IPv6.br

The Brazilian experience in IPv6 dissemination

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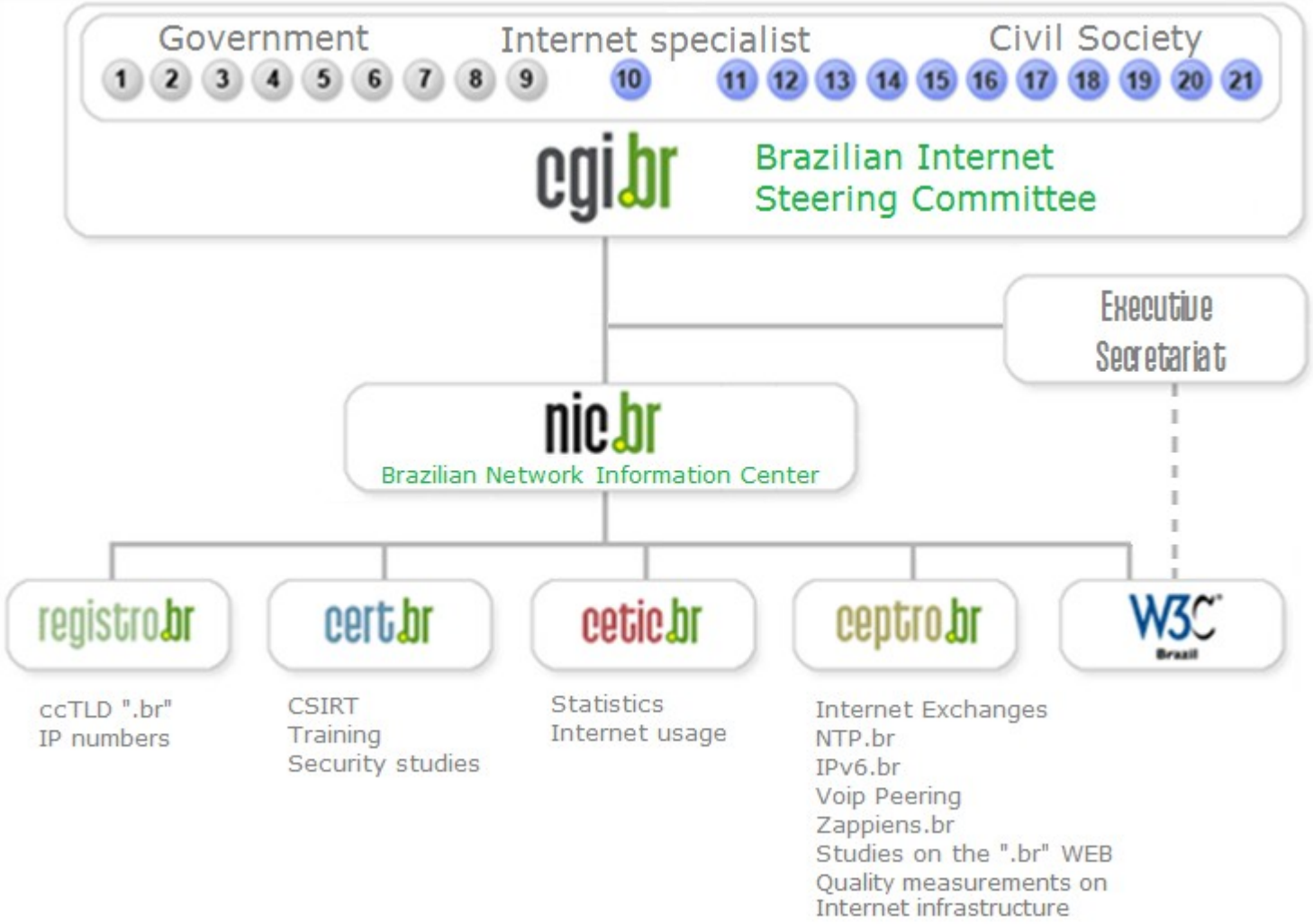
IGF 2010

CGI.br and NIC .br



easier access to the adresses (1)

- Until 2007, LACNIC was responsible for IPv6 allocations
  - This means a challenge for Brazilian Providers:
    - A legal contract, in Spanish, with a foreign organization.
  - December 2007: Registro.br starts to register IPv6 addresses and AS numbers, which had been already happening with v4.
    - Policy: if you already have an IPv4 allocation, then you certainly justify at least a /32 IPv6.
  - Easier process led to a increase in registration.

awareness raising (2)

- It started at the beginning of 2008
  - Awareness raising
  - Speeches at events
    - Universities
    - IT meetings / events
    - (...)

