

What's new at the RIPE NCC?

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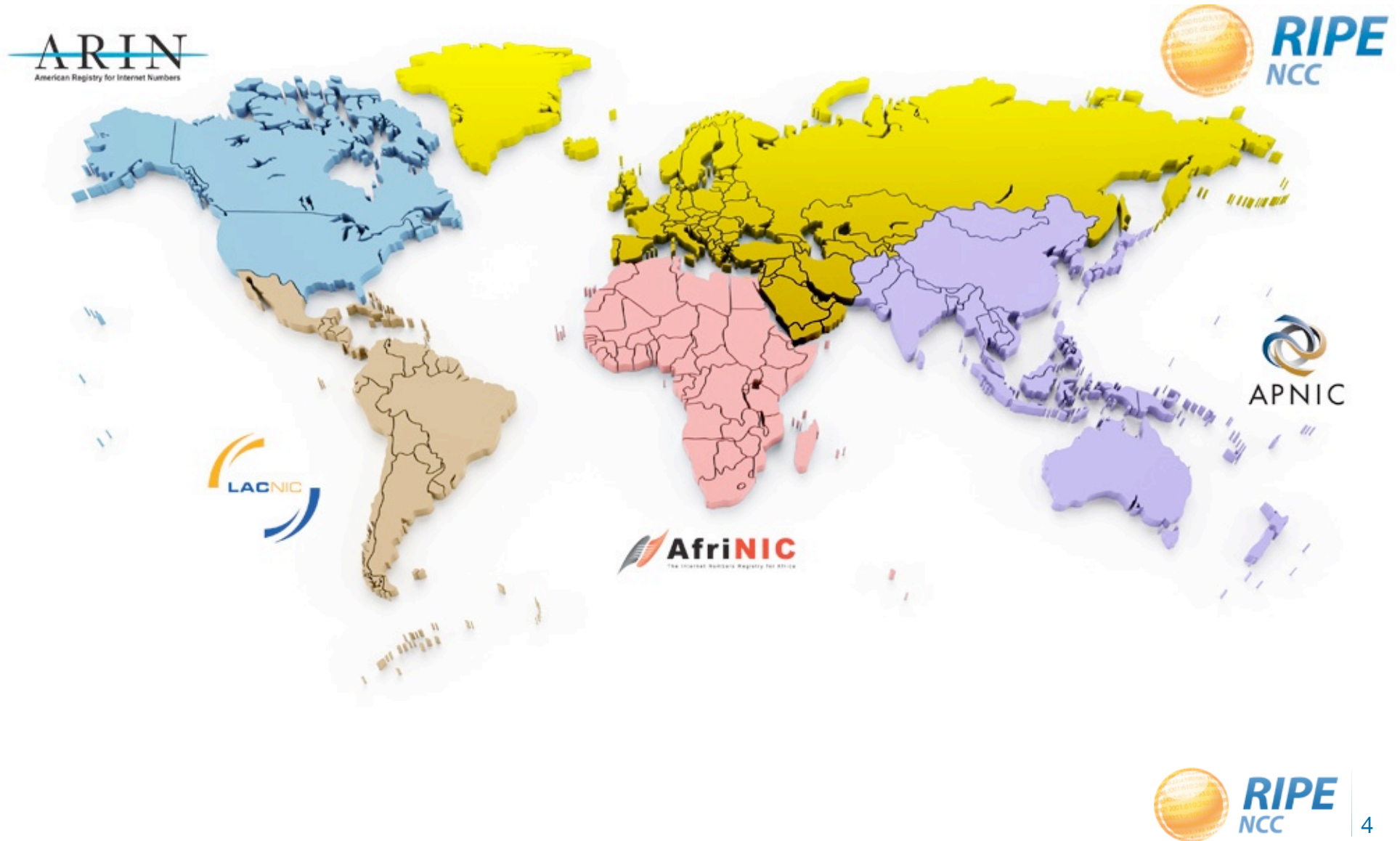
Topics - overview

- The Registry System
- IPv4 depletion
- IPv6 policy update and statistics
- RIPEstat, RIPE Atlas

The Registry System



The five RIRs



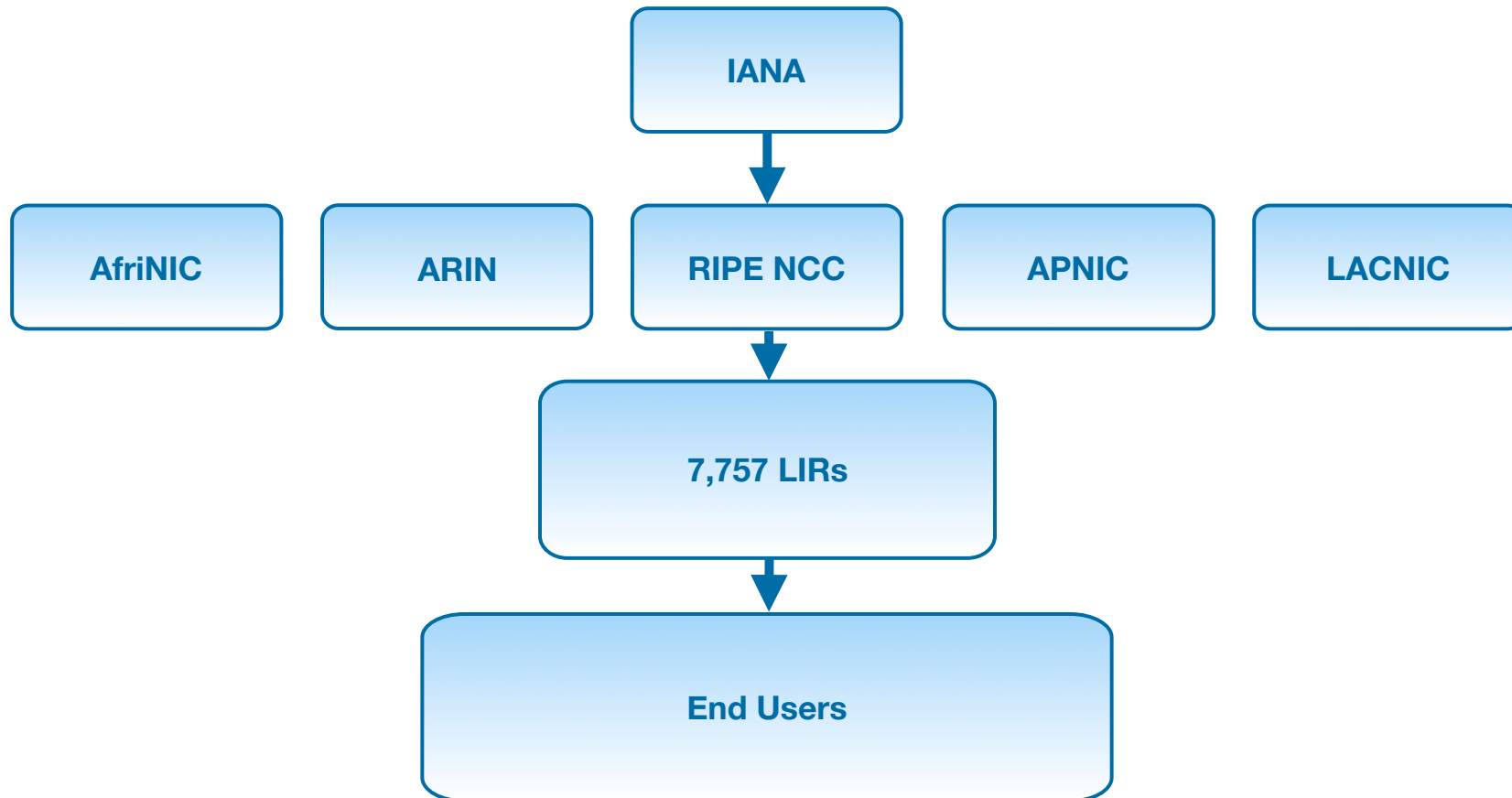
RIPE NCC

- Service region: Europe, Middle East and parts of Central Asia
- Supports coordination of Internet operations
- Distributes and registers Internet resources
- Not-for-profit membership organisation
- 7,757 members
- Neutral, impartial, open and transparent
- **RIPE**: self regulated, open to everyone

