

# NRO Status Report

## IEPG Montréal

### 9 July 2006

Prepared by  
Regional Internet Registries



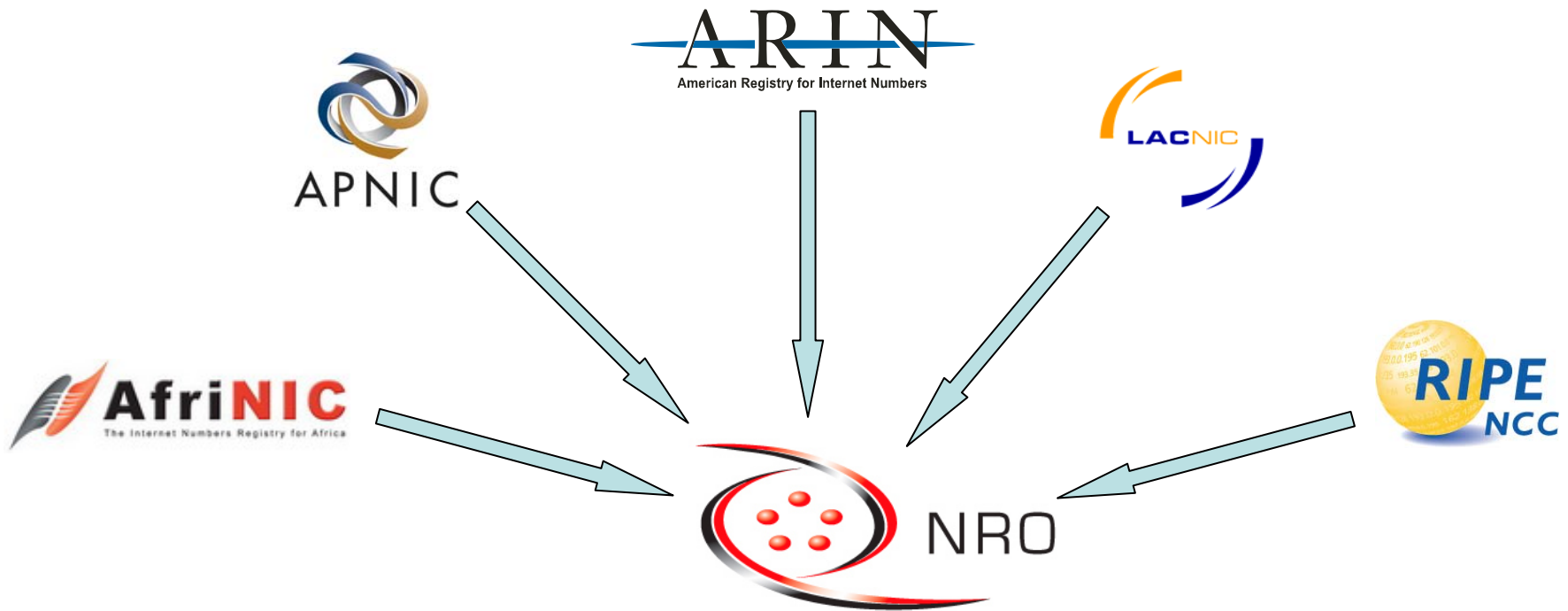
# Overview

- Organization
- Internet Number Resource Status Report
- Policy Discussions

# ORGANIZATION

# Number Resource Organization

## 24 October 2003



Formed by the Regional Internet Registries to formalize their cooperative efforts, the NRO exists to protect the unallocated Number Resource pool, to promote and protect the bottom up policy development process, and to act as a focal point for Internet community input into the RIR system.

