

APNIC Member's Training Course

Internet Resource Management Essentials

26th August 2008

Christchurch, New Zealand

Introduction

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Assumptions & Objectives

Assumptions

- Are current or prospective APNIC member
- Have not submitted many requests
- Are not familiar / up-to-date with policies
- Are not familiar with procedures

Objectives

- Teach members how to request resources from APNIC
- Keep membership up-to-date with latest policies
- Liaise with members
 - 😊 Faces behind the e-mails

Overview

- IRMe
 - Introduction to APNIC
 - APNIC community & policy development
 - APNIC meetings
 - APNIC policies – allocation and assignment
 - APNIC policy update
 - APNIC procedures – IPv4, 2nd Opinion Request Form
 - APNIC policy and procedures – IPv6
 - APNIC policy and procedures - ASN
 - APNIC Whois database – recap
 - Privacy of customer assignment
 - MyAPNIC
 - IPv4 unallocated address space exhaustion
 - Current policy discussion
 - APNIC procedures – reverse DNS
 - APNIC statistics

Introduction to APNIC

Asia Pacific Network Information Centre

What is APNIC?

- Regional Internet Registry (RIR) for the Asia Pacific region
 - One of five RIRs currently operating around the world
 - Non-profit, membership organisation
 - Open participation, democratic, bottom-up processes
 - Responsible for distributing Internet resources throughout the AP region
- Industry self-regulatory body
 - Consensus-based, open, and transparent decision-making and policy development
- Meetings and mailing lists
 - Open to anyone
 - <http://www.apnic.net/meetings/26/index.html>
 - <http://www.apnic.net/community/lists/index.html>

Where is APNIC region?



What does APNIC do?

Resource service

- IPv4, IPv6, ASNs
- Reverse DNS delegation
- Resource registration
 - Authoritative registration server
 - whois
 - IRR

Policy development

- Facilitating the policy development process
- Implementing policy changes

Information dissemination

- APNIC meetings
- Web and ftp site
- Publications, mailing lists
- Outreach seminars

<http://www.apnic.net/community/lists/>

Training & Outreach

- Training
 - Internet Resource management
 - DNS workshops

- Subsidised for members

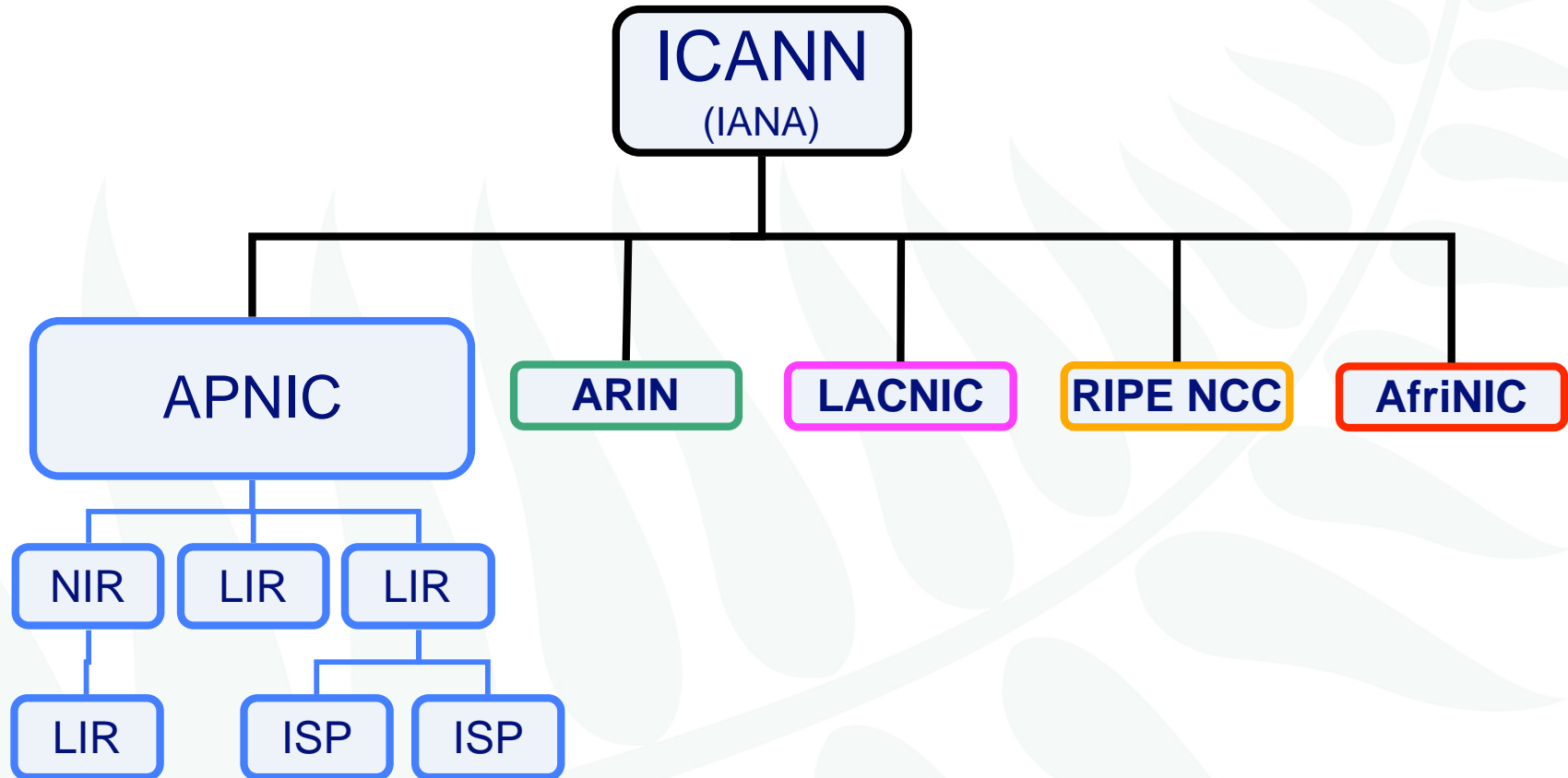
Schedule:

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

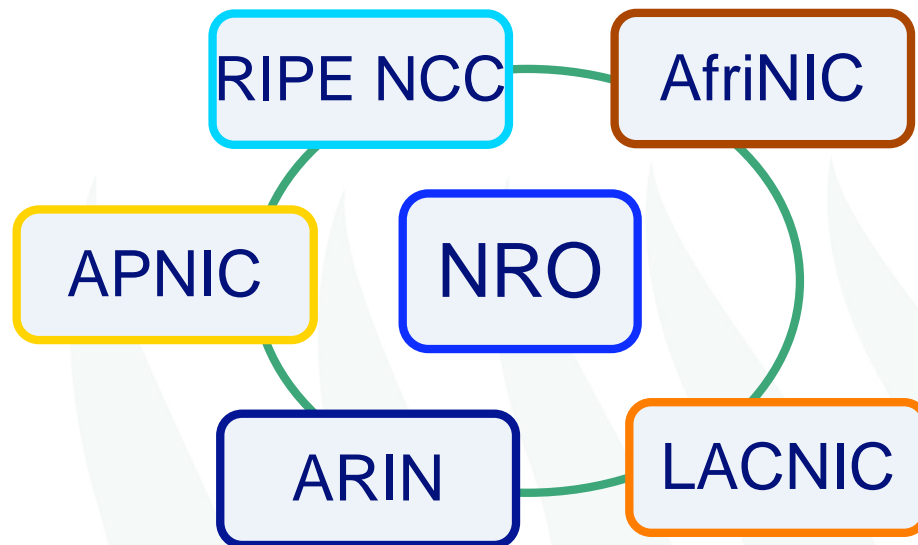
APNIC is NOT

- A network operator
 - Does not provide networking services
 - Works closely with APRICOT forum
- A standards body
 - Does not develop technical standards
 - Works within IETF in relevant areas (IPv6 etc)
- A domain name registry or registrar
 - Will refer queries to relevant parties

Internet Registry structure



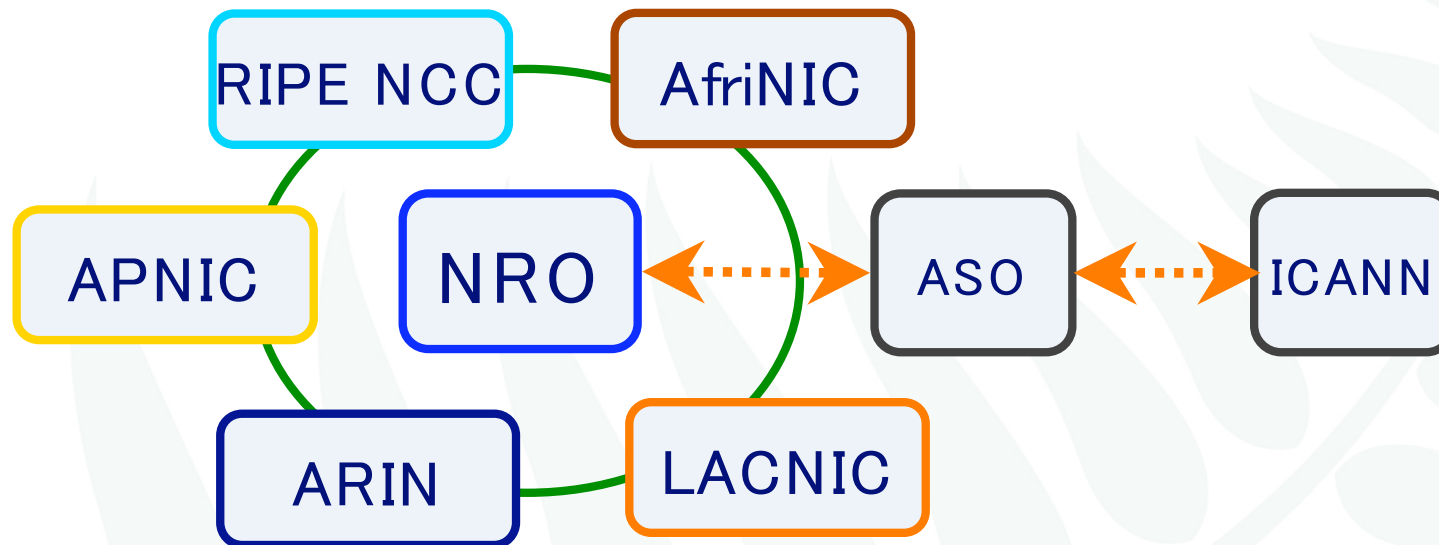
Global policy coordination



The main aims of the NRO:

- To protect the unallocated number resource pool
- To promote and protect the bottom-up policy development process
- To facilitate the joint coordination of activities e.g., engineering projects
- To act as a focal point for Internet community input into the RIR system