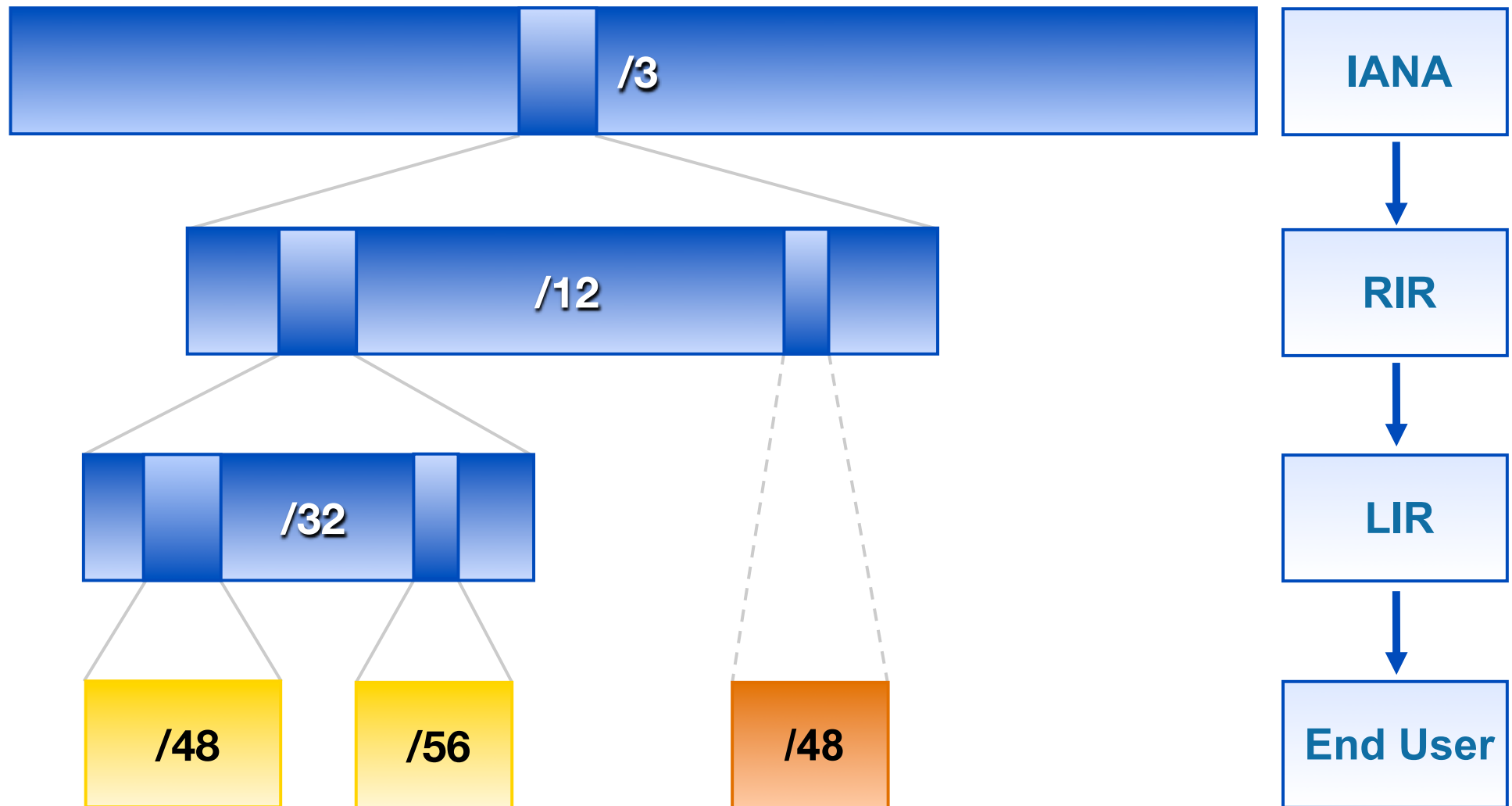
RIPE NCC Activities

- Distributing and managing number resources
- Routing Registry
- Statistics and measurements
- Education
- K-root
- ENUM root zone

IP Address Distribution



IPv6 Address Distribution



 Allocation  PA Assignment  PI Assignment





Registration



Conservation



Aggregation

RIPE community

- Develops policies
- Open to **everyone**
- Communicates on Working Groups mailing lists
- Meets twice a year at RIPE Meetings.
- RIPE Meetings in 2011:
 - RIPE 62 (Amsterdam, 2 - 6 May)
 - RIPE 63 (Vienna, 31 October - 4 November)
- All new LIRs get two free tickets to attend
- Remote participation possible

Participate!



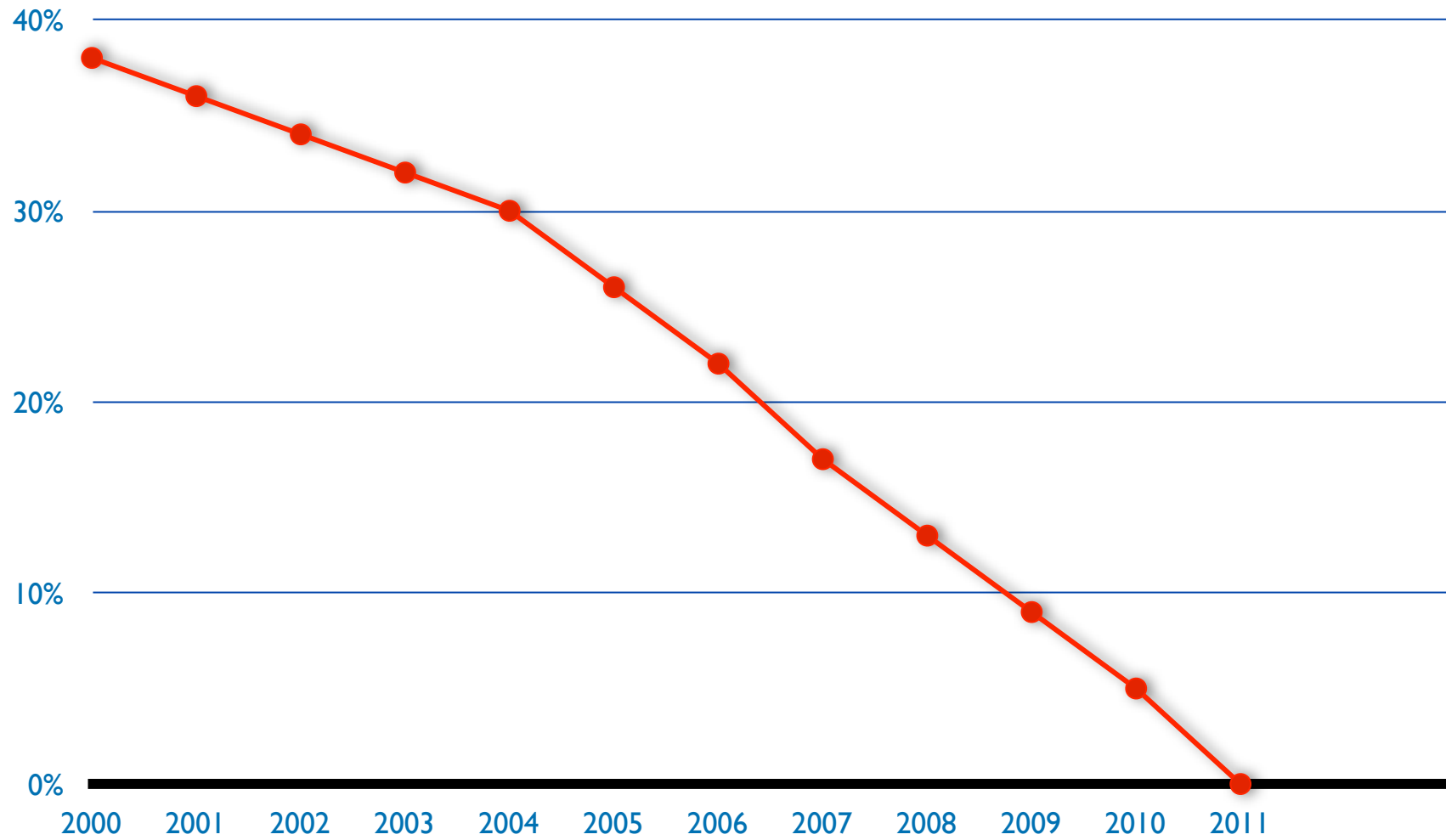
New RIPE policies

- Help IPv6 deployment
- Help make remaining IPv4 addresses last as long as possible