GTER
Grupo de Trabalho de Engenharia e Operação de Redes

1º Fórum de Software Livre do CINDACTA II

UNISANTOS
Universidade Católica de Santos
V EXATEC 2009

AHK CÂMARA BRASIL ALEMANHA

geinfo

Campus Party™

IV SEMANATEC
Semana de Tecnologia e III Jornada de Pesquisa
FATEC RIO PRETO • DE 20 A 25 DE OUTUBRO DE 2008

FISL 9
17, 18 e 19 de Abril de 2008
Porto Alegre

CONIP
14º Congresso de Inovação da Gestão Pública
04 e 05 de Junho de 2008
São Paulo - SP

IP COMMUNICATIONS BRASIL

CONISLI 2008
diálogo de inteligências

website (3)

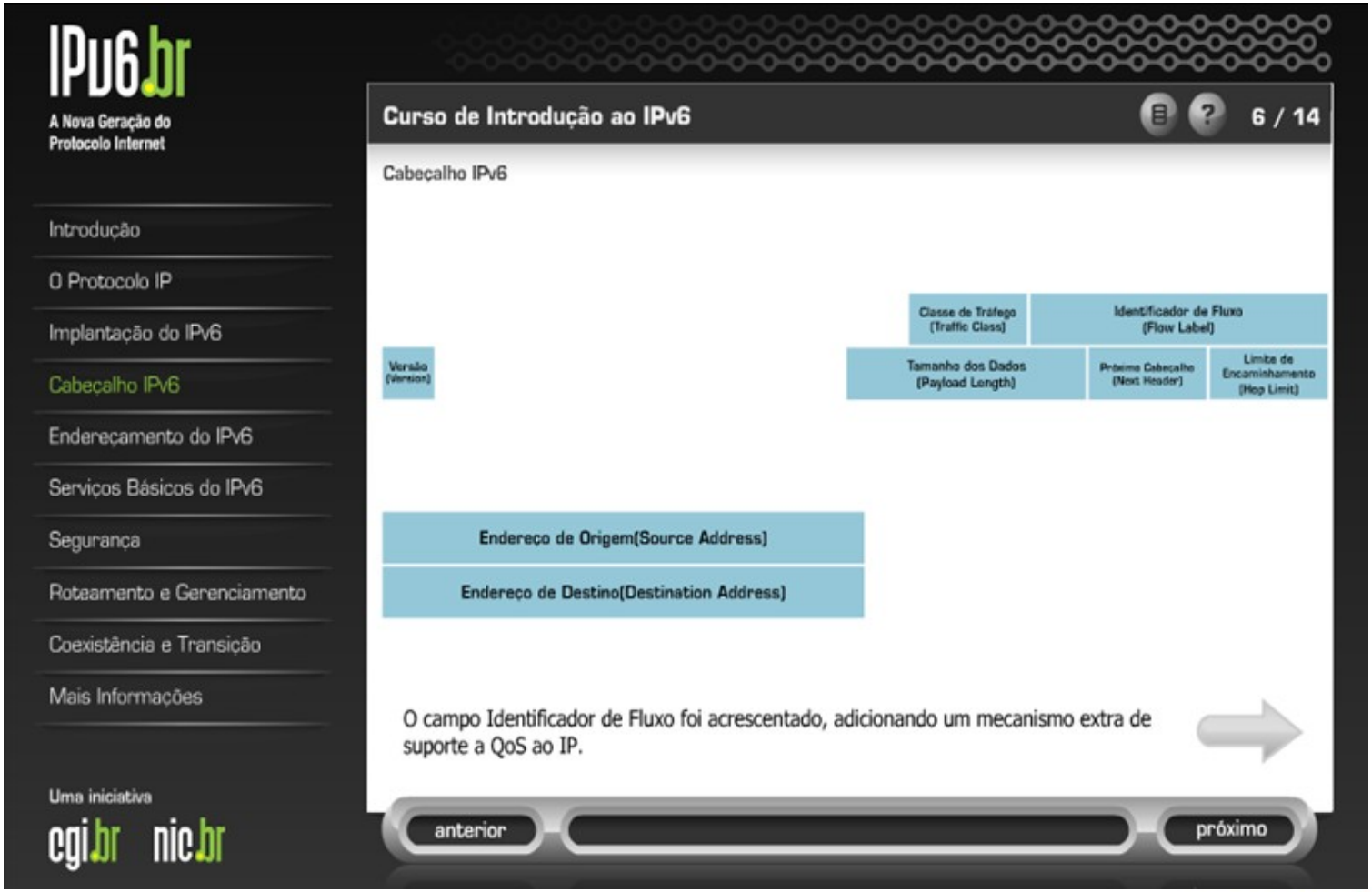
- Awareness raising
- Information
- Started as a simple repository of pre-existent information (in Portuguese language)
- We noticed the need to write some articles / information → fill the gaps...
- Collaborative work
- Creative Commons 2.5 (Brazilian License)

