


## How to get IP addresses & AS numbers


"Starting an IXP" conference  
MENOG7, 21 October 2010, Istanbul  
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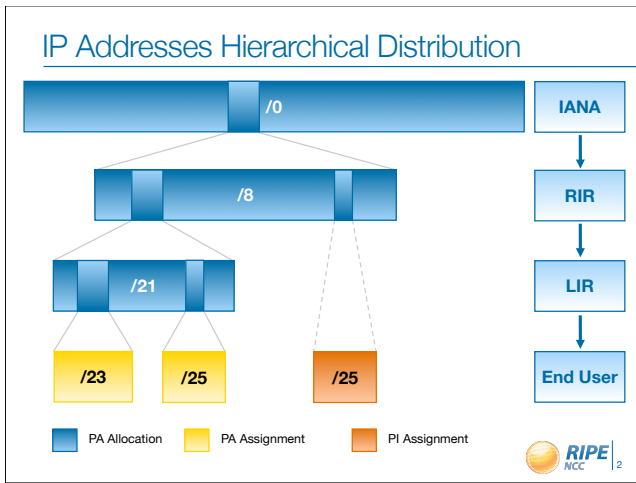
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## Governing principles of addressing policy

- Registration (in RIR whois databases)
  - Ensure uniqueness of Internet number resources
  - Provide contact information for users of Internet number resources
- Aggregation
  - Introduction of Classless Inter Domain Routing (CIDR)
  - Provide scalable routing solution for Internet
- Conservation
  - Policies to ensure fair usage
  - Number resources are distributed based on need




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## Allocations & assignments


- Provider Aggregatable (PA)
  - Allocated to LIR
  - Assigned by LIR to their customers or own infrastructure
- Provider Independent (PI)
  - Assigned to End User
- Allocation: block of IP addresses reserved for future use; also "PORTABLE"
- Assignment: a chunk of addresses out of an allocation that is in use



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## To be or not to be an LIR


Type	Contract with:	Fee 2010 / 2011	Space	Member of RIPE NCC	Can influence RIPE policies
End User	LIR	PI = € 50 ASN = € 50	PI	No	Yes
LIR	RIPE NCC	Start-up fee + yearly fee XS = € 1300 + PI / ASN	PA allocations + PI	Yes	Yes
Direct Assignment User	RIPE NCC	Start-up fee + € 1300 + PI / ASN	PI	No	Yes



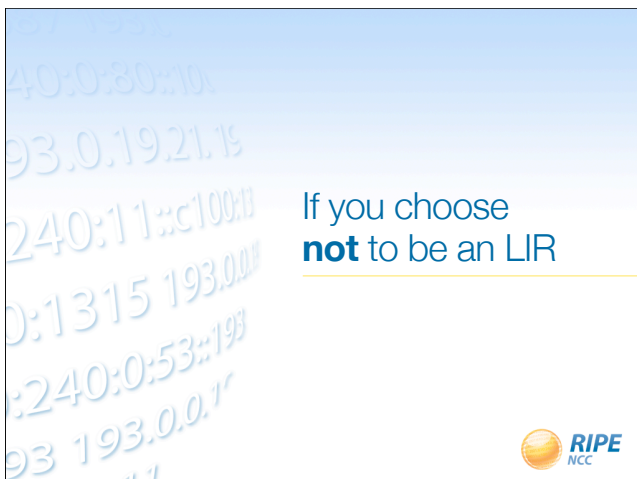
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## Yearly fee and direct assignments charges


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



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## If you choose **not** to be an LIR



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## IXP asking for Independent Resources


- PI, ASN, IPv6 for IXP, Anycast
- Make a contract with a “sponsoring” LIR
  - LIR will contact RIPE NCC, send forms, contracts, and IXP’s registration from Chamber of Commerce
- or
- IXP can sign a contract with the RIPE NCC as a Direct Assignment User



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## Existing assignments: End User choices

- Sign contract with their original LIR
- Find a new sponsoring LIR
- Become an Direct Assignment User and get a RIPE NCC End User Assignment Agreement
- Become an LIR
- Return the resources




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## Requesting PI space

- IPv4 & IPv6: No sub-assigning allowed!

