# IPv6 traffic on the AMS-IX peering platform

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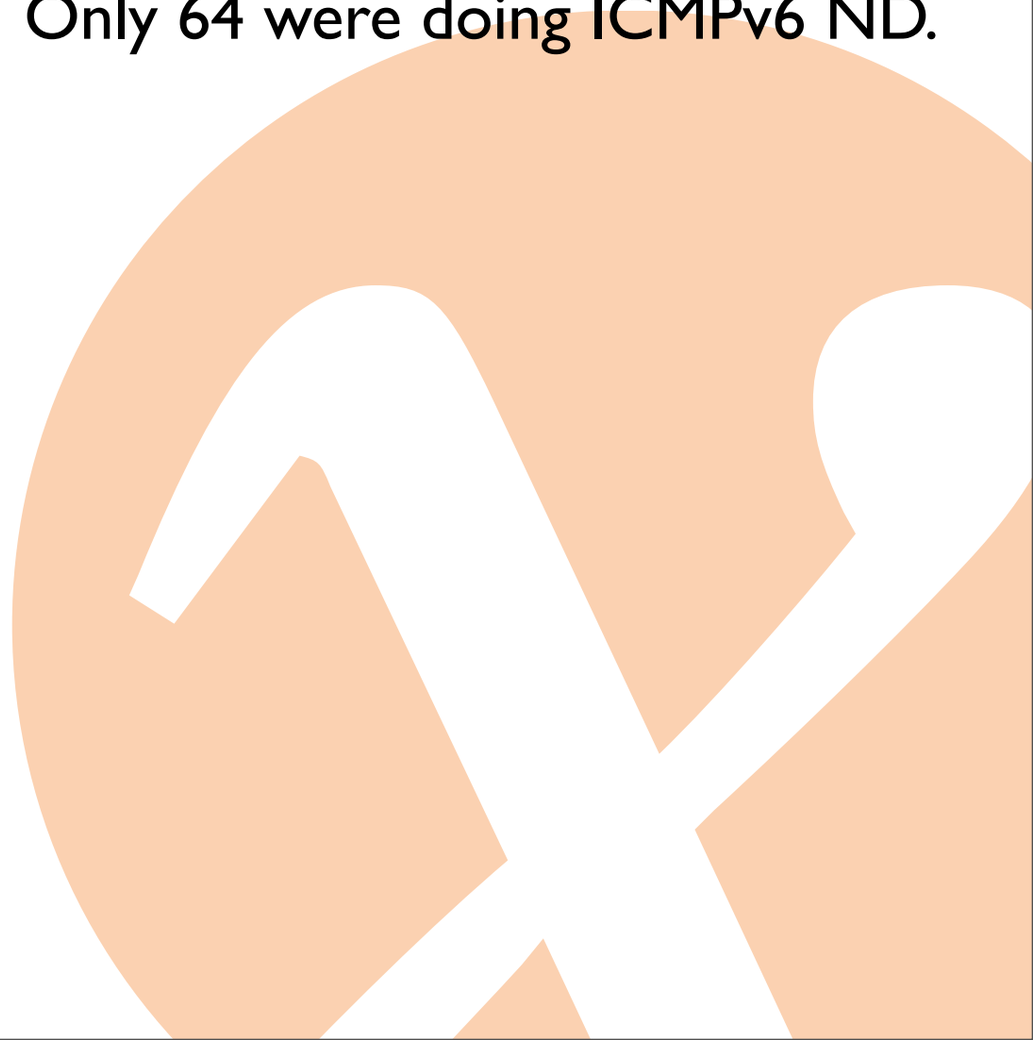
# Numb3rs

| IPv6 Addresses | Registered (database) | Actual (ND) |
|---|---|---|
| RIPE55 | 81 | 64 |
| | | |

- RIPE55, October 2007:
  - 81 IPv6 addresses registered in our database.
  - Only 64 were doing ICMPv6 ND.



# Numb3rs

| IPv6 Addresses | Registered (database) | Actual (ND) |
|---|---|---|
| RIPE55 | 81 | 64 |
| RIPE56 | 113 | 117 |

- RIPE55, October 2007:
  - 81 IPv6 addresses registered in our database.
  - Only 64 were doing ICMPv6 ND.
- Now, RIPE56:
  - 113 IPv6 addresses registered.
    - 9 “dead” addresses.
  - 117 are doing ICMPv6 ND.
  - Includes one test address.
    - 116 potential BGP talkers.
    - Including AS1200 and AS6777.