website (3)

http://ipv6.br

e-learning package (4)

http://ipv6.br/curso



capacity building (5)

- How do we reach the Brazilian ISPs?
  - We felt that capacity building was an important need, due to potential high costs...
  - We have prepared our own brochures inspired on 6diss/6deploy material, but completely rewritten
  - Creative Commons - Comercial use, derivative works, copy, distribution, all uses are allowed...
  - Laboratory: 8 Cisco + 8 Juniper routers, plus ~ 60 virtual machines, to teach 8 groups of 4 people each.

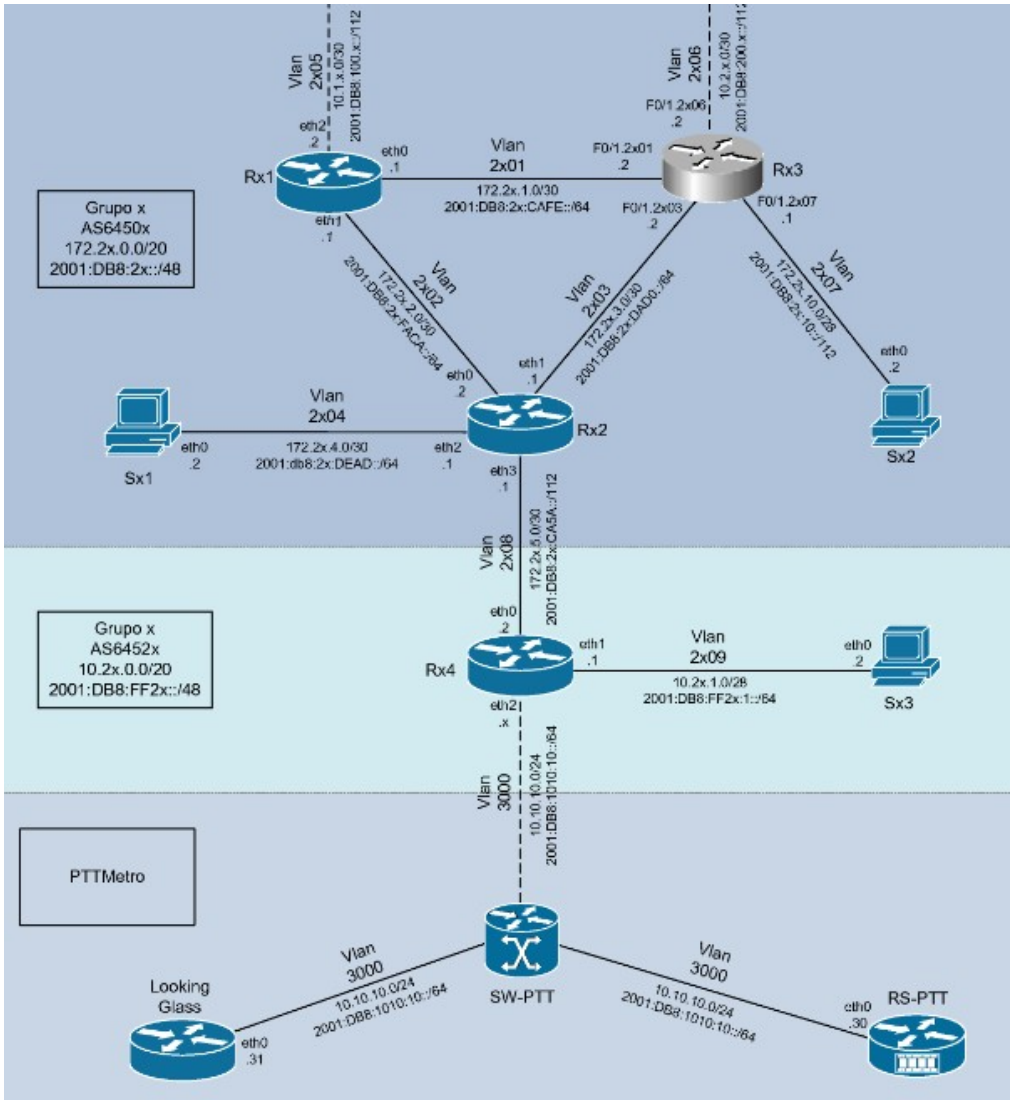
capacity building (5)