# NRO – Current Main Topics

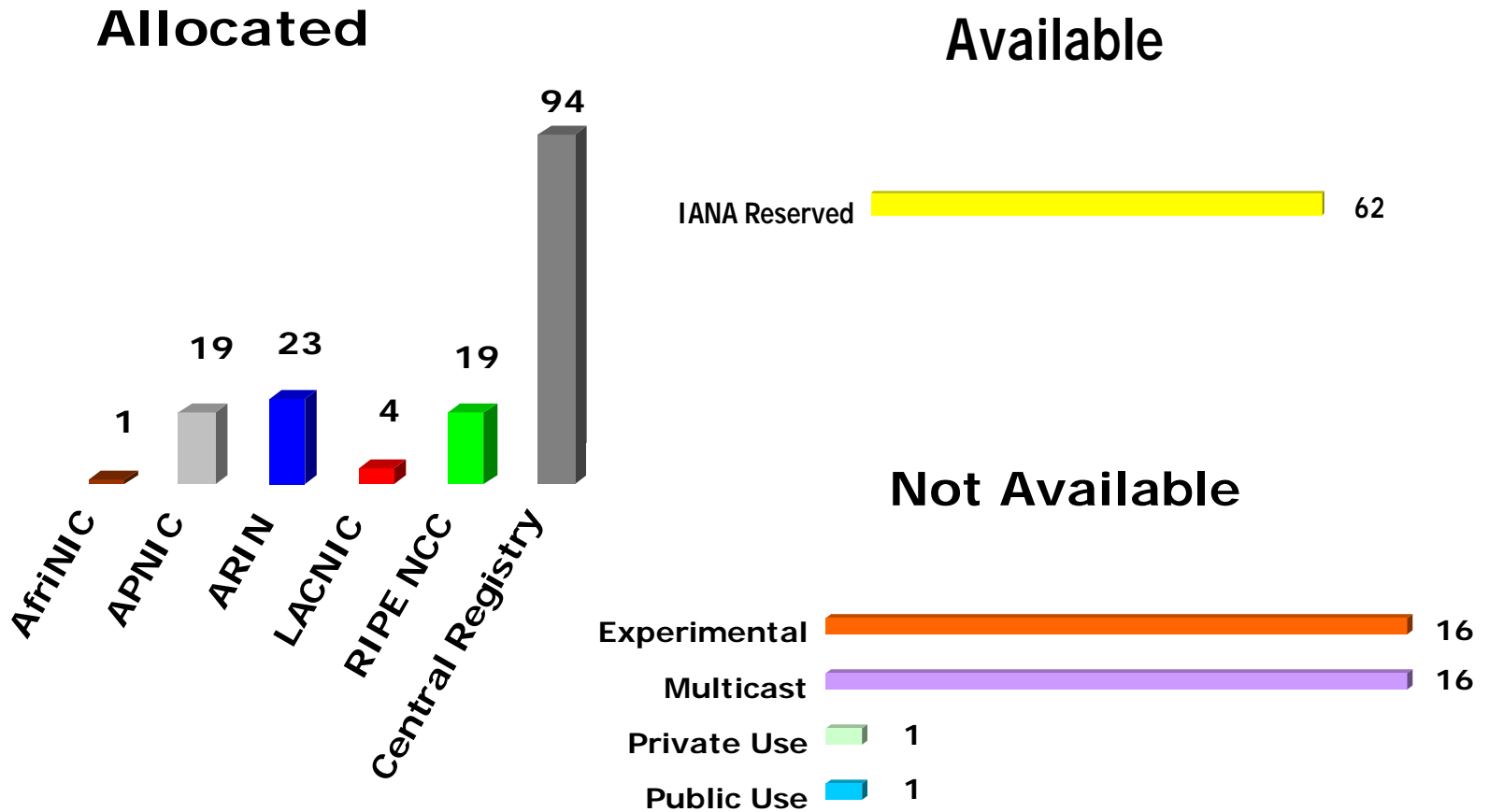
- **ICANN**
  - Services Contract
  - Strategic Plan
  - Budget
  - Global IPv6 Policy Proposal
  - Relationship with GAC
- **IGF**
  - IGF Meeting Advisory Group
  - IGF Meeting – Athens
- **ITU**
  - Liaison
  - Plenipotentiary Meeting – Antalya
  - World Telecom – Hong Kong
- **Joint RIR Activity**
  - Certification Issues
  - Harmonization of IP allocation practices
  - NRO Incorporation

