

10ff:198:  
:bf98:3080:  
98.51.100.14:  
:cb00:13be 200:  
:19f2:80::1 192:  
:2209:bc:80f  
:db8::109b  
98.51.?

## What's hot at the RIPE NCC

PLNOG6, March 2011

Sandra Brás  
Trainer, RIPE NCC  
sbras@ripe.net



## Hot topics - overview

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- The registry system
- IPv4 depletion
- IPv6 policy update
- Independent resources

# The five RIRs



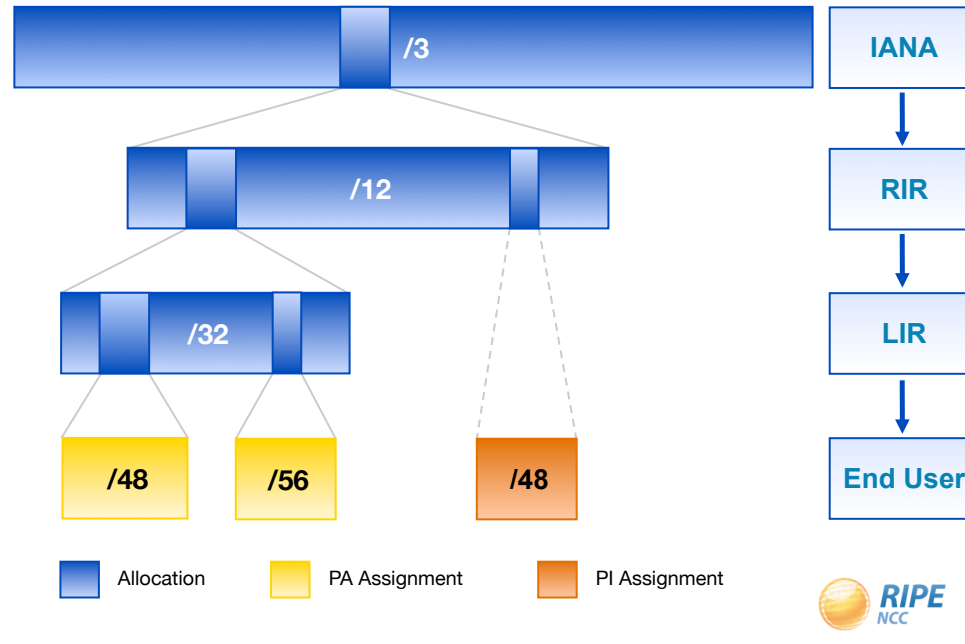
## The RIPE NCC

---

- Independent not-for-profit membership organisation
- Supports the operation and development of the Internet
- Europe, Middle East and Central Asia
- Distributes and registers Internet number resources
- 7,365 members called LIRs



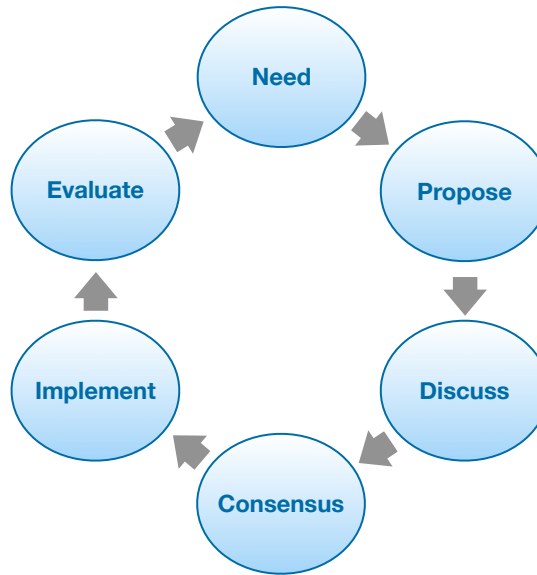
# IPv6 Address Distribution



## RIPE community



# Policy development cycle



## RIPE community

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- 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 provided

