A proposal to lower the IPv4 minimum allocation size and initial criteria in the AP region
prop-014-v001

Policy SIG
APNIC17/APRICOT 2004
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KL, Malaysia

Clarifications

- Proposal only applies to initial allocation to an LIR

- Proposal does not affect size of subsequent allocations

- Every attempt will be made to ensure contiguous allocations

Background

- RIR goals
  - Conservation, aggregation
- Minimum allocation and criteria
  - Balance conservation and aggregation
  - Unbiased and fair access to all
  - Allocations based on 'demonstrated need'
- Policy responsive to changing environment
  - 1996 minimum allocation /22
  - 1997 minimum allocation /19
  - 2000 minimum allocation /20
  - 2001 Introduction of criteria

APNIC

Current Situation

- Minimum allocation size
  - /20 initial allocation
- Eligibility criteria
  - Have used a /22 from upstream provider or demonstrate an immediate need for a /22; and
  - Demonstrate a detailed plan for use of a /21 within a year

Why Change the Size of the Minimum Allocation & Criteria?

- Voiced as 'need' by parts of community
  – Proposal from APJII Indonesian NIR 2001
- Concern expressed by India, Pacific
  – Trainings conducted in region
  – Helpdesk
  – Membership applications
  – Regional meetings

What is the Problem with the Current Criteria & Allocation Size?

- Barrier to ISP market entry
  - Smaller ISPs unable to meet criteria
  - Difficult to obtain address space
    - From upstream is very difficult (India)
    - Regulatory framework (license in Indonesia)
- More than 'needed'
  - /20 is too much for some smaller economies and businesses

Research into 'Need' – Are ISPs Excluded by Current Policies?

Economy	No. of APNIC members	No. of ISP licenses	No. of ISPs excluded	% of ISPs excluded
IN	104	192	88	46%
AU	195	964 *	769	80%
HK	110	216	106	50%
ID	96	179	83	47%

Sources:

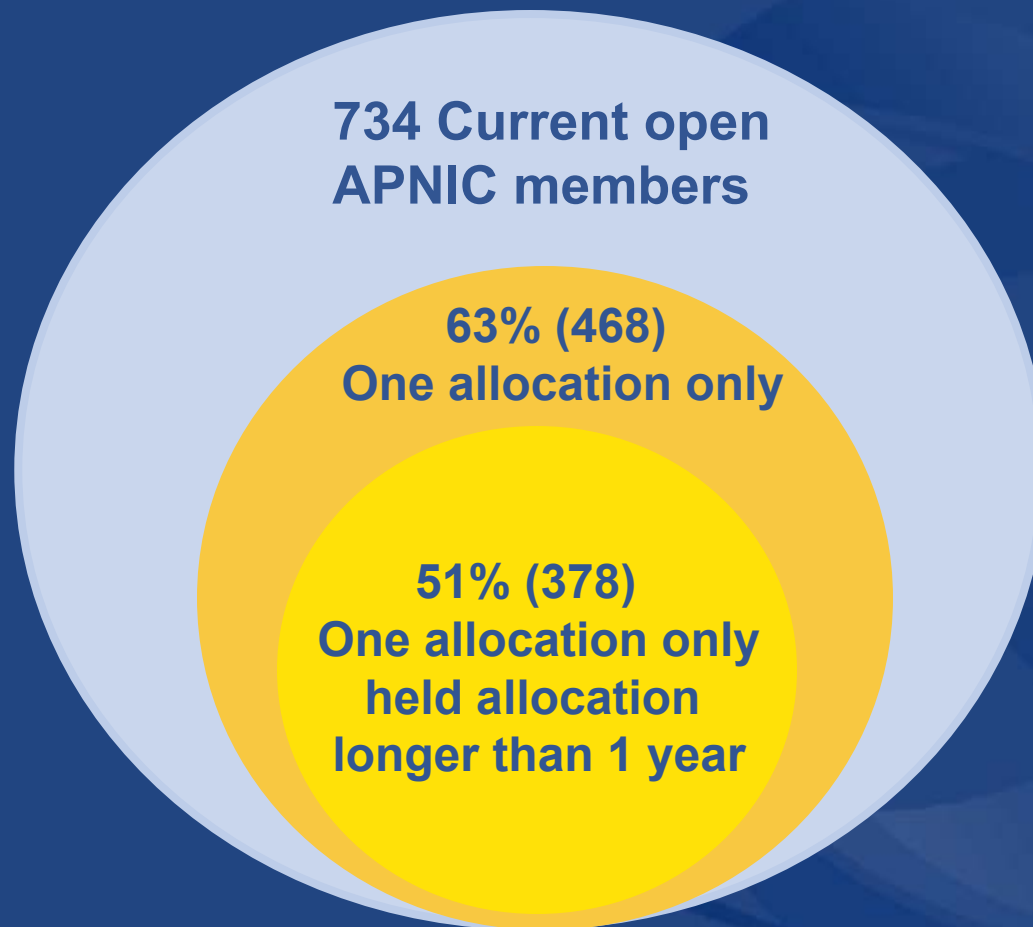India – Department of Telecommunications Data
Hong Kong – Office of the Telecommunications Authority
Australia Registered with Telecommunications Industry Ombudsman
Indonesia – Department of Post and Telecommunications