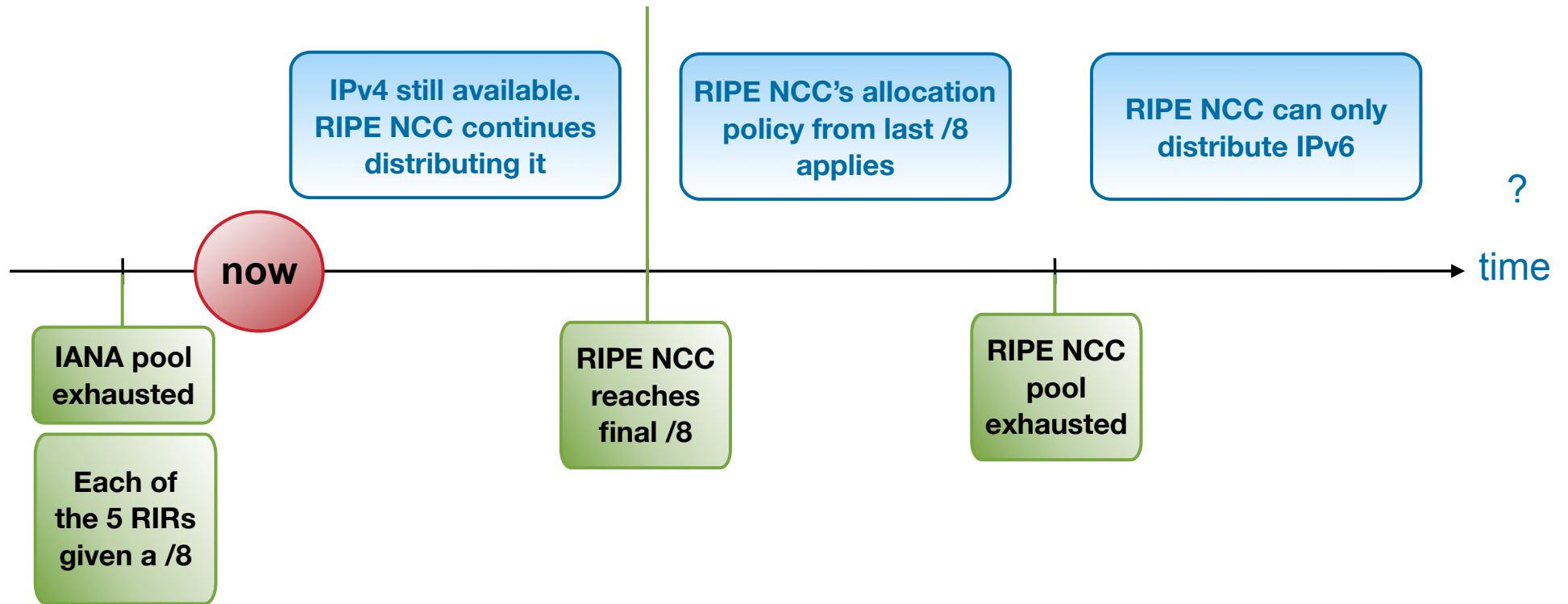


IPv4 depletion

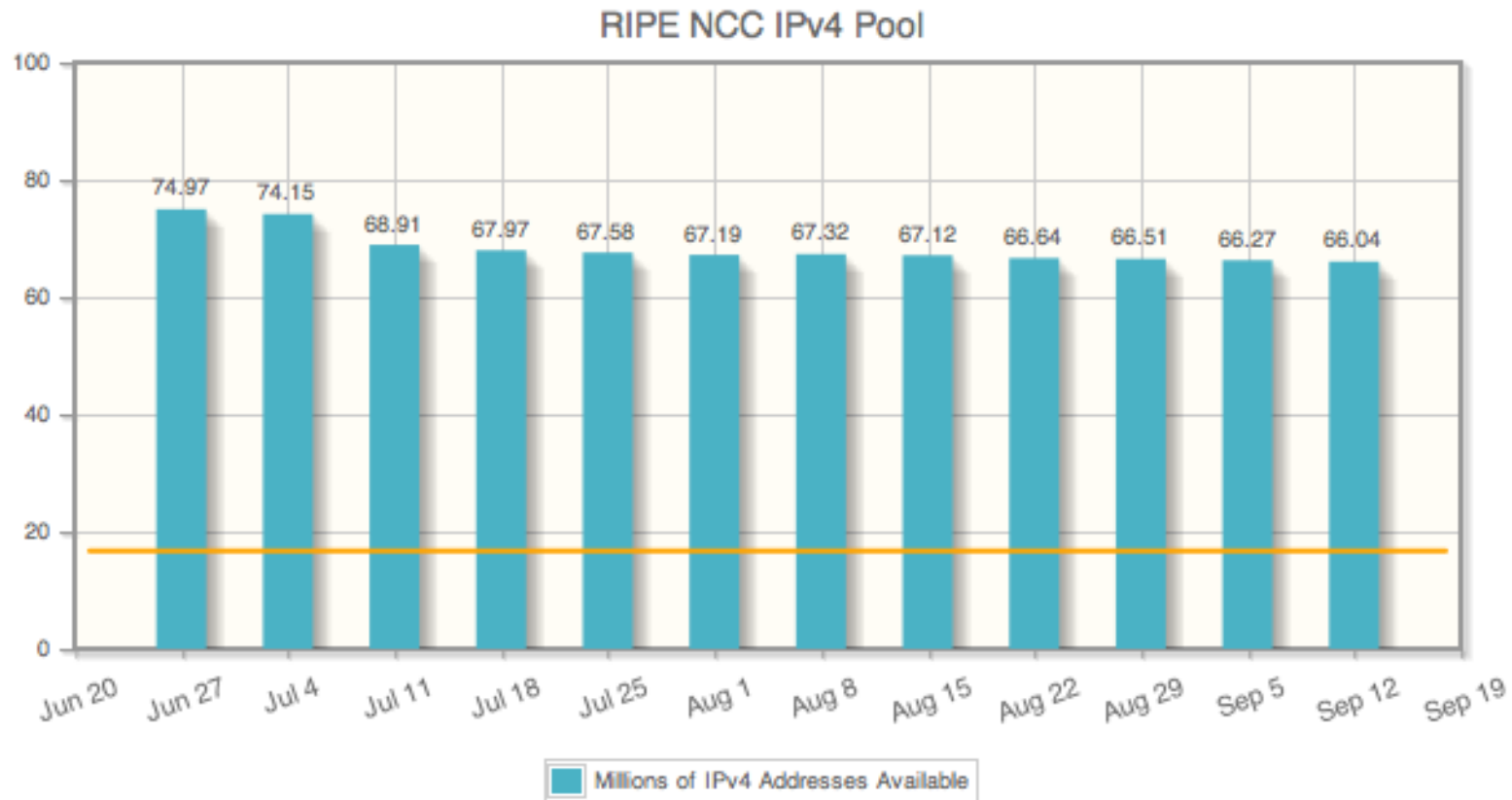
IANA IPv4 Pool



IPv4 exhaustion phases



How Many Addresses Left?