- 16 courses already
  - ~500 people, from more than 180 organizations (mainly ISPs or other Autonomous Systems) trained.
- Intensive / hands on / 5 days = 36h (theory + labs)
  - It became very common, in the next few weeks :
    - ...the ISPs ask for an IPv6 allocation
    - ...to ask for IPv6 peering in our IXPs
    - ...sometimes, to put a test IPv6 website to work

capacity building (5)

- The course is free for the ISPs staff
  - Funded by the “.br” domain names
- Course for Non-Brazilian ISPs
  - Scheduled for November, 2010 - São Paulo / Brazil
    - PTT Forum (Brazilian IXP Forum) / LACNOG + LACNIC
    - Also free + “becas” offered by ISOC

capacity building (4)



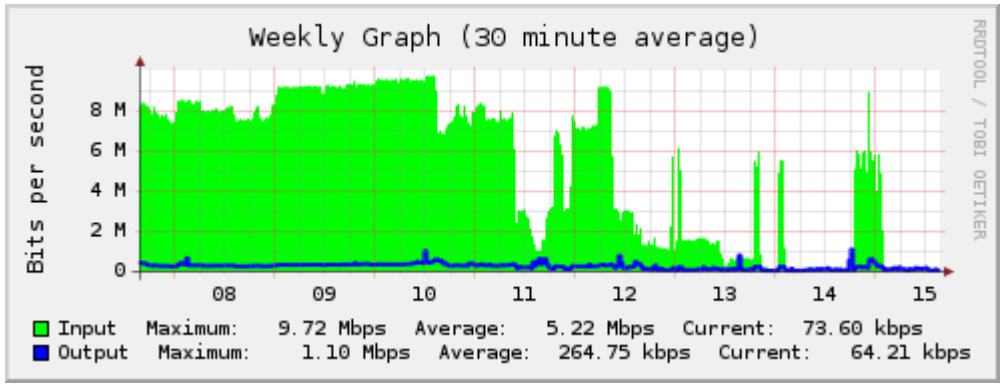
Theory
- introduction
- basic funcionality
- routing
- management
- security
- planning

Labs
- basic
- tunneling
- firewall
- routing (ospf, bgp)
- dns

http://ipv6.br/presencial

IPv6 transit free of charge (6)

