

# Native IPv6

## Results and statistics

Marco Hogewoning

[marco@xs4all.net](mailto:marco@xs4all.net)

Nov 16th 2010 - RIPE 61 meeting Rome (.it)

# Who are we ?

XS4ALL

- Small Dutch ISP
- 100% daughter of KPN NV
- 270k DSL subscribers
- ...and we run IPv6

# History

XS4ALL

- See earlier presentations at RIPE 58 and RIPE 59
- Closed pilot in May 2009
- Open pilot in March 2010

# IPv6 as a standard offering

XS4ALL

- Announced August 26th, 2010
- Feature is opt-in
  - No experience with it on support
  - We don't want any surprises
  - CPE firmware still beta
- Available for all current residential DSL products
  - Covers 80% of the install base
  - Business offering being worked on
  - Legacy products excluded (RFC1483)

# Keep it simple

XS4ALL

- Login onto the self service portal
- Push a button
- Flash or replace CPE
- Be done

# Activating it (1/2)

XS4ALL

## IPV6

XS4ALL geeft IPv6 adressen uit naast uw IPv4 adres. Met de nieuwe IPv6-reeks zijn in tegenstelling tot de oude IPv4 adressen tot in de verre toekomst genoeg IP-adressen beschikbaar. Meer informatie op de [IPv6 pagina](#).

Indien u geen IPv6 meer wilt schakel IPv6 dan uit in het modem.

- [Index](#)
  - [E-mail](#)
  - [Bellen](#)
  - [Website & Eigen server](#)
  - [Persoonlijke gegevens](#)
  - [Verhuizen](#)
  - [Extra](#)
  - [Internet-toegang](#)

### Verbindingen

| Gebruikersnaam | IPV4 adres | IPV6 adres |
|----------------|------------|------------|
| njal           | 82.95.204. | geen       |

Activeer IPV6

The button

# Activating it (2/2)

XS4ALL

## IPV6

XS4ALL geeft IPv6 adressen uit naast uw IPv4 adres. Met de nieuwe IPv6-reeks zijn in tegenstelling tot de oude IPv4 adressen tot in de verre toekomst genoeg IP-adressen beschikbaar. Meer informatie op de [IPv6 pagina](#).

Indien u geen IPv6 meer wilt schakel IPv6 dan uit in het modem.

- [Index](#)
  - [E-mail](#)
  - [Bellen](#)
  - [Website & Eigen server](#)
  - [Persoonlijke gegevens](#)
  - [Verhuizen](#)
  - [Extra](#)
  - [Internet-toegang](#)

### Verbindingen

IPV6 adres geactiveerd.

**Gebruikersnaam**

nja

**IPV4 adres**

82.95.204.