<http://www.ripe.net/internet-coordination/ipv4-exhaustion/ipv4-available-pool-graph>

Wait and See?



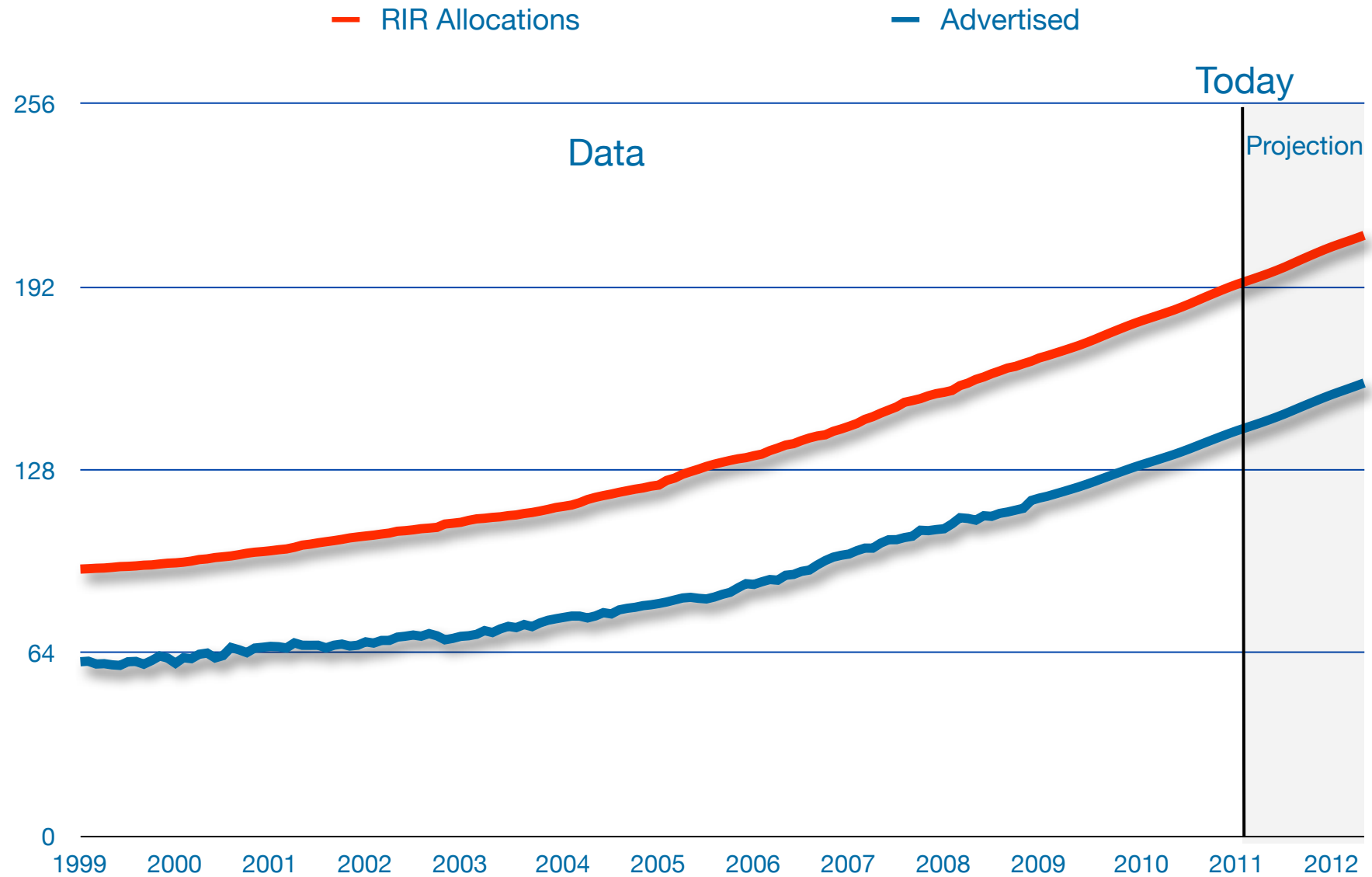
“Run Out Fairly”

- RIPE Policy Proposal 2009-03, “Run Out Fairly”
- Gradually reduced allocation / assignment periods
 - 12 months (January 2010)
 - 9 months (July 2010)
 - 6 months (January 2011)
 - **3 months (July 2011)**
- 50% has to be used up by half-period

Get your IPs fast? Know how we evaluate!

- Want to know how get your resources fast?
 - <http://www.ripe.net/lir-services/resource-management/contact/ipv4-evaluation-procedures>

IPv4: allocations versus advertised



Transfer of IPv4 allocations

- LIRs can transfer address blocks
 - To another LIR
 - Only when it's empty
 - Meets minimum allocation size (/21)
- Requests are evaluated by the NCC
- Registered in the RIPE database

Listing Services

- Platform to list address space you no longer need
- For members only (LIR)
- Access via the LIR Portal
- Based on the “Transfer of Allocations Rules”
- Service included in the membership fee

Unannounced early registration addresses

- Identify legacy space which is currently not announced on the internet
- Contact the holders about the possibility of returning those addresses
- 400 organisations contacted
- And some blocks returned

The RIPE NCC's last /8



**How will distribution of the
last /8 differ?**

The RIPE NCC's last /8

- Each LIR can get **one /22** allocation
- Only if LIR already has IPv6
- You must meet the criteria for an (additional) allocation
- /16 reserved for unforeseen situations
- **No PI assignments**

How to request Independent Resources?

- Sponsoring LIR requests for End User
- Direct Assignment User request for themselves
- End User can become LIR

Charging for Resources

- 5 LIR categories: Extra Small to Extra Large
- For each category the fee is the same as in 2010
- Category determined by IPv4 and IPv6 allocations over time
- Direct assignments don't influence category
- 50 Euro fee for every direct assignment

Have you got PI?

- **Contract with End User required**
 - Example contract on RIPE NCC website
- Yearly charges for Independent Resources
 - RIPE NCC Charging Scheme 2011
- enduser-contract@ripe.net

Don't forget

- Reduced allocation/assignment periods
- Transfer of IPv4 address space
- Final /8



Future?

IPv6!

