

# IPv6@ccTLD

CZ.NIC - <http://www.nic.cz>

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Jul 28 2012, Prague, ICANN, IPv6 session

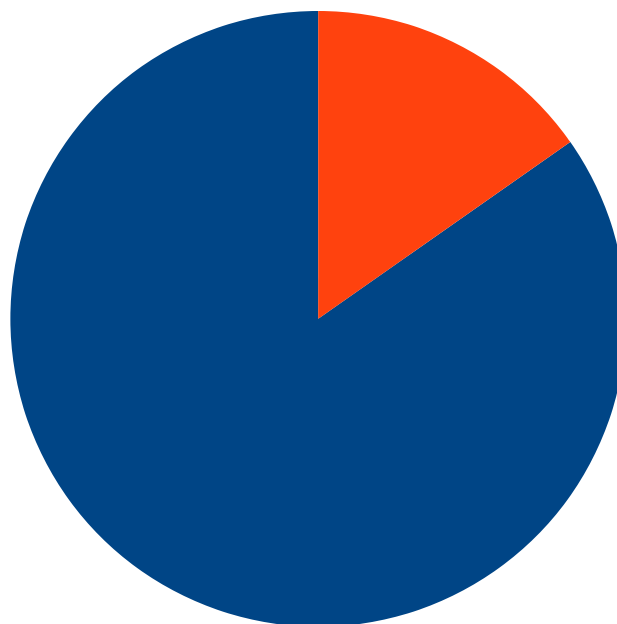
# Registry

- DNS servers (software ready)
- Registry system (glue records)
  - Database
  - Whois
  - Zone generation
  - EPP



# DNS servers

- Root – ftp.internic.net - 9 of 13
- TLDs (at least one NS on IPv6)
  - all – 267 of 311 (86%)
  - ASCII ccTLDs – 211 of 249 (85%)

