

# RIPE NCC Update

DENOG 4, Darmstadt, Germany, 15 Nov 2012

Mirjam Kühne, RIPE NCC



# Overview

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- Reaching last /8
- IPv6 RIPEness
- IP Analyser
- Resource certification (RPKI)
- New developments in RIPE Atlas
- New developments in RIPEstat
- Other RIPE Labs highlights

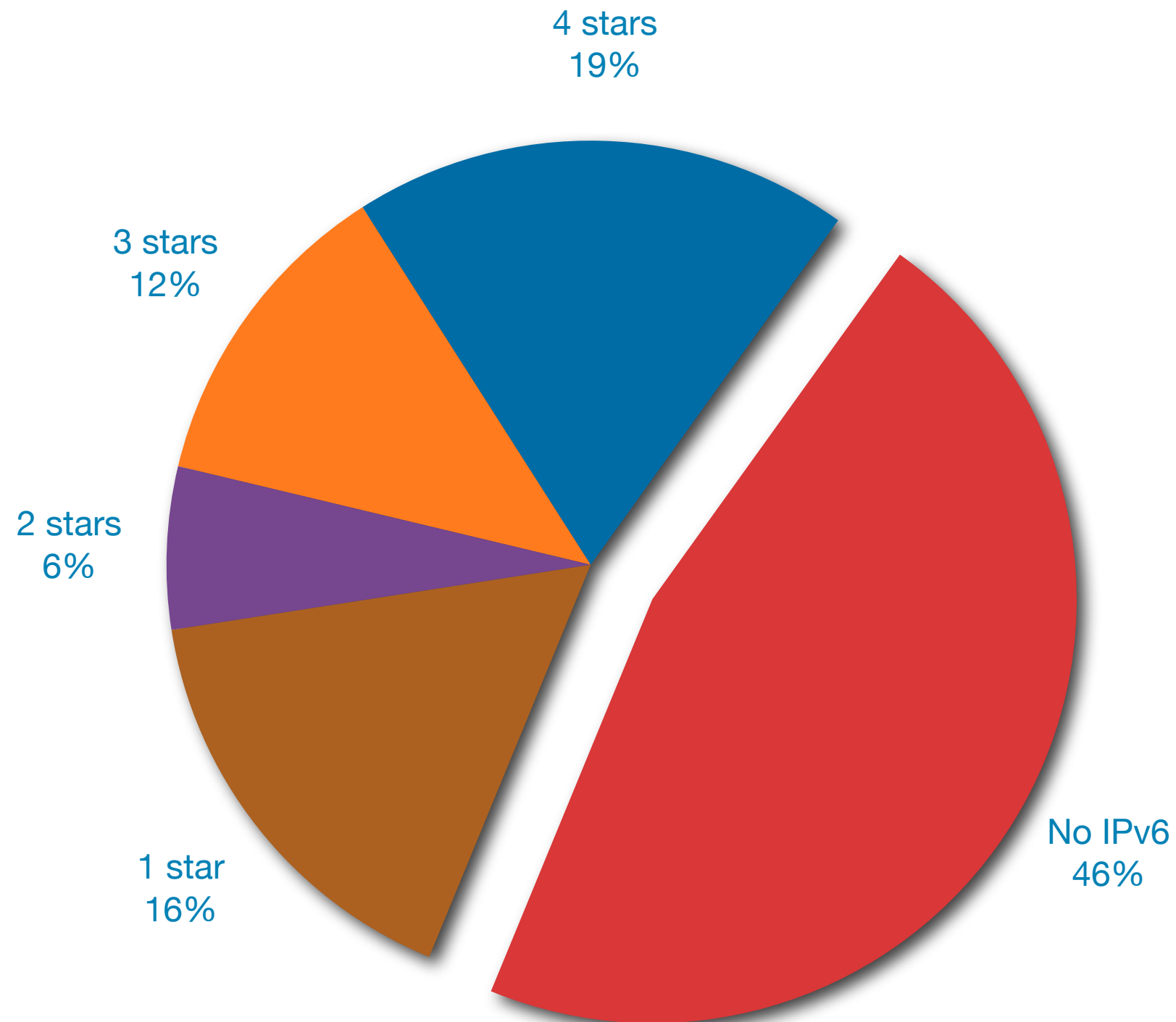
# Reaching Last /8 of IPv4 Space

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- RIPE NCC started allocating from last /8 in September
- Number of LIRs and resource requests increased
- Number of IPv6 allocations also increased
  - Partially due to last /8 allocation policy
  - 470 /22 allocated so far, many of them to RU

