



APNIC update

CNNIC OPM
9 - 10 Nov 2006
Hangzhou, China



APNIC 报告

2006年中国IP地址专家研讨会
暨CNNIC联盟成员会议

2006年11月9日-10日
中国 杭州

Overview

- Internet Registry Structure
- Internet Resources Statistic
- IPv4 Addressing in China
- Global Policies and Discussions
- APNIC Meetings

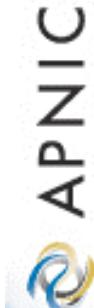


APNIC

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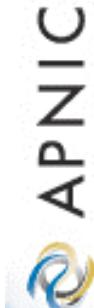
主要内容

- 全球互联网资源注册管理体系
- 互联网资源分配情况
- 中国的IPv4地址情况
- 国际IP地址相关政策和讨论
- APNIC会议



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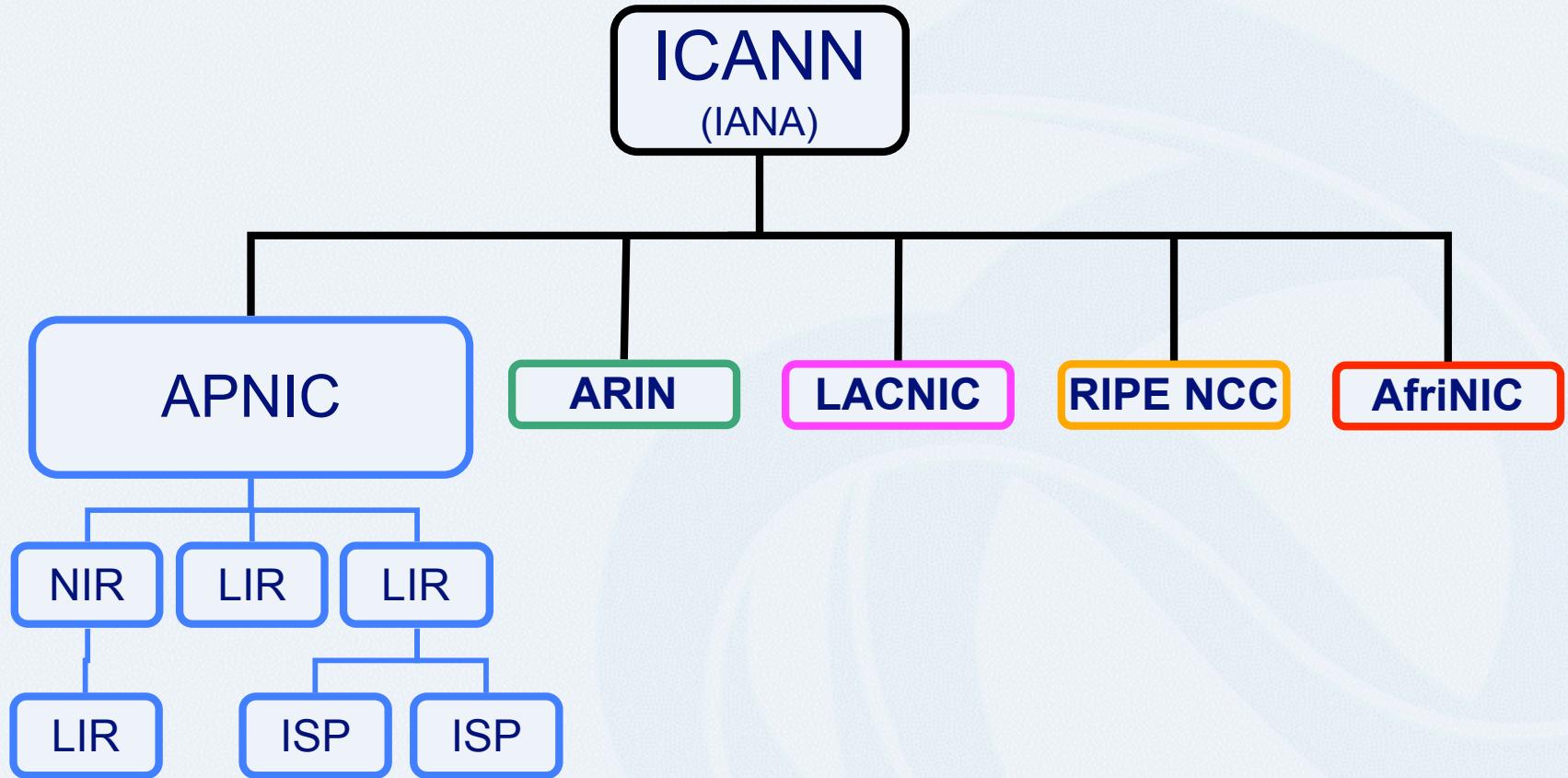
Internet Registry Structure



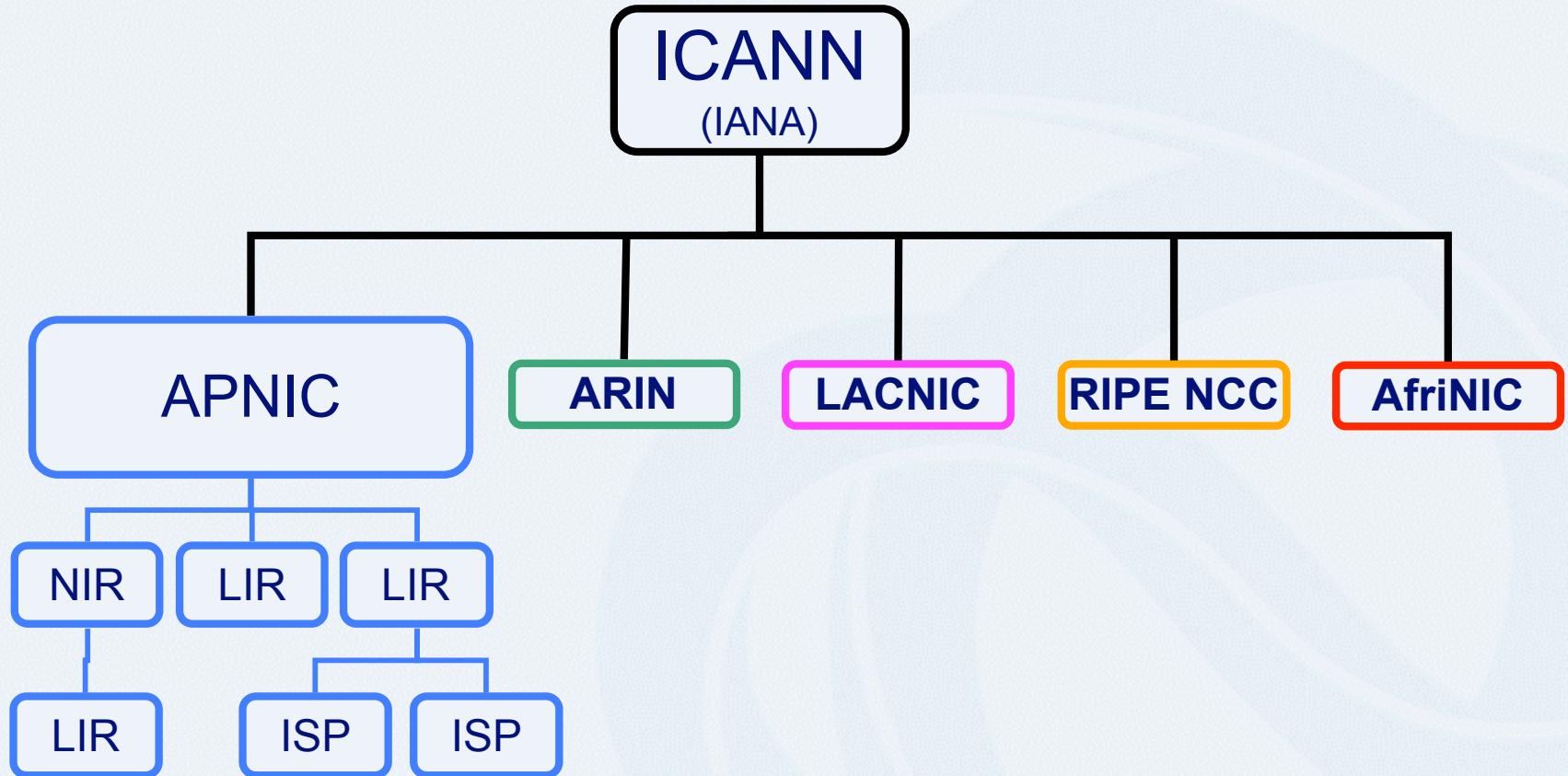
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全球互联网资源注册管理体系

Internet Registry Structure



注册管理体系



What is APNIC?

- Regional Internet Registry (RIR) for the Asia Pacific region
 - One of five RIRs currently operating around the world
 - Non-profit, open membership organisation
 - Responsible for distributing Internet resources throughout the AP region
 - Industry self regulatory body

APNIC简介

- 亚太地区的互联网注册管理机构 (RIR)



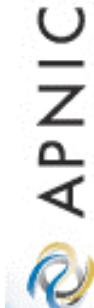
- 全世界五大RIR之一
- 非营利机构，开放式会员结构
- 负责亚太地区的互联网地址资源的分配
- 行业自主机构

Where is APNIC Region?