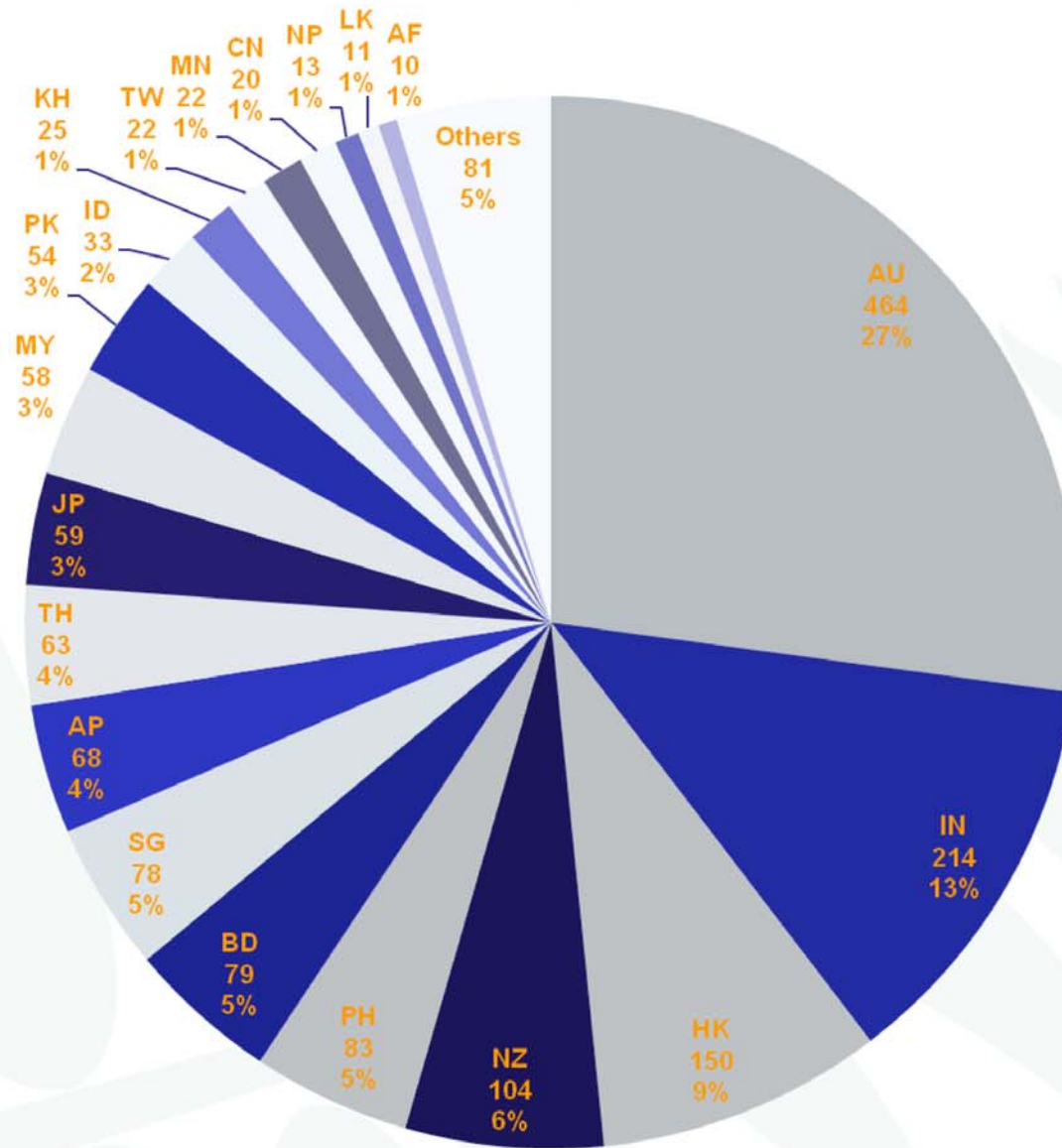
Global policy coordination



The main function of ASO:

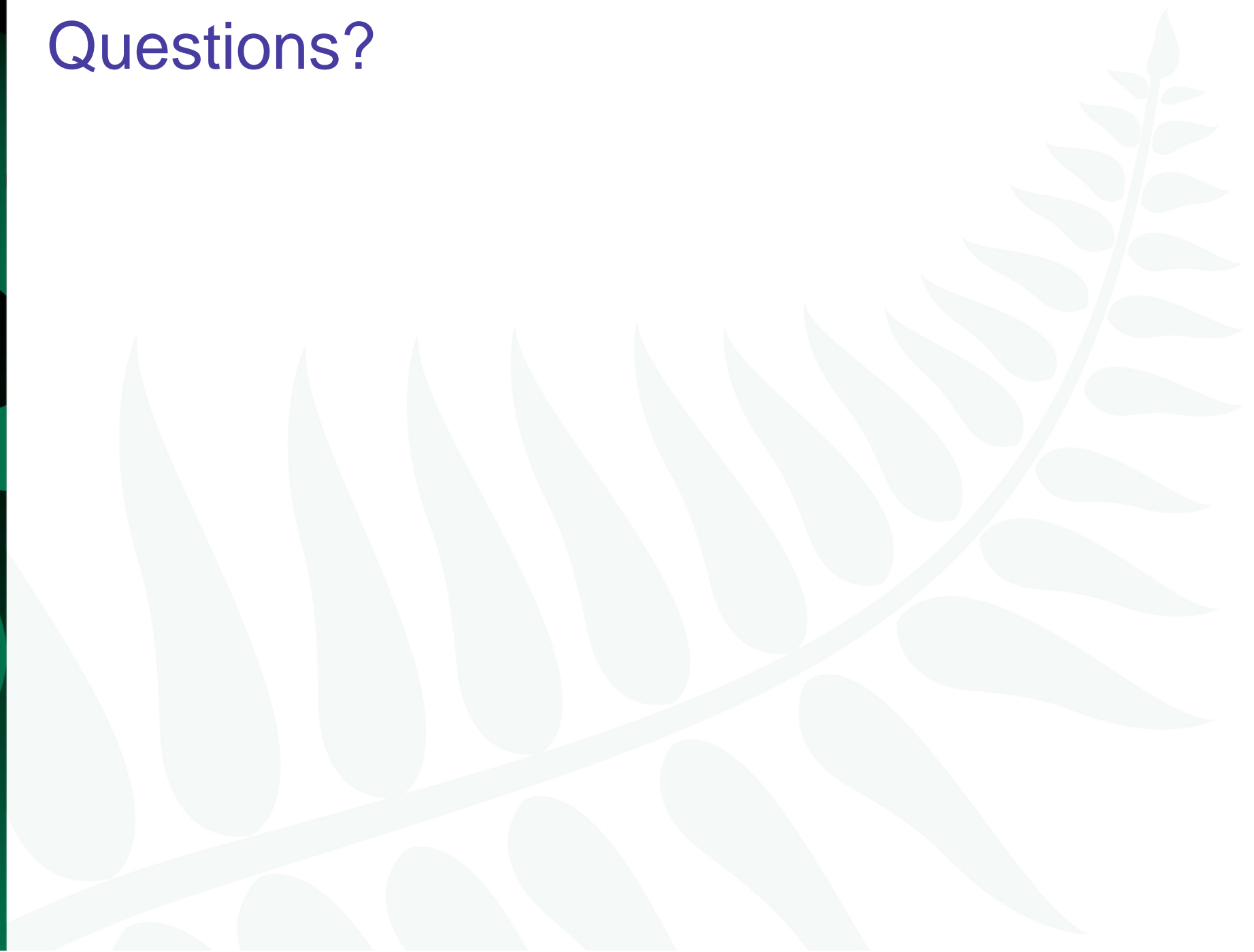
- ASO receives global policies and policy process details from the NRO
- ASO forwards global policies and policy process details to ICANN board