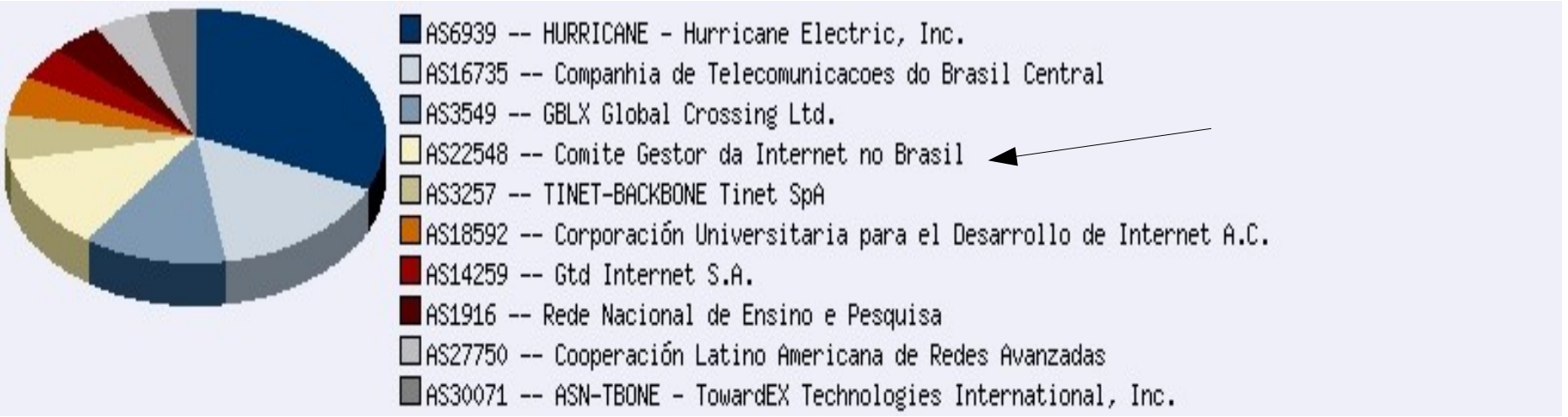
- Participants of Internet Exchange PTTMetro São Paulo.
- Experimental
- Limited time
- Limited and shared bandwidth
- Expected results:
  - Foster the ASes to use IPv6;
  - Lower the gap between Allocated and Routed IPv6 addresses



Trânsito IPv6 - PTTMetro - São Paulo	
ASN	**NOME**
8167	BRT
11706	Terra
14282	Persis
16397	Alog-SP
19182	TVA
22356	Durand
26592	Alog-RJ
28220	Cabo Telecom
28571	USP

IPv6 transit free of charge (6)