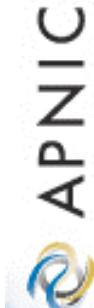
APNIC服务范围





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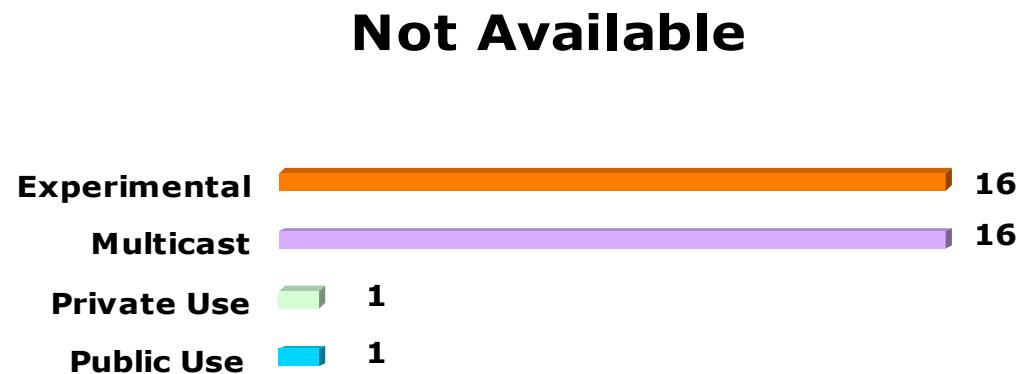
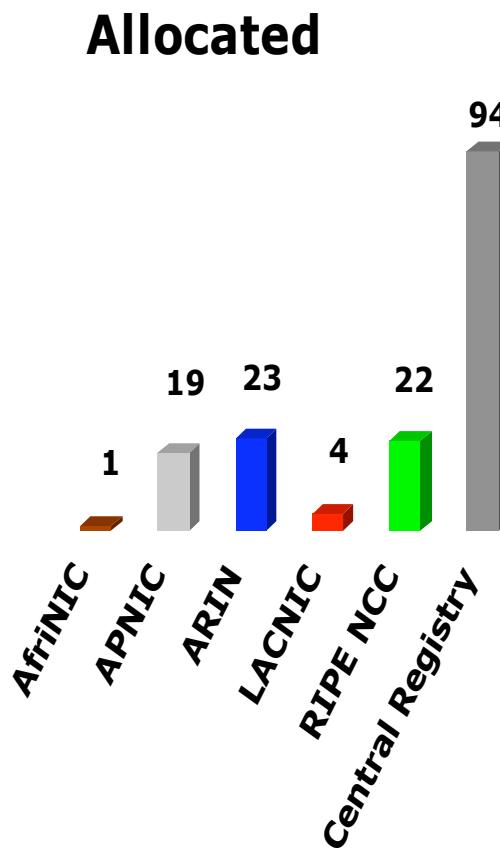
Internet Resources Statistics



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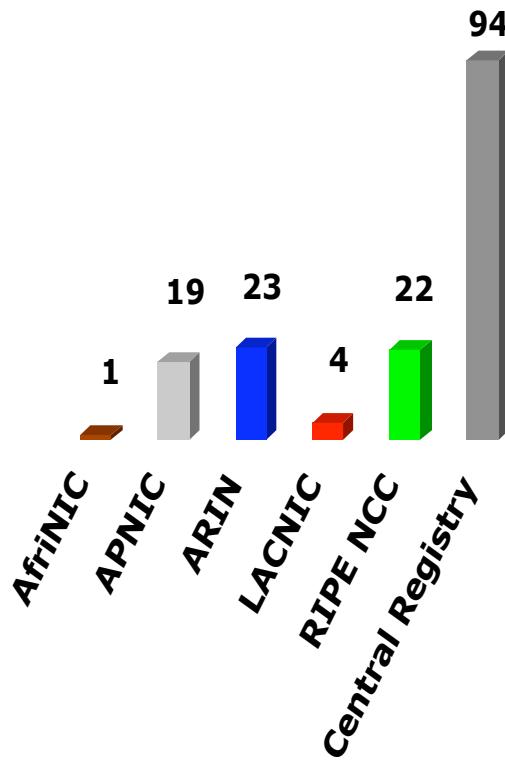
互联网资源分配情况

Status of IPv4 Address Space (/8s)



IPv4地址分配情况 (以/8为单位)