# **Internet Number Resource Status Report**

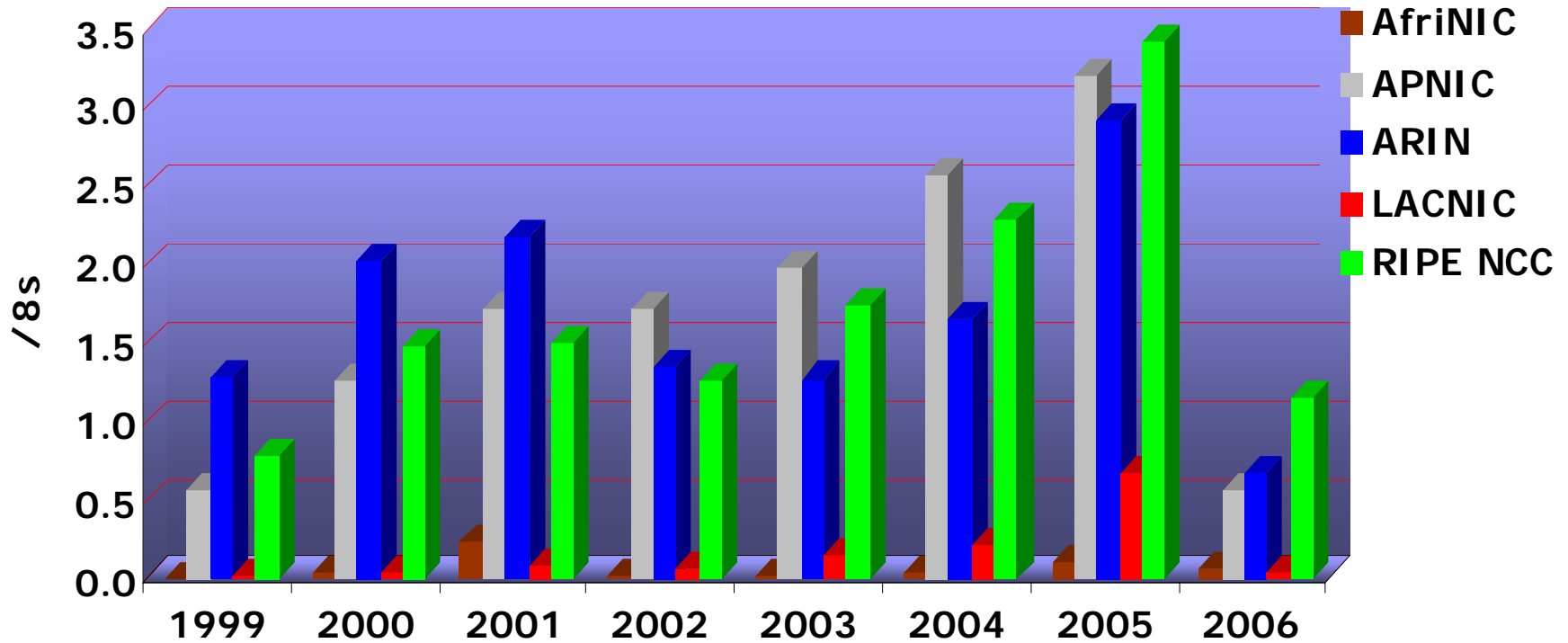
**As of 31 March 2006**

Prepared by  
Regional Internet Registries  
AfrINIC, APNIC, ARIN, LACNIC and the RIPE NCC

# IPv4 /8 Address Space Status



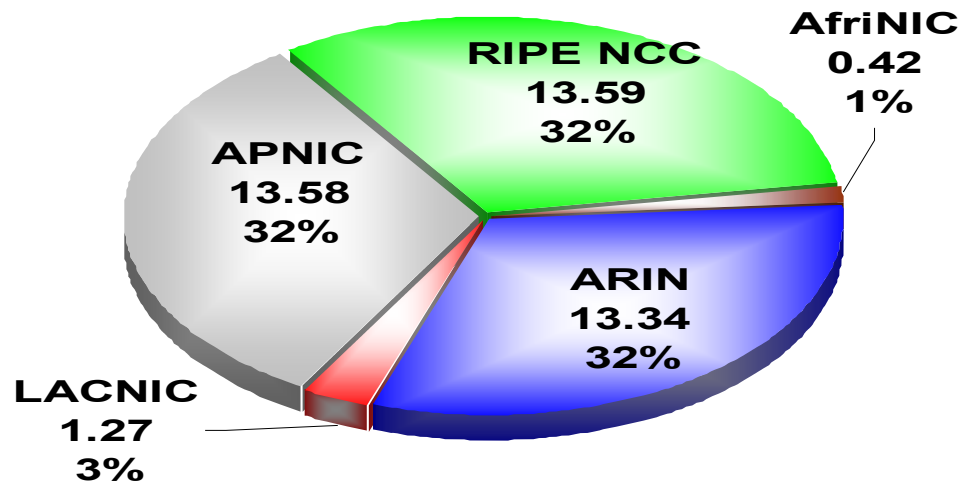
# IPv4 Allocations from RIRs to LIRs/ISPs Yearly Comparison