# Numb3rs

| Brand | IPv6 | Total | Perc. (%) |
|---|---|---|---|
| CISCO | 54 | 170 | 32 |
| JUNIPER | 46 | 99 | 46 |
| FOUNDRY | 9 | 33 | 27 |
| AVICI | 2 | 2 | 100 |
| *NIX | 6 | 44 | 14 |
| Others | 0 | 10 | 0 |

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  - 113 IPv6 addresses registered
    - 9 “dead” addresses
  - 117 are doing ICMPv6 ND
  - Includes one test address
    - 116 potential BGP talkers
    - Including AS1200 and AS6777
- Routers, based on OUI
  - Monitor systems included 1 IPv6 address, 8 in total.

# Why the differences?

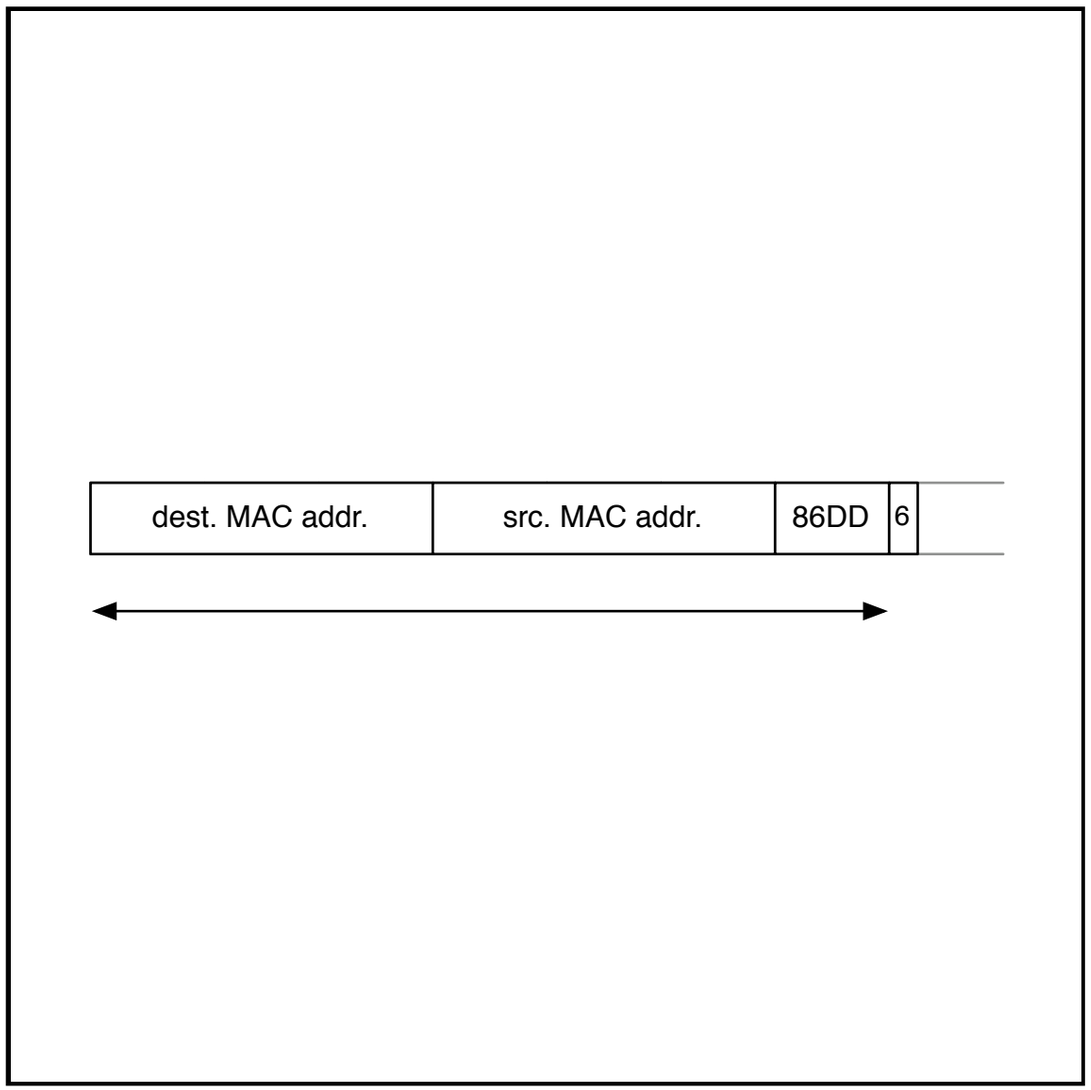
```
Prefix : 2001:7f8:1::/64
Suffix scheme is:

        A5xx:xxxx:n

“xx:xxxx” is a zero-padded
      AS number in decimals
“n” is a serial number
      (number of interfaces)
```

- Allocation method:
  - Self-assigned, based on ASN.
  - Members don’t tell us to update the database.