Research into 'Need' – Are Allocations too Large for Region?

- Allocations based on 'needs' for 1 year

734 Current open APNIC members

63% (468) One allocation only

51% (378) One allocation only held allocation longer than 1 year

Proposal

- Lower minimum allocation
  - /21 initial allocation
- Lower eligibility criteria
  - Have used a /23 from upstream provider or demonstrate an immediate need for a /23; and
  - Demonstrate a detailed plan for use of a /22 within a year
- All other parts of current policy remain unchanged

Other RIR Regions

- ARIN
  - Minimum allocation /20
  - Criteria: multi-homed: used a /21 block, not multi-homed: used a /20 from upstream
  - Approved /22 minimum allocation for AfriNIC part of ARIN
- LACNIC
  - Minimum allocation /20
  - Criteria: multi-homed: used a /22 block, not multi-homed: used a /21 from upstream
- RIPE
  - /21 minimum allocation (Jan 2004)
  - No criteria
  - Approved /22 minimum allocation for AfriNIC part of RIPE

Impact of Policy Changes

Some Thoughts..

# Conservation and Routing Tables

- Will conservation be affected?
  - More organisations will qualify
  - Less address space is being allocated
  - What does past experience show us?
- Will the size of the routing table be affected?
  - Will more routes be announced?
  - What does past experience show us?

Potential Global Impact – Routing Table

- Impact of previous policy changes?
  - /19 minimum 1 Jul 2000 (82,999 entries)
    - /19 prefixes 6.6%
    - /20 prefixes 4%
    - /24 prefixes 57.5%
  - /20 minimum 1 Jan 2004 (131,469 entries)
    - /19 prefixes 6.7%
    - /20 prefixes 7.1%
    - /24 prefixes 54.6%