Allocated



Available

IANA Reserved 59

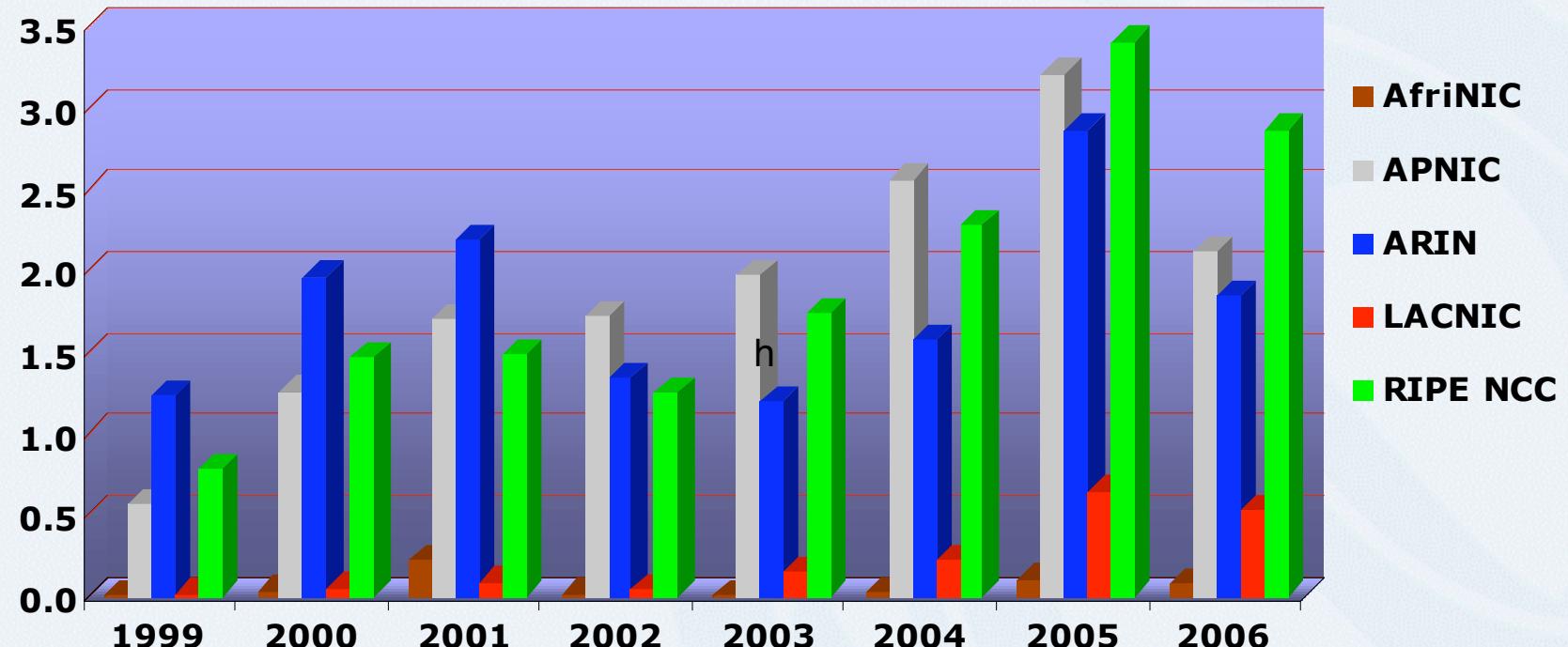
Not Available



IPv4 Allocations RIRs to LIRs/ISPs

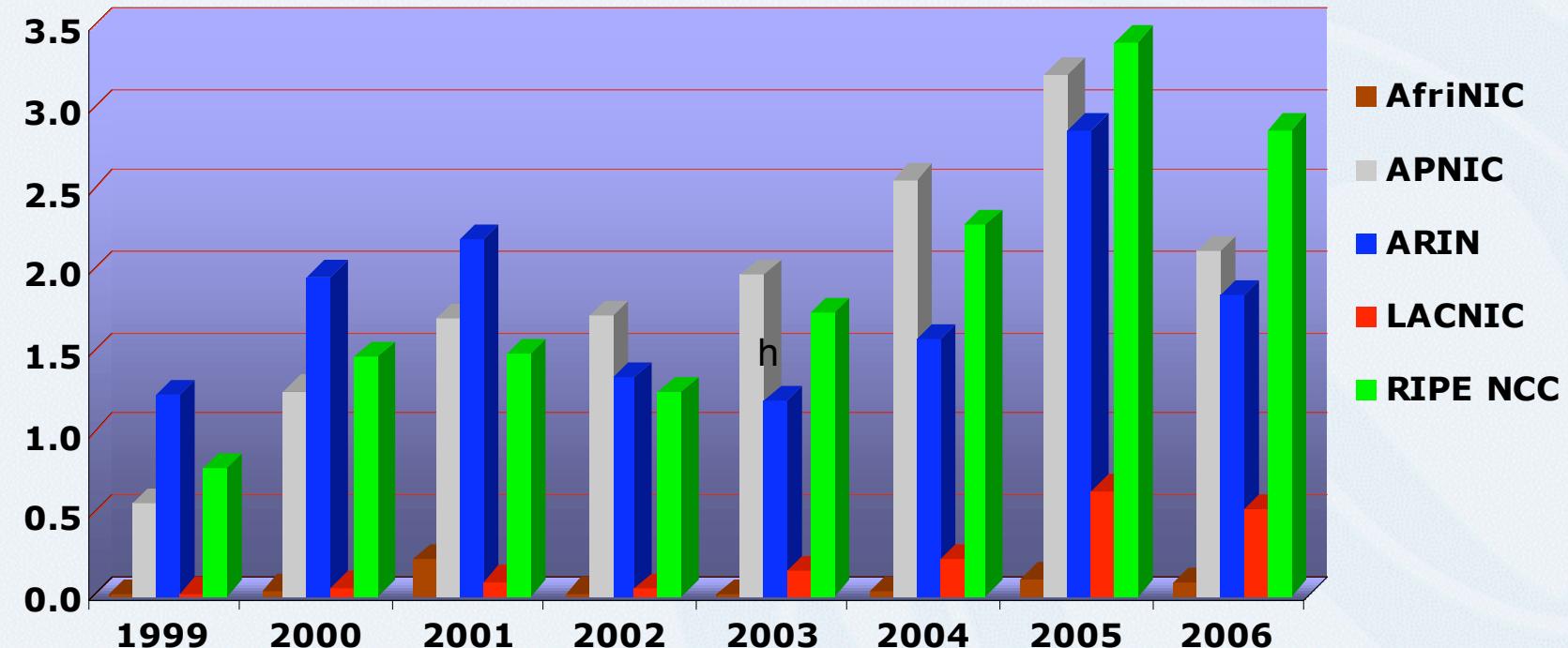
Yearly Comparison

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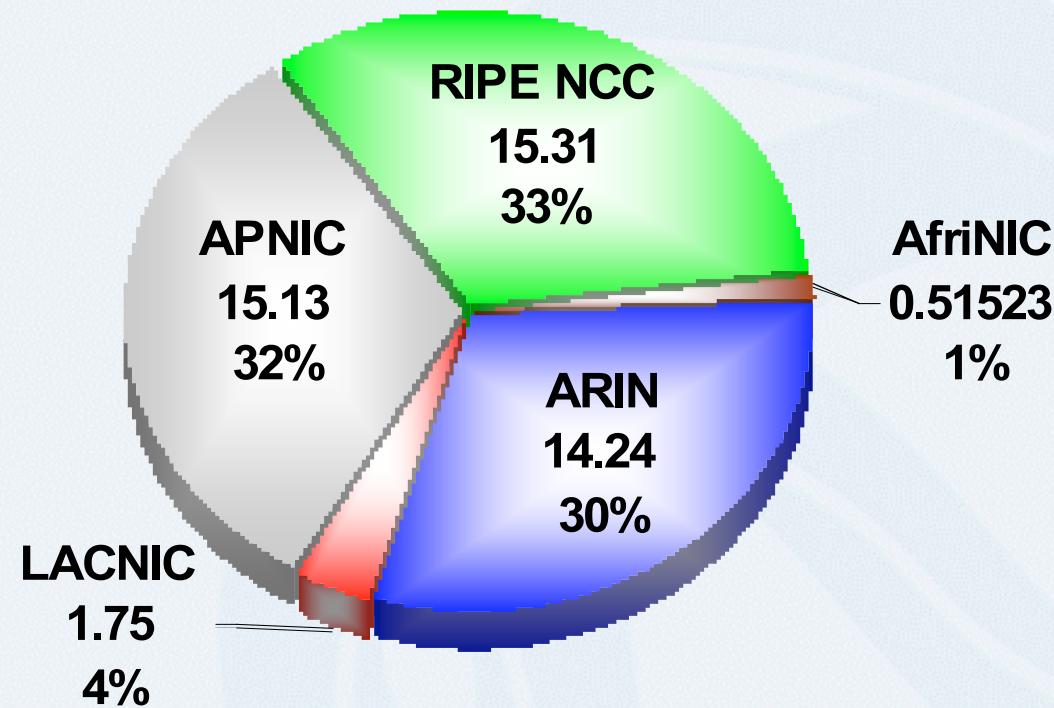


RIR向LIR/ISP分配的IPv4地址 (按年度)

Asia Pacific Network Information Centre

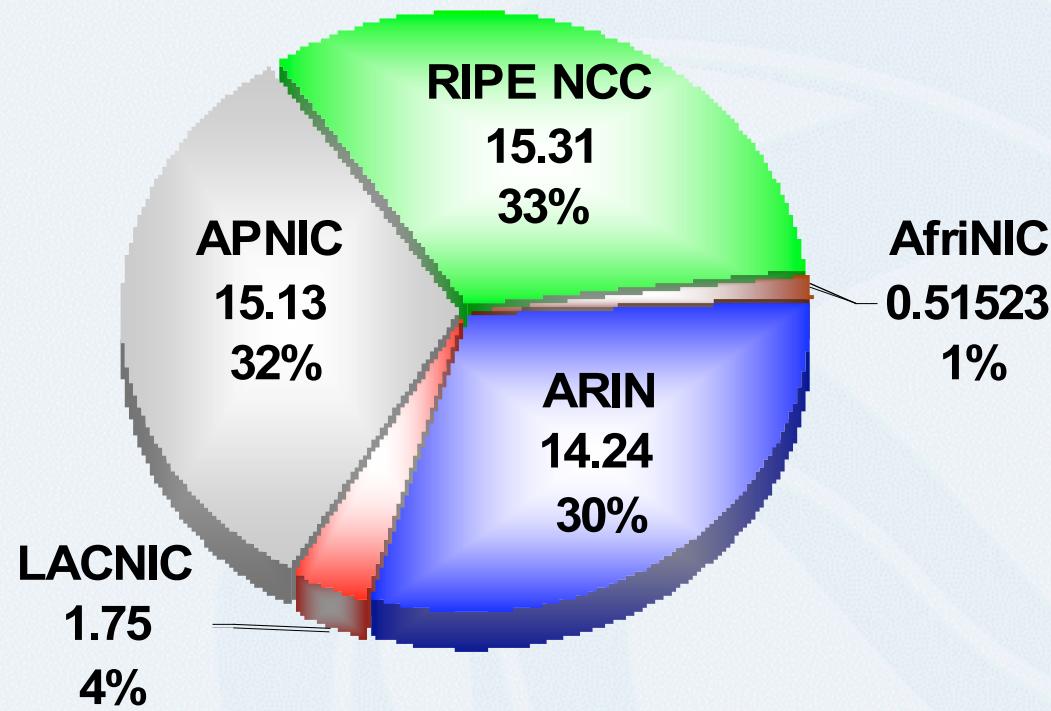


IPv4 Allocations RIRs to LIRs/ISPs Cumulative Total (Jan 1999 – Sept 2006)

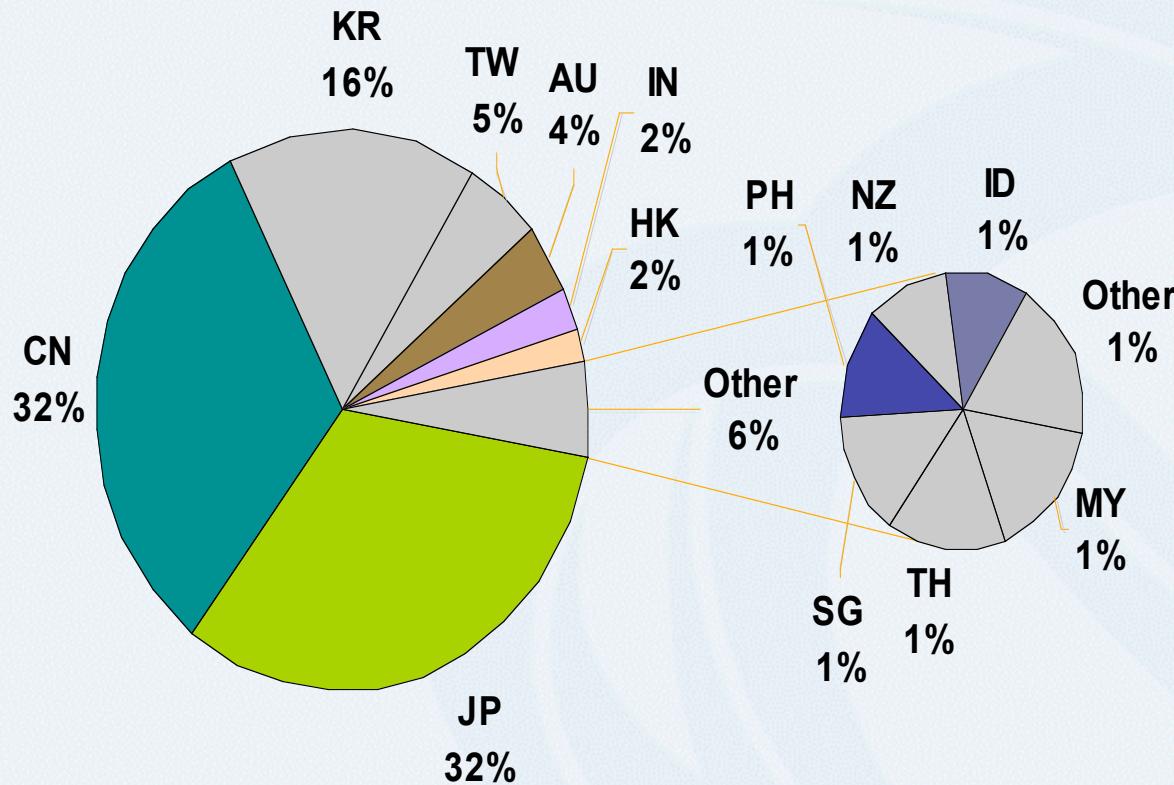




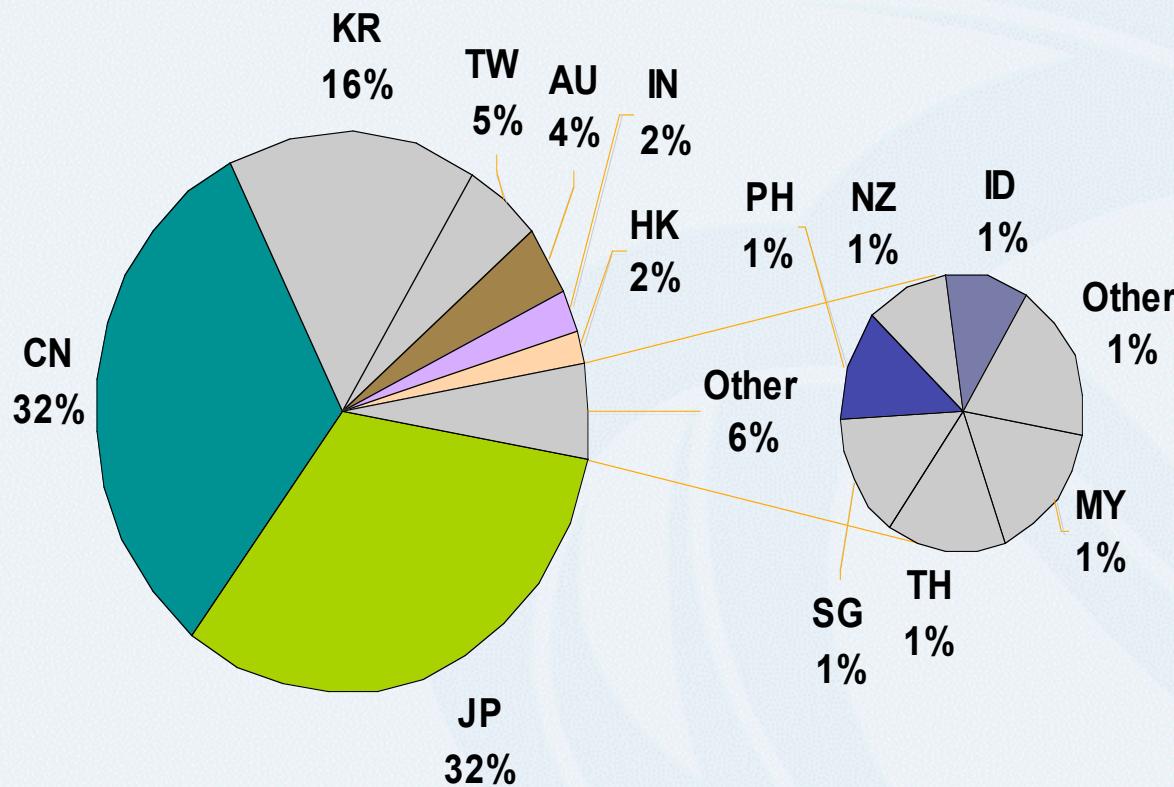
RIR 向 LIR/ISP 分配的 IPv4 地址 (总数, 1999年1月 – 2006年9月)