<b>inetnum: 172.25.64.0/23</b>	
<b>status:</b>	ASSIGNED PI
<b>mnt-by:</b>	RIPE-NCC-END-MNT
<b>mnt-lower:</b>	RIPE-NCC-END-MNT
<b>mnt-by:</b>	LIR-MNT
<b>mnt-domains:</b>	End-User-MNT
<b>mnt-routes:</b>	ISP-MNT


- IPv6: demonstrate it be will multihomed
  - Minimum assignment size /48
- Special IPv6 policy for IXPs (ripe-451, ripe-460)



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## Autonomous System Numbers


- Regular requirements:
  - Address space, multihoming
- Specifically for IXPs
  - use the same form but explain your situation
  - e.g. route servers do not announce space, do not have “peers”
- IXP does not request ASNs for its members!
  - ISPs will obtain their own ASN



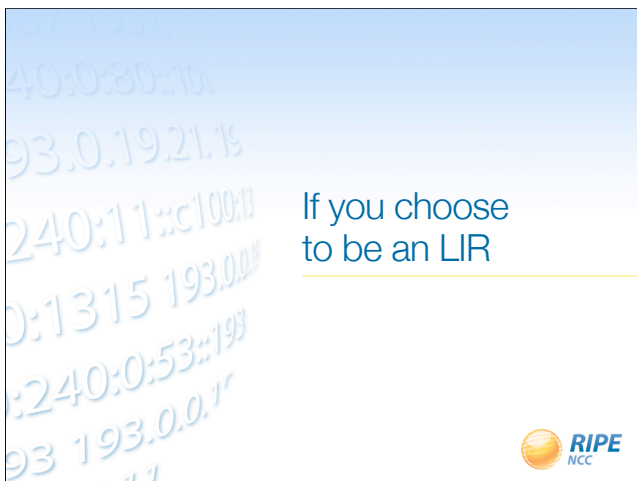
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## 32-bit AS Numbers and you


- Can you handle the new format: “AS4192351863”
- If not, please act now!
- Prepare for 32-bit ASNs in your organisation:
  - Check whether your hardware is compatible; if not, ask your hardware vendor for support
  - Check whether your upstream provider is running compatible hardware; if not, encourage them to upgrade!



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## If you choose to be an LIR



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## Getting an IPv4 Allocation


- Create `mntner`, `person`, and `role` objects
- Submit the IPv4 First Allocation Request form
- Submit the IPv4 PA Assignment Request form
- Minimum allocation size is /21



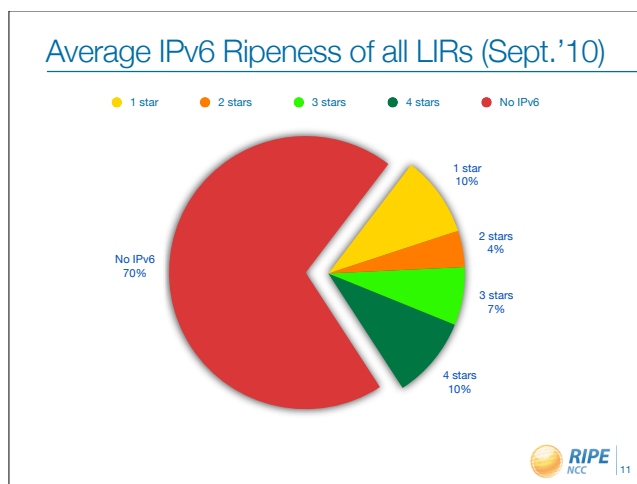
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## Getting an IPv6 allocation

- To qualify, an LIR must:
  - Have a plan for making assignments within two years
  - **NEW from 2011: first IPv6 allocation does not contribute to the billing score**
- Minimum allocation size /32
  - Announcement as a single prefix recommended
- RFC5963 (IPv6 Deployment in IXP)
- Create `route6` object
- Request reverse DNS



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## How can you change addressing policies

- Take part in email discussions
  - RIPE website → RIPE → Mailing Lists
  - e.g. policy proposal 2010-07
- Come to the RIPE Meetings
  - Rome November; 2011: A'dam May, Vienna October
  - Two free tickets for new LIRs
  - Remote participation possible



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## Questions?

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