Potential Global Impact - Prefix Distribution
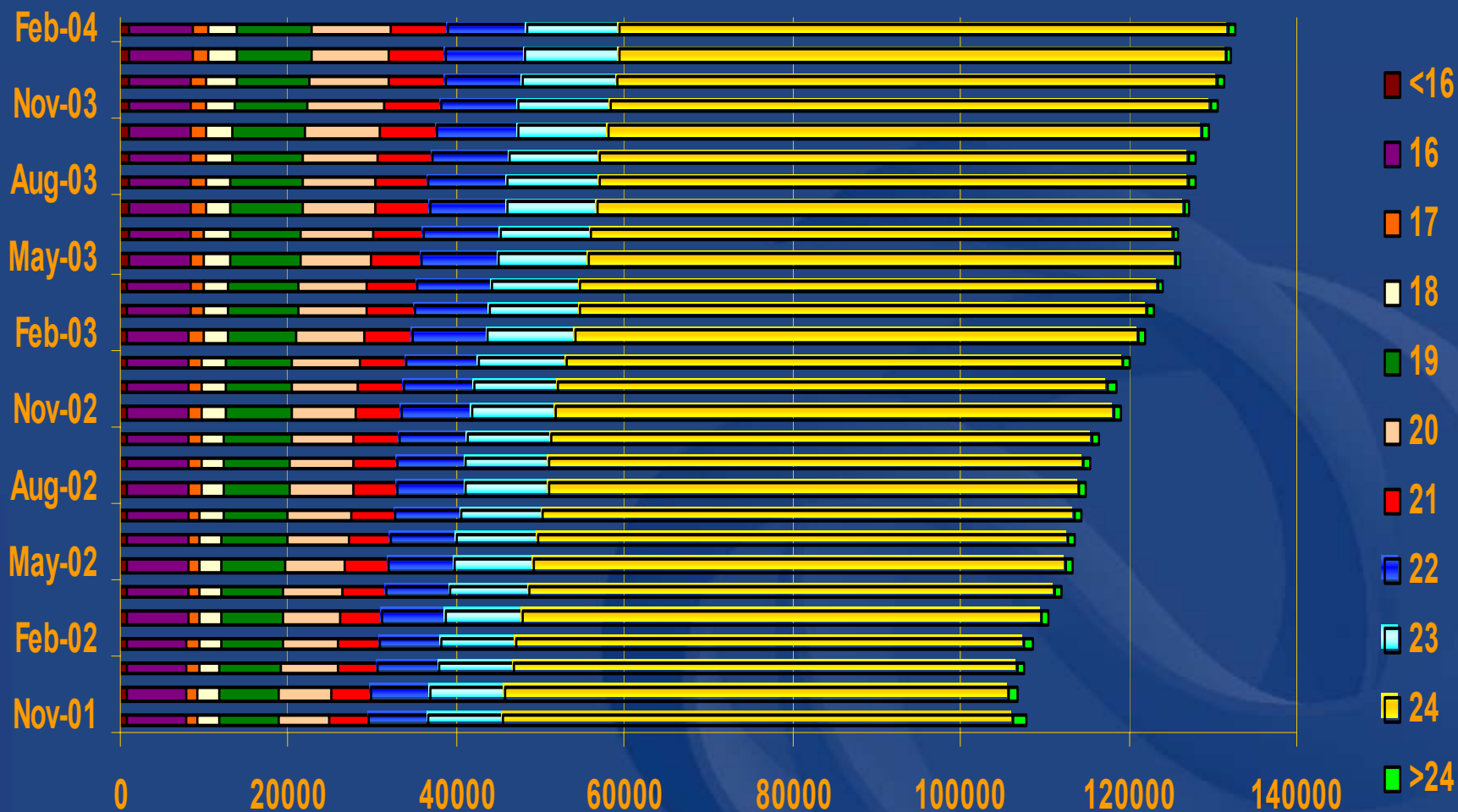
Last updated 14 Feb 2004