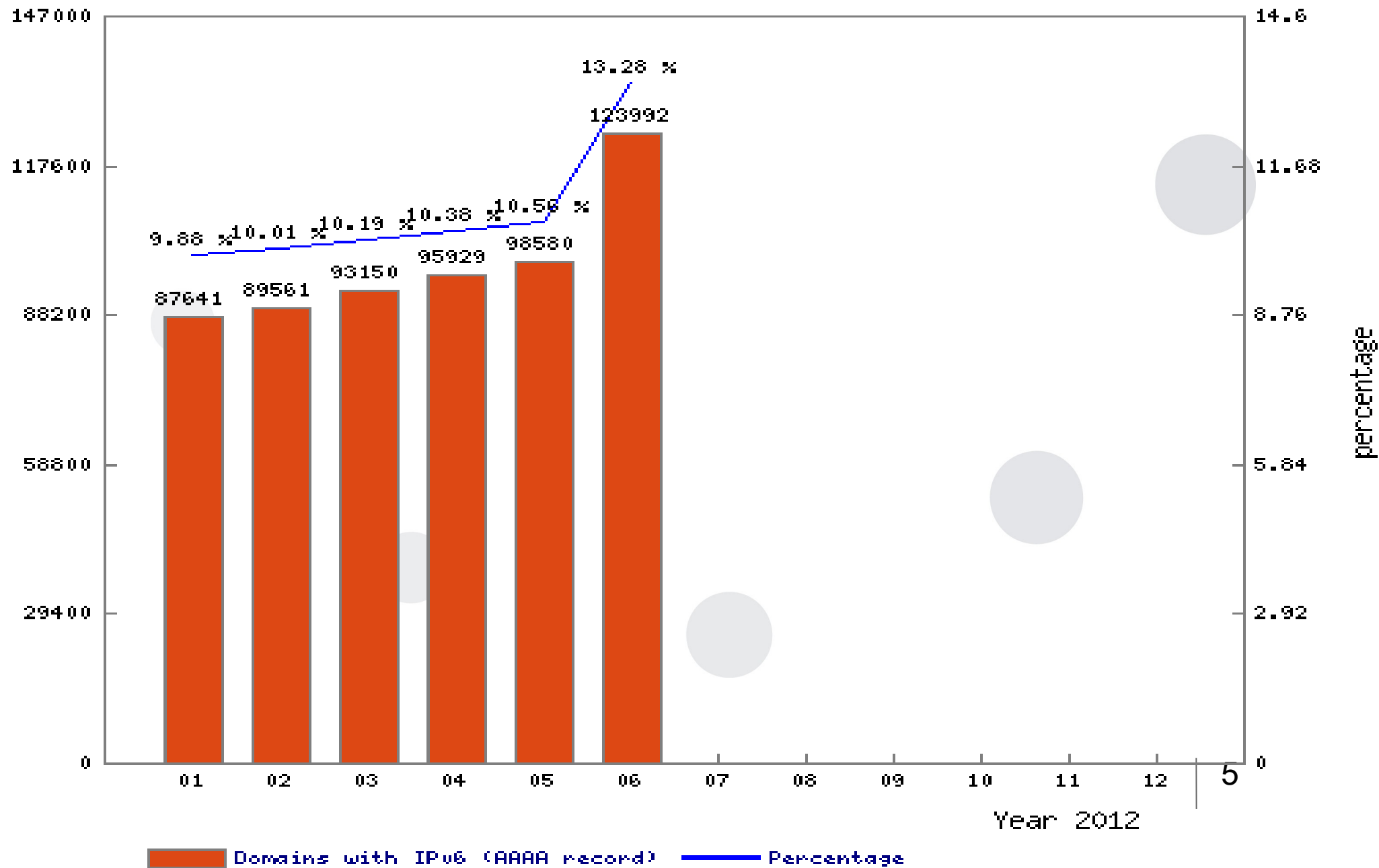


# TLD Progress Measurement

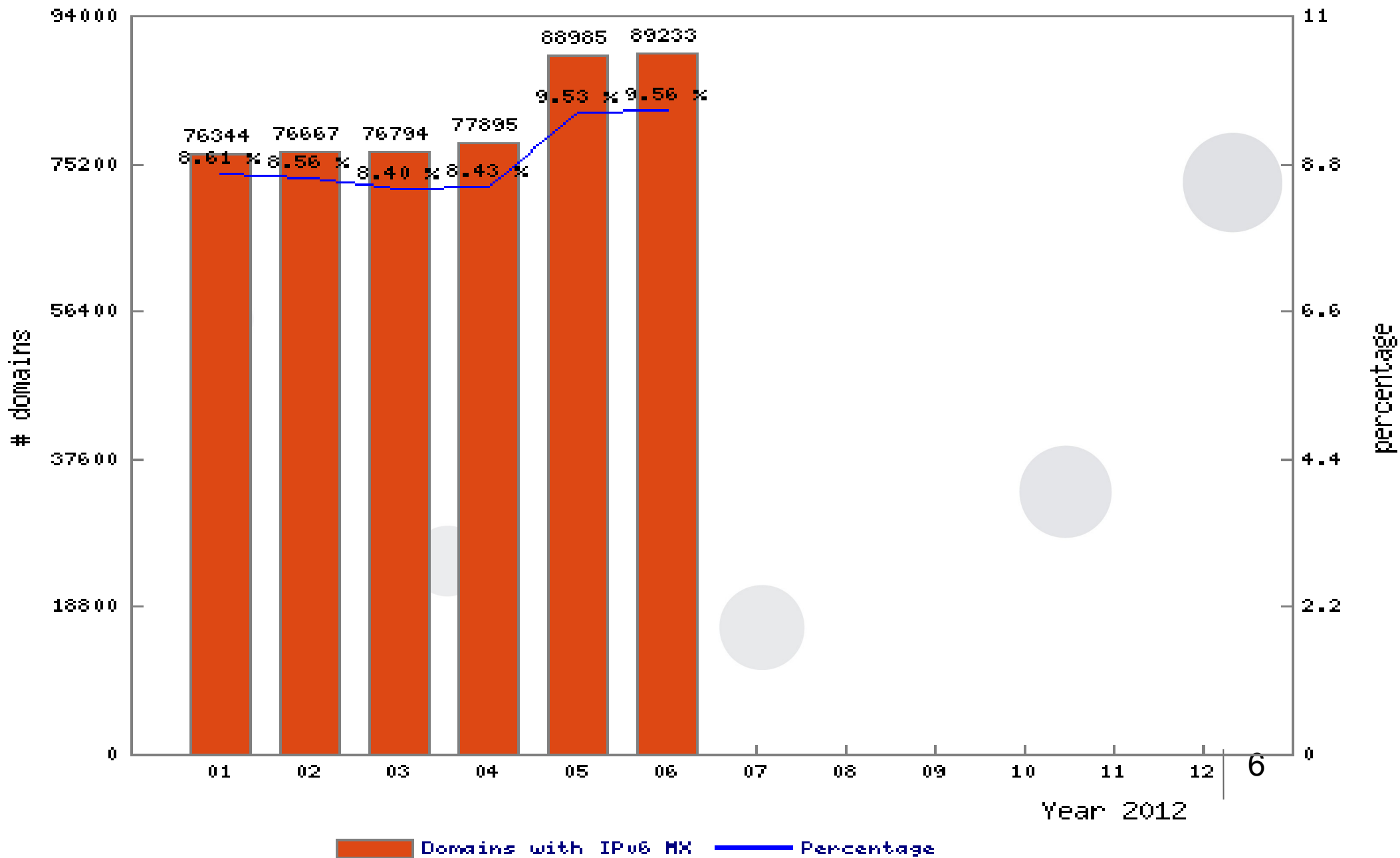


- AAAA records
  - `www.(domain).tld`
  - MX
  - DNS
  - .....
  - `http://labs.nic.cz/ipv6` (for `.cz`)
  - `http://bgp.he.net/ipv6-progress-report.cgi`
- % of DNS queries
- DNS record vs service

