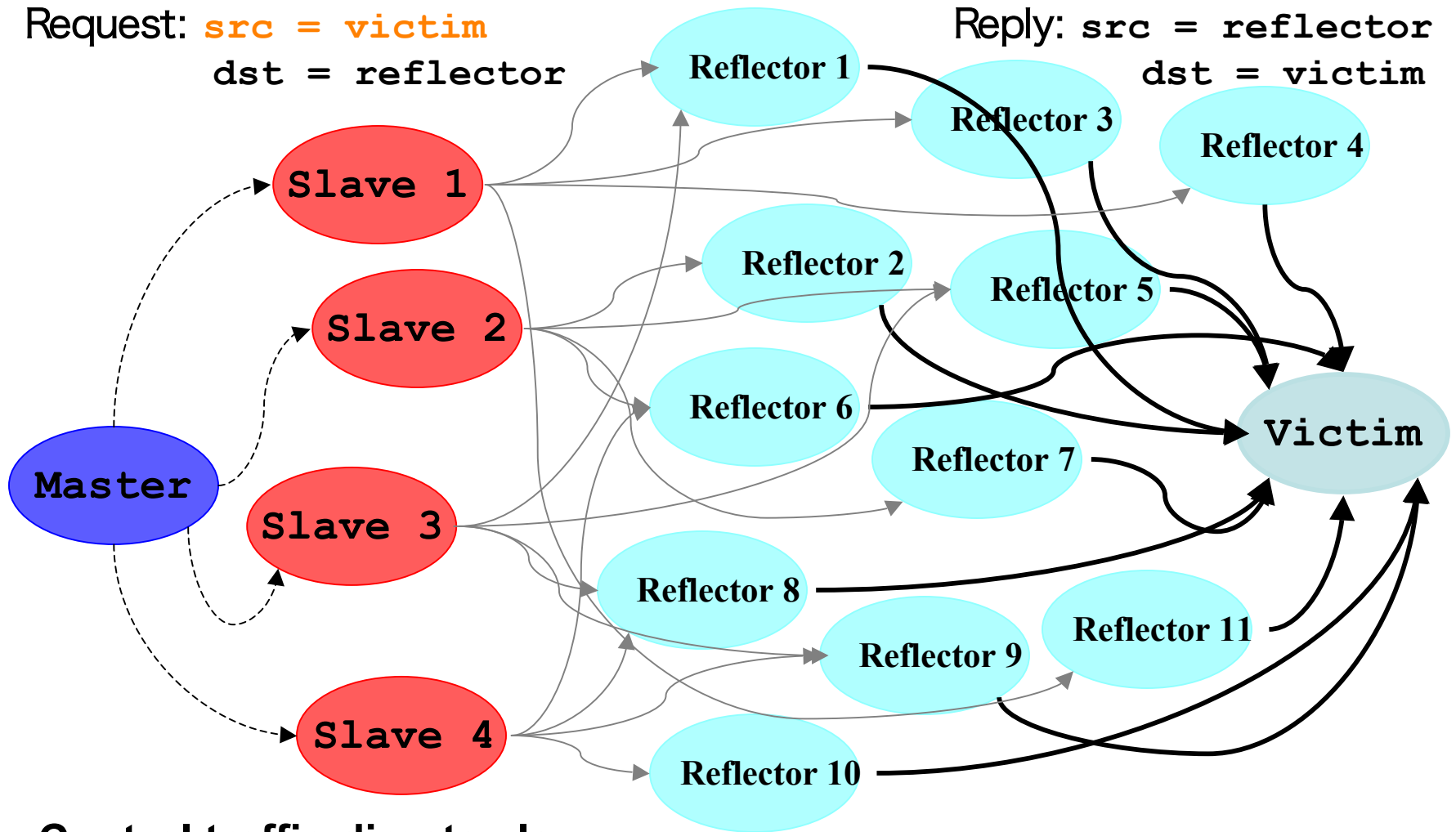
```

for  $d := 0$  to  $maxd$ 
  for all ordered combinations of fragments at distance  $d$ 
    construct edge  $z$ 
    if  $d \neq 0$  then
       $z := z \oplus last$ 
    if Hash(EvenBits( $z$ )) = OddBits( $z$ ) then
      insert edge ( $z$ , EvenBits( $z$ ),  $d$ ) into  $G$ 
       $last :=$  EvenBits( $z$ );
  
```

Diffuse DDoS: Reflector Attack

Request: **src = victim**
dst = reflector

Reply: **src = reflector**
dst = victim



Control traffic directs slaves at victim & reflectors

Reflectors send streams of **non-spoofed** but unsolicited traffic to victim