- 4th transit AS for LATAM – according to the BGP Weathermap
- 14 ASs



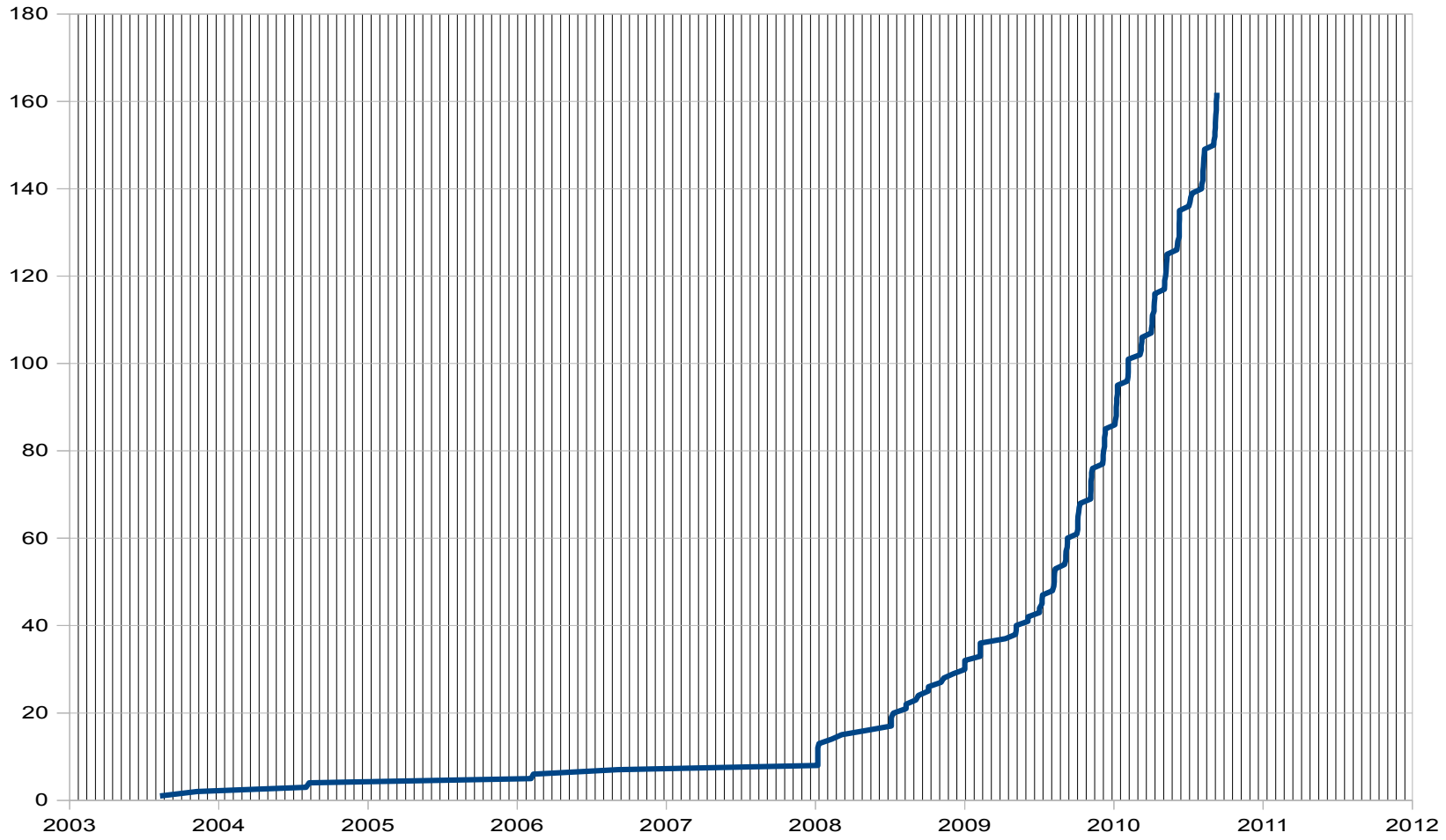
budget

- 1 engineer / 1 system analist – full time
  - + coordination (part time)
  - + some help from IX PTT Metro team (on the courses and free transit)
- + ~ US$ 100k / 2009 (labs, courses, e-learning)
- + ~ US$ 100k / 2010

- Obs:
  - Participation of CISCO, JUNIPER and MICROSOFT with speeches at some of our courses
  - Some courses outside São Paulo can be supported by co-sponsors

some results (IPv6 allocations)

(ftp://ftp.registro.br/pub/stats/delegated-ipv6-nicbr-latest)