IPv4 Address Allocations by Economy in AP Region

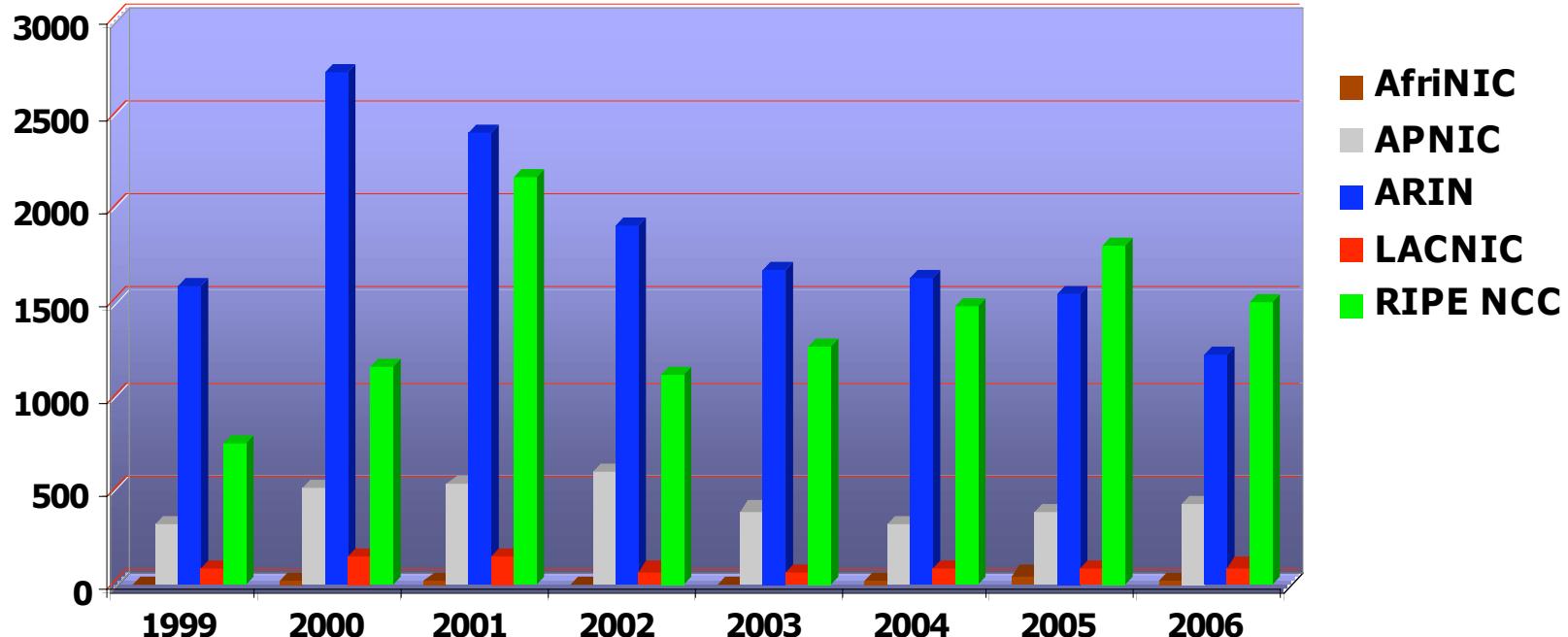


亚太地区的IPv4地址分配情况（按经济体）

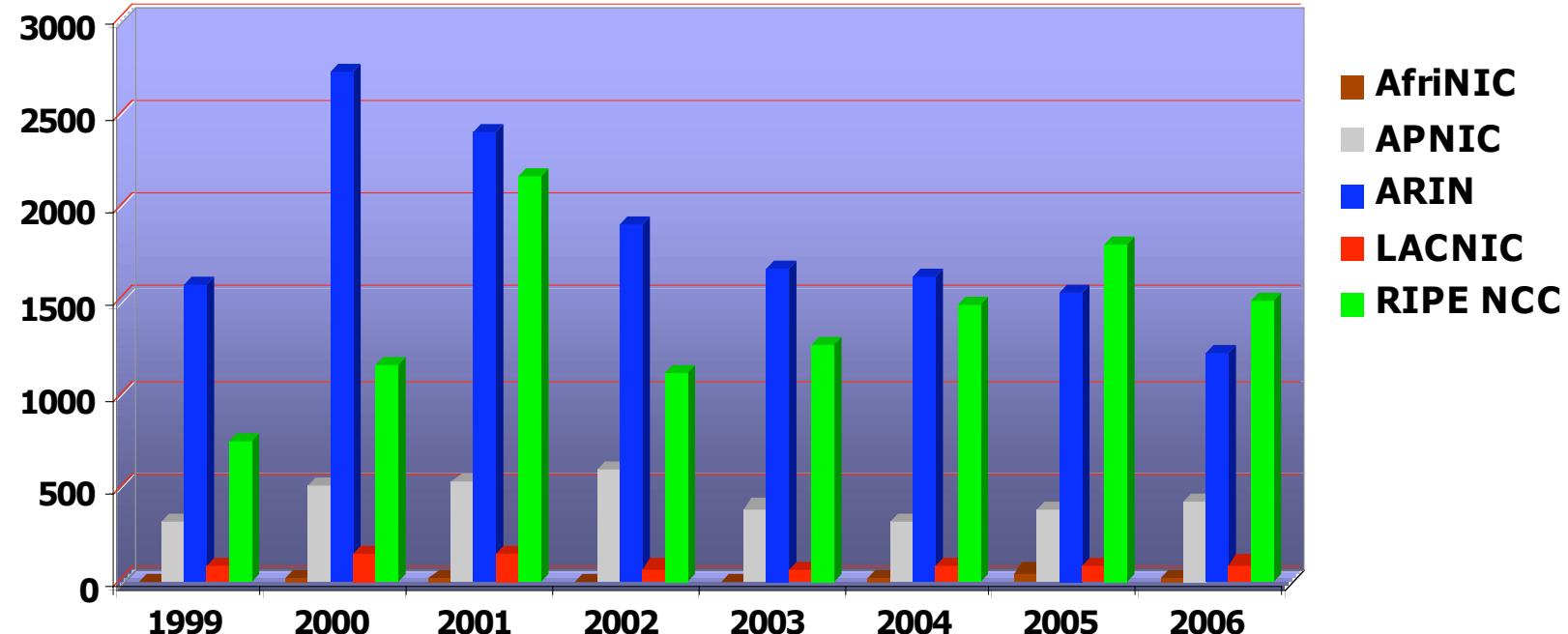


ASN Assignments

Yearly Comparison

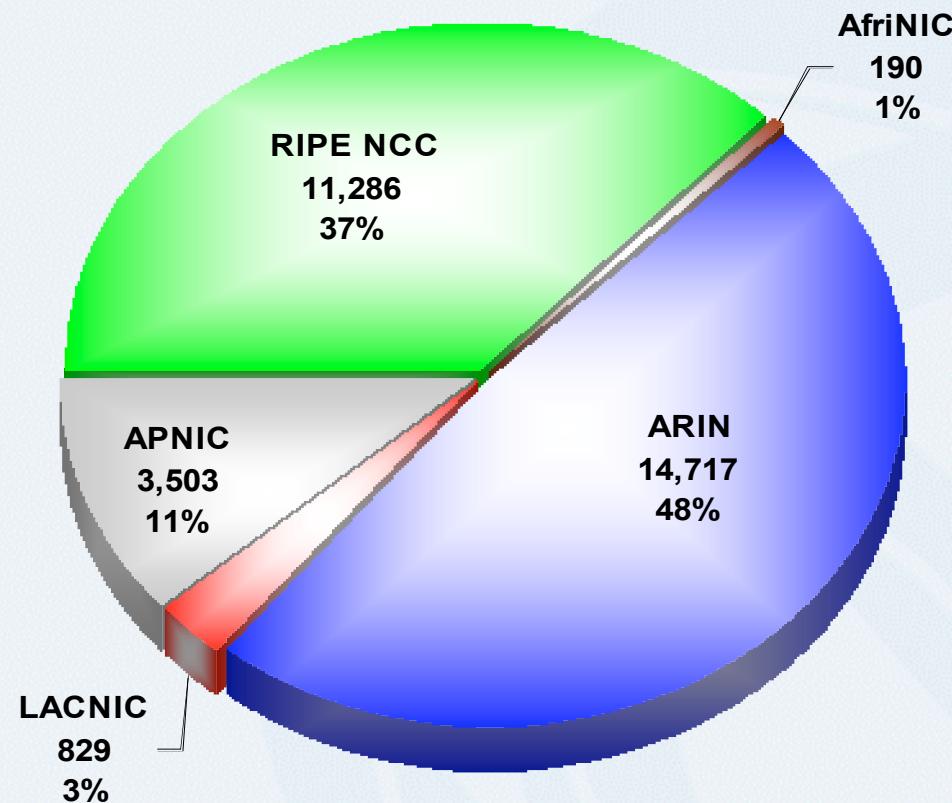


AS号码分配情况 (按年度)



ASN Assignments

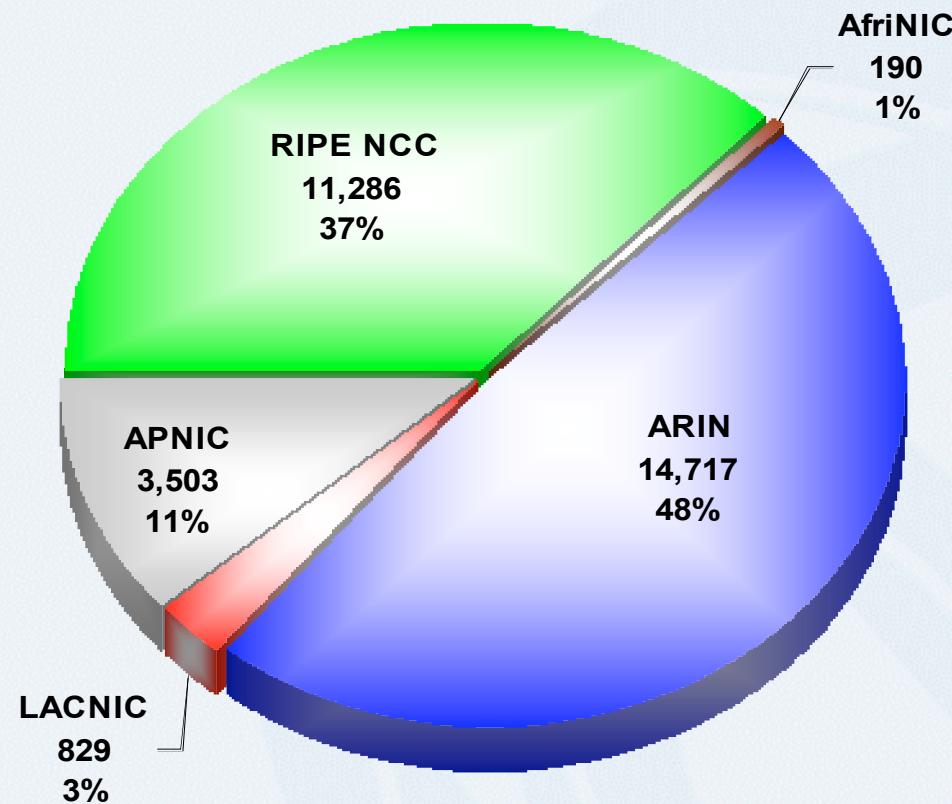
Cumulative Total (Jan 1999 – Sept 2006)