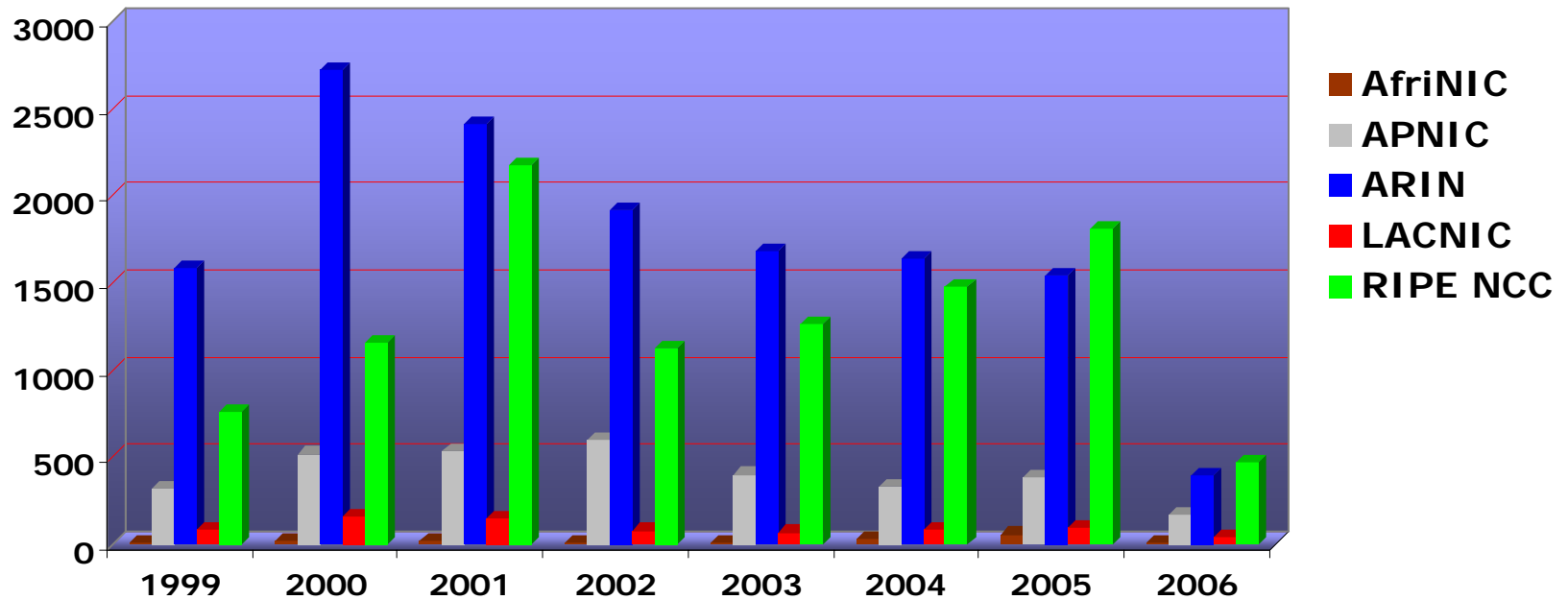


# IPv4 Allocations RIRs to LIRs/ISPs

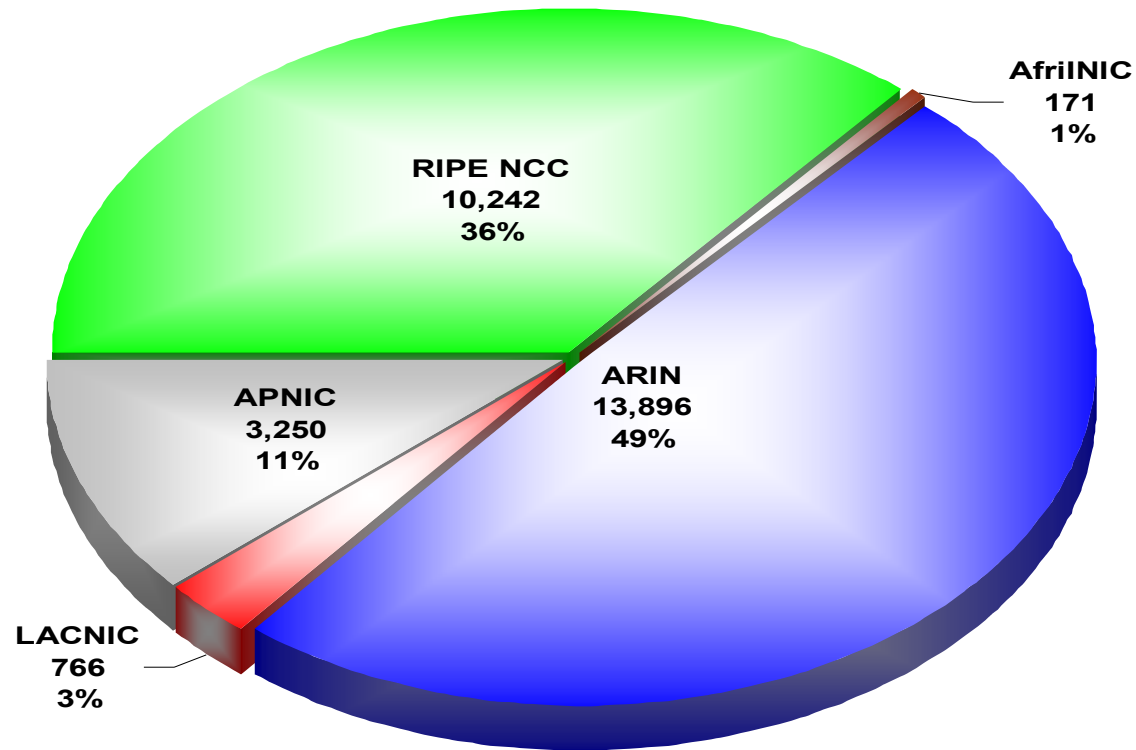