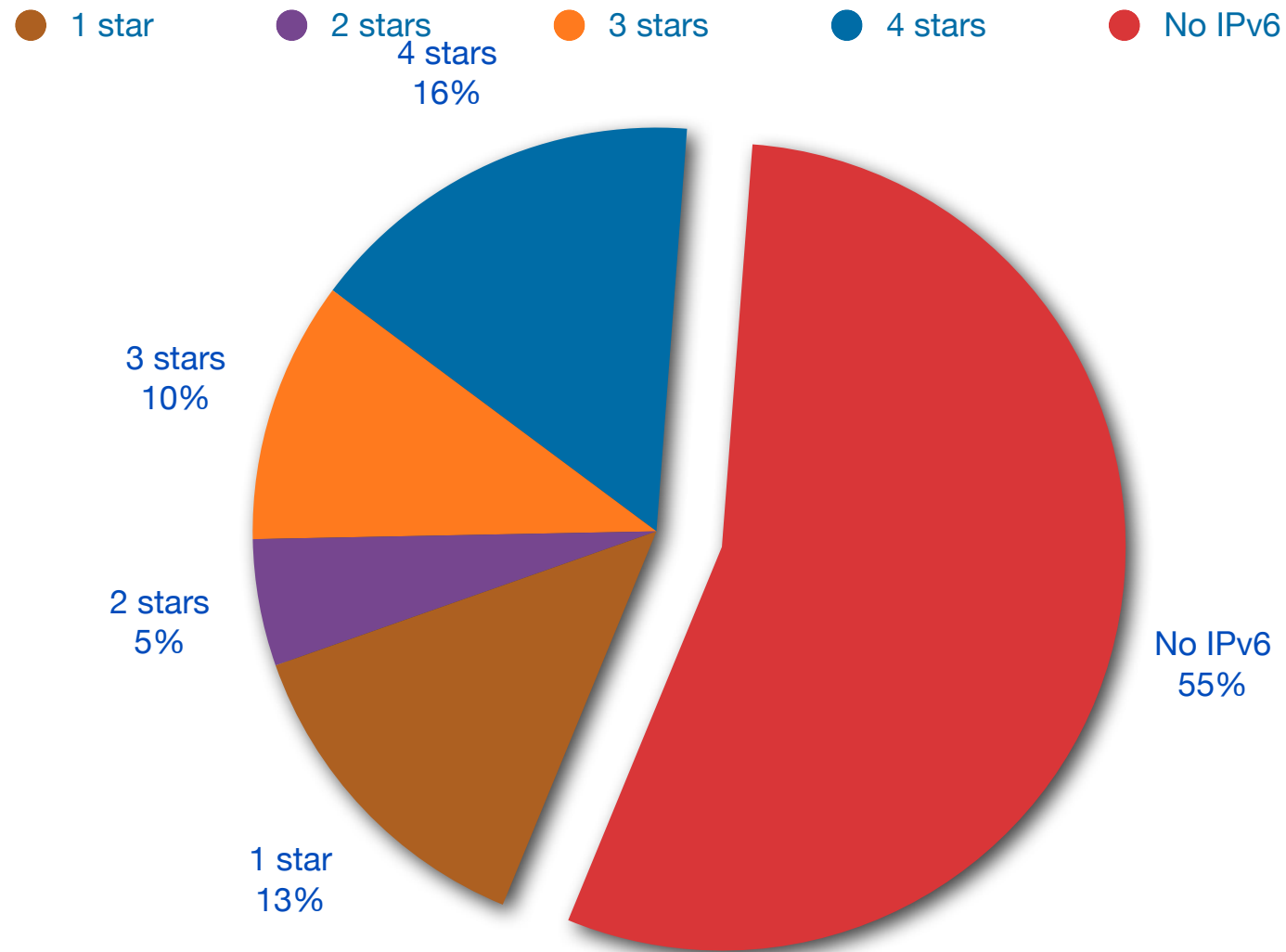


IPv6 ? Yes please!

IPv6 Ripeness

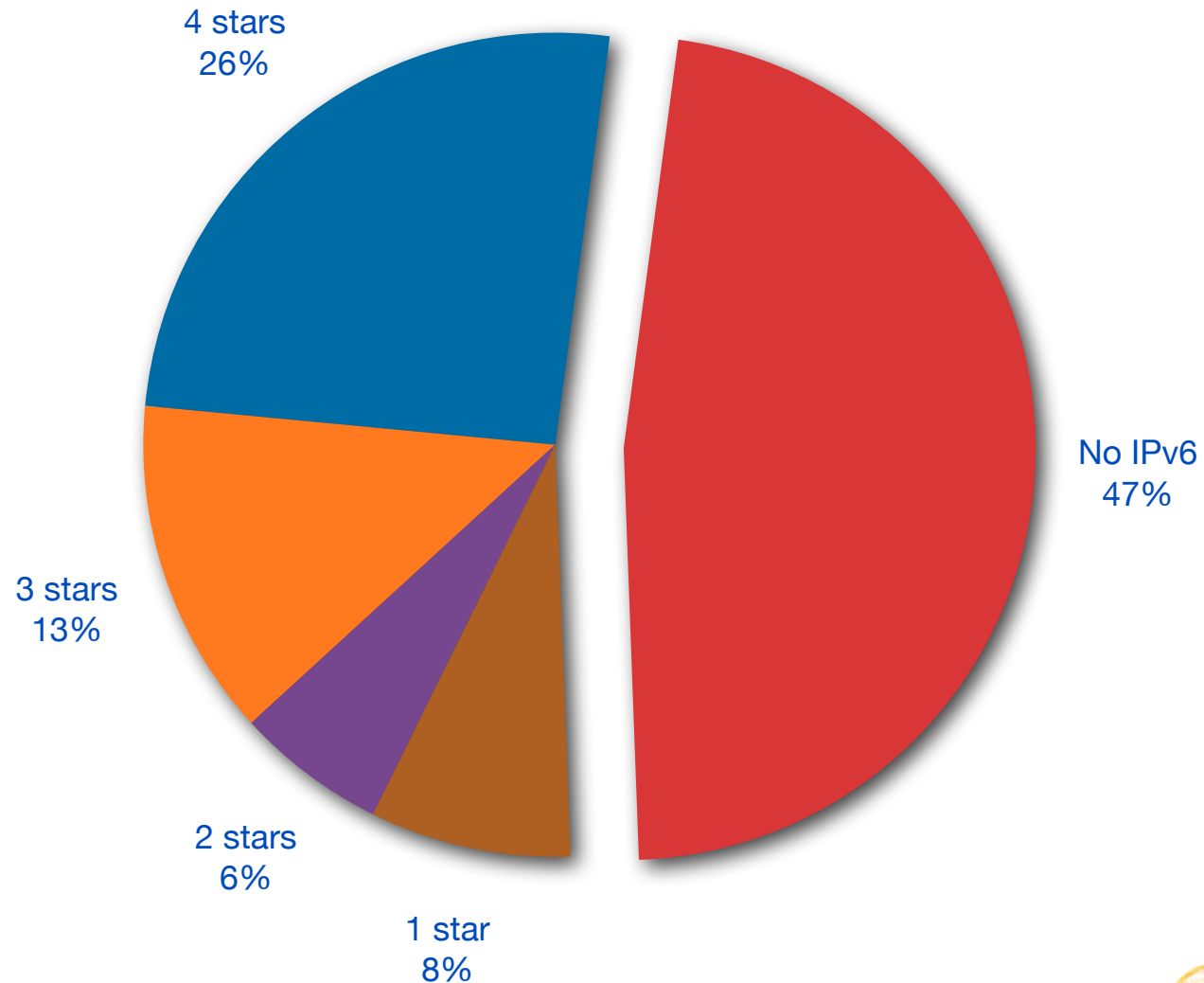
- Rating system:
 - One star if the LIR has an IPv6 allocation
 - Additional stars if:
 - IPv6 Prefix is announced on router
 - A route6 object is in the RIPE Database
 - Reverse DNS is set up
 - A list of all 4 star LIRs: <http://ipv6ripeness.ripe.net/>