**IPV6 adres**

2001:980:1 e::/48



# The results



XS4ALL

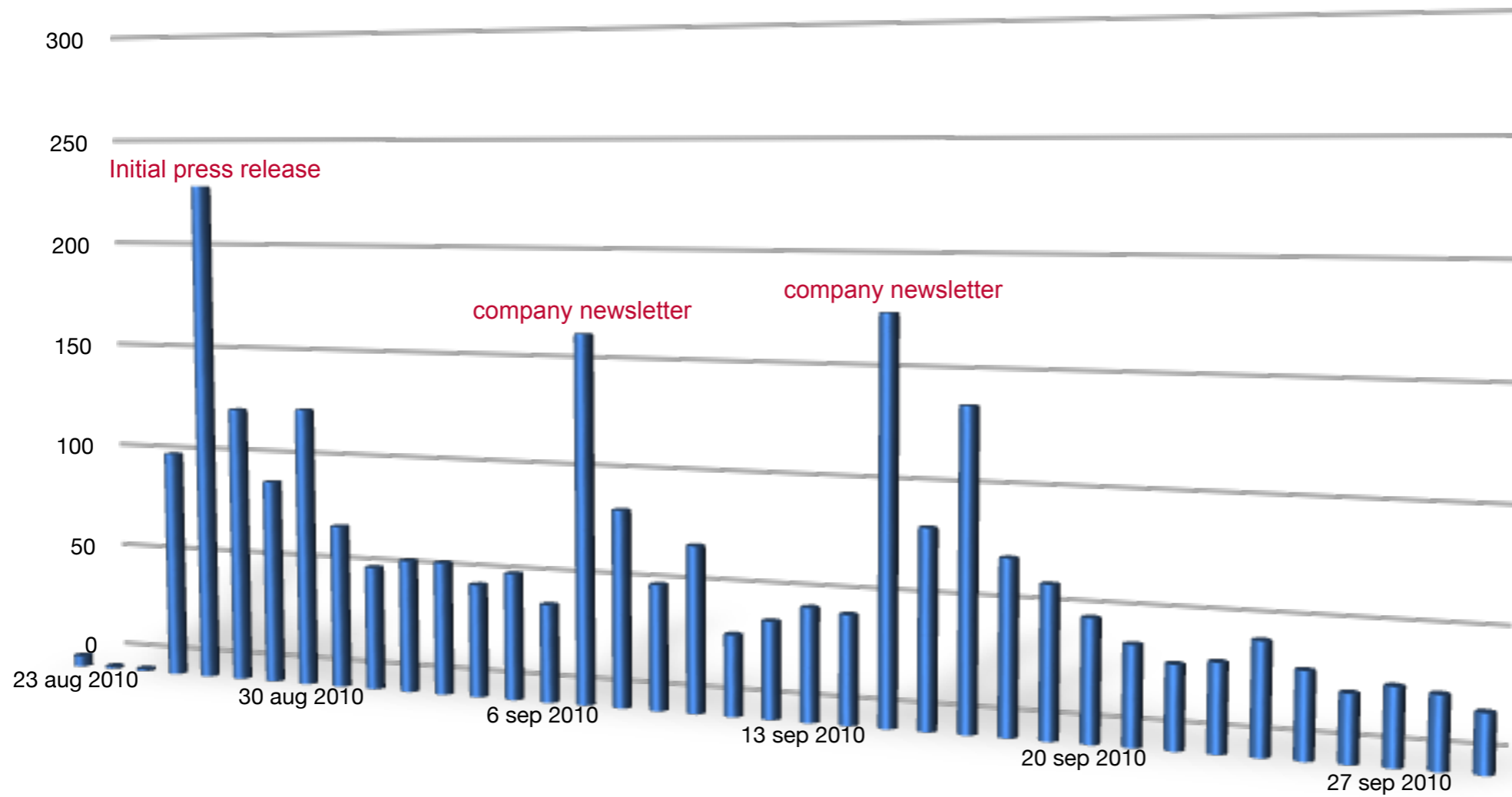




# Activations per day

XS4ALL

Number of IPv6 activations



# Activations (2)

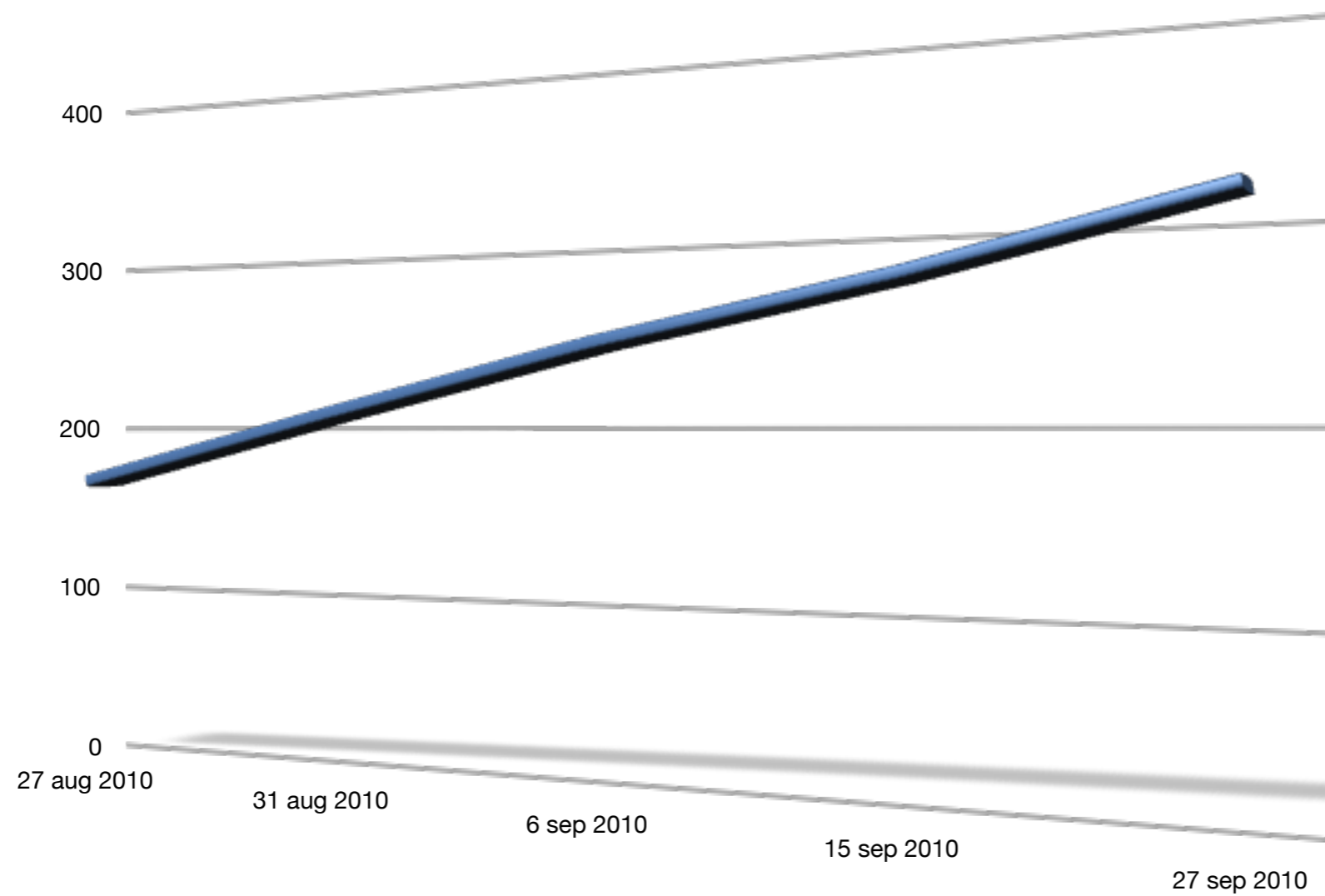
XS4ALL

- Every time we make noise, people activate
- Up to November 14th
  - 4048 people activated IPv6 (1.5 % base)
  - Average 45 per day
  - Last 30 days still at 25/day
  - Without much advertising
  - Press coverage does the trick