APNIC membership



Source: APNIC statistic data - Last update May 2008

Questions?



APNIC Community & Policy Development

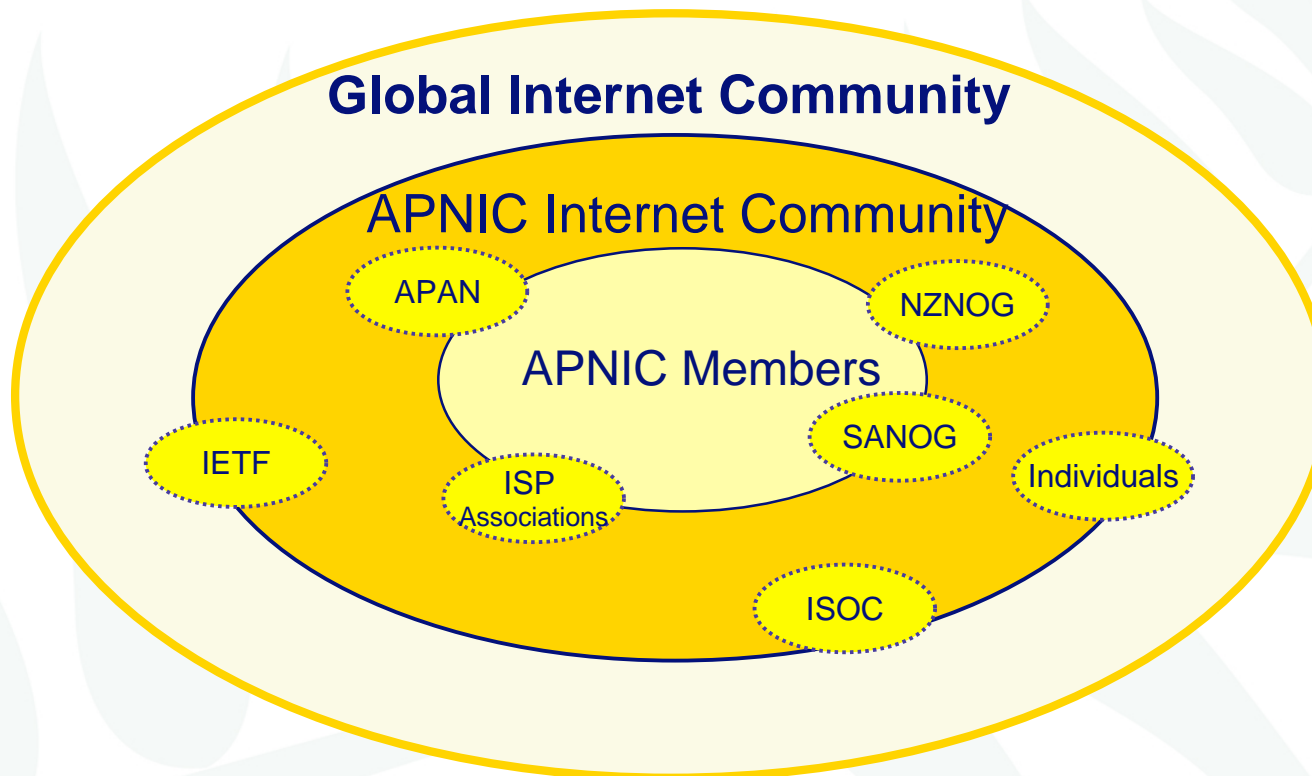


What is the APNIC community?

- **Open** forum in the Asia Pacific
 - Open to any interested parties
- Voluntary participation
- Decisions made based on consensus
- Public meetings
- Mailing lists
 - web archived
- *A voice in regional Internet operations through participation in APNIC activities*

You are part of APNIC community!