IPv6 RIPv6ness in the RIPE NCC service region

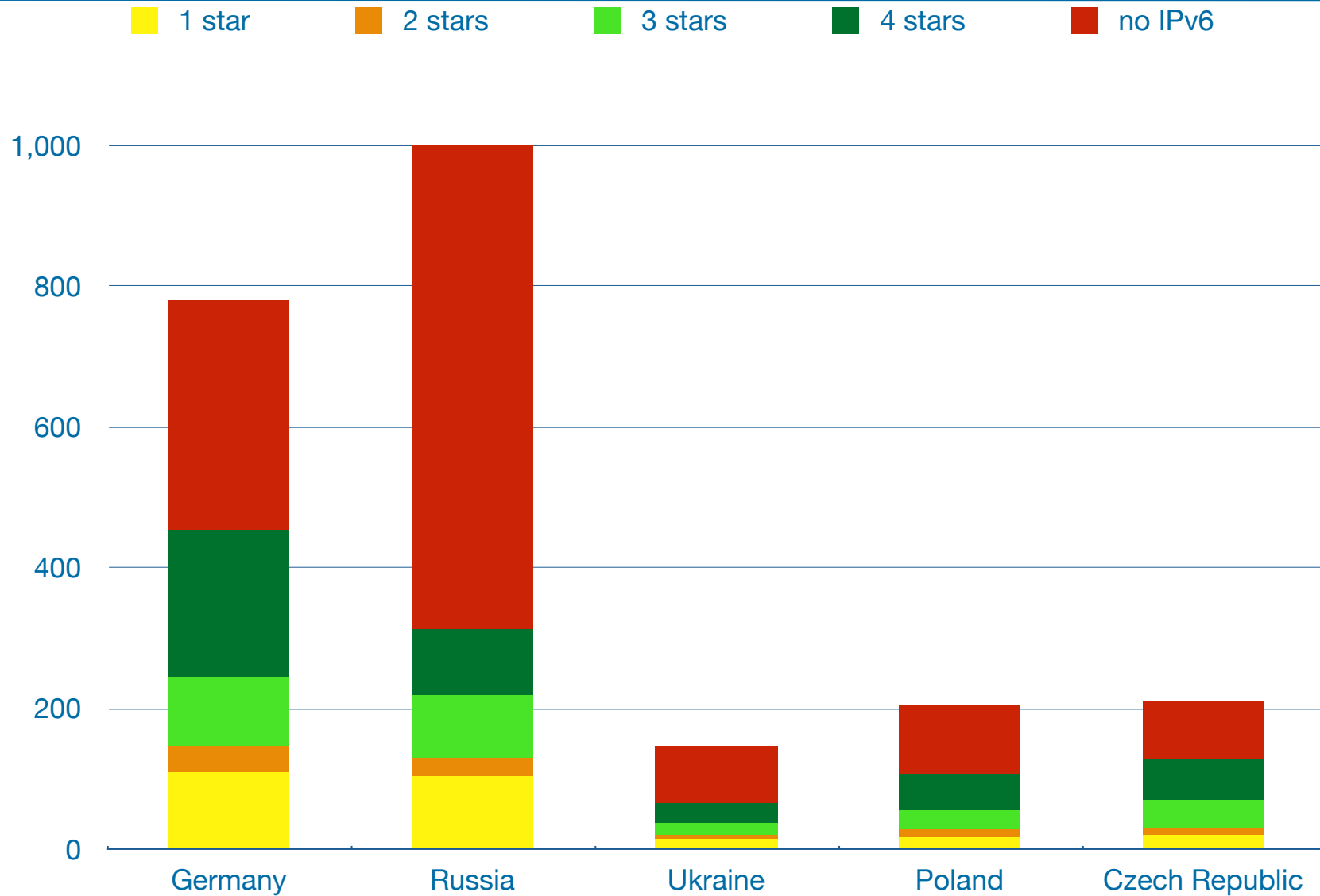


IPv6 Ripeness in Poland

● 1 star ● 2 stars ● 3 stars ● 4 stars ● No IPv6

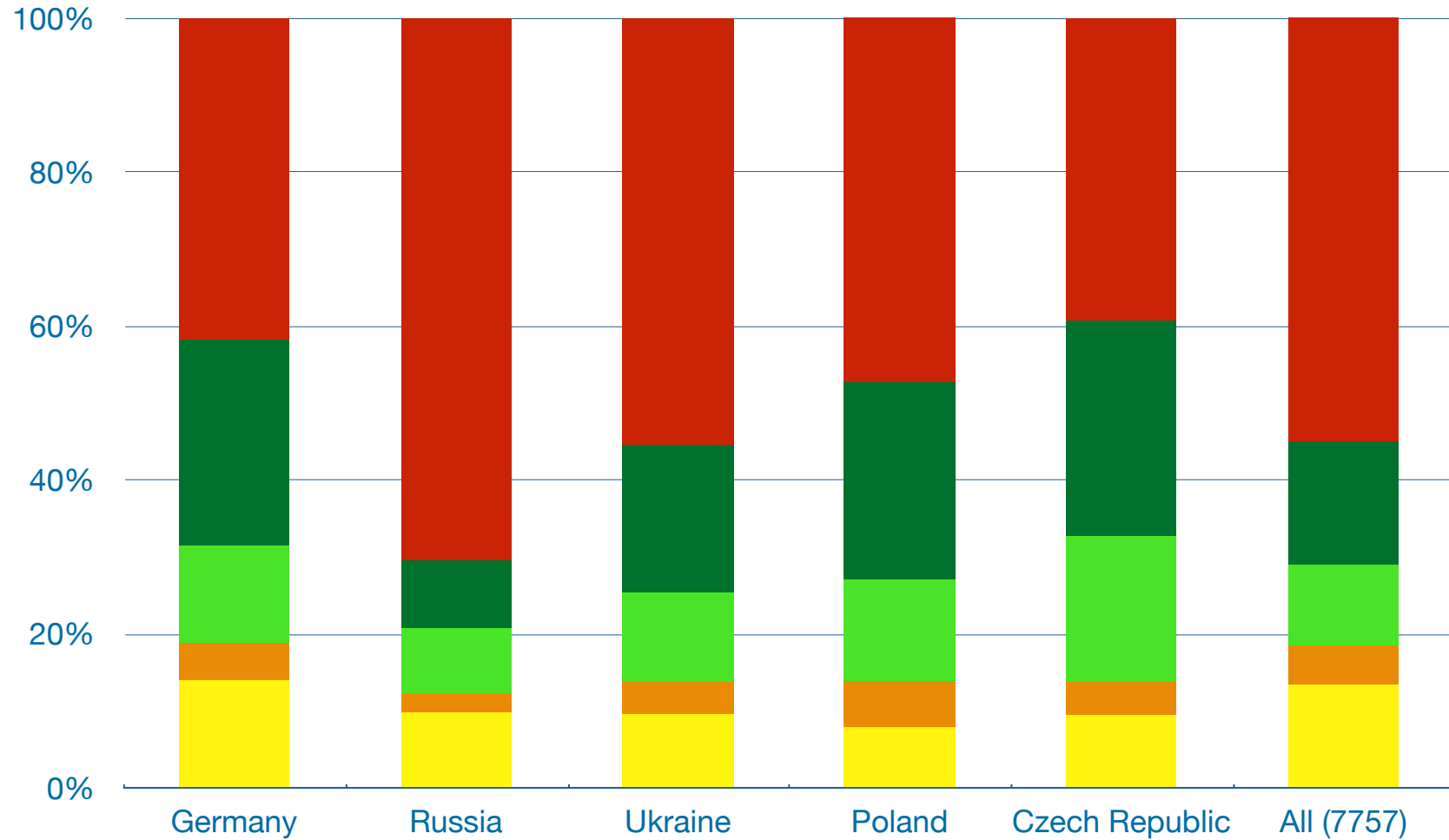


Ripeness per country (Poland & region)