# Why the differences?

- Allocation method:
  - Self-assigned, based on ASN
  - Members don't tell us to update the database
- People seem to value v6 differently over time
  - New router hardware
    - IPv6 is disabled
  - IPv6 sits in the way
    - Security issue
  - Personnel changes
  - Stricter procedures

# Volume




- sFlow sampling:
  - 1 in 8k frames (random)
  - Ethertype 0x86DD
    - Native IPv6 only, tunnels are measured as v4.
- We are a layer-2 exchange, packets are payload for us.

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  - 1 in 8k frames (random)
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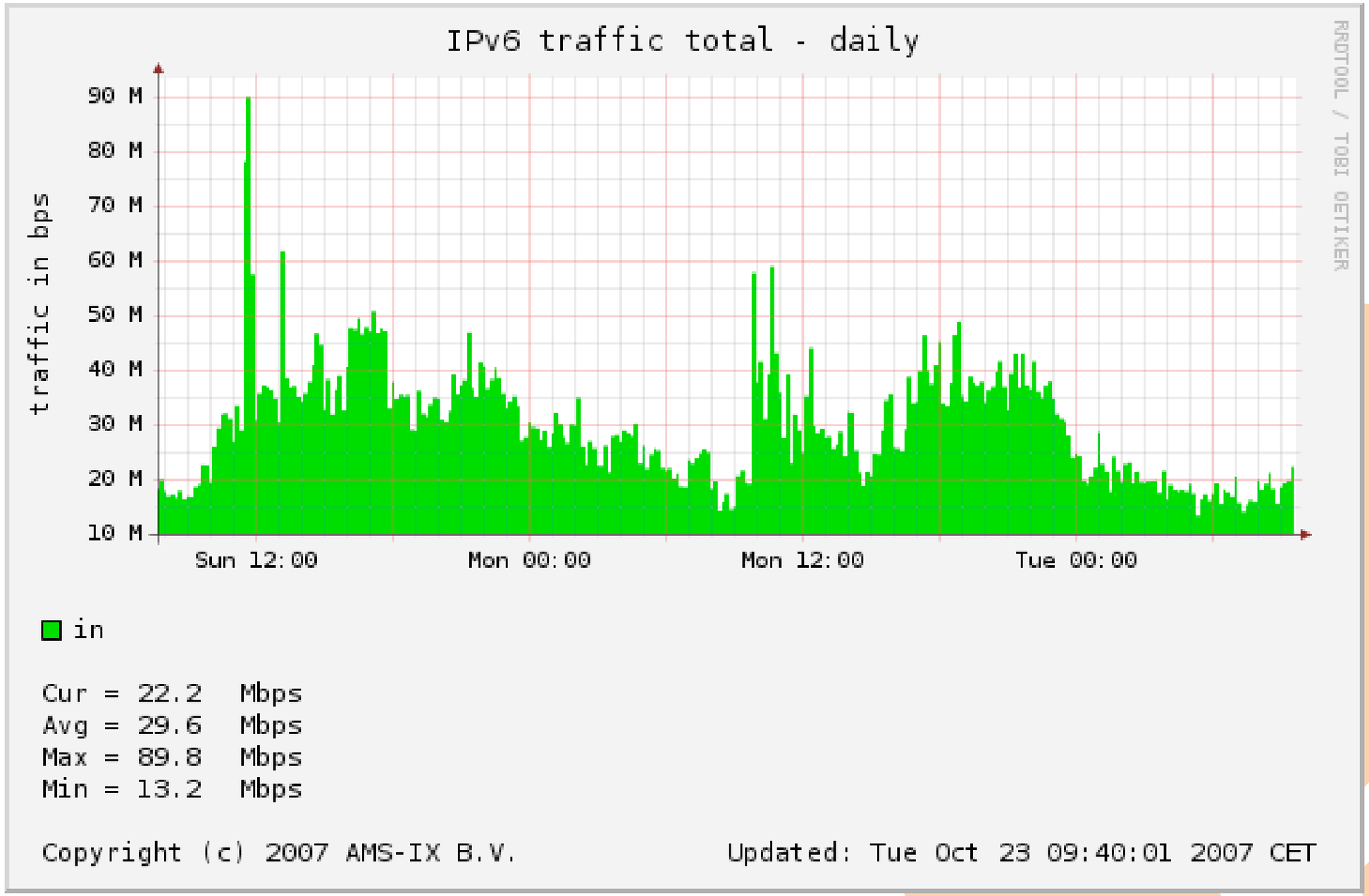
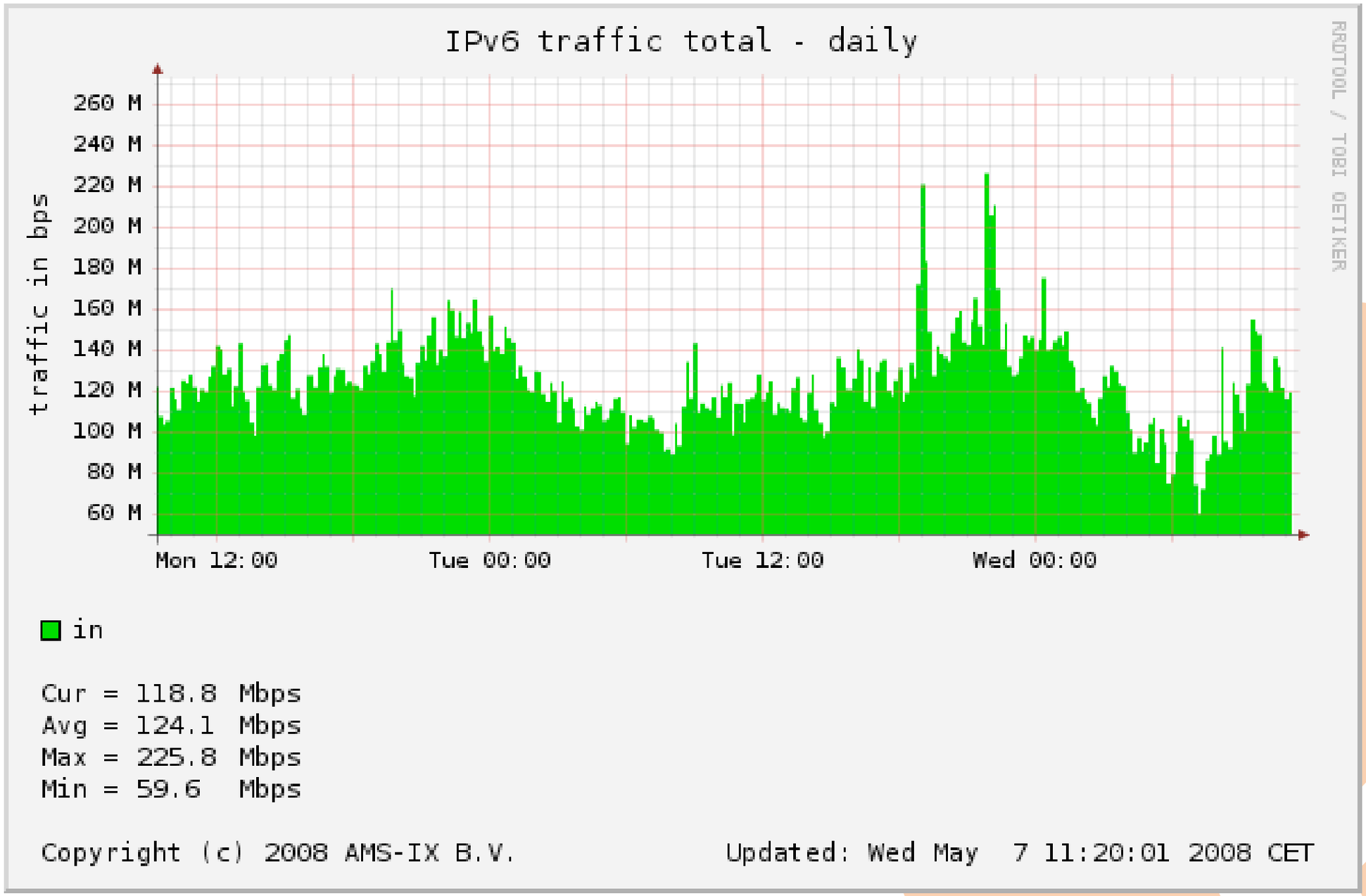
- Putting things in perspective.
  - The daily *overall* volume peaks at ~ 400Gb/s.
  - It was ~300Gb/s during RIPE55.