- **Open** forum in the Asia Pacific
 - Open to any interested parties



– A voice in regional Internet operations through participation in APNIC

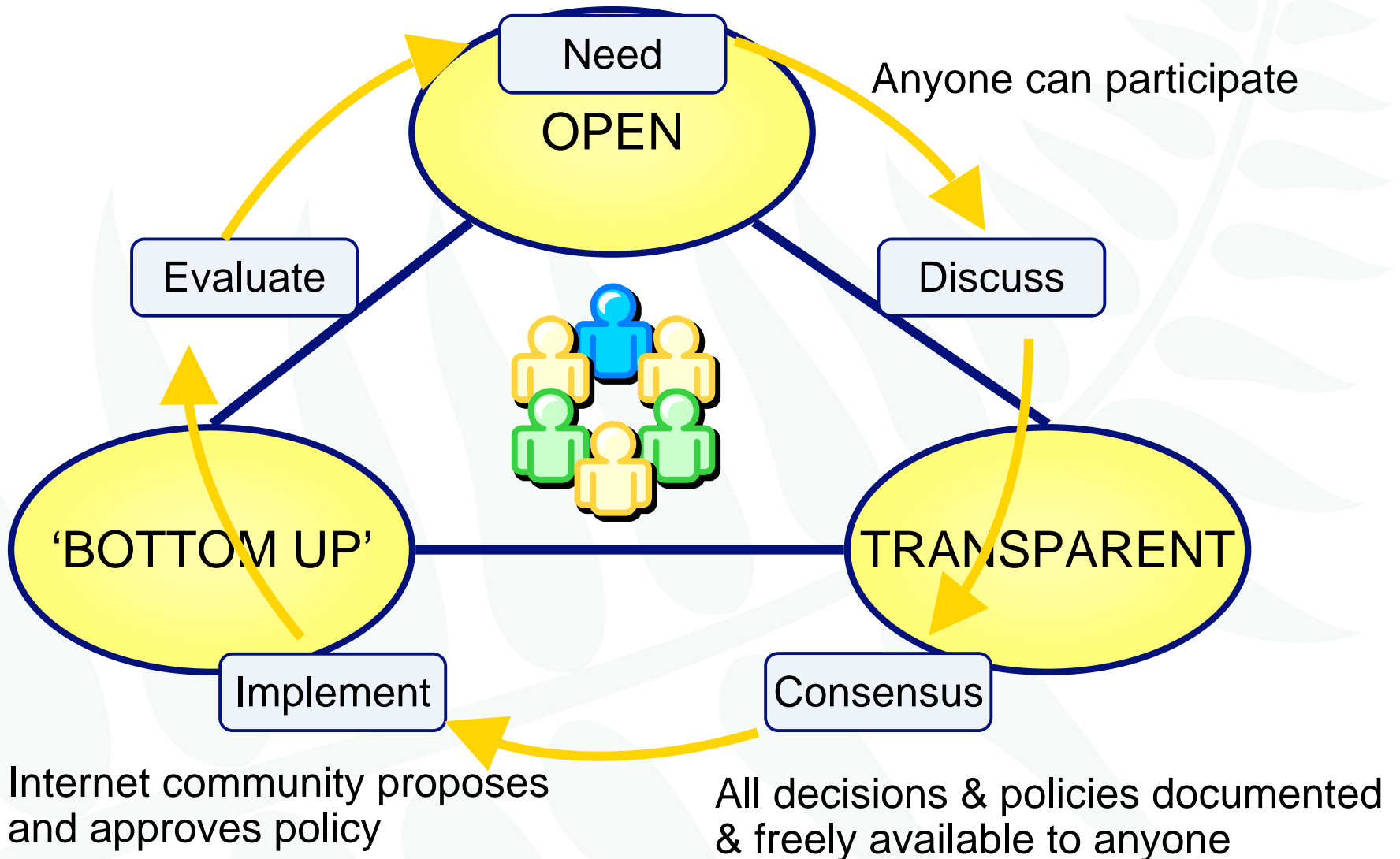
Policy development

- Industry self-regulatory process
 - Policy is developed by the AP Internet community to suit needs of region
 - Facilitated by RIR staff
- Policy implementation
 - APNIC shares with its members and their customers a collective responsibility
 - RIR process
 - ISPs and other affected parties

Participation in policy development

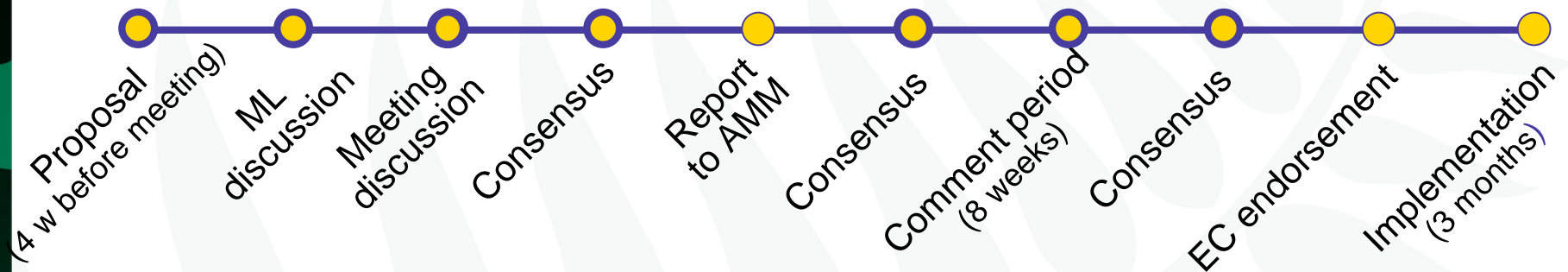
- Why should I bother?
 - Responsibility as an APNIC member
 - To be aware of the current policies for managing address space allocated to you
 - Business reasons
 - Policies affect your business operating environment and are constantly changing
 - Ensure your ‘needs’ are met
 - Educational
 - Learn and share experiences
 - Stay abreast with ‘best practices’ in the Internet

Policy Development Process



The policy development process

Need Discuss Consensus Implement



You can participate!