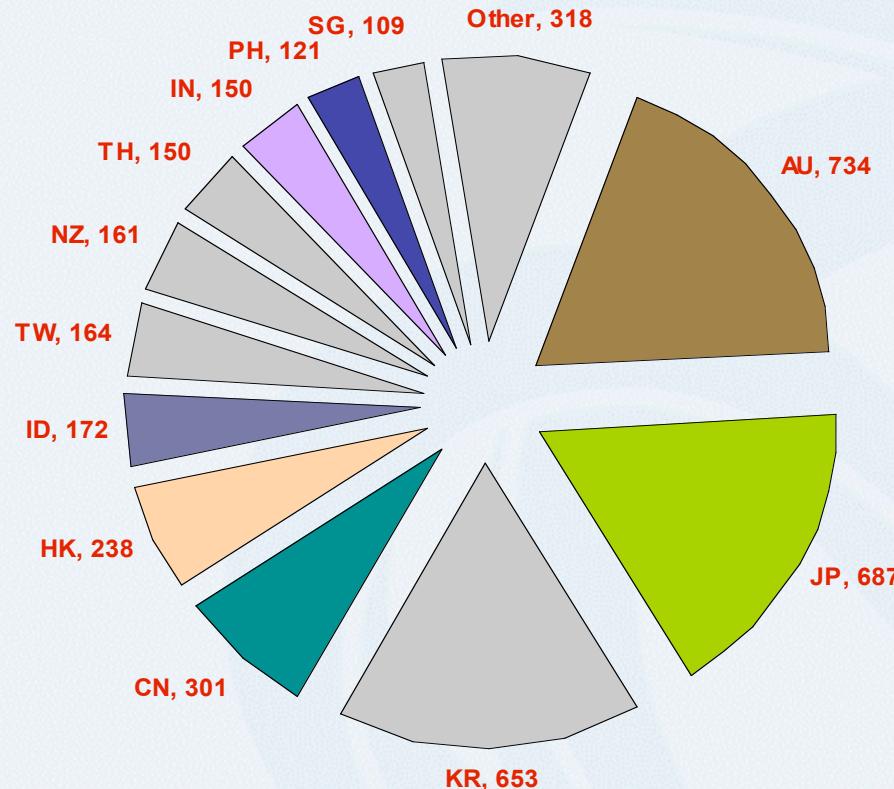


AS号码分配情况

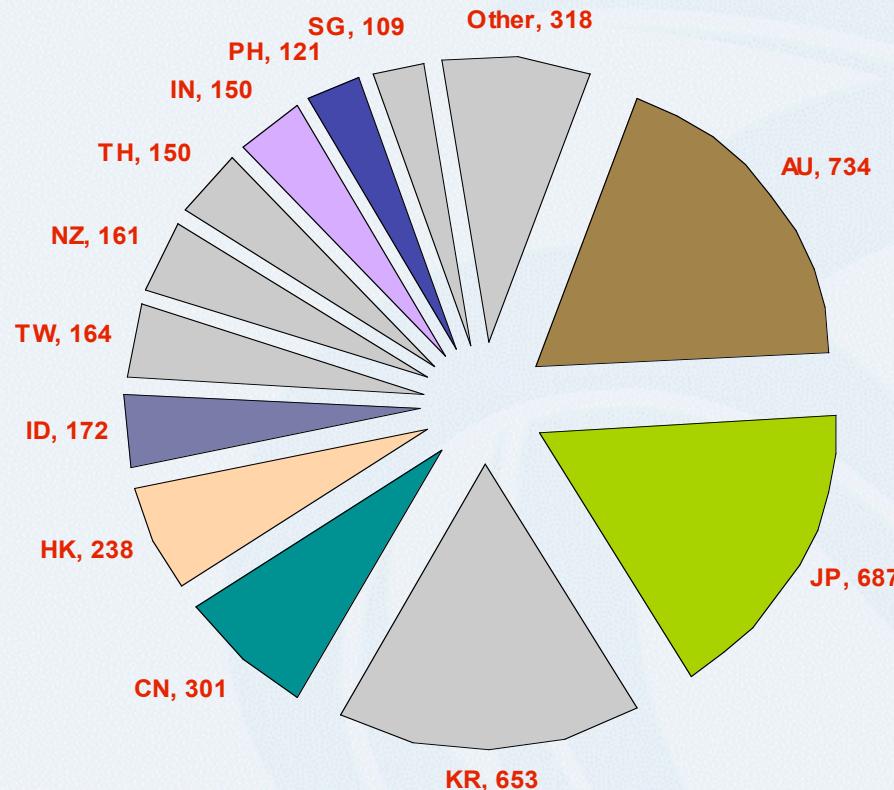
(总数, 1999年1月 – 2006年9月)