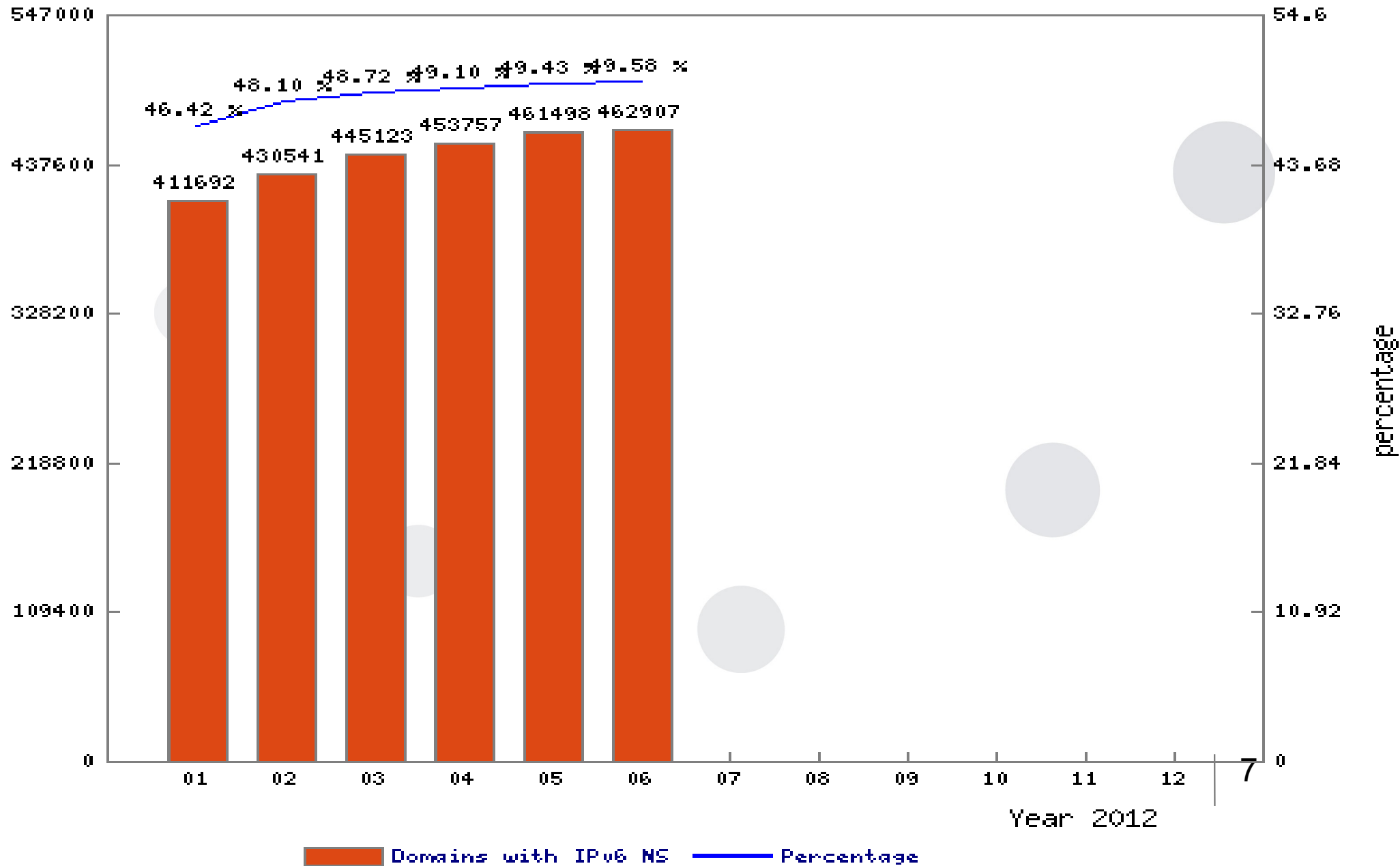
# Web servers (.cz – 13%)