More information about policy development can be found at:

<http://www.apnic.net/docs/policy/dev>

How to make your voice heard

- Contribute on the public mailing lists
 - <http://www.apnic.net/community/lists/index.html>
- Attend meetings
 - Or send a representative
 - Watch webcast (video streaming) from the meeting web site
 - Read live transcripts from the meeting web site
 - And express your opinion via Jabber chat
- Give feedback
 - Training or seminar events



APNIC meetings



Next meetings

- **APNIC 26**
 - Christchurch, New Zealand
 - 25 - 29 August 2008
- **APNIC 27**
 - Held in conjunction with APRICOT 2009
 - Manila, Philippines
 - 18 - 27 February 2009
- **APNIC 28**
 - Beijing, China
 - 24 - 28 August 2009
- **APNIC 29**
 - Held in conjunction with APRICOT 2010
 - Kuala Lumpur, Malaysia
 - 24 Feb – 5 Mar 2010

APNIC 26

<http://www.apnic.net/meetings/26/>

APNIC 26 - Program highlights - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/meetings/26/program/

Firefox Help Firefox Support Plug-in FAQ iagu Networks

APNIC 26 25 - 29 AUGUST 2008 CHRISTCHURCH - NEW ZEALAND

Home Program Election Fellowship Sponsorship Travel Register Remote participation Hostmaster Consultation

Program highlights

APNIC APNIC 26 features an exciting program

The five-day meeting includes training activities, APNIC seminars, Asia Pacific OperatorS Forum (APOPS) sessions, APNIC Special Interest Groups (SIGs) and the APNIC Member Meeting.

APNIC plenaries

APNIC Training, along with international guest trainers, will be providing three streams of training catering for all levels of experience:

IPv4 in 2015: Black markets, regulated transfers or totally redundant?

The unallocated pool of IPv4 addresses is predicted to run out in around 2011. What will happen next? Hear industry experts work through hypothetical scenarios in a quest to find out what the Internet industry will do when the pool dries up.

Internet governance hui

What are the challenges facing Internet operators in developing countries? How can the Internet community, together with business, civil society and government, work to overcome the challenges?

This hui ("gathering" in Maori) features key Internet community figures such as Peter Dengate-Thrush, Raúl Echeberria and Ranjesh Singh.

[View speaker bios >>](#)

IPv6: Does it work for you?

You've seen the reports about IPv6 being the next big business decision for networks. Now you can experiment with IPv6 on your own laptop and hear the latest IPv6 developments from people actively working to make global IPv6 connectivity a reality.

REGISTER NOW

Venues:
 Christchurch Convention Centre
 Christchurch Town Hall
 Crowne Plaza Hotel

(These three venues are joined by a covered walkway)

Dates: 25-29 August
Email: meetings@apnic.net
Attendees: [Registration list](#)

[More information about APNIC](#) and its role in regional and global Internet communities

View full program

http://www.apnic.net/meetings/26/fellowship/

2001:d:c0:2001:0:4608:20: +1 DWL: 40.96%

EN 4:35 PM

APNIC meetings

- Participate remotely



- **Video streaming**

- Selected sessions are video streamed live via unicast and multicast



- **Audio streaming**

- For users with lower bandwidth follow live audio streamed in MP3 format



- **Live transcripts**

- Live transcripts of selected sessions available via Jabber and web browsers



- **Jabber chat**

- Jabber chat rooms give people around the world the chance to participate in meeting sessions in near real time

Sponsorship invite for APNIC 26 and 27

- Aim
 - Reduce delegate costs (important for developing economies in region)
- Benefits
 - Promote products and services to international audience
 - Align brand with a credible forum
- Sponsorship opportunities
 - Social events
 - Exhibition booths
 - Day sponsorship
 - Training program sponsorship
 - Webcast
 - Fellowships
- Contact
 - meetings@apnic.net

APNIC policies



Internet registry allocation and assignment

Policies

Allocation and assignment

Allocation

“A block of address space held by an IR (or downstream ISP) for subsequent allocation or assignment”