Cumulative Total (Jan 1999 – Mar 2006)



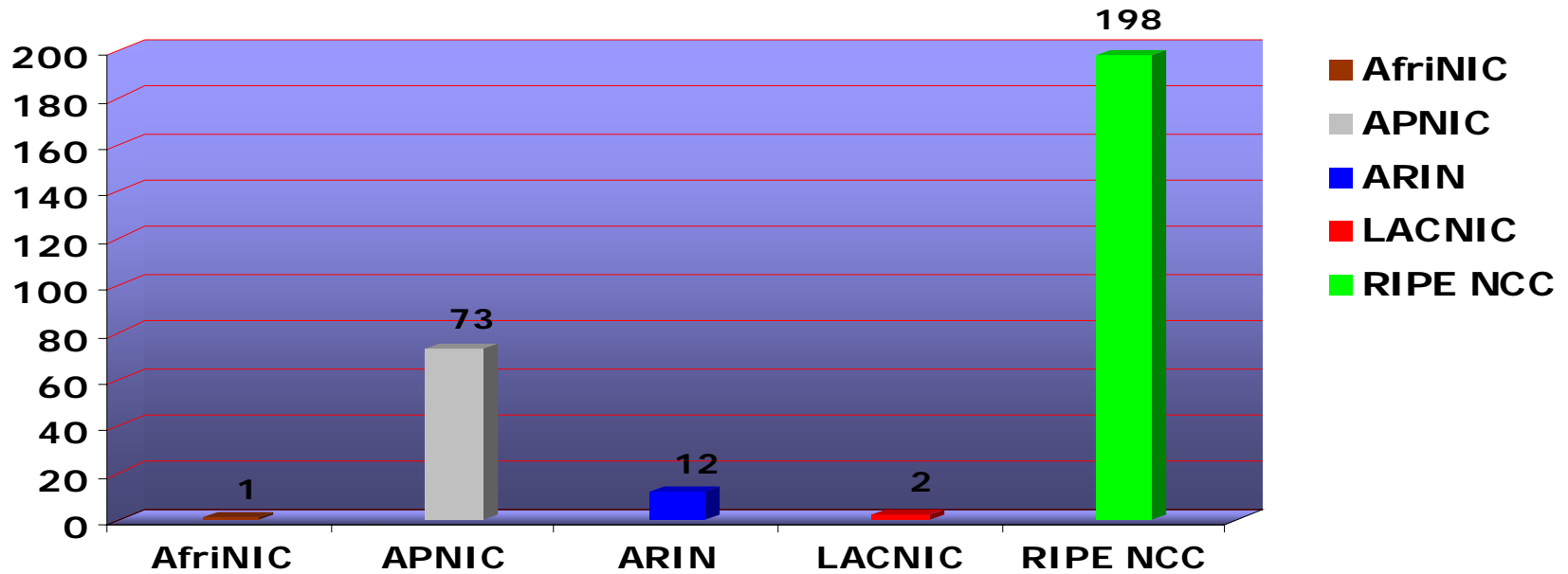
# ASN Assignments RIRs to LIRs/ISPs Yearly Comparison