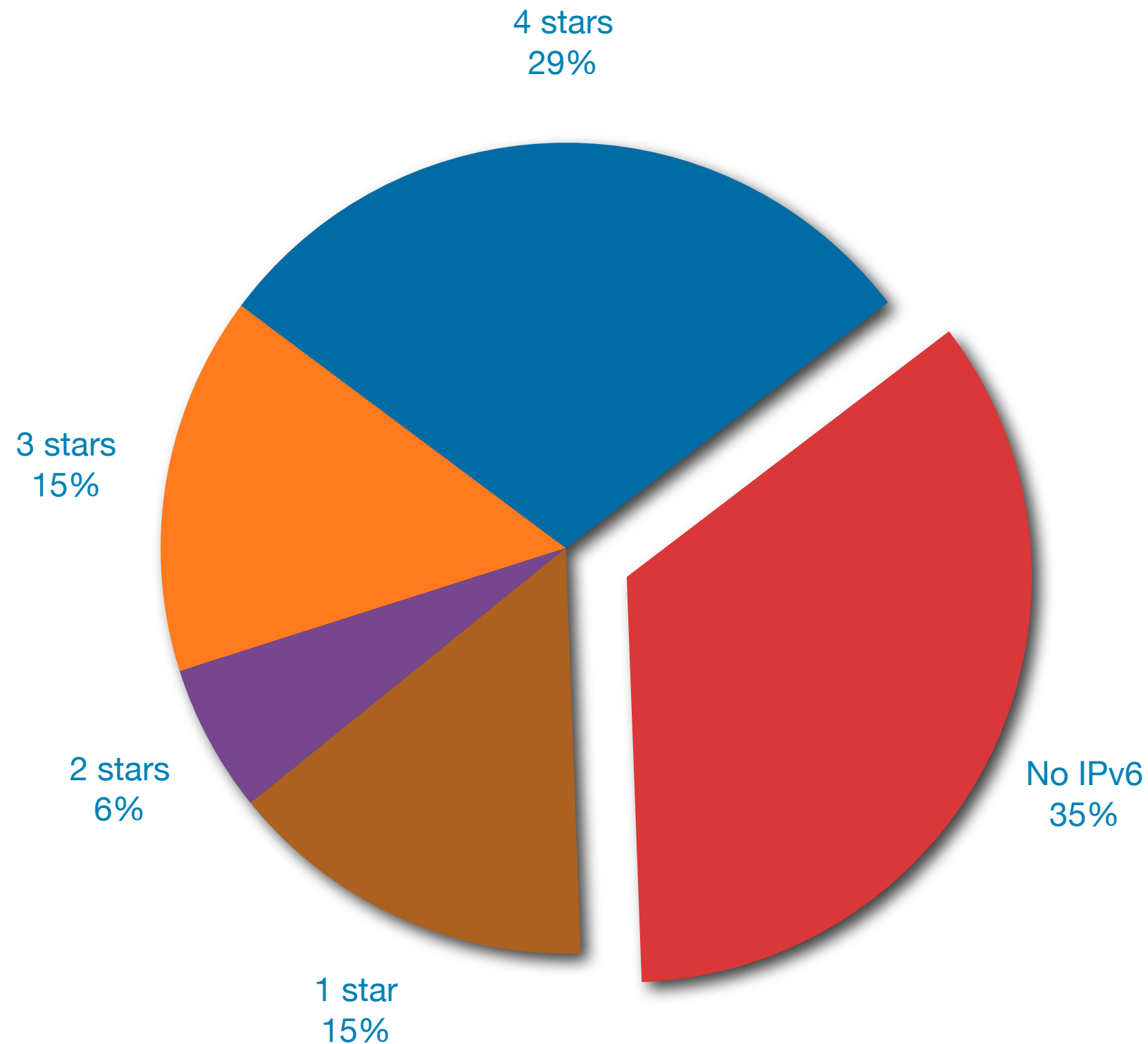
# IPv6 RIPEness (8,643 LIRs)