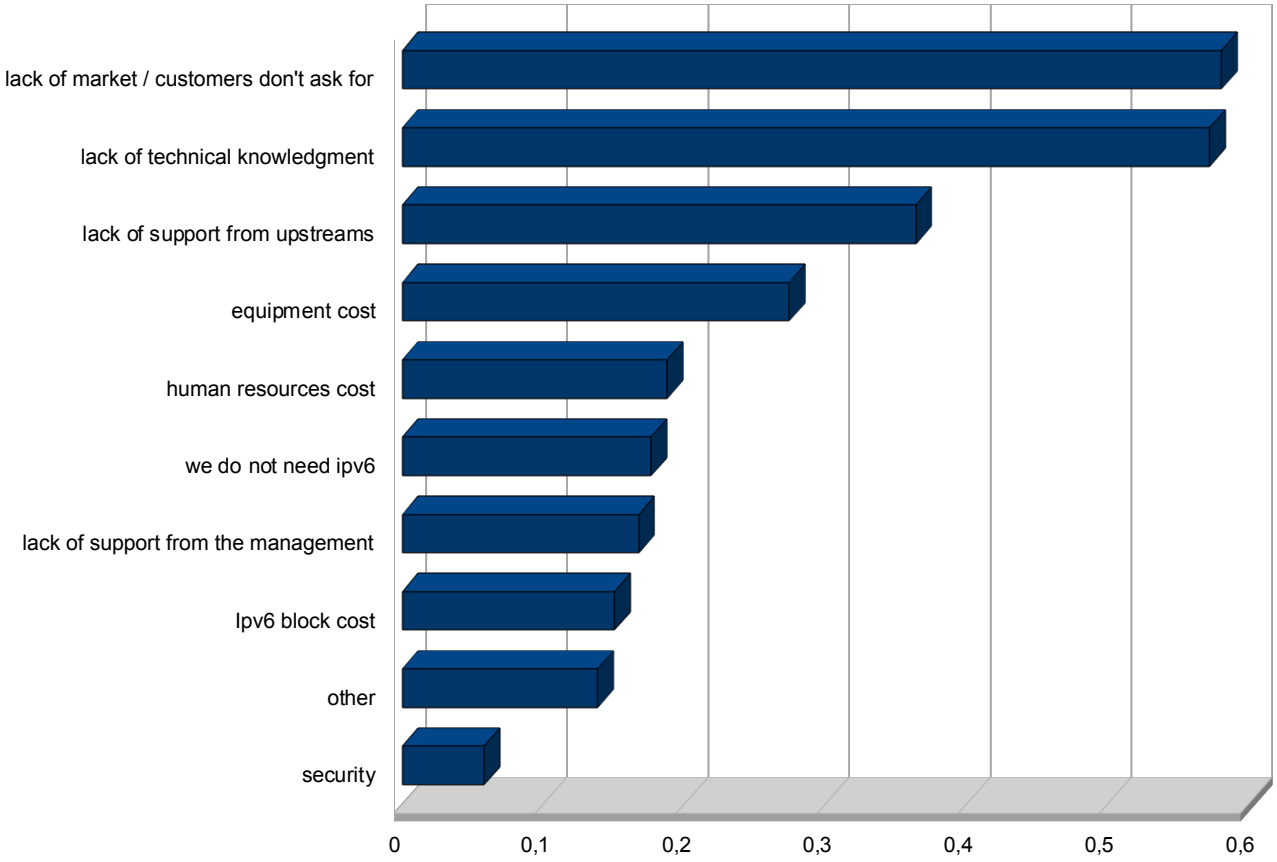


2010 survey

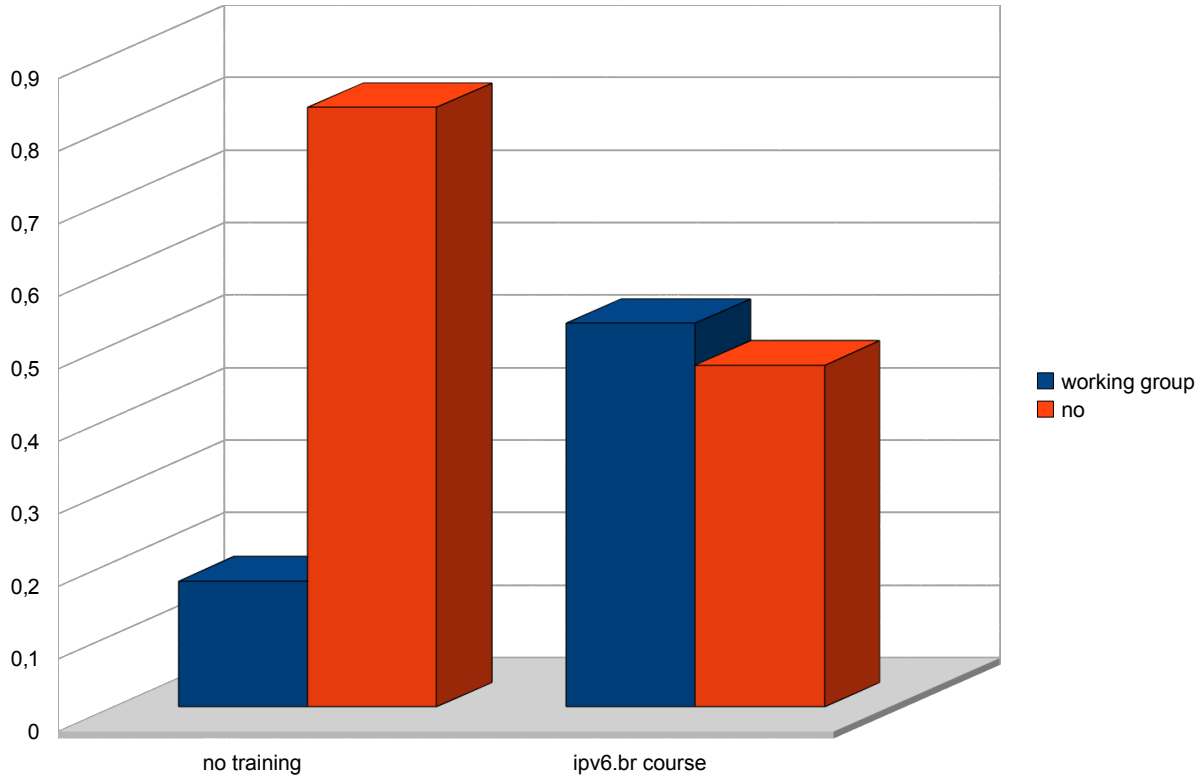
- In Brazil we have:
  - ~ 800 Autonomous Systems
  - ~ 1600 ISPs (estimated)
  - ~ 160 Autonomous Systems with IPv6 blocks (20%)
  - ~ 45 blocks in the BGP table (5%)