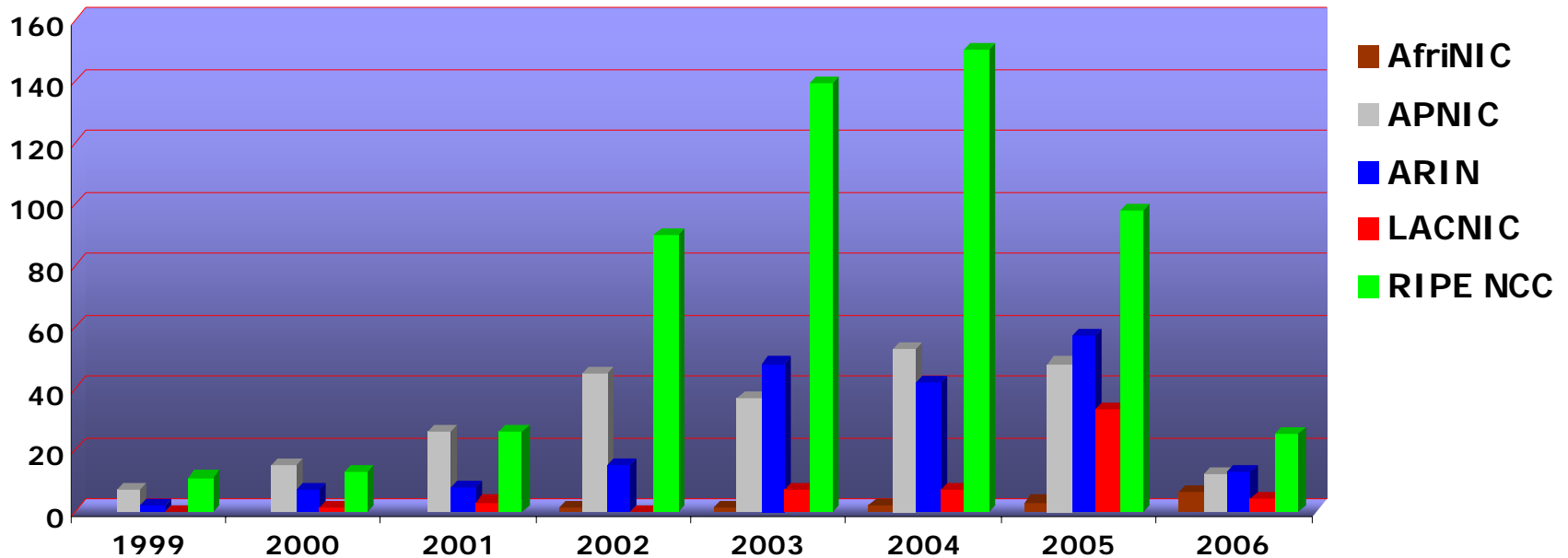
# ASN Assignments RIRs to LIRs/ISPs Cumulative Total (Jan 1999 – Mar 2006)