# MX – mail servers (.cz 10%)



# Authoritative DNS (.cz 50%)



# DNS queries

IP Version Carrying DNS Queries

From Jun 20, 2012, 07:35:50 To Jun 27, 2012, 07:35:50 CEST

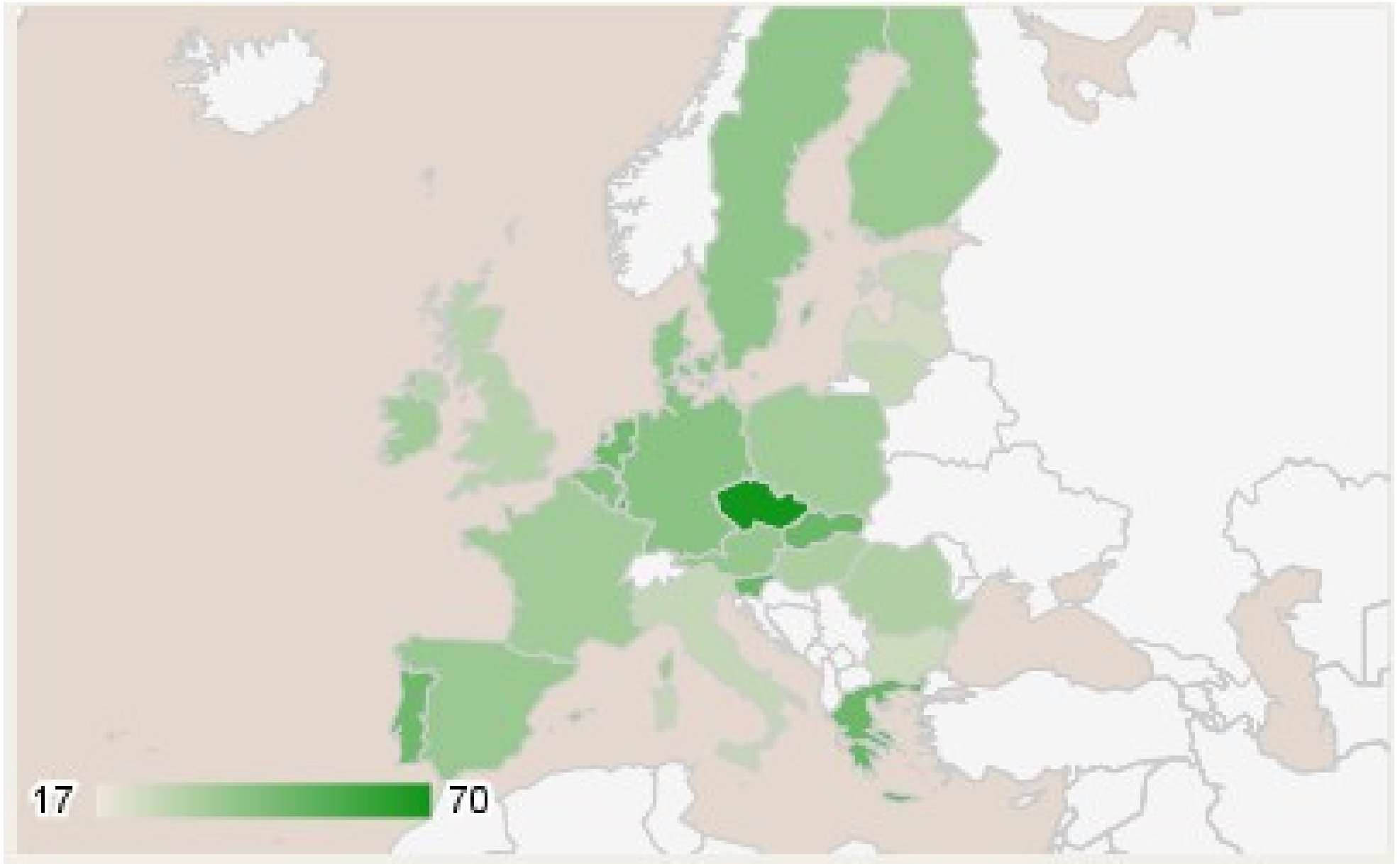




# IPv6 observatory

- Measuring IPv6 reachability of Alexa-500
- Important websites
- Ranking updated every 3 months
- Websites tested daily – DNS and http
- EU focus (+ USA, Canada, China, India)
- <http://www.ipv6observatory.eu>

# IPv6 observatory



# IPv6 observatory

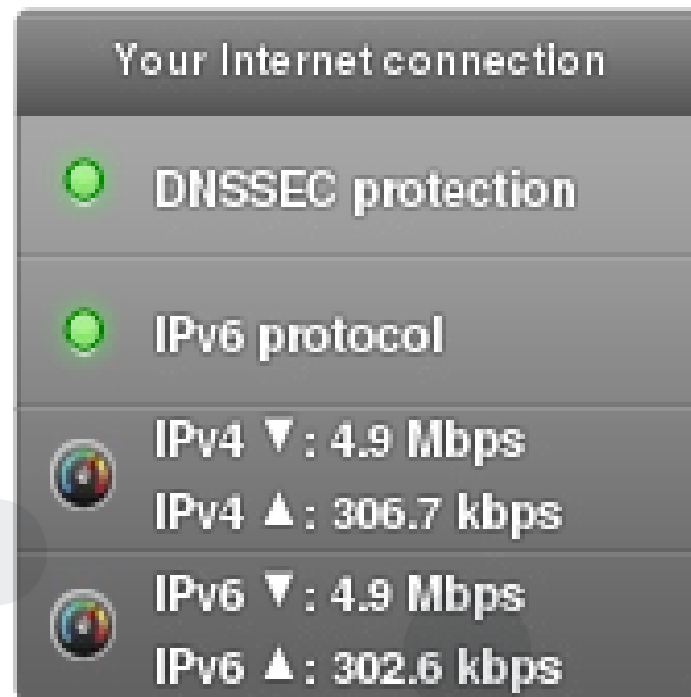
- 1) Czech Republic (70 websites, 14.00%)
- 2) Luxemburg (53 websites, 10.60%)
- 3) Greece (48 websites, 9.60%)
- 4) Slovakia (48 websites, 9.60%)
- 5) Slovenia (48 websites, 9.60%)
- 6) Portugal (47 websites, 9.40%)
- 7) The Netherlands (46 websites, 9.20%)
- 8) Belgium (41 websites, 8.20%)
- 9) Germany (41 websites, 8.20%)
- 10) Sweden (39 websites, 7.80%)