- In this survey:
  - 346 responses total (21% of 1600)
  - 258 ASs (32% of 800)

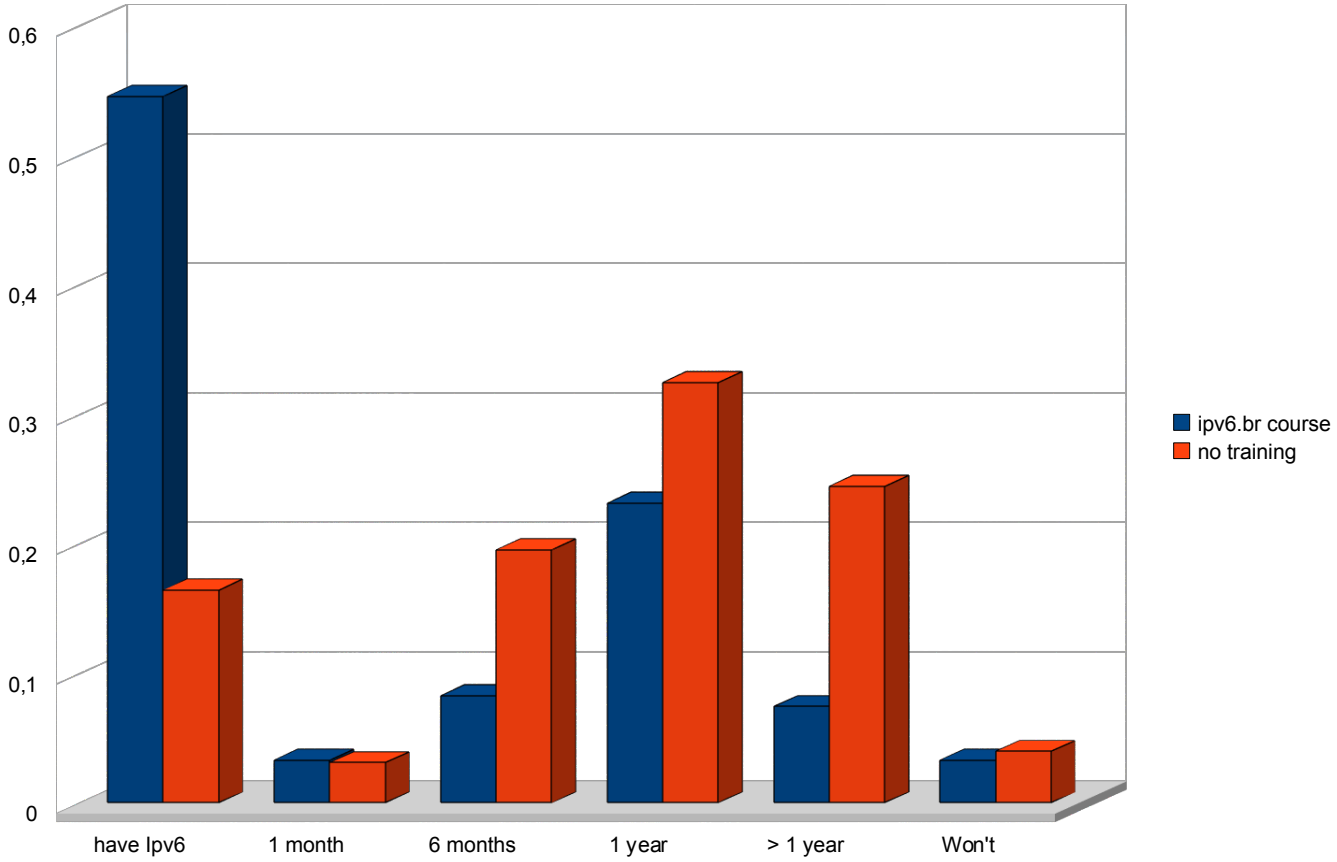
main dificulties



do you have a formal working group in your organization taking care of IPv6 deployment?



when do you intend to ask for the IPv6 address block?



THANK YOU

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http://ipv6.br
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