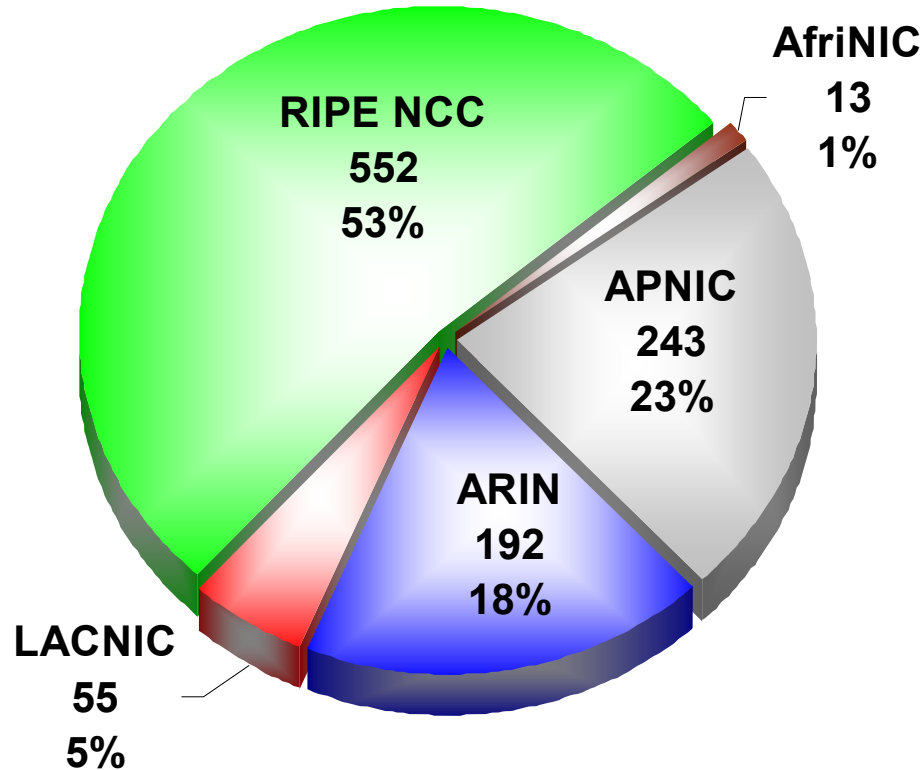
# IANA IPv6 Allocations to RIRs (no of /23s)



# IPv6 Allocations RIRs to LIRs/ISPs Yearly Comparison



# IPv6 Allocations RIRs to LIRs/ISPs Cumulative Total (Jan 1999 – Mar 2006)



# Links to RIR Statistics

- **RIR Statistics:**

<http://www.nro.net/statistics/>

- **Raw Data/Historical RIR Allocations:**

<http://www.aso.icann.org/stats>

<http://www.iana.org/assignments/ipv4-address-space>






<http://www.iana.org/assignments/as-numbers>

<http://www.iana.org/assignments/ipv6-unicast-address-assignments>






# Policy Discussions








# Worldwide Look IPv4 Policy Discussions

RIR	TOPIC	STATUS
	<ul style="list-style-type: none"> <li>• End User Assignment Criteria</li> <li>• Temporary/Critical Infrastructure Assignments</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt</li> <li>• Adopt</li> </ul>
	<ul style="list-style-type: none"> <li>• HD Ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Abandon</li> </ul>
	<ul style="list-style-type: none"> <li>• Micro Allocation for Anycast</li> </ul>	<ul style="list-style-type: none"> <li>• Abandon</li> </ul>
	<ul style="list-style-type: none"> <li>• International ISPs</li> <li>• Allocation Period</li> </ul>	<ul style="list-style-type: none"> <li>• Abandon</li> <li>• Discuss</li> </ul>
	<ul style="list-style-type: none"> <li>• Anycast Services</li> <li>• HD Ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss</li> <li>• Abandon</li> </ul>

# Worldwide Look IPv6 Policy Discussions

RIR	TOPIC	STATUS
	<ul style="list-style-type: none"> <li>• Direct Assignments for End Sites</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss</li> </ul>
	<ul style="list-style-type: none"> <li>• Direct Assignments for End Sites</li> <li>• HD Ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss</li> <li>• Adopt</li> </ul>
	<ul style="list-style-type: none"> <li>• Direct Assignments for End Sites</li> <li>• Assignment and Utilisation</li> <li>• Micro Allocation for Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt</li> <li>• Adopt</li> <li>• Discuss</li> </ul>
	<ul style="list-style-type: none"> <li>• Direct Assignments for End Sites</li> <li>• HD Ratio</li> <li>• Assignment and Utilisation</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss</li> <li>• Discuss</li> <li>• Discuss</li> </ul>
	<ul style="list-style-type: none"> <li>• End Site Definition</li> <li>• HD Ratio</li> <li>• Number of Required Customers</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss</li> <li>• Adopt</li> <li>• Discuss</li> </ul>