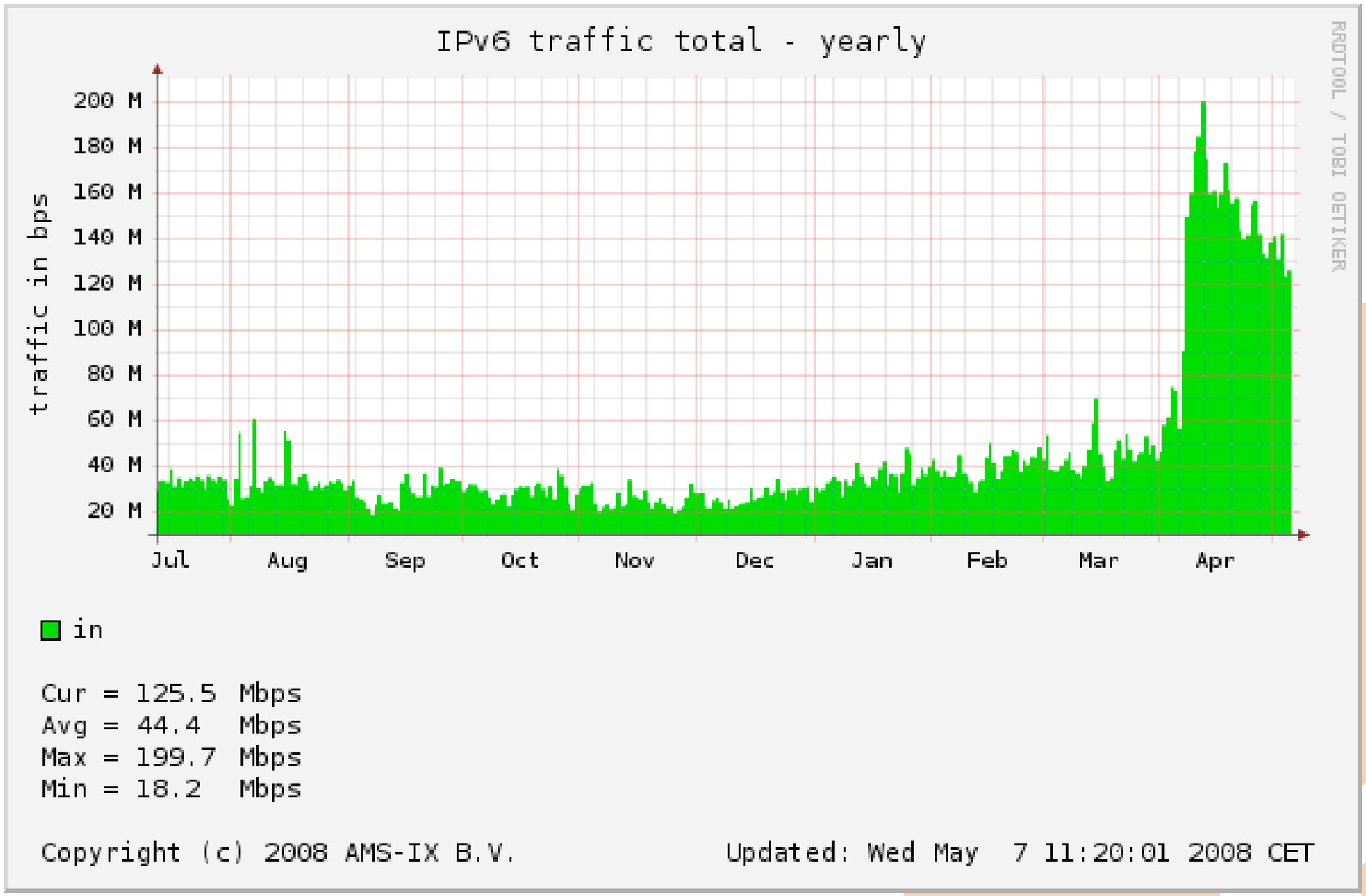
# Daily volume RIPE55



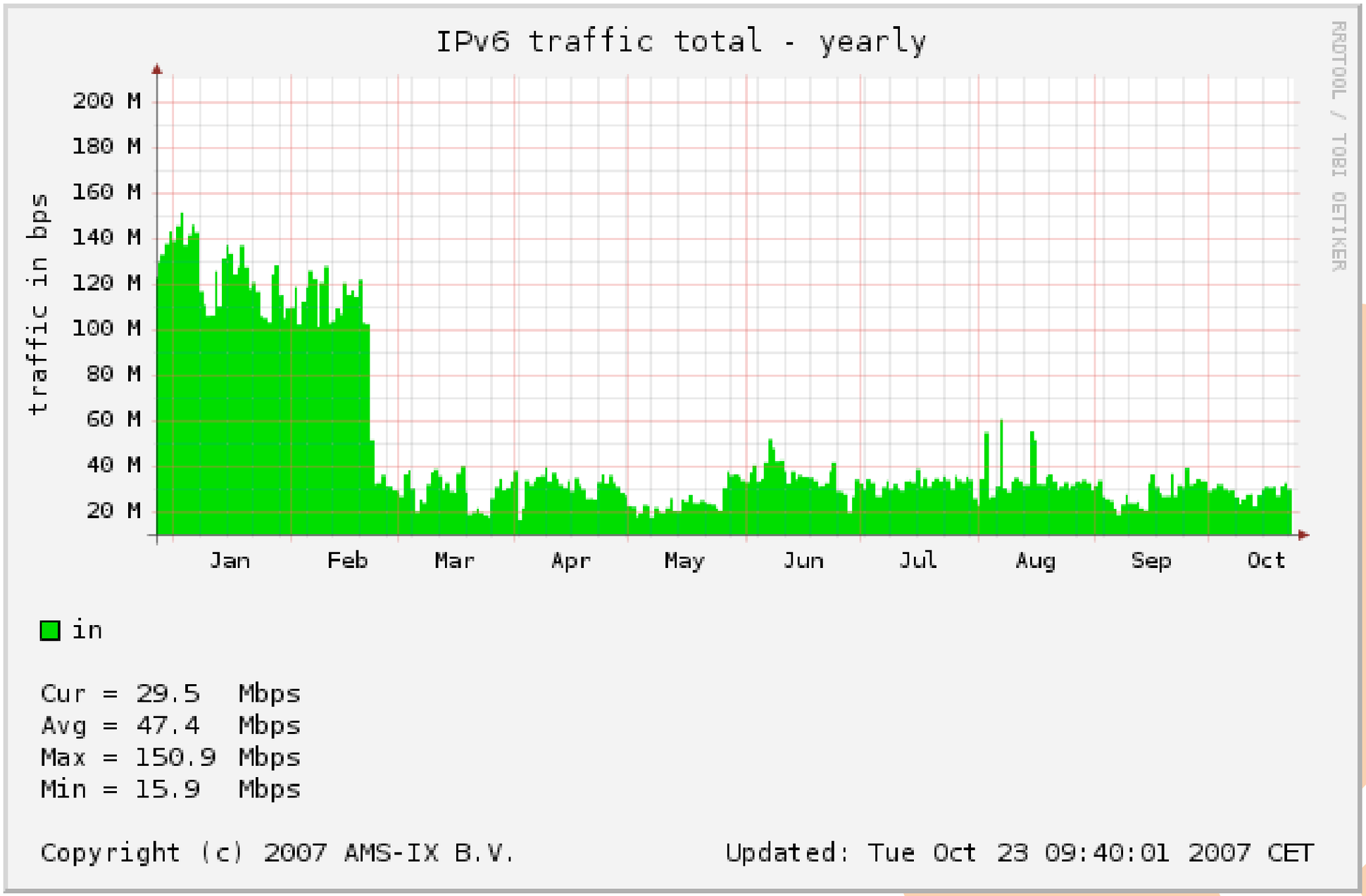
# Daily volume RIPE56



# Yearly volume



# It was there before



# Conclusions

- Amount of v6 enabled routers increased from 64 to 117.
- Still a minority of the connected routers are v6 enabled (117 of the 358 operational devices).
- Self-assignment works but presents challenges in database consistency.
- V6 volume increased mostly due to Usenet feeds.
- V6 traffic is still a tiny fraction of the total volume. (~200Mb/s vs ~400Gb/s).
- Some members switch off  v6 when it gets in the way.