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



# IPv6 RIPEness in Germany (880 LIRs)

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



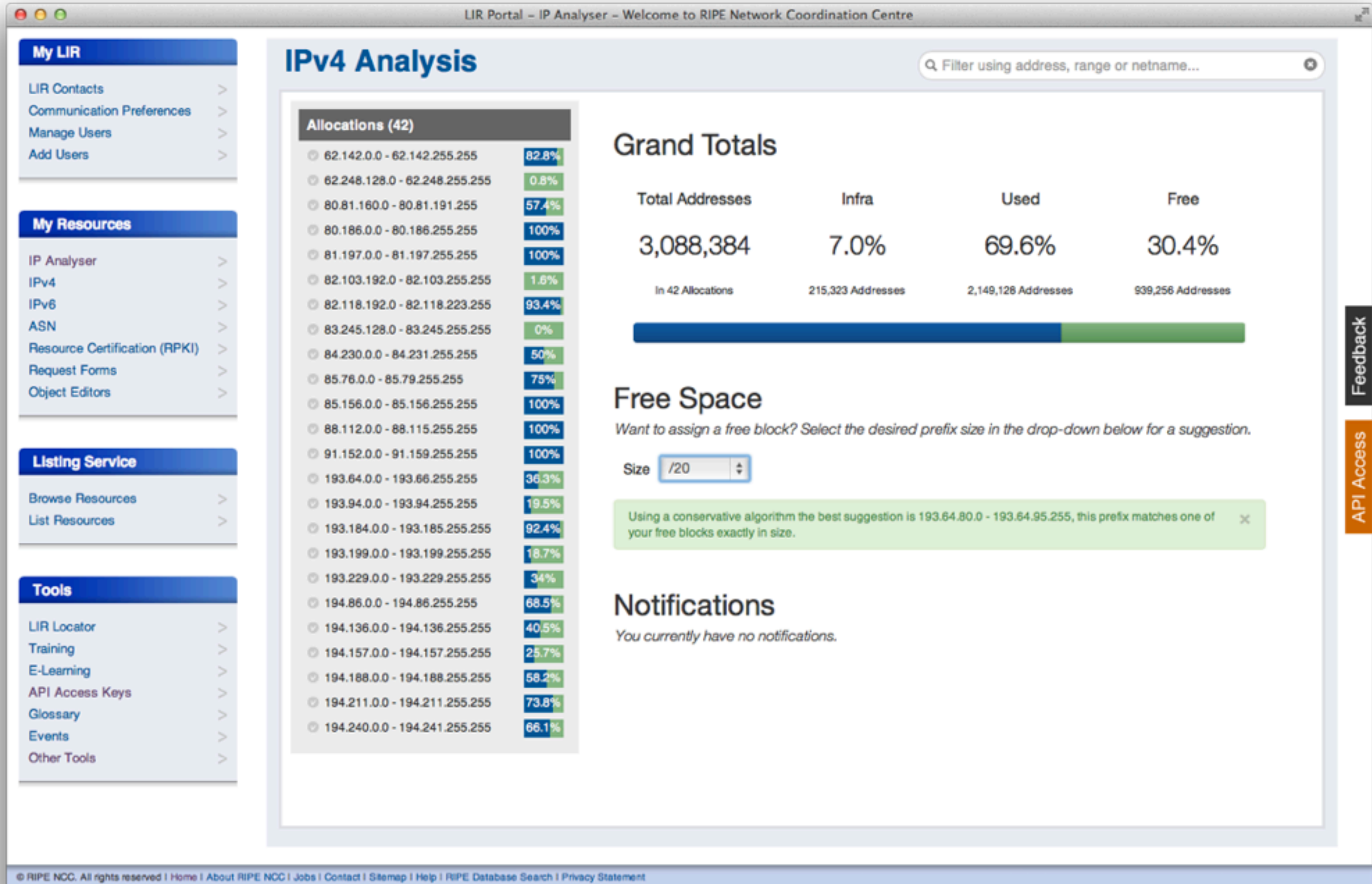
# IP Analyser

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- IPv4 feature set:
  - Shows all allocations and assignments
  - Shows free space, makes suggestions for assignments
  - Notifications of invalid assignments and steps to solve
- Data presented in:
  - User-friendly web page in the LIR Portal
  - JSON and plain text output through an API