# Role of ccTLD

- ccTLD has a unique position
- Communication
- Support – training (CZ.NIC Academy)
- Seminars - .cz – 3 IPv6 Days
  - Jun 8 2010
  - Jun 8 2011 – World IPv6 Day
  - Jun 6 2012 – World IPv6 Launch
- IPv6 test lab (IPv6 only network, DSLAM)

# IPv6 HTML Widget

- Informs about DNSSEC validation and IPv6 support of connection (on <http://www.nic.cz>)



- Measures speed of IPv4 and IPv6
- <http://labs.nic.cz/widget>

# Router catalog

- IPv6 support on CPEs – home routers, cable, ADSL, ...
- Help End Users buying new HW
- All IPv6 features tested in our laboratory
- In cooperation with local e-shop
- Comparison, Filter search
- Currently in beta stage
- <http://katr.labs.nic.cz>



# ROUTER CATALOG

[HOMEPAGE](#)[COMPARISON \(3\)](#)[FILTER SEARCH](#)[FAQ](#)[ABOUT](#)

## MANUFACTURERS

- [ASUS](#)
- [Cisco](#)
- [D-Link](#)
- [NETGEAR](#)
- [ZyXEL](#)

[Homepage](#) :: **Filter search**

## FILTER SEARCH

PARAMETER	VALUE
WAN speed	<input type="checkbox"/> 100 (1) <input type="checkbox"/> 1000 (10)
LAN speed	<input type="checkbox"/> 100 (1) <input type="checkbox"/> 1000 (10)
Number of LAN ports	4 (11)
IPv6 support	Yes (11)
IPv6 firewall	<input type="checkbox"/> No (7) <input type="checkbox"/> Yes (4)
DNSSEC passthrough	Yes (11)
DNSSEC support in DNS server	Yes (11)
Wall mountable	<input type="checkbox"/> No (4) <input type="checkbox"/> Yes (7)
Number of antennas	<input type="checkbox"/> 2 (6) <input type="checkbox"/> 3 (1) <input type="checkbox"/> 4 (3) <input type="checkbox"/> 6 (1)

# Router catalog

<b>IPv6 support</b>	<b>Yes</b>	<b>Yes</b>
<b>IPv6 WAN functionality</b>		
IPv6 autoconfiguration with RDNSS	Yes	No
IPv6 autoconfiguration with DHCPv6	Yes	Yes
IPv6 configuration over DHCPv6	Yes	Yes
<b>IPv6 LAN functionality</b>	<b>Yes</b>	<b>Yes</b>
IPv6 autoconfiguration with RDNSS	Yes	No
IPv6 autoconfiguration with DHCPv6	Yes	Yes
IPv6 configuration over DHCPv6	Yes	Yes
<b>IPv6 tunnel support</b>	<b>Yes</b>	<b>Yes</b>
Teredo	No	No
6to4	Yes	Yes
6rd (rapid deployment)	Yes	No
6in4	Yes	No
IPv6 passthrough	No	Yes
IPv6 firewall	Yes	No
IPv6 only (without IPv4) support	Yes	No
IPv6 prefix delegation	Yes	Yes



# Thank you!



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<http://www.nic.cz>