Routing Table Analysis - /24 Fragmentation

- From 71,079 /24's advertised
  - 7,787 (11%) RIR assigned/allocated and advertised as a /24
    - RIPE - 1,110 prefixes
    - LACNIC - 128 prefixes
    - ARIN - 6,034 prefixes
    - APNIC - 653 prefixes
  - 63,292 (89%) fragments of larger RIR allocations
    - RIPE – 10,488 prefixes
    - LACNIC – 5,729 prefixes
    - ARIN - 41,747 prefixes
    - APNIC - 13,162 prefixes
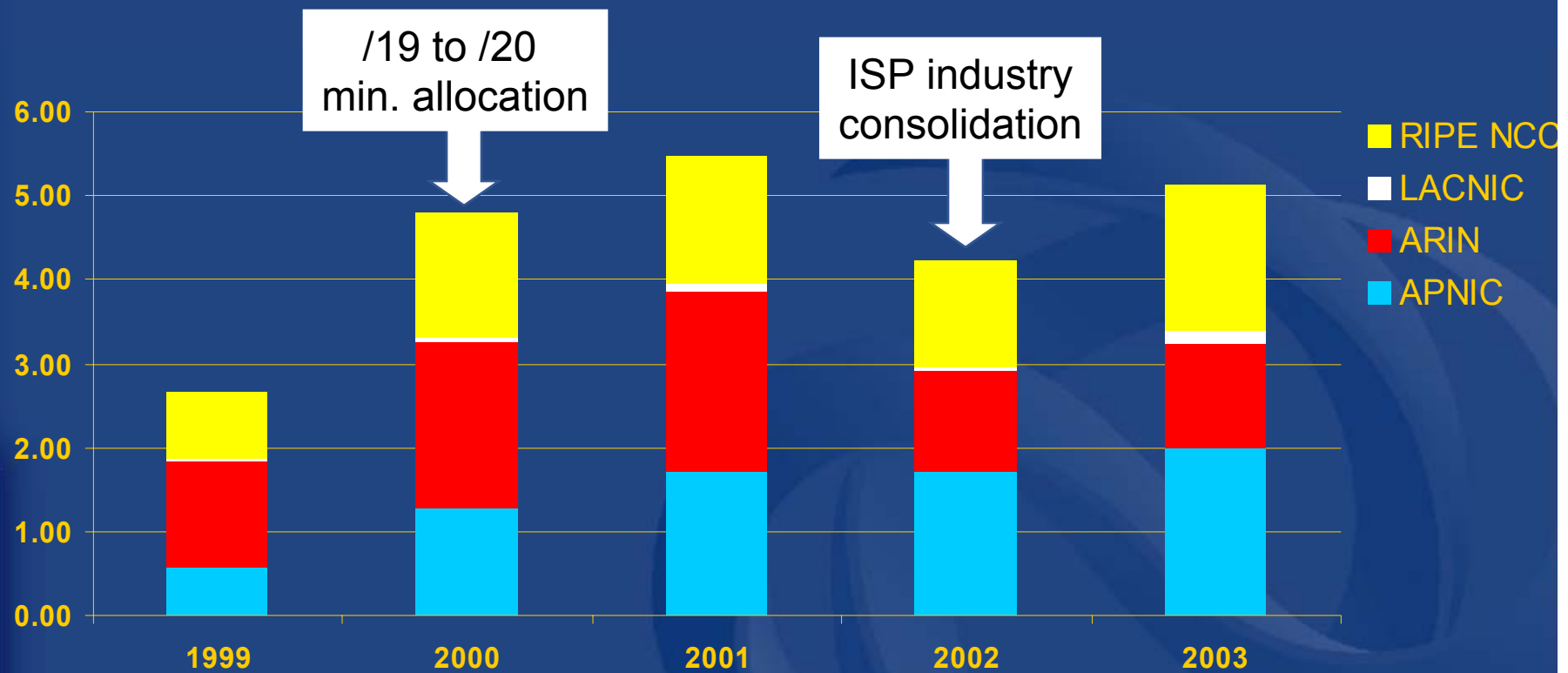
Routing Table Analysis - Fragmentation

- Significant fragmentation in RIR allocations
  - Appears to be major contributor to growth of the routing table
- /21, /22, /23 less fragmentation
  - Proportionately less advertised fragmentation than larger prefix sizes
- Levels of fragmentation of advertisements improving since late 2000
  - Corresponding with a return to linear growth of the BGP routing table size
- Source: Geoff Huston
  - http://www.apnic.net/meetings/17/docs/sigs/routing/routing-pres-huston-allocvsannouncement.pdf

Feedback

- Posted *sig-policy* ML 19 Jan 2004
  - 14 postings, 5 individuals
  - Supported by VNNIC, JPNIC
- Comments
  - How far do we go in lowering barrier?
    - End user organisations might qualify and break CIDR
    - The number who do not use their allocation may be higher or as high in the future
  - Data not really analysed for impact of policy changes
    - More work needed on routing and rates of address consumption
  - Tighten criteria for portable assignments
    - Should be for end-users only so ISPs apply for allocations
  - What is the difference between an assignment and an allocation?

Implementation

- NIR considerations
  - The outcome of this policy discussion should be applicable to all NIRs equally in APNIC region
    - Timeframe determined by NIR
- Timeframe for APNIC Secretariat
  - 3 months for implementation
    - Policy development process requires 2 months for comment on mailing list followed by EC approval

Questions and Feedback?

- Summary
  - Proposal is to lower minimum allocation to a /21 and criteria as follows
    - Have used a /23 from ISP or demonstrate an immediate need for a /23; and
    - Demonstrate a detailed plan for use of a /22 within a year
  - Why?
    - To lower the barrier for smaller ISPs
    - To allocate appropriate size
      - Response to expressed needs from community