**<http://lirportal.ripe.net/ipanalyser>**

# IP Analyser



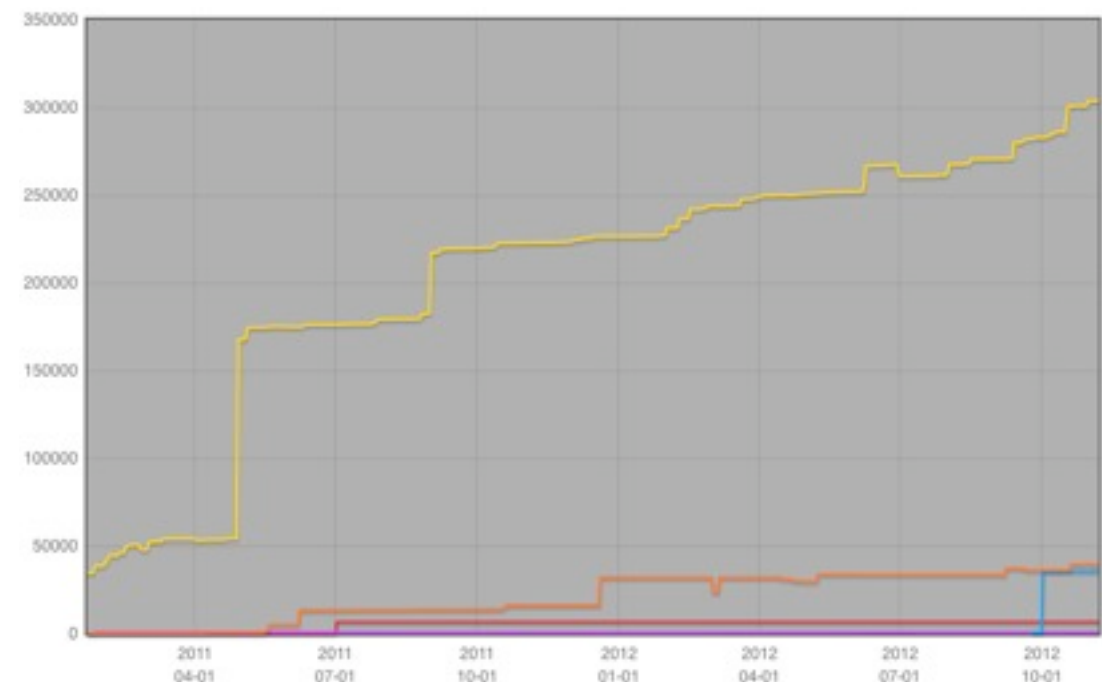
Feedback

API Access



# Resource Certification (RPKI) - (1)

- Free, opt-in service in the LIR Portal
- Offers LIRs the ability to:
  - Get validatable proof of resource holdings
  - Perform BGP Origin Validation
- Current Status
  - Over 1,000 certificates
  - 300,000 /24s and
  - 9,000 /32s covered



<http://www.ripe.net/certification>



# Resource Certification (RPKI) - (2)

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- All certificates and ROAs are published in a repository and available for download
  - Route Origin Authorisation (ROA) says: “This AS is authorised to originate that prefix.”
- Software running on your own machine will periodically retrieve and verify the information
  - Cryptographic tools check all the signatures
- Base routing decisions on this information!
  - Filter hijacks and accidental mis-originations

# RIPE Atlas



# RIPE Atlas - Active Measurements Network

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- Next generation Internet measurements network
  - Thousands of measurement nodes
  - Probes run different measurements
- Instead of building small, individual, private infrastructures, build a HUGE common infrastructure that serves both private and community goals



**<http://labs.ripe.net/atlas>**

# RIPE Atlas Update

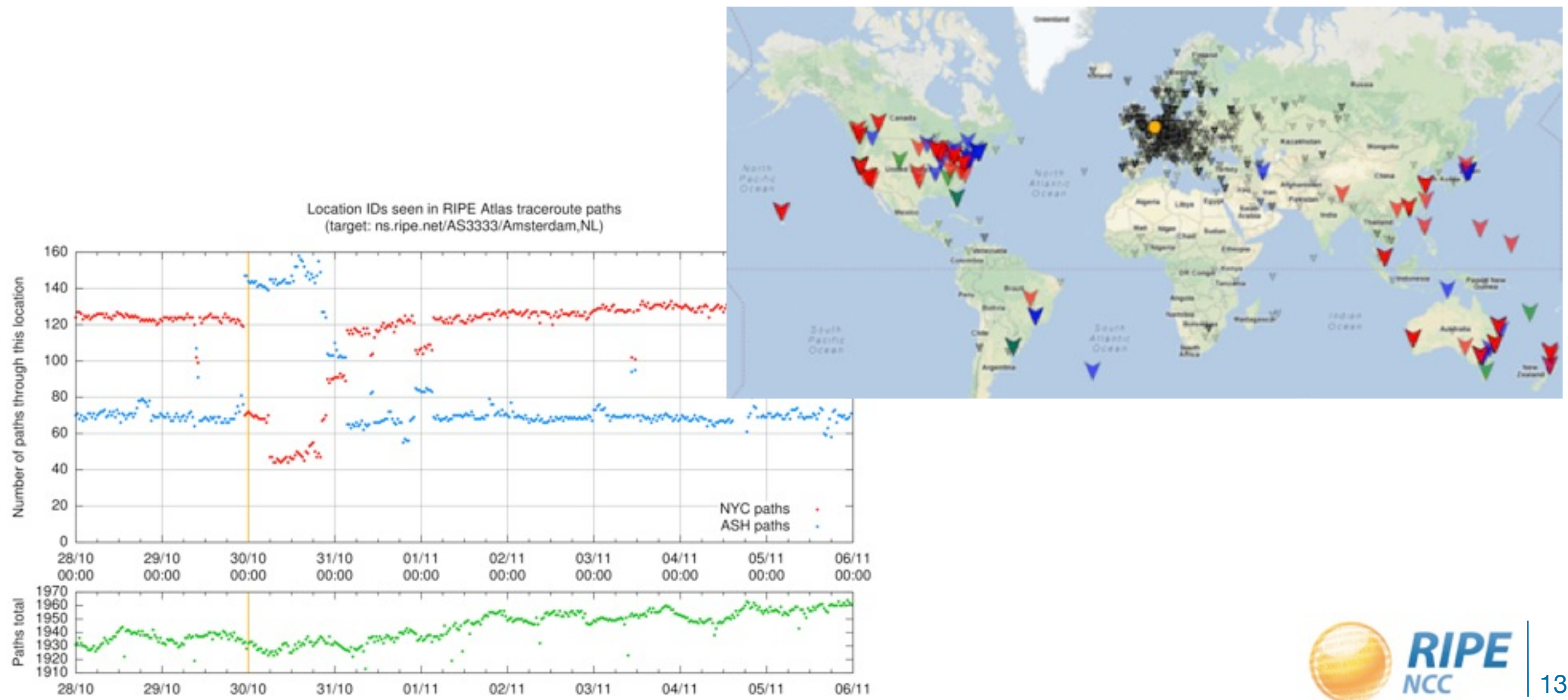
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- 2,000 active probes and 4,600 users worldwide
  - Increasing number of requests
  - Working on next version of probes
- New Internet traffic maps available
- RIPE Atlas anchors pilot started (10 volunteers)
  - Collecting data from surrounding Atlas probes
- New generation probes