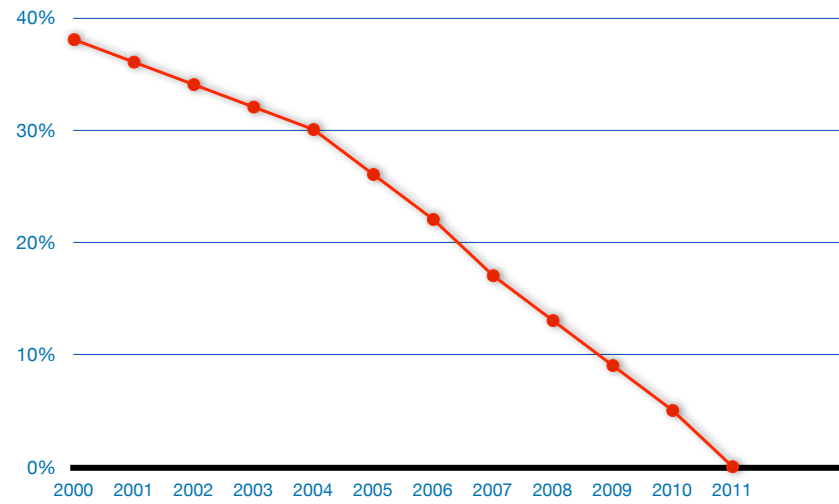


Participate!

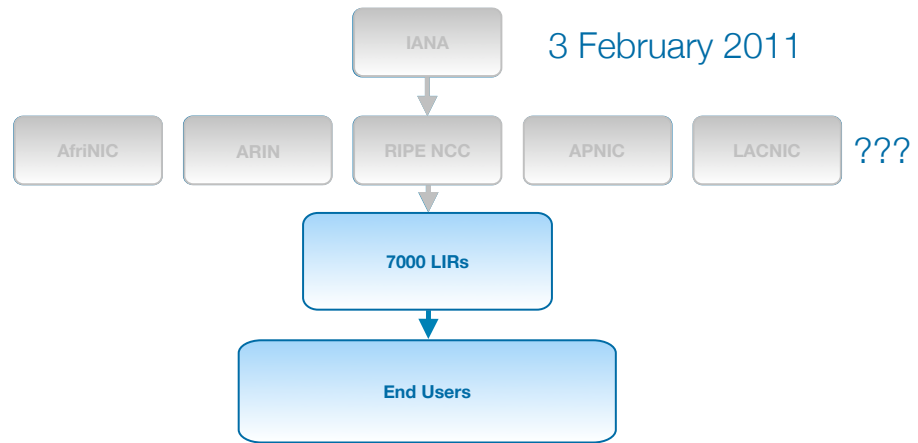
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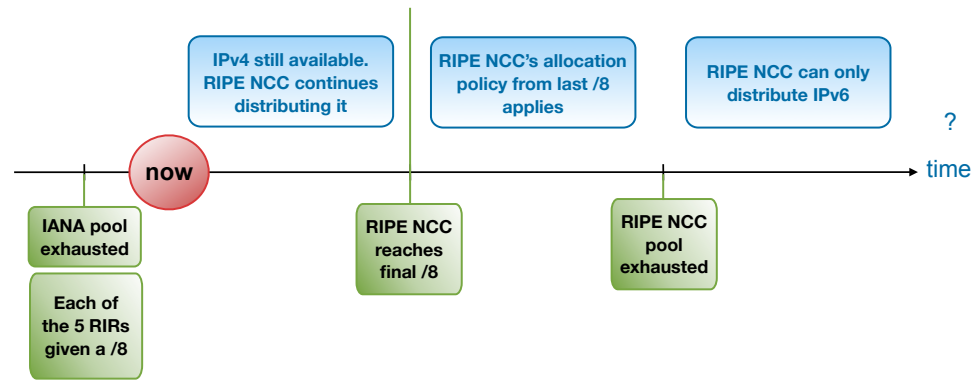
## IANA IPv4 pool



# IPv4 distribution



# IPv4 exhaustion phases



Wait and See?



## IPv4: still your Christmas wish?



## What we are doing

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



## “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

## 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



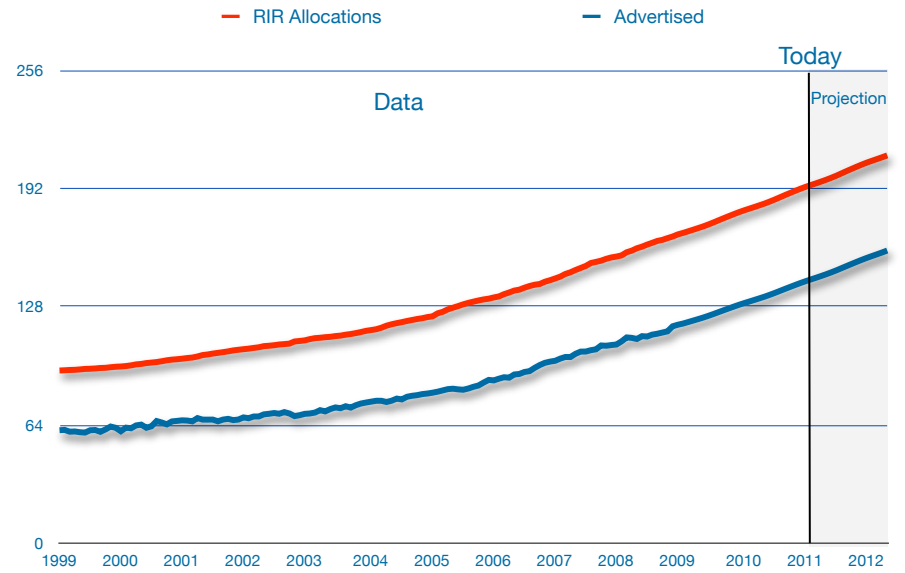
**How will distribution of the  
last /8 differ?**