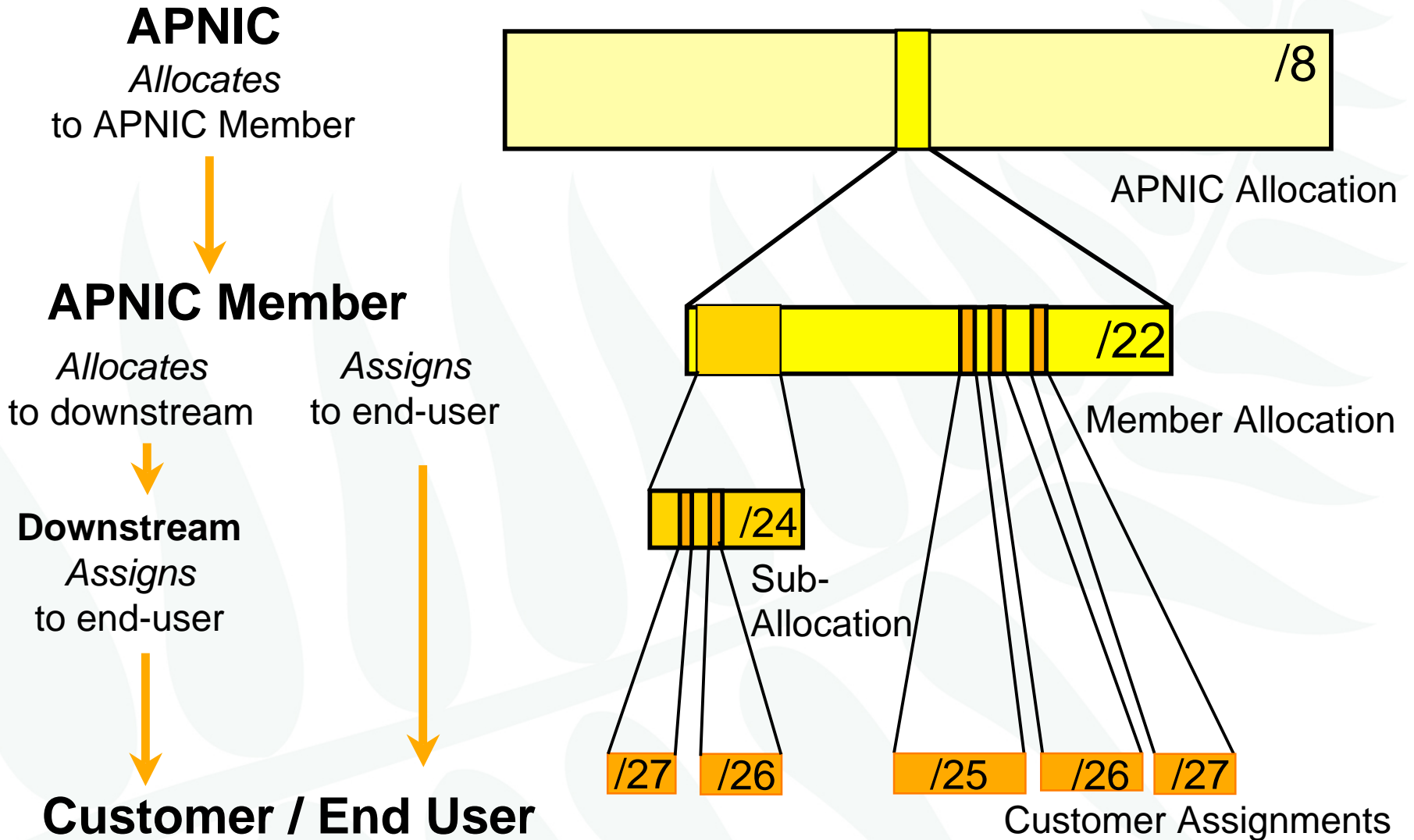
- Not yet used to address any networks

Assignment

“A block of address space used to address an operational network”

- May be provided to LIR customers, or used for an LIR’s infrastructure (‘self-assignment’)

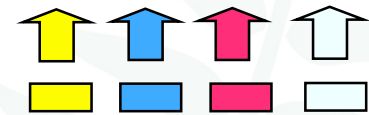
Allocation and assignment



Portable & non-portable

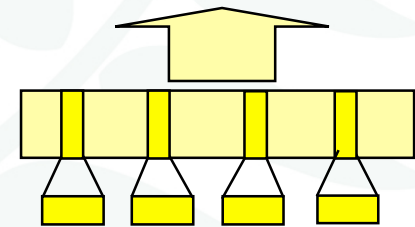
Portable Assignments

- Customer addresses independent from ISP
 - Keeps addresses when changing ISP
- Bad for size of routing tables
- Bad for QoS: routes may be filtered, flap-dampened



Non-portable Assignments

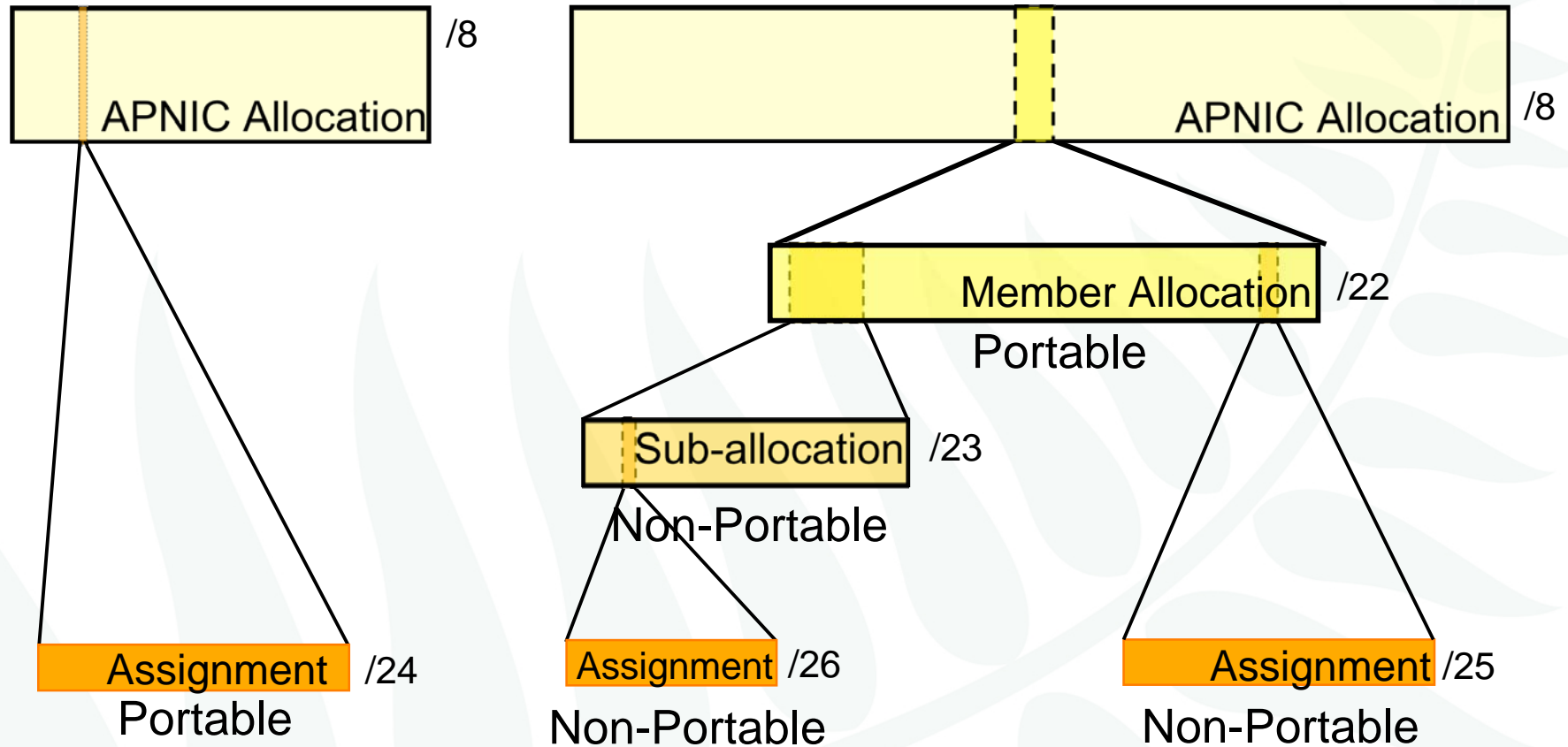
- Customer uses ISP's address space
 - Must renumber if changing ISP
- Only way to effectively scale the Internet