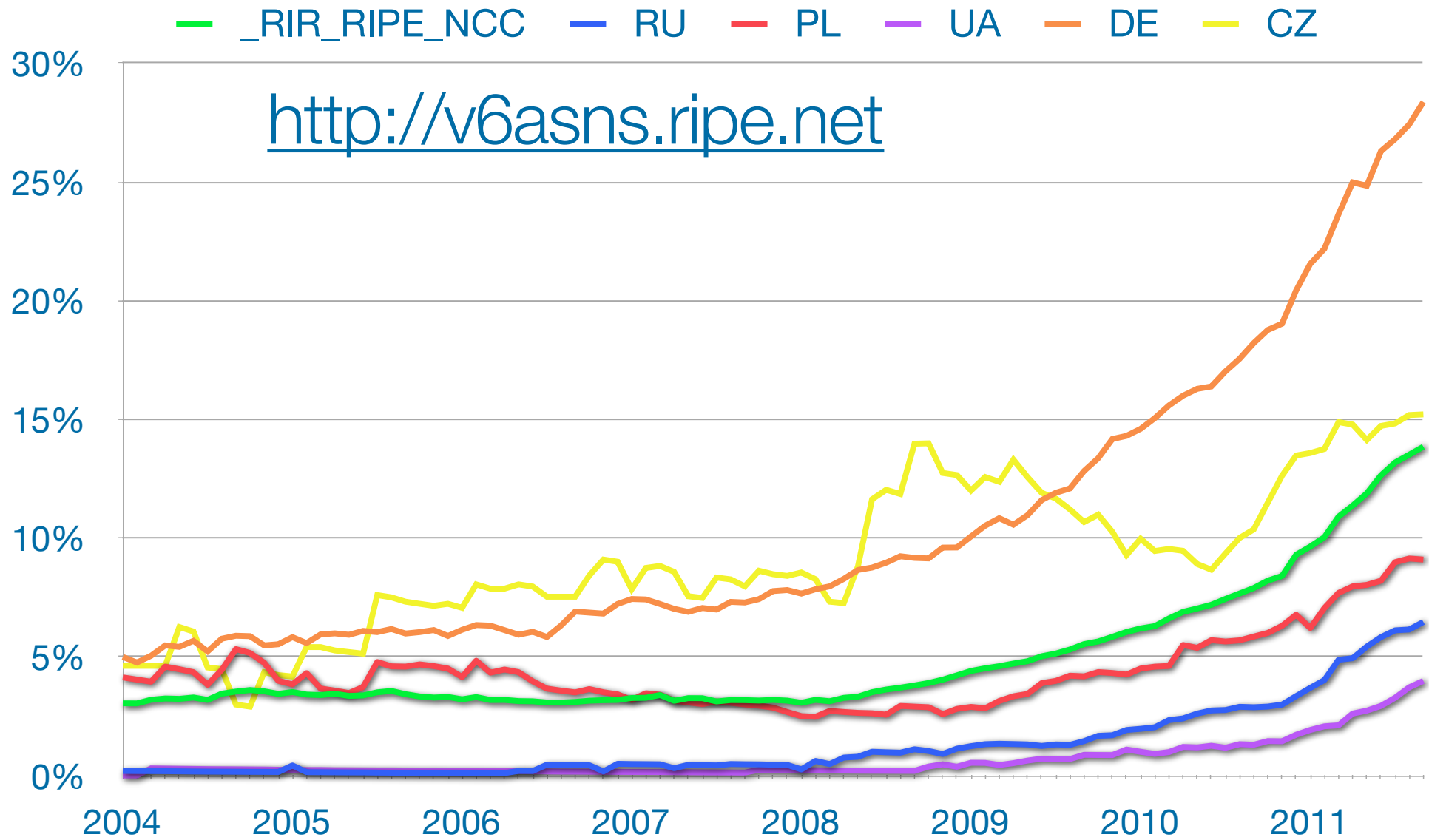


Ripeness per country, (% , Poland & region)

1 star 2 stars 3 stars 4 stars no IPv6



IPv6 enabled networks



To get an IPv6 allocation

- You must:
 - Be an LIR
 - Have a plan for making assignments within two years
- Minimum allocation size /32
- Allocation size is based on customer numbers and growth, not on transition technique!

Assigning IPv6 to customers

- Give your customers enough addresses
 - Up to a /48
- For more addresses, send in request form
 - Alternatively, make a sub-allocation
- Every assignment must now be registered in the RIPE database

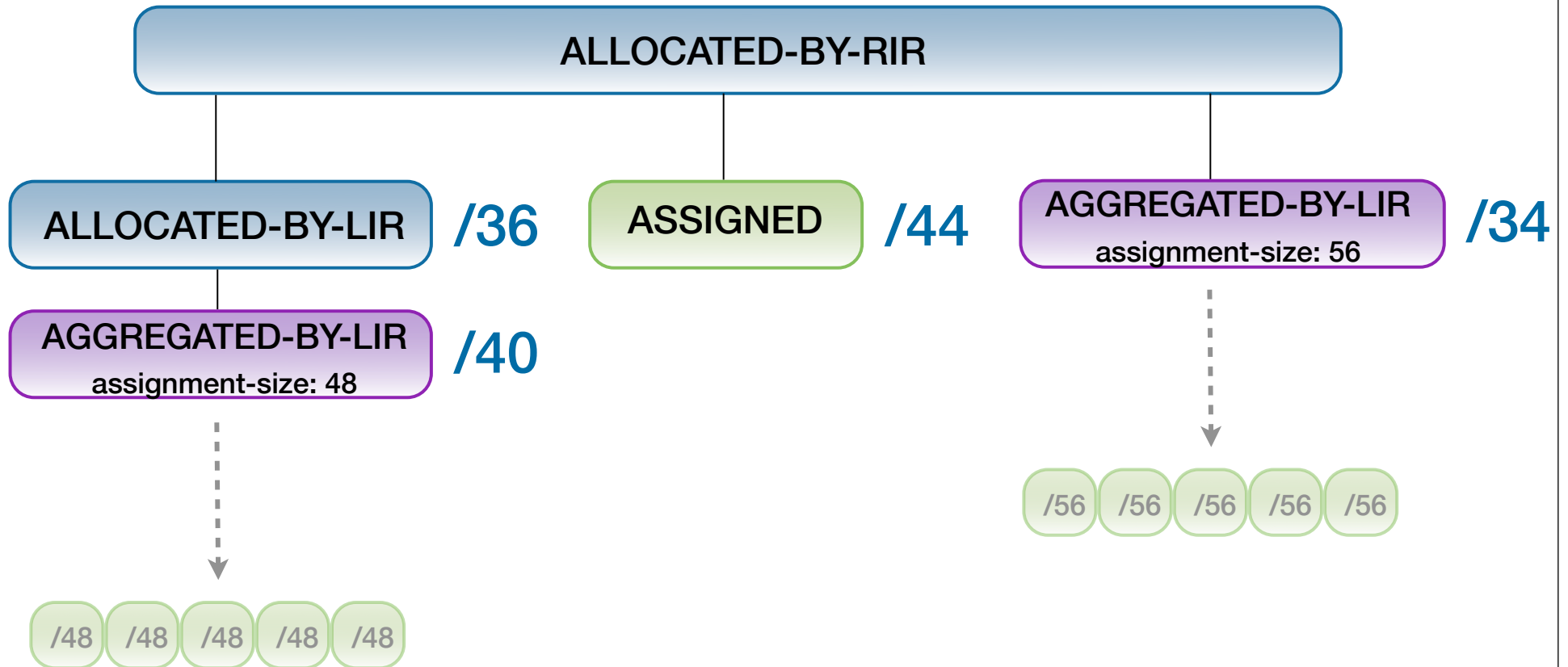


Grouping assignments in the RIPE DB

inet6num: 2001:db8:1000::/36
netname: Bluelight
descr: We want more Bluelight B.V.
descr: Colocation services
country: NL
admin-c: BN649-RIPE
tech-c: BN649-RIPE
status: AGGREGATED-BY-LIR
assignment-size: 48
mnt-by: BLUELIGHT-MNT
notify: noc@example.net
changed: noc@example.net 20110218
source: RIPE



Using AGGREGATED-BY-LIR



IPv6 in the Routing Registry

Route6 object:

```
route6:    2001:DB8::/32
origin:    AS65550
```

Aut-num object:

```
aut-num:   AS65550
mp-import: afi ipv6.unicast from AS64496 accept ANY
mp-export: afi ipv6.unicast to AS64496 announce AS65550
```

Getting IPv6 PI address space

- Minimum assignment size /48
- PI space can not be used for sub-assignments
- An organisation must:
 - Demonstrate it will multihome *
 - LIRs must demonstrate special routing requirements
 - Meet contractual requirements

Contract for independent resources



enduser-contract@ripe.net

RESTful API

- Newly developed
- Query service released September 2011
- Update service currently in beta
 - Planned to be released later this year
- Uses XML or JSON
 - Plain html currently available for testing, this will be removed later on!