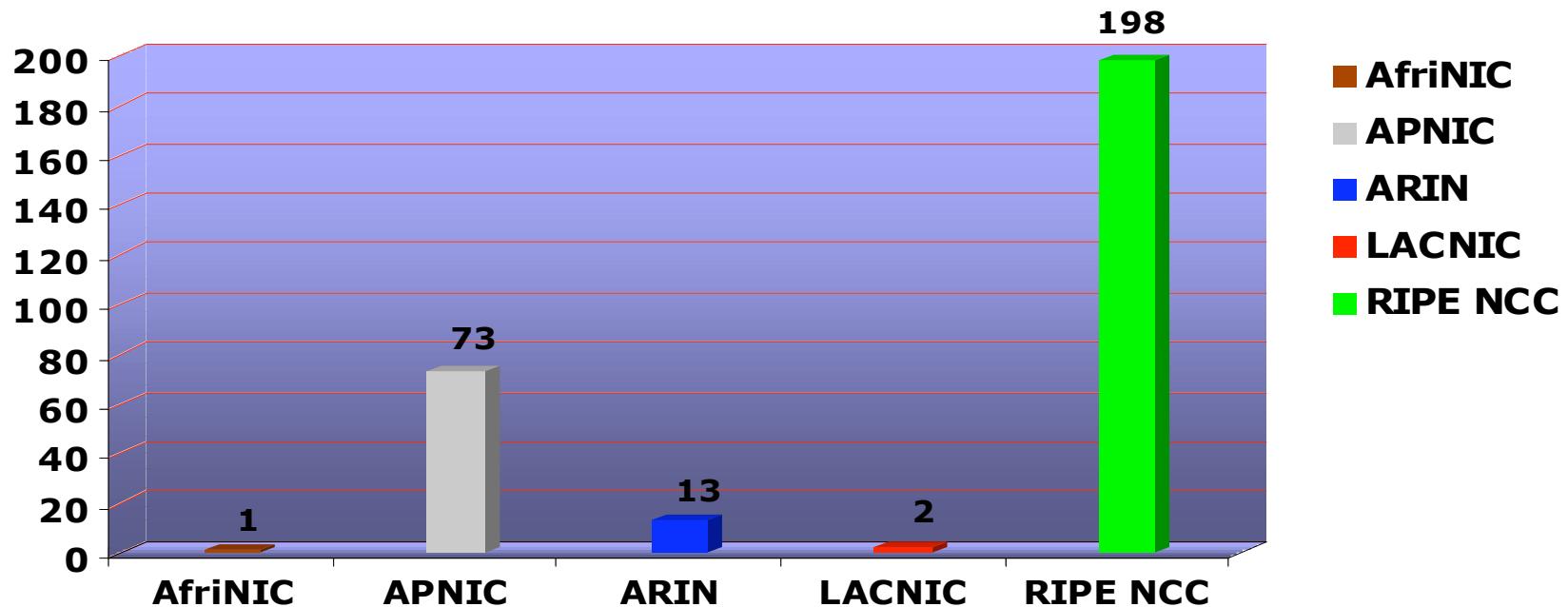
ASN Assignments in AP Region



亚太地区的AS号码分配情况（按经济体）

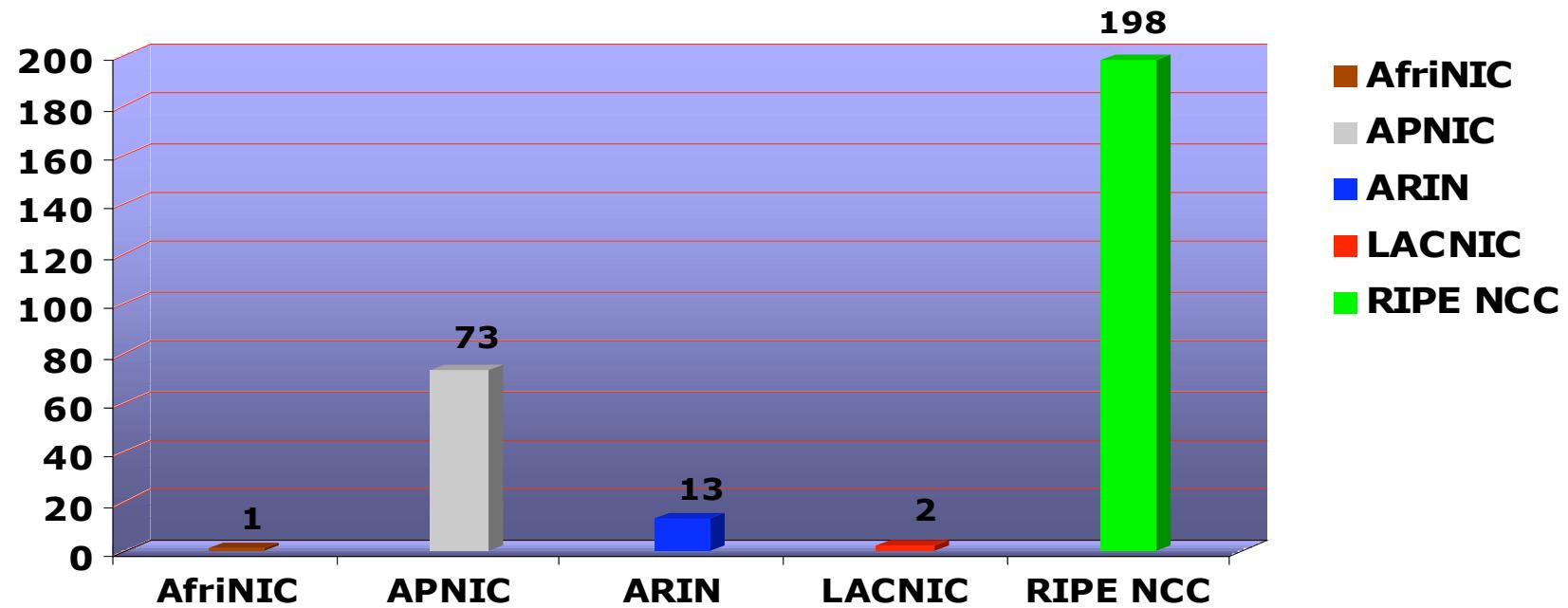


IANA IPv6 Allocations to RIRs* (Before Oct 2006)



*number of /23s

IANA给RIR分配的 IPv6 地址 (2006年10月之前)



*number of /23s

IANA IPv6 Allocations

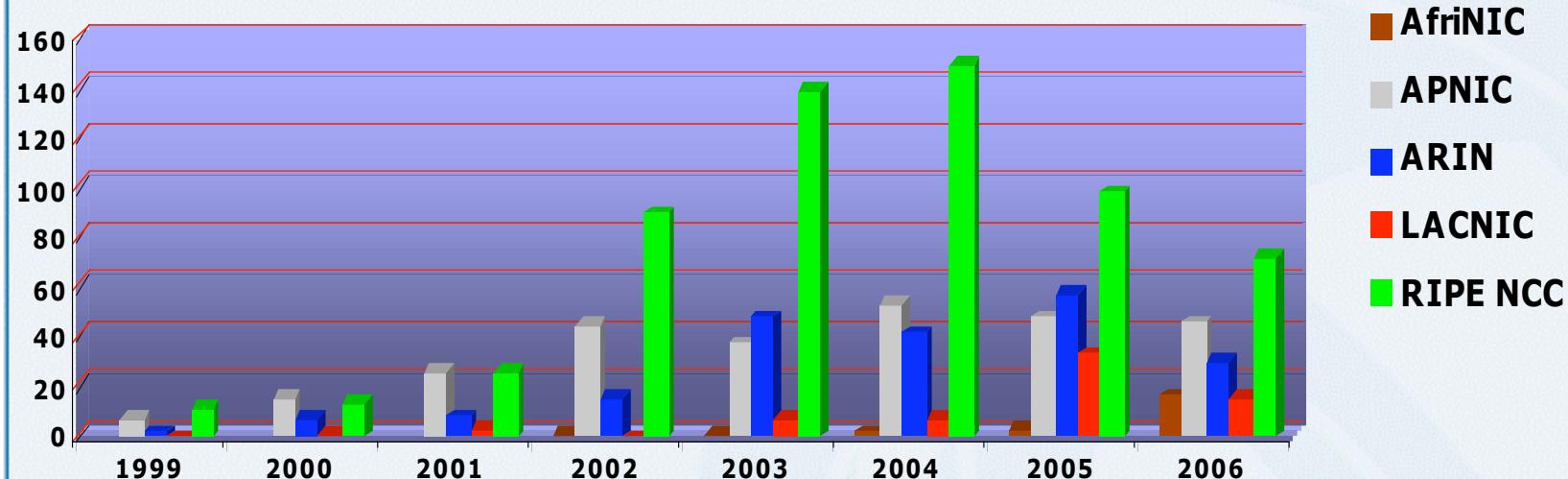
- IANA allocations to RIRs on 3 Oct 2006
 - APNIC 2400::/12
 - ARIN 2600::/12
 - LACNIC 2800::/12
 - RIPE 2A00::/12
 - AfriNIC 2C00::/12



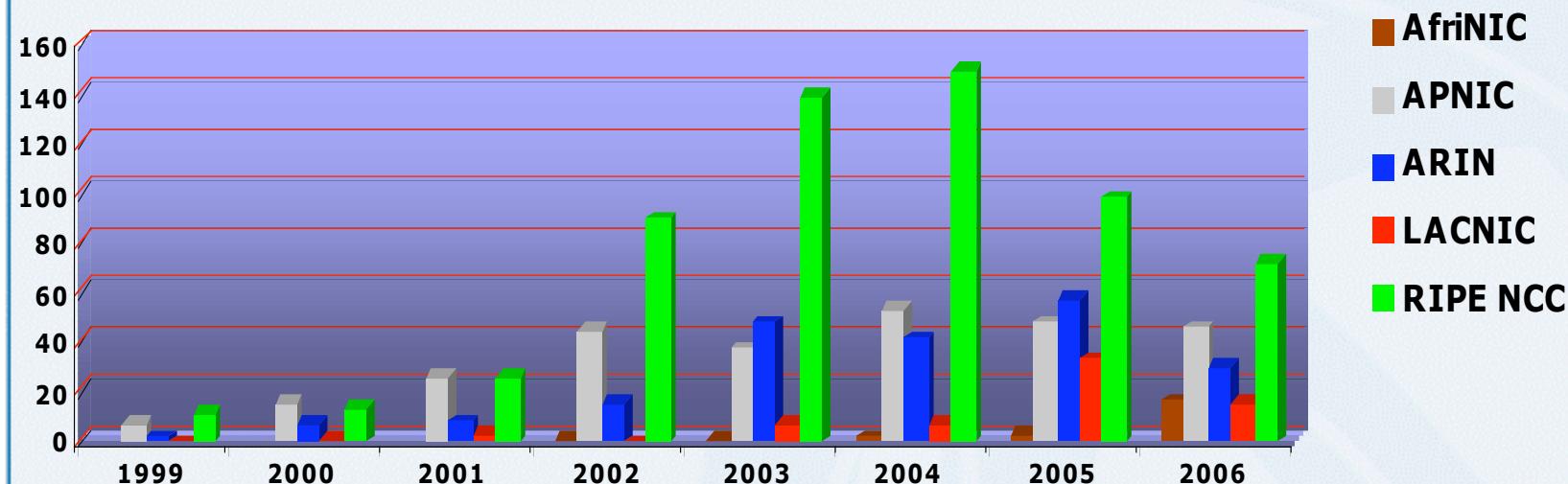
IANA 分配的IPv6地址

- IANA于2006年3月向 RIRs分配如下IPv6 地址
 - APNIC 2400::/12
 - ARIN 2600::/12
 - LACNIC 2800::/12
 - RIPE 2A00::/12
 - AfriNIC 2C00::/12

IPv6 Allocations RIRs to LIRs/ISPs Yearly Comparison

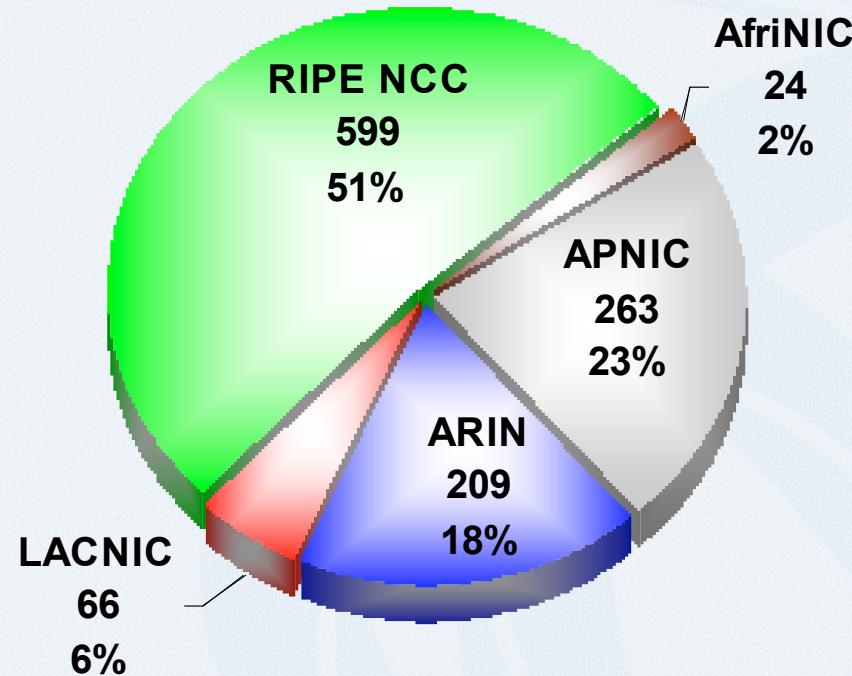


RIR分配给LIRs/ISPs的IPv6地址 (按年度)