# Measuring Storm Sandy with RIPE Atlas

- RIPE Atlas probes on East Coast US unavailable during storm Sandy
- Storm had an effect on other parts of Internet





# RIPEstat



# RIPEstat - <https://stat.ripe.net>

The screenshot displays the RIPEstat website interface. At the top, there is a search bar with the text "Get information on an AS number or IP prefix" and a "Sign in" button. Below the search bar, it shows "Your network: AS3333, 193.0.20.0/23" and "e.g. IPv4 prefix/range, IPv6, ASN". A navigation bar contains a "GO" button. The main content area is divided into several widgets:

- Resource Overview (AS3333):** Displays "RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC)" and shows results from 2012-11-10 15:26:00Z to 2012-11-13 15:26:00Z. It includes links for "source data", "embed code", "permalink", and "info".
- Registry Browser (AS3333):** Shows details for "aut-num: AS3333" with fields for "as-name", "descr", "org", "admin-c", "tech-c", "mnt-by", and "mnt-by".
- Geoloc (AS3333):** Displays a map of Europe with a location marker in Germany. It includes a "Map" button and "Geoloc details" link.
- Routing Status (AS3333):** Shows a green checkmark and text: "AS3333 is visible by 100% of 100 IPv4 and 100% of 88 IPv6 RIS full peers." It also includes a copyright notice "© First ever seen before Jan 2001." and statistics: "Originated IPv4 prefixes: 6", "Originated IPv6 prefixes: 1", "Observed BGP neighbours: 167", "Address space announced (IPv4): 4608 IPs", and "Address space announced (IPv6): equiv. to 1 /48s".

- Toolbox

- All data in one place
- Routing, IP, geoloc, BLs, etc.
- Graphical interface
- Over 40 widgets

- Monthly live demo session

- Reports on RIPE Labs





# What's new in RIPEstat

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- New interface
  - New look of response page
- Registry Object Browser
  - Another way to look at whois data
  - Graphical and interactive interface
- Command-line interface
  - Text-based server on port 43

**Please give us feedback**

# New RIPEstat Interface

The screenshot displays the RIPEstat interface with a tabbed layout on the left. The main content area is divided into four sections:

- Resource Overview (2001:67c:2e8::/48)**: Shows the prefix is announced by AS3333, RIPE-NCC-AS - Reseaux IP Europeens Network Coordination Centre (RIPE NCC). It includes a 'Showing results for 2001:67c:2e8::/48 as of 2012-11-07 00:00:00Z' timestamp and links for source data, embed code, permalink, and info.
- Geoloc (2001:67c:2e8::/48)**: Features a map of Europe and Africa. It shows 'Address space without geographic information: 100.00%' and 'Geoloc details'. It includes a 'Showing results for 2001:67c:2e8::/48 as of 2012-11-08 00:00:00Z' timestamp and links for source data, embed code, permalink, and info.
- Registry Browser (2001:67c:2e8::/48)**: Displays a table of registry information for the prefix 2001:67c:2e8::/48.
- Routing Status (2001:67c:2e8::/48)**: Shows the prefix is 100% visible (by 88 of 88 RIS full peers). It includes a 'First ever seen announced by AS3333, on 2010-09-28 16:00:00Z' timestamp and 'Originated by: AS3333 (valid route object in RIPE)'. It also shows 'No less-specific covering prefixes' and a 'Compare to 1 week earlier' button. It includes a 'Showing results for 2001:67c:2e8::/48 as of 2012-11-07 00:00:00Z' timestamp and links for source data, embed code, permalink, and info.

The left sidebar contains a 'Tabbed layout' with the following tabs:

- At a Glance (4)
- Routing (7)
- DNS (1)
- Anti Abuse (1)
- Database (9)
- Geographic (2)

The top of the interface shows the RIPEstat logo, a search bar, and a welcome message for Mirjam Kühne (sign out).