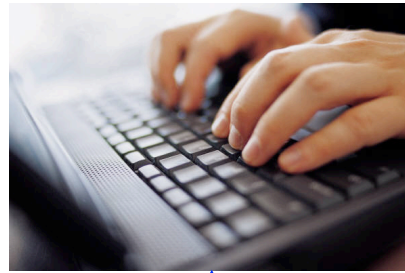
- Details on <http://labs.ripe.net>

Tools for Measurements & Analysis

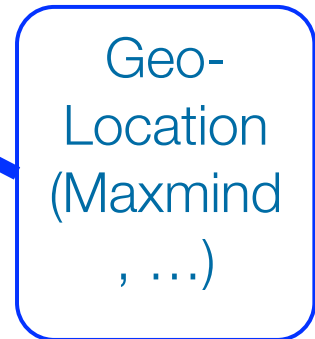
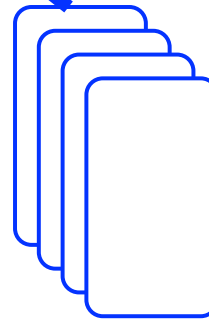
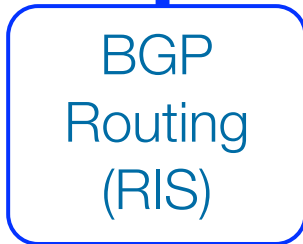
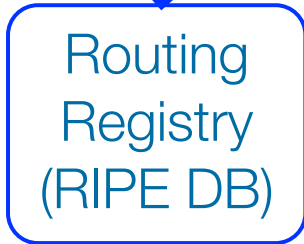
RIPEstat
&
RIPE Atlas



Beta: <http://stat.ripe.net>



You

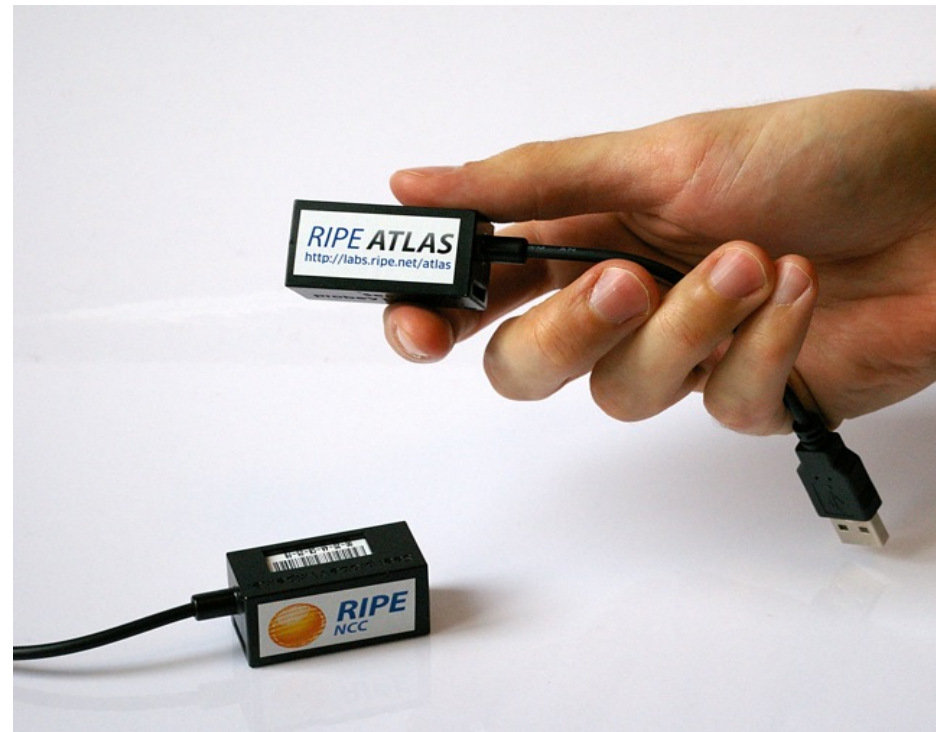


RIPEstat Strategy

- Immutable, sharable URLs for each result
- Add more history
- Multiple output formats (command line tool?)
- **RIPEstat** regular “Public Demos” (WebEx)
 - Modular design --> agile development
 - We demo new functionality every 4 weeks
 - we receive comments and feedback
 - You get the tools you ask for: get involved!
 - **Next public demo: Tuesday @ 11:30, 4th October**

RIPE Atlas

- Next generation Internet measurement network
 - To scale to thousands of measurement nodes
 - Potentially “be everywhere” and ready to run different measurements
 - Started last November
 - We’re still building it



Light Map of Europe

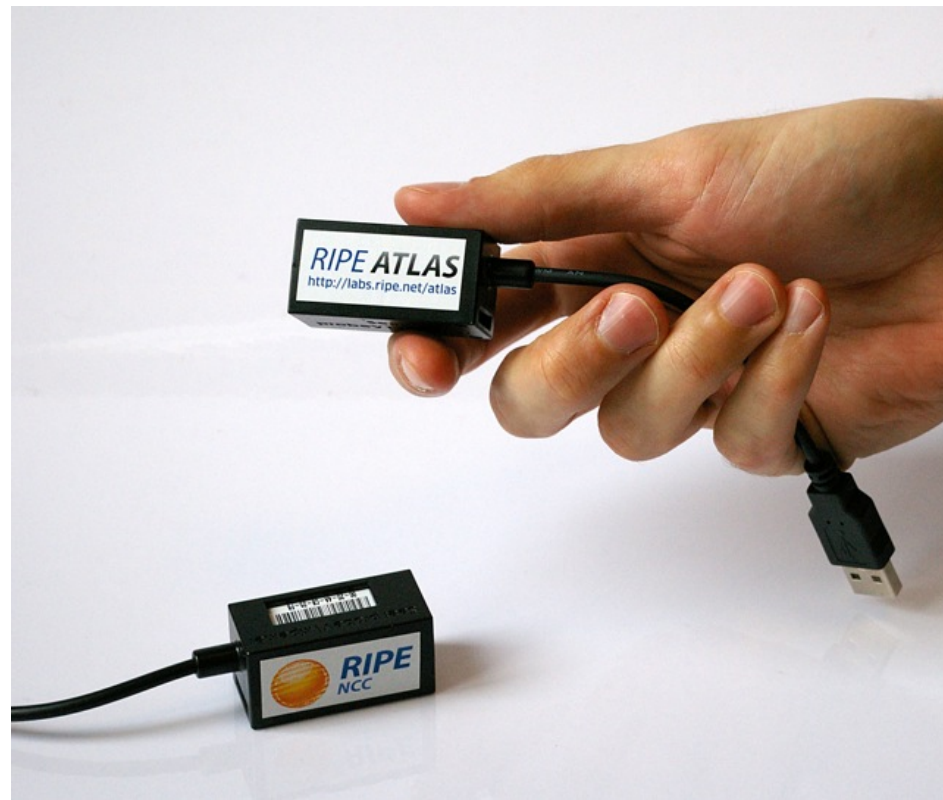


Ambitious Community Effort

Instead of building small, separate,
individual & private infrastructures,
build a
huge common infrastructure
that serves **both** the private goals
and the community goals.

Intuition -> Plan

- For accurate maps we need more probes
- Deploying very many TTM boxes too expensive
- Smaller probes
- Easily deployable
- USB powered
- 24 x 365 capable



Probes Deployed Today



Hosting = Credits = Measurements

- We cannot be everywhere without your help

Become a probe host!

- Donate a fraction of your bandwidth
- Donate a very small amount of electricity

You get:

- Recognition
- Access to fixed measurements from your probe
- Credits = Measurements **from any probe** (Q4/11)

RIPE Atlas - Security aspects

- Probes have hardwired trust material (registration server addresses / keys)
- The probes don't have any open ports, they only initiate connections
 - This works fine with NATs too
- Probes don't listen to local traffic, there are no passive measurements running
 - There's no snooping around

How we see k.root-servers.net (IPv6 RTT)



RIPE NCC Measurement Tools

- Tools for YOU
- Please support us by
 - Using the tools
 - **Giving us feedback and ideas**
 - **Telling your friends about them**
 - Finding sponsors for RIPE Atlas

Questions?



See you at RIPE 63!
Vienna, 31 Oct-4 Nov 2011