Portable allocations

- Allocations made by APNIC/NIRs”

Address management hierarchy



- Describes “portability” of the address space

Internet resource management objectives

Conservation

- Efficient use of resources
- Based on demonstrated need

Aggregation

- Limit routing table growth
- Support provider-based routing

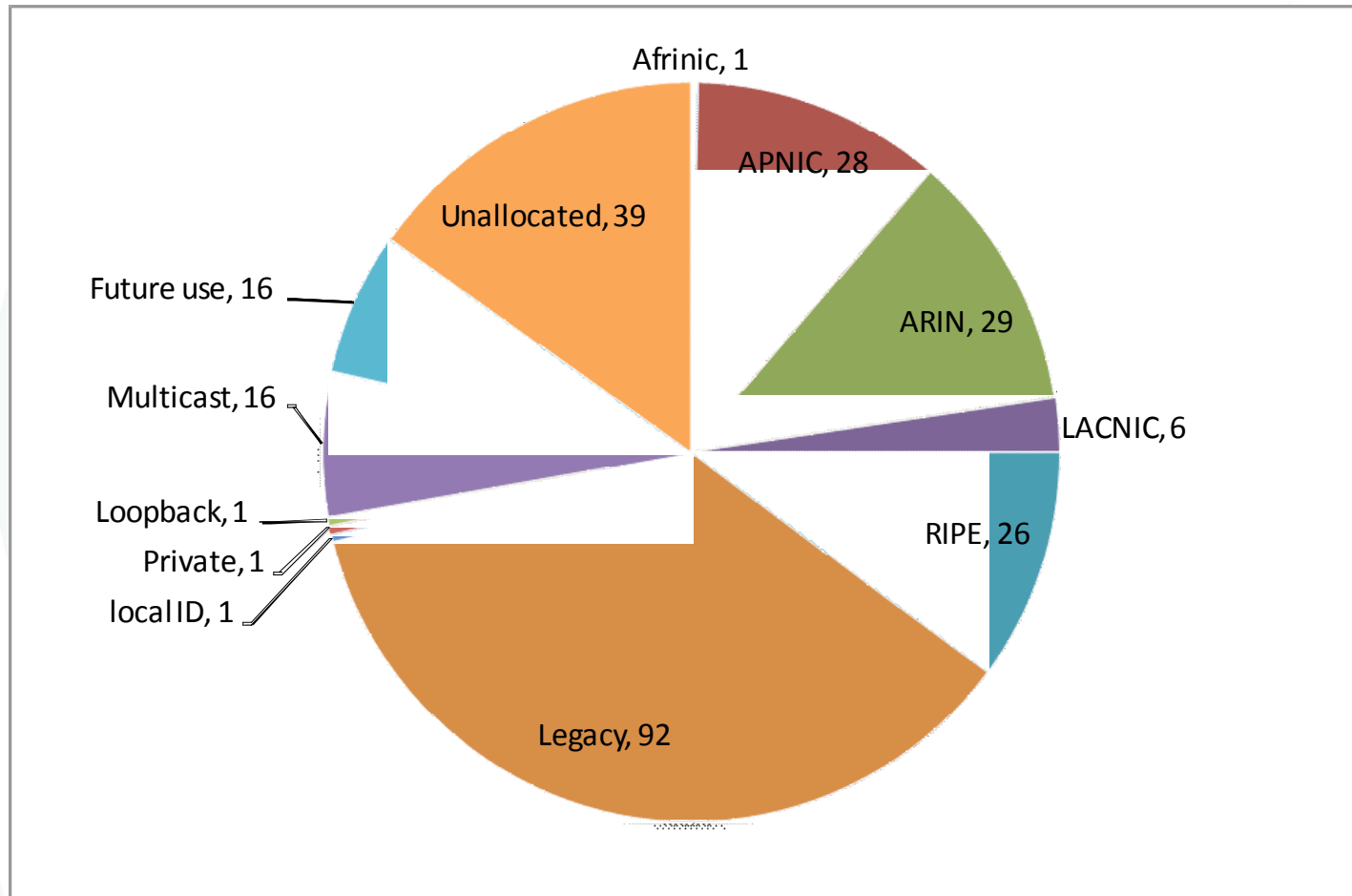
Registration

- Ensure uniqueness
- Facilitate trouble shooting

Uniqueness, fairness and consistency