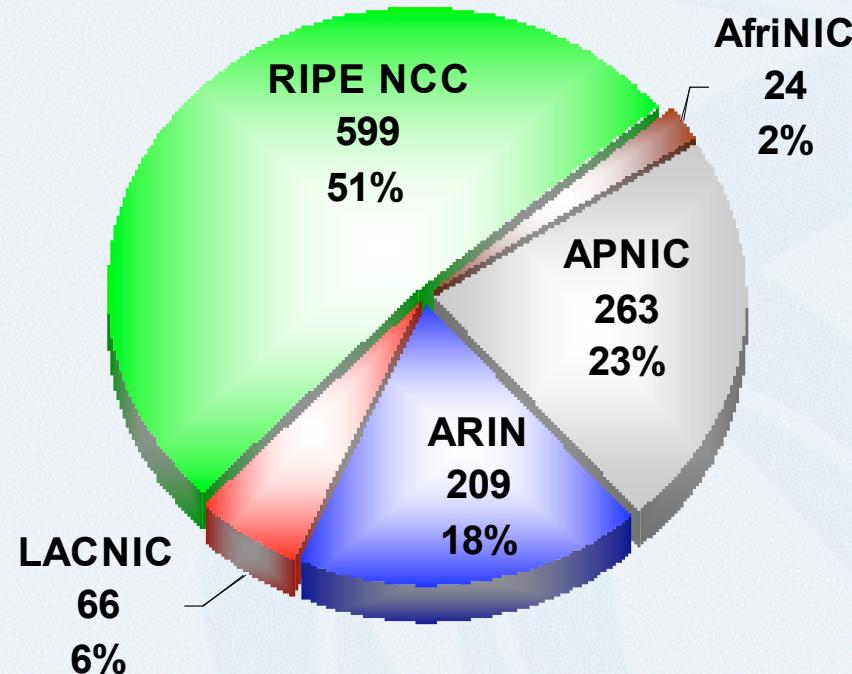


IPv6 Allocations RIRs to LIRs/ISPs

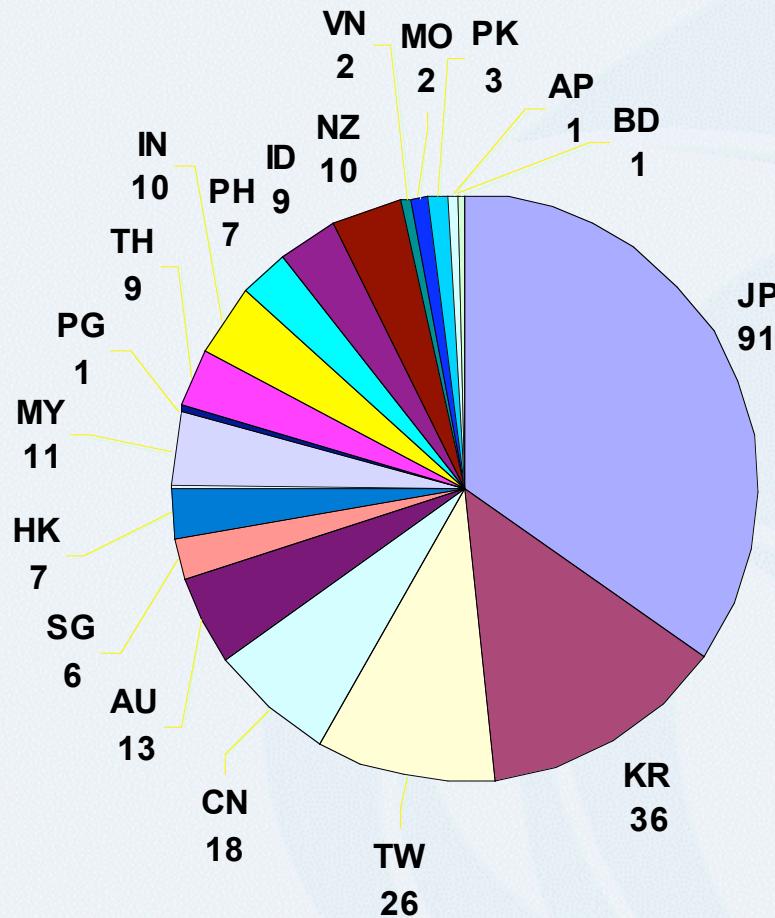
Cumulative Total (Jan 1999 – Sept 2006)



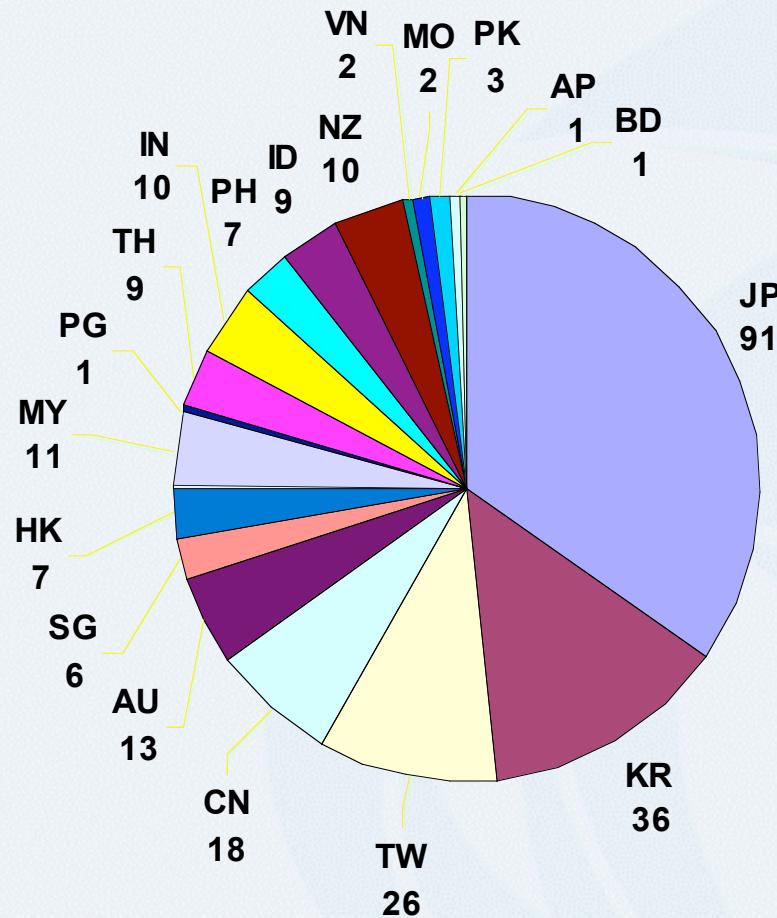
RIR分配给LIRs/ISPs的IPv6地址 (总数, 1999年1月 – 2006年9月)

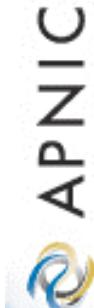


IPv6 Allocations in AP region



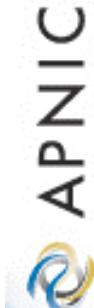
亚太地区的IPv6地址分配情况（按经济体）





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IPv4 Addressing in China



中国的IPv4地址情况



IPv4 Addressing in China

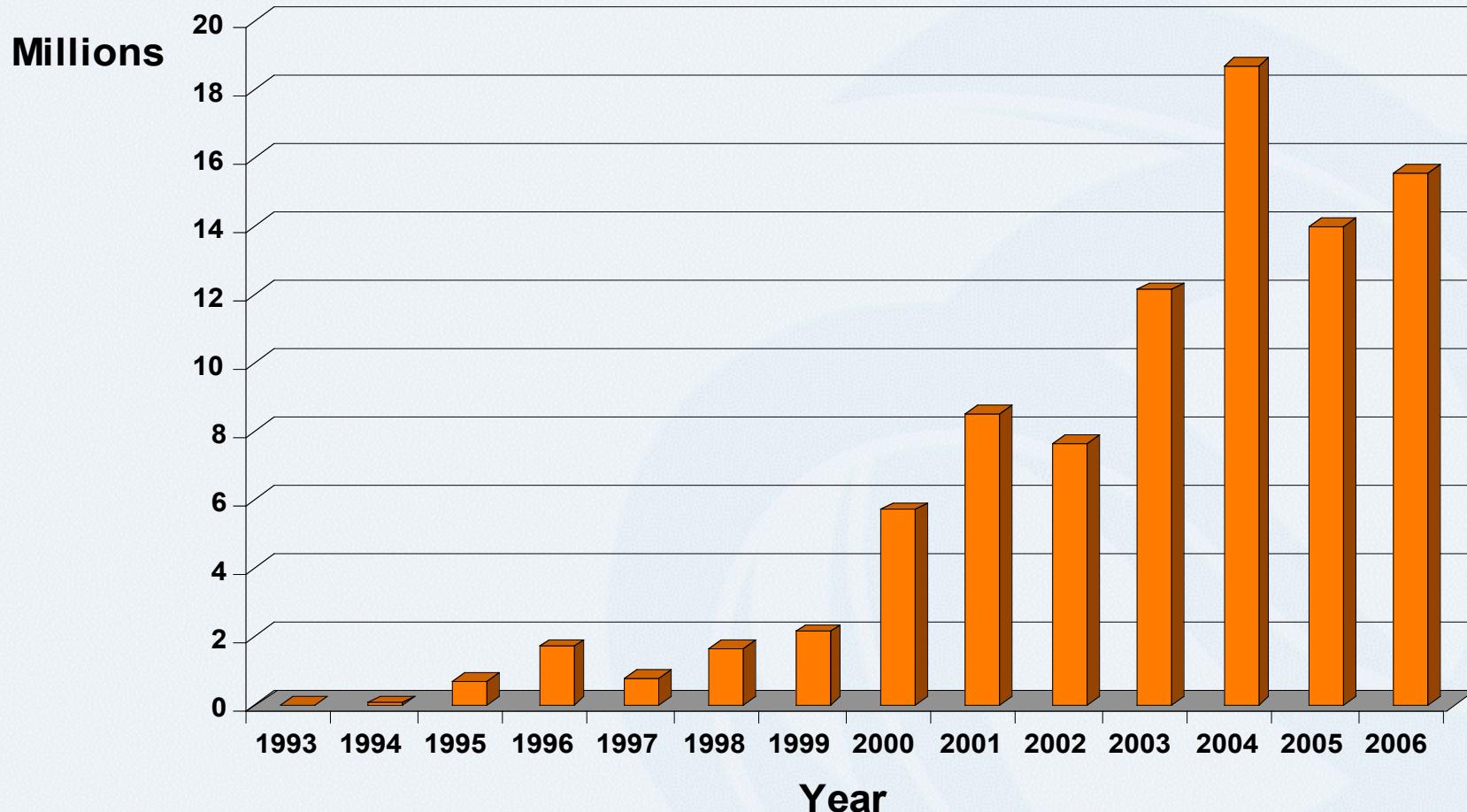
- China has about 90 millions IPv4 addresses now. It is more than 5 * /8.
- IPv4 address space is not running out immediately, IANA still has 59 * /8 reserved for future allocations.
- There are strong growth of IPv4 address allocations to China since 2000.
- Organisations in China like others go through the same process to receive IPv4 addresses.