# Worldwide Look Other Policy Discussions

RIR	TOPIC	STATUS
	<ul style="list-style-type: none"> <li>• <b>ASN Assignment Criteria</b></li> <li>• <b>4 Byte ASN</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Adopt</b></li> <li>• <b>Adopt</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>4 Byte ASN</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Adopt</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>4 Byte ASN</b></li> <li>• <b>Capturing Route Origins</b></li> <li>• <b>Residential Customer Privacy</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Adopt</b></li> <li>• <b>Discuss</b></li> <li>• <b>Discuss</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>4 Byte ASN</b></li> <li>• <b>Unused Resource Recovery</b></li> <li>• <b>WHOIS Privacy</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Discuss</b></li> <li>• <b>Discuss</b></li> <li>• <b>Discuss</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>4 Byte ASN</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Discuss</b></li> </ul>

# Public Policy Meetings

RIR	DATE	LOCATION
 <b>Afrinic</b> The Internet Numbers Registry for Africa	<b>27 – 28 November 2006</b>	<b>Mauritius</b>
 APNIC	<b>5 – 8 September 2006</b>	<b>Taiwan</b>
 <b>ARIN</b> American Registry for Internet Numbers	<b>11 – 13 October 2006</b>	<b>St. Louis, MO</b>
 LACNIC	<b>21 – 25 May 2007</b>	<b>TBD</b>
 <b>RIPE</b> NCC	<b>2 – 6 October 2006</b>	<b>Amsterdam</b>

# Policy Archives

RIR	LINK
 <b>Afrinic</b> The Internet Numbers Registry for Africa	<a href="http://www.afrinic.net/policy.htm">http://www.afrinic.net/policy.htm</a>
 APNIC	<a href="http://www.apnic.net/docs/policy/proposals/archive.html">http://www.apnic.net/docs/policy/proposals/archive.html</a>
 American Registry for Internet Numbers	<a href="http://www.arin.net/policy/proposals/proposal_archive.html">http://www.arin.net/policy/proposals/proposal_archive.html</a>
 LACNIC	<a href="http://lacnic.net/en/politicas/desarrollo.html">http://lacnic.net/en/politicas/desarrollo.html</a>
 RIPE NCC	<a href="http://www.ripe.net/ripe/policies/proposals/">http://www.ripe.net/ripe/policies/proposals/</a>

# Global Policy Proposal

## IANA to RIR IPv6 Allocation

# Overview

- **What is the proposed policy?**
- **Is it fair?**
- **What is the current status?**

# What is the Proposed Policy?

Minimum Allocation*	Allocation Criteria	New RIR Allocation	Announcements
= 18 Months of Necessary Space	Available Space: < 50% of 1 Allocation Unit	/12 Regardless of Utilization or Transferred Space	IANA, NRO, RIRs will: <ul style="list-style-type: none"> <li>•Make Announcements</li> <li>•Update Websites</li> </ul>
Unit Size: /12*	<u>OR</u> Available Space is < 9 Month Necessary Space		
0.02% of Total [1 IPv4 /8 = 0.4%]	<u>OR</u> Special Need Exists		

**\*Upon policy inception, each RIR receives a /12 if it has < /12 on hand.**





# Is It Fair?

**YES!**

- **Minimum Allocation Size**
  - **Not Dependent on Regional Market Size**
  - **Contributes to Regional Aggregation**
  - **Best Conserves Address Space**
- **Allocation Criteria**
  - **Provides Objectivity**
  - **Satisfies Demonstrated Needs**
  - **Provides Accountability**

# Policy Status

	Develop		Advise	Ratify
Policy Community	Proposed	Adopted	Address Council	ICANN
 <b>AfriNIC</b>	<b>1 AUG 05</b>	<b>15 MAY 06</b>	<b>Received 6 JUN 06 From NRO (Must Act Prior to 5 AUG 06)</b>	<b>Receipt From ASO AC ≈ 14 JUL 06</b>
 <b>APNIC</b>	<b>1 SEP 04</b>	<b>25 NOV 05</b>		
 <b>ARIN</b> <small>American Registry for Internet Numbers</small>	<b>20 SEP 04</b>	<b>16 JUN 05</b>		
 <b>LACNIC</b>	<b>2 SEP 04</b>	<b>17 OCT 05</b>	<b>Action Point 12 JUL 06</b>	<b>Action Point within 60 Days of Receipt</b>
 <b>RIPE NCC</b>	<b>4 AUG 04</b>	<b>19 APR 06</b>		

**Thank You**