Permalink

New  
'At a Glance'  
view

Tabbed layout

# RIPE Labs



# What is RIPE Labs?

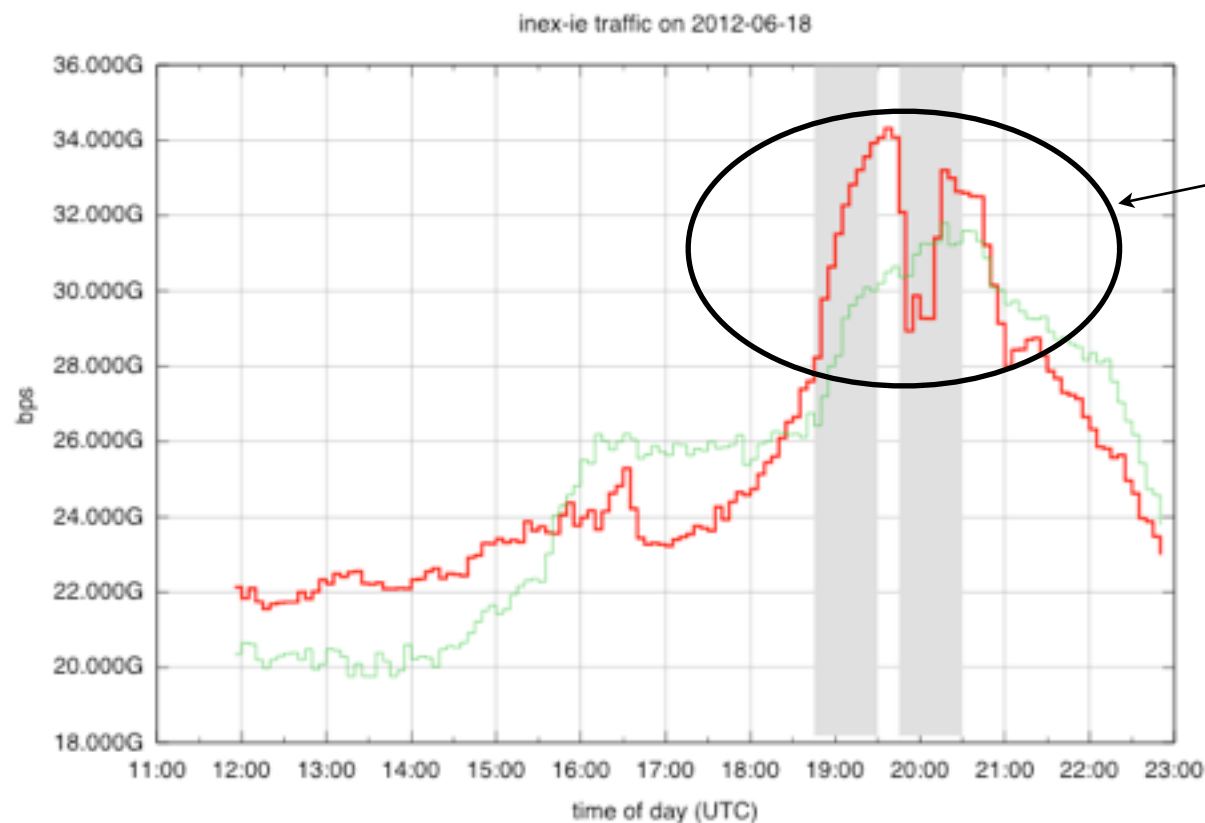
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- It's a website, but more importantly:
  - It is a platform and a tool **for the community**
- You can:
  - Test and evaluate new tools and prototypes
  - Contribute new ideas and research results
  - Provide feedback and discuss with others