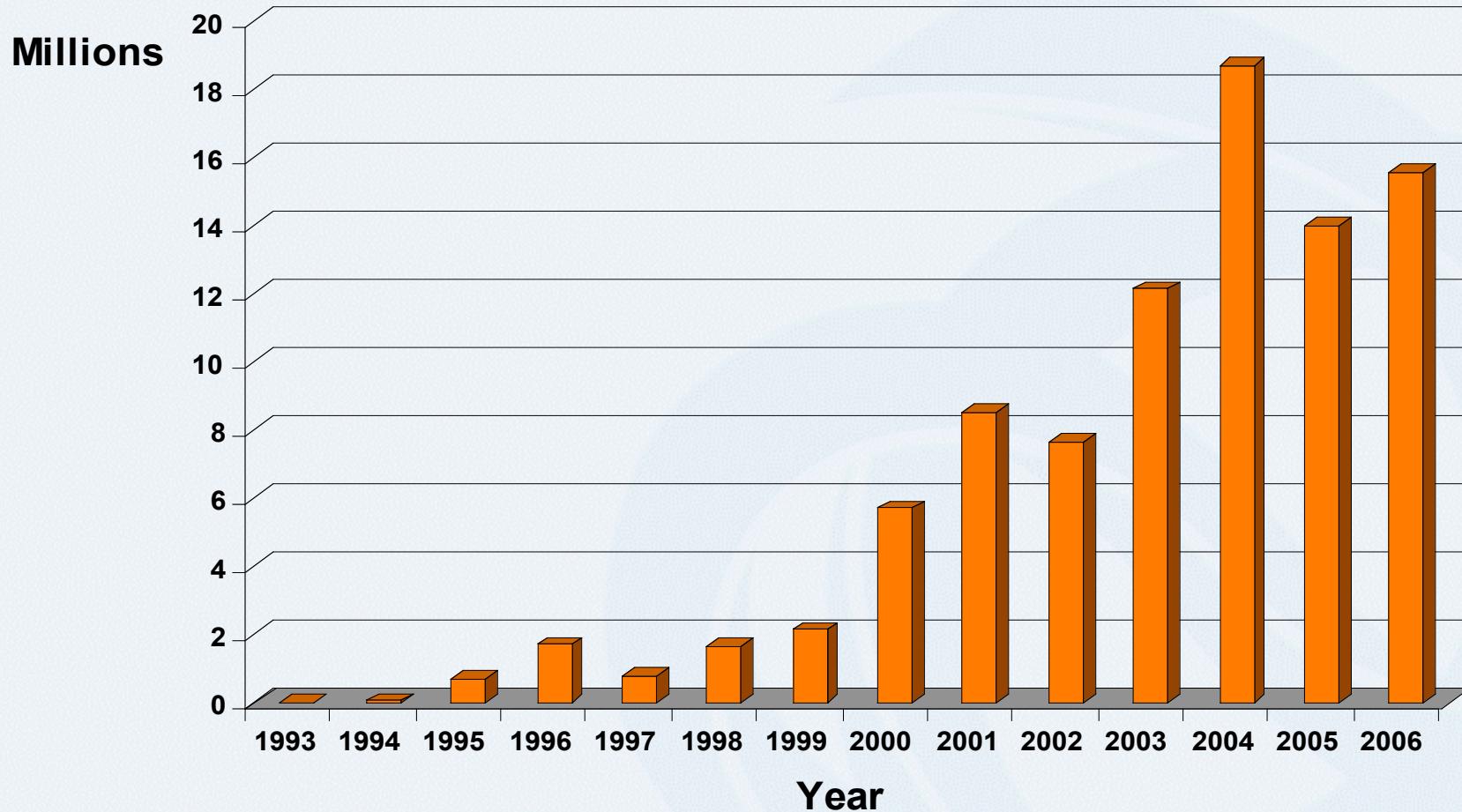
中国的IPv4地址情况

- 中国目前的IPv4地址数大约9000万个，即超过5个A的地址.
- IPv4地址不会马上耗尽，IANA现在还有59个A可供分配.
- 自2000年以来中国的IPv4地址需求和分配一直呈迅猛上升趋势.
- 中国的机构和其他地区的机构遵循同样的程序申请IPv4地址.

IPv4 Address Allocations to China by Year



中国的IPv4地址分配情况 (按年度)



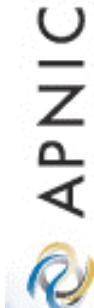
CNNIC Improvements

- CNNIC did a good job as a NIR in China
- Followed APNIC policies and provided better services to members
- Created their own whois database and resources services platform
- Allocation Window has been increased from /19 to /15 in the last 2 years
- Keep up the good work ☺



CNNIC工作进展

- CNNIC作为中国的国家级注册机构，表现得很出色
- 及时跟踪APNIC政策，同时努力向联盟成员提供更好的服务
- 建设自己的**whois**数据库和会员服务平台
- 分配窗口在过去两年中从/19（32C）提升至/15（2B）
- 继续保持好的工作状况 ☺



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Global Policies and Discussions



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国际IP地址相关政策和讨论

Global policies status - IPv4

- RIR maximum allocation period
 - Current all RIRs allocate for different timeframes
 - APNIC – 12 months
 - RIPE and AfriNIC – 24 months
 - LACNIC and ARIN – 6 months
 - Inconsistent and unfair to LIRs
- Proposes 12 months
 - Adopted in LACNIC
 - Proposed in ARIN
 - Under discussion in RIPE
 - Balance between regional needs and consistency globally
 - Will propose in AfriNIC next meeting

国际地址政策 - IPv4

- 各**RIR**要求的地址规划周期
 - 现在各**RIR**规定的地址规划周期不同
 - APNIC – 12个月
 - RIPE and AfriNIC – 24个月
 - LACNIC and ARIN – 6个月
 - 可能造成对LIRs的不一致、不公平
- 提议采用**12个月**的规划周期
 - 已经被LACNIC采纳
 - 在ARIN中被提议
 - 在RIPE中被讨论
 - 平衡不同地区的需求和国际政策的一致性
 - 将在AfriNIC的下届会议中被提议

Global policies status - IPv6

- HD ratio (0.94)
 - APNIC, ARIN and LACNIC adopted
 - RIPE under discussion
- Amend IPv6 Assignments and Utilisation Requirements (change /48 to /56)
 - ARIN adopted
 - APNIC last call
 - LACNIC and RIPE under discussion
- Provider Independent IPv6 Assignments for End-Sites
 - ARIN adopted (size: min /48 but reserved to /44)
 - APNIC last call (size: for a /48)
 - AfriNIC, LACNIC and RIPE are discussing (size: /32)

国际地址政策 - IPv6

- HD 比率 (0.94)
 - APNIC, ARIN and LACNIC 均采用
 - RIPE 正在讨论
- 修订IPv6分配和利用率要求 (从 /48 到 /56)
 - ARIN 已经采纳
 - APNIC 在最后讨论
 - LACNIC 和 RIPE 正在讨论中
- 为终端分配独立的IPv6地址
 - ARIN 已经采纳 (大小: 最小 /48 但是可以预留到 /44)
 - APNIC 在最后讨论 (大小: 一个 /48)
 - AfriNIC, LACNIC and RIPE 正在讨论 (大小: /32)

IPv6 global policies (cont)

- IPv6 Address Allocation criteria
 - ARIN
 - known isp in the region or have plan to allocate 200 */48)
 - LACNIC
 - need to be an LIR and use address space within 1 year
 - AfriNIC
 - Show a details plan to provide connectivity to organisation within Africa
 - show a reasonable plan for making /48 IPv6 assignments to end sites and make aggregate announcement within 12 months
 - RIPE is discussing
 - NO consensus in APNIC



IPv6 国际分配政策

- IPv6 地址分配标准
 - ARIN
 - 该地区的ISP或是有分配200 */48的计划
 - LACNIC
 - 必须是LIR并且在一年内有使用地址的需求
 - AfriNIC
 - 出示与本地区其他机构进行互联的详细规划
 - 出示为终端用户分配/48的IPv6地址的合理规划，并且在12个月内实现可聚合的路由广播
 - RIPE 正在讨论中
 - APNIC 中还没有达成一致意见

Global policy – 4 bytes ASN

- Policy status
 - Adopted in all regions
- 1/1/2007 – 31/12/2008
 - LIR can request for 2 bytes or 4bytes
 - RIR will assign 2 bytes by default
- 1/1/2009 – 31/12/2009
 - LIR can request for 2 bytes or 4bytes
 - RIR will assign 4 bytes by default
- After 1/1/2010
 - Only 4byte is available
 - No change in policy or procedure



4比特 AS号码分配政策

- 政策实施情况
 - 所有大区均已采用
- 1/1/2007 – 31/12/2008
 - LIR可以申请2比特或4比特的AS号码
 - RIR默认分配2比特的AS号码
- 1/1/2009 – 31/12/2009
 - LIR可以申请2比特或4比特的AS号码
 - RIR默认分配4比特的AS号码
- 1/1/2010以后
 - 只能使用4比特的AS号码
 - 政策和进程方面没有变化

Debogon new /8

- Issues
 - Out of date filters
 - Fire wall software
 - Old router configuration
 - Examples of old filters in documents
- Identify blocking AS
 - Announce multiple prefixes from new /8
 - Publish results in public website
 - Community can test and identify where the blocking occurs
 - Results
 - <http://www.ris.ripe.net/debogon/debogon.html>
- Future outlook
 - Possibly testing IPv6
 - Testing recovered historical resource address space



新分配的/8的地址

- 论述
 - 落后的数据过滤
 - 防火墙软件
 - 旧的路由配置
 - 旧的路由过滤案例
- 查出路由阻塞情况
 - 从新的/8中广播不同前缀的地址
 - 在公开网站上公布结果
 - 企业可测试并查出路由阻塞发生在哪
 - 测试结果
 - <http://www.ris.ripe.net/debogon/debogon.html>
- 未来展望
 - 可能测试IPv6
 - 测试重新可用的历史地址

APNIC meetings

- APNIC 23, APRICOT 2007
 - Bali, Indonesia
 - 27 February to 2 March 2007
- APNIC 24, SANOG 10
 - New Delhi, India
 - 29 August - 7 September 2007
- APNIC 25, APRICOT 2008
 - Taipei, Taiwan
 - 25 - 29 February 2008
- All invited !!!

<http://www.apnic.net/meetings>





APNIC 会议

- APNIC 23, APRICOT 2007
 - 巴厘 , 印度尼西亚
 - 27 February to 2 March 2007
- APNIC 24, SANOG 10
 - 新德里, 印度
 - 29 August - 7 September 2007
- APNIC 25, APRICOT 2008
 - 台北, 台湾
 - 25 - 29 February 2008
- 欢迎参加 !!!

<http://www.apnic.net/meetings>



Thank you for listening!

Questions?

谢谢!

问题?