# Customers online

XS4ALL

Number of active leases



# Customers online

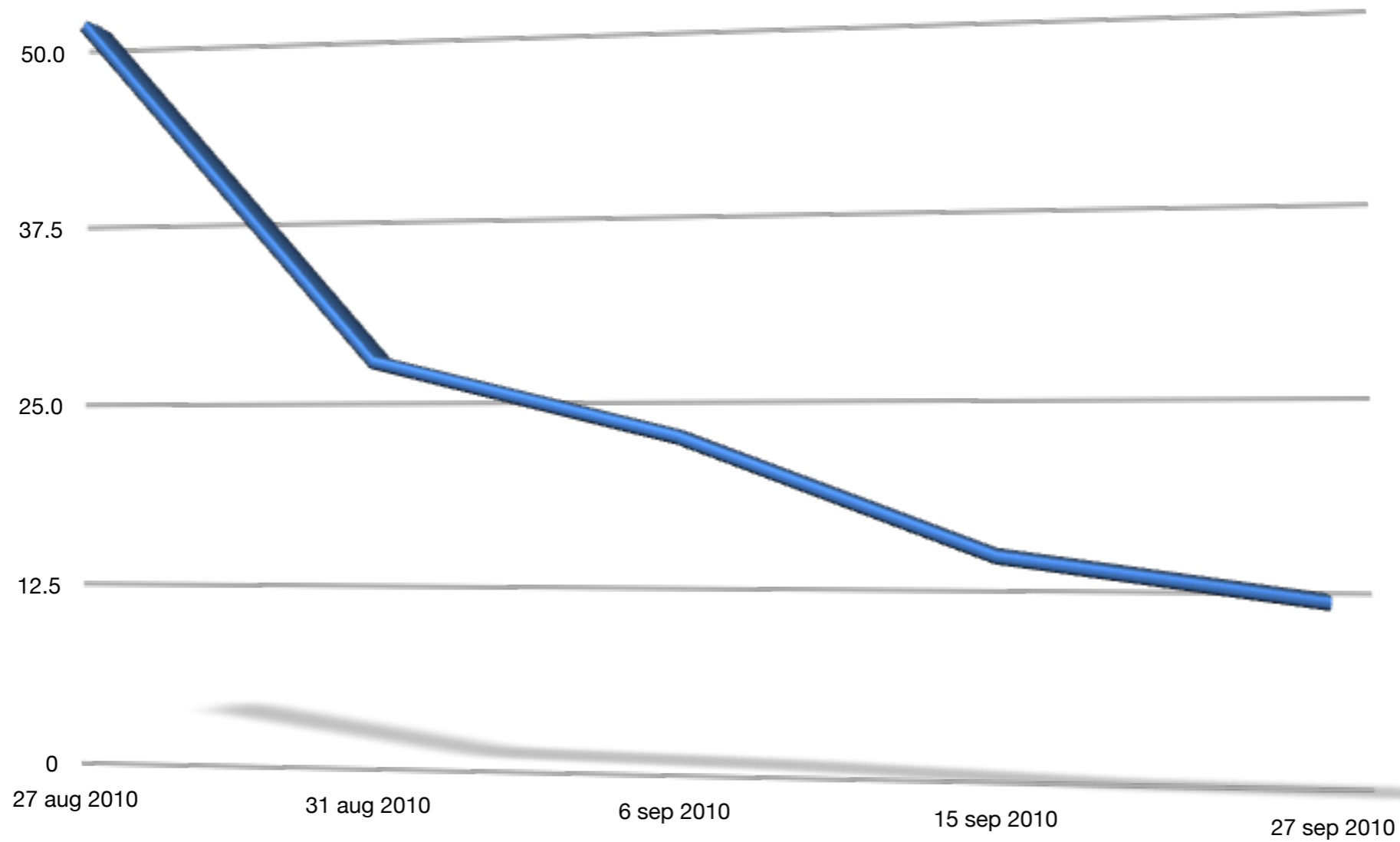
XS4ALL

- Taken from DHCPv6 lease table
- Not automated, so irregular interval
  - Aug 31st: 208
  - Sep 15th: 276
  - Sep 27th: 313
  - Oct 22nd: 359
  - Nov 24th: 426
- Number of customers is slowly growing

# Activated vs Online

XS4ALL

Percentage of customers online



# Statistics November 24th

XS4ALL

- 4048 people activated
- 426 active leases
- Only 10.5 % has working IPv6
  - Approx 3500 people 'missing' :(
  - But we haven't received 3500 calls :)

# Causes for this

- People only realize they need a new modem after pushing the button.
- Or they are lazy and forget about it.
- Modems available upon contract renewal, so not everybody can get one (yet).
- Some firmwares default to 6to4 (invisible)
- Firmware for the supplied modem is broken
  - Works for VDSL2
  - Doesn't work for ADSL
  - Vendor is trying to solve this

# Conclusions

XS4ALL

- If you tell customers they need IPv6, a certain number will go out and get it.
- But they don't want to spent much effort
  - They either can't tell wether it's working
  - Or they can't be bothered with it
- Don't roll based on a beta firmware
  - Things can and probably will break
  - Can you really trust your vendor to deliver ?



# Fixes ?

XS4ALL

- More noise about the world ending ?
- Exclusive content to push them to get it working ?
- Default off instead of 6to4 ?
- Push the vendor to deliver

# Questions ?



**XS6ALL**

meer adressen.