IPv6 distribution and policy update

ICANN Wellington
28 March 2006
Overview

- What is the NRO
- IPv6 distribution status
- IPv6 policy status
- Questions
What is the NRO

- Number Resource Organisation
  - Single point of contact, coordination, representation for the Regional Internet address Registries (RIRs)
  - Independent from ICANN
  - Incorporation in Uruguay

- Address Supporting Organisation (ASO)
  - A component of the ICANN framework
  - Established by agreement between the NRO and ICANN
  - Responsible for coordination of global IP addressing policies
  - Regional policies are handled by each RIR
IPv6 distribution status
IPv6 distribution – Global

Unit: /32 prefix
IPv6 distribution – top 10 CC

- **EU**: 6161 (14%)
- **JP**: 7268 (16%)
- **FR**: 8225 (18%)
- **KR**: 4145 (9%)
- **US**: 165 (0%)
- **DE**: 9308 (21%)
- **NL**: 561 (1%)
- **PL**: 2069 (5%)
- **NO**: 268 (1%)
- **TW**: 2243 (5%)

Other: 585 (1%)
IPv6 distribution – annual totals

Unit: /32 prefix

IPv6 distribution by year and region:

- **1999**: Small distribution across regions.
- **2000**: Similar to 1999.
- **2001**: Minor growth across regions.
- **2002**: Little change from previous years.
- **2003**: Significant growth, especially in APNIC.
- **2004**: Continued growth with significant increases in LACNIC and AFRINIC.
- **2005**: Exponential growth, with major increments in RIPENCC and LACNIC.
- **2006**: Further growth with notable expansions in ARIN and APNIC.

**RIPENCC**, **LACNIC**, **ARIN**, **APNIC**, and **AFRINIC** are represented in the chart.
IPv6 distribution – annual totals

Unit: /32 prefix

* log scale

AFRINIC
APNIC
ARIN
LACNIC
RIPENCC

1999 2000 2001 2002 2003 2004 2005 2006
IPv6 statistics online

• RIR statistics
  – http://www.nro.net/statistics

• IANA
  – http://www.iana.org/assignments/ipv6-unicast-address-assignments
IPv6 policy status
RIR policy development process

Internet community proposes and approves policy

All decisions & policies documented & freely available to anyone
ASO global policy process
IPv6 policy status

<table>
<thead>
<tr>
<th>Policy proposal</th>
<th>AfriNIC</th>
<th>APNIC</th>
<th>ARIN</th>
<th>LACNIC</th>
<th>RIPE-NCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy for IPv6 allocation from IANA to RIRs (global policy)</td>
<td>...</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>...</td>
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<tr>
<td>Amend IPv6 utilisation requirement (HD ratio = 0.94)</td>
<td>-</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Amend IPv6 assignment requirements</td>
<td>-</td>
<td>?</td>
<td>...</td>
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<td>...</td>
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<tr>
<td>IPv6 address space for anycast services</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>...</td>
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<tr>
<td>PI (portable) IPv6 assignments for end sites</td>
<td>-</td>
<td>-</td>
<td>...</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- ✓ approved
- ? under discussion
- - no discussion
- ... no consensus
RIR policy references

• NRO
  - http://www.nro.org/policy

• RIRs
  - AfriNIC http://www.afrinic.net/policy.htm
  - APNIC http://www.apnic.net/docs/policy/proposals
  - ARIN http://www.arin.net/policy
  - LACNIC http://lacnic.net/en/politicas
  - RIPE http://www.ripe.net/ripe/policies
Questions?

http://www.nro.net