**<http://labs.ripe.net/>**

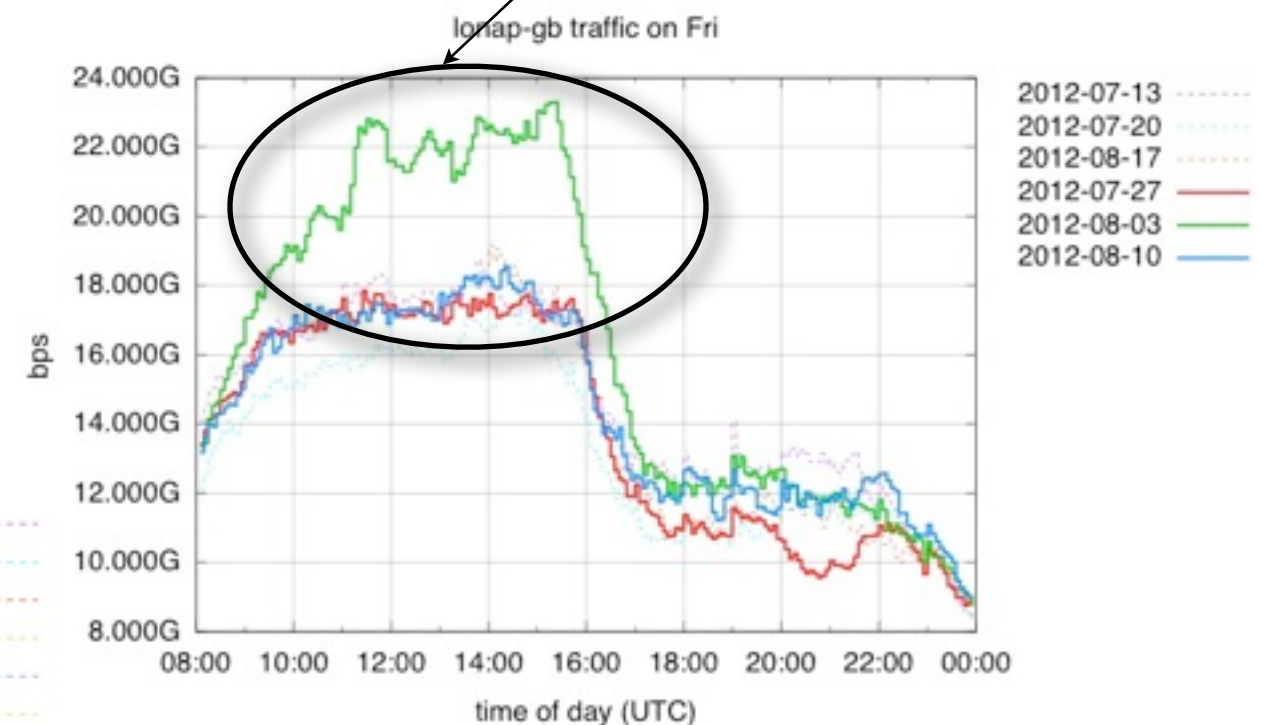


# IXP Traffic Levels During Major Events

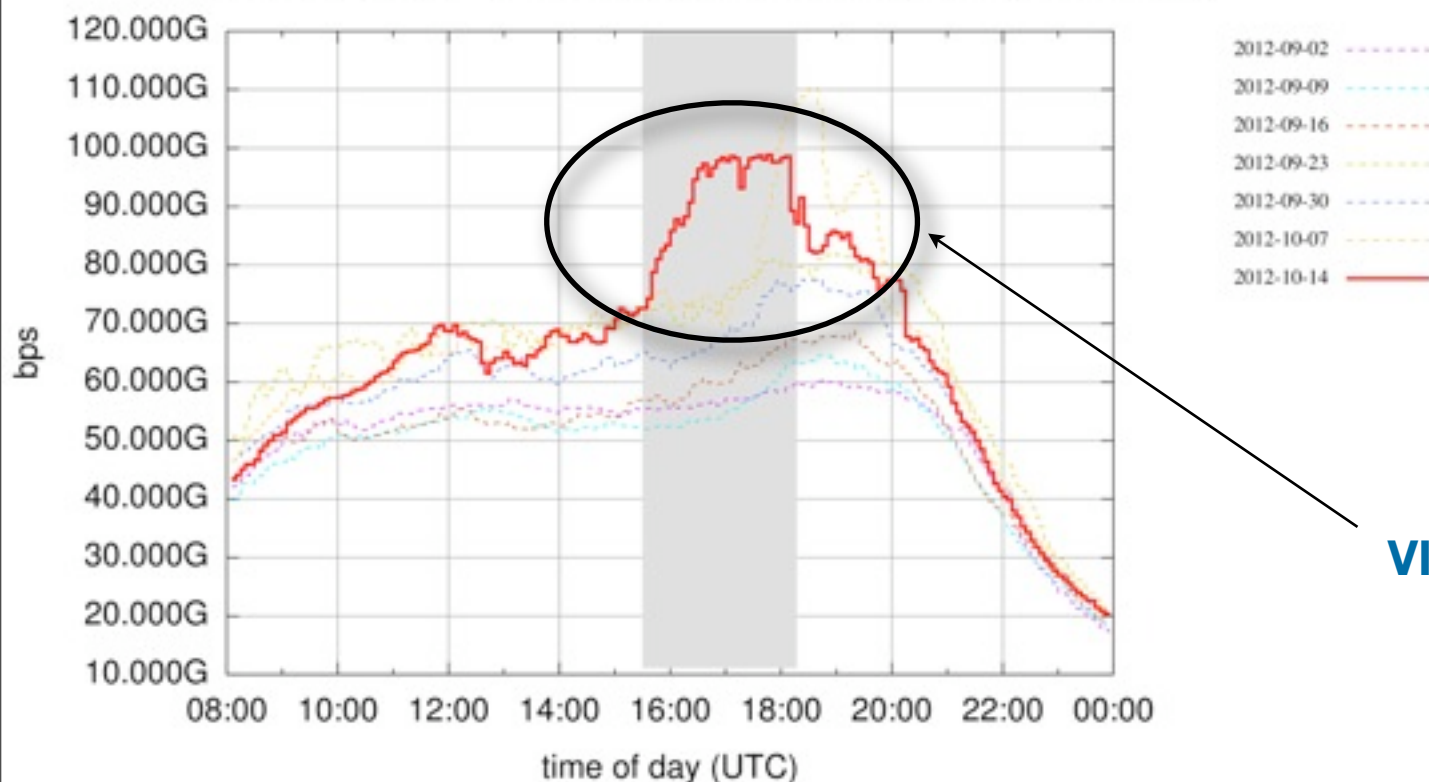


**INEX during Euro Championship  
Ireland vs. Italy**

**LONAP during Olympics  
(office hours)**



vix-at traffic on 2012-10-14 (solid line) vs. previous Sundays (dashed lines)



**VIX during Felix Baumgartner's  
Skydive**

# IXP Traffic Levels During Major Events

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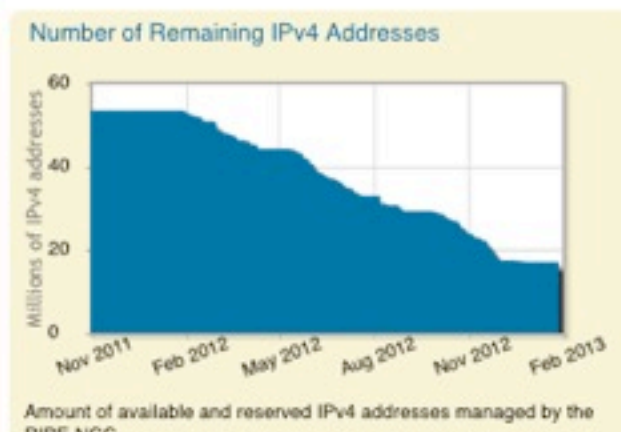
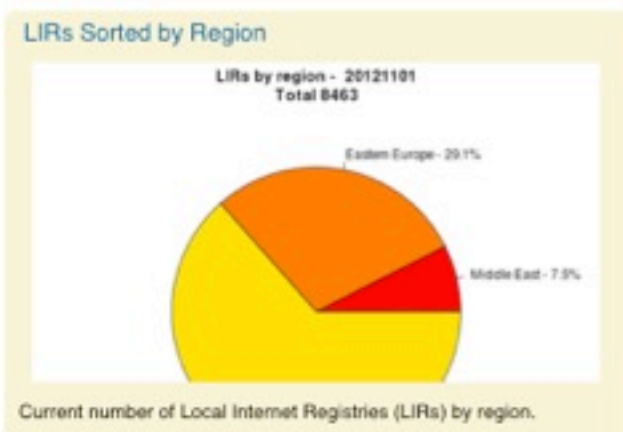
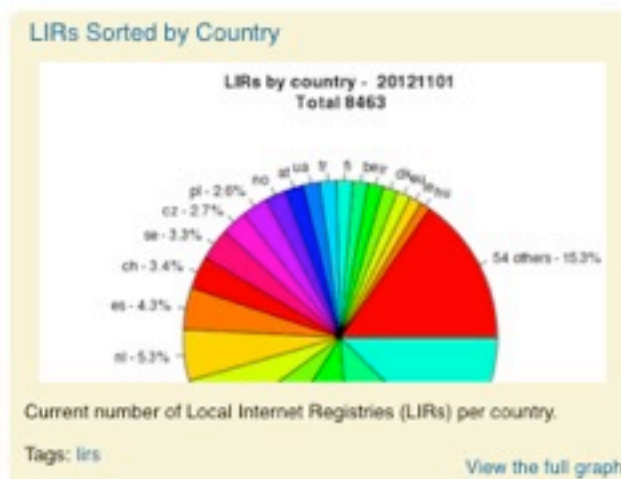
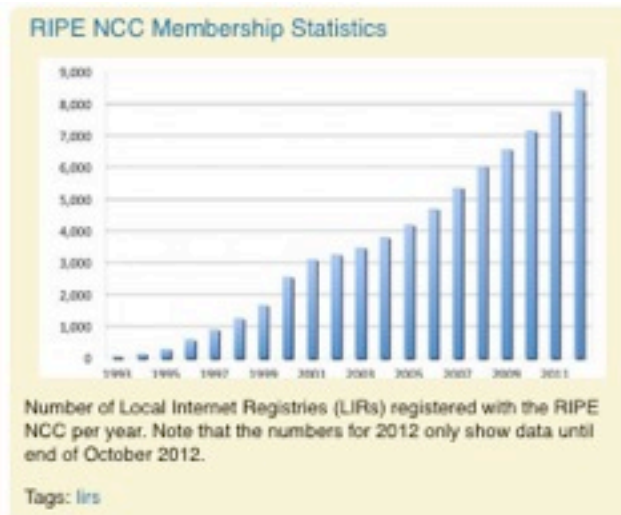
- In collaboration with Euro-IX and various IXPs
- Major events have an impact on IXP traffic volumes
- Discovered typical pattern for football matches
- Despite big peaks at times, Internet can cope

**<http://labs.ripe.net/>**

# New Statistics Dashboard

- One page with various Internet statistics
- Automatically updated
- Each graph is tagged
  - Easier to navigate

<http://labs.ripe.net/statistics>





# Questions?