## 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**

# IPv4: allocations versus advertised



## 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

# Future?

---

IPv6!



10ff:198:  
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:2209:bc:80:  
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98.51.?

IPv6? Yes please.

---

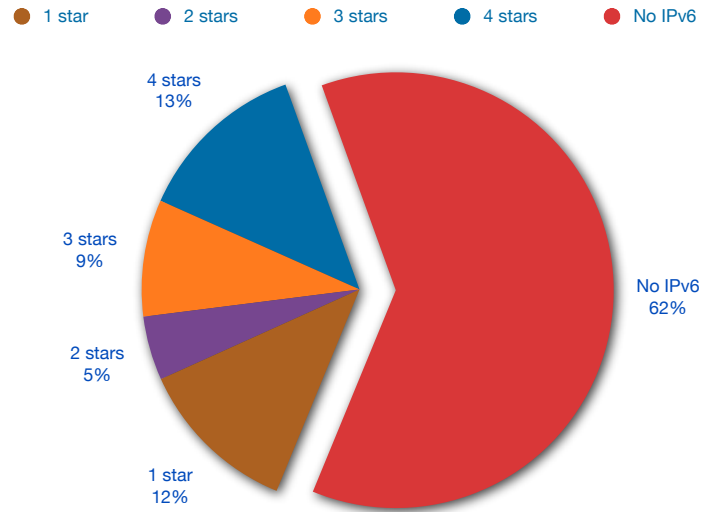


## IPv6 Ripeness

---

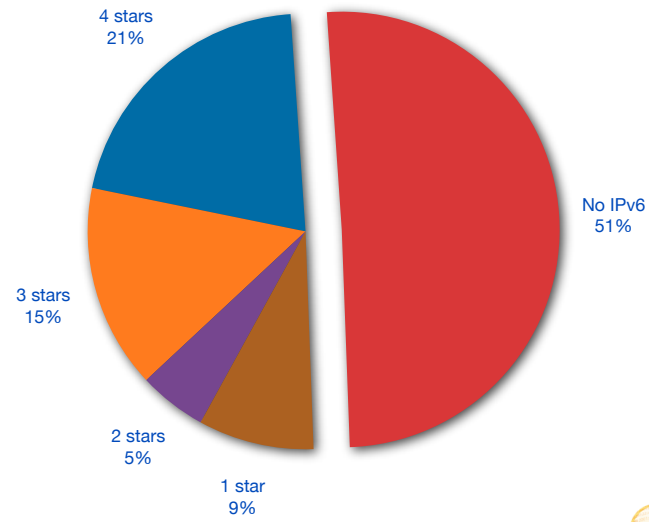
- Rating system:
  - One star if the LIR has an IPv6 allocation
  - Additional stars if:
    - IPv6 Prefix is announced on router
    - A route6 object is in the RIPE Database
    - Reverse DNS is set up
  - A list of all 4 star LIRs: <http://ipv6ripeness.ripe.net/>

## IPv6 RIPEness in the RIPE NCC service region

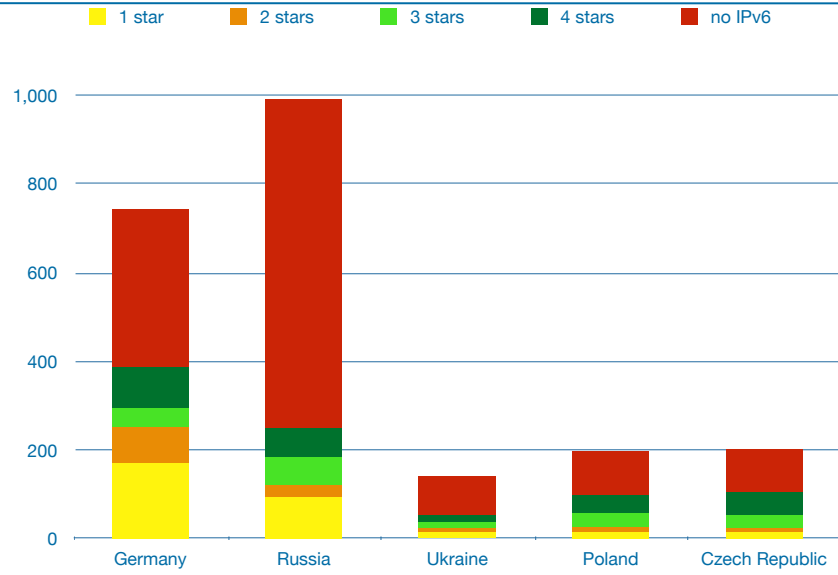


# IPv6 Ripeness in Poland

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



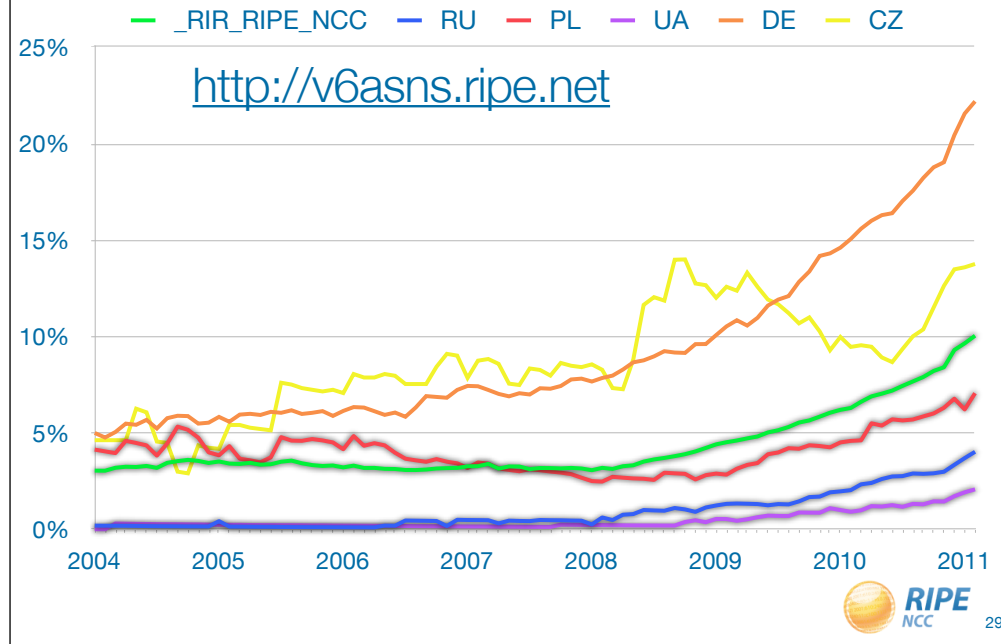
# Ripeness per country, relative (Poland)



# Ripeness per country, relative (Poland)



# 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!

## Getting IPv6 PI address space

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- 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

so the PI can NOT be used for End-User companies who have customers themselves (e.g. web hosting, broadband, (a)DSL...)

## 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



10ff:198.  
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98.51.100.14.  
:cb00:13be:200  
:19f2:80::1:192  
:2209:bc:80f  
:db8::109b  
98.51.

Independent resources

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## Independent Resources

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- What ?
  - PI
  - ASN
  - IXP IPv6
  - Anycast



[enduser-contract@ripe.net](mailto:enduser-contract@ripe.net)

## How to request Independent Resources

---

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

3 ways

## How to request Independent Resources (2)

- Create `organisation` and `mntner` objects
- Send us Assignment Request Form
- Send us contract and registration
- No sub-assigning allowed!

```
inetnum: 172.25.64.0/23
```

```
status:          ASSIGNED PI
mnt-by:          RIPE-NCC-END-MNT
mnt-lower:       RIPE-NCC-END-MNT
mnt-by:          LIR-MNT
mnt-domains:     End-User-MNT
mnt-routes:      ISP-MNT
```



## Charging for Independent Resources

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- 5 LIR categories: Extra Small to Extra Large
- Category determined by IPv4 and IPv6 allocations over time
- 50 Euro fee for every direct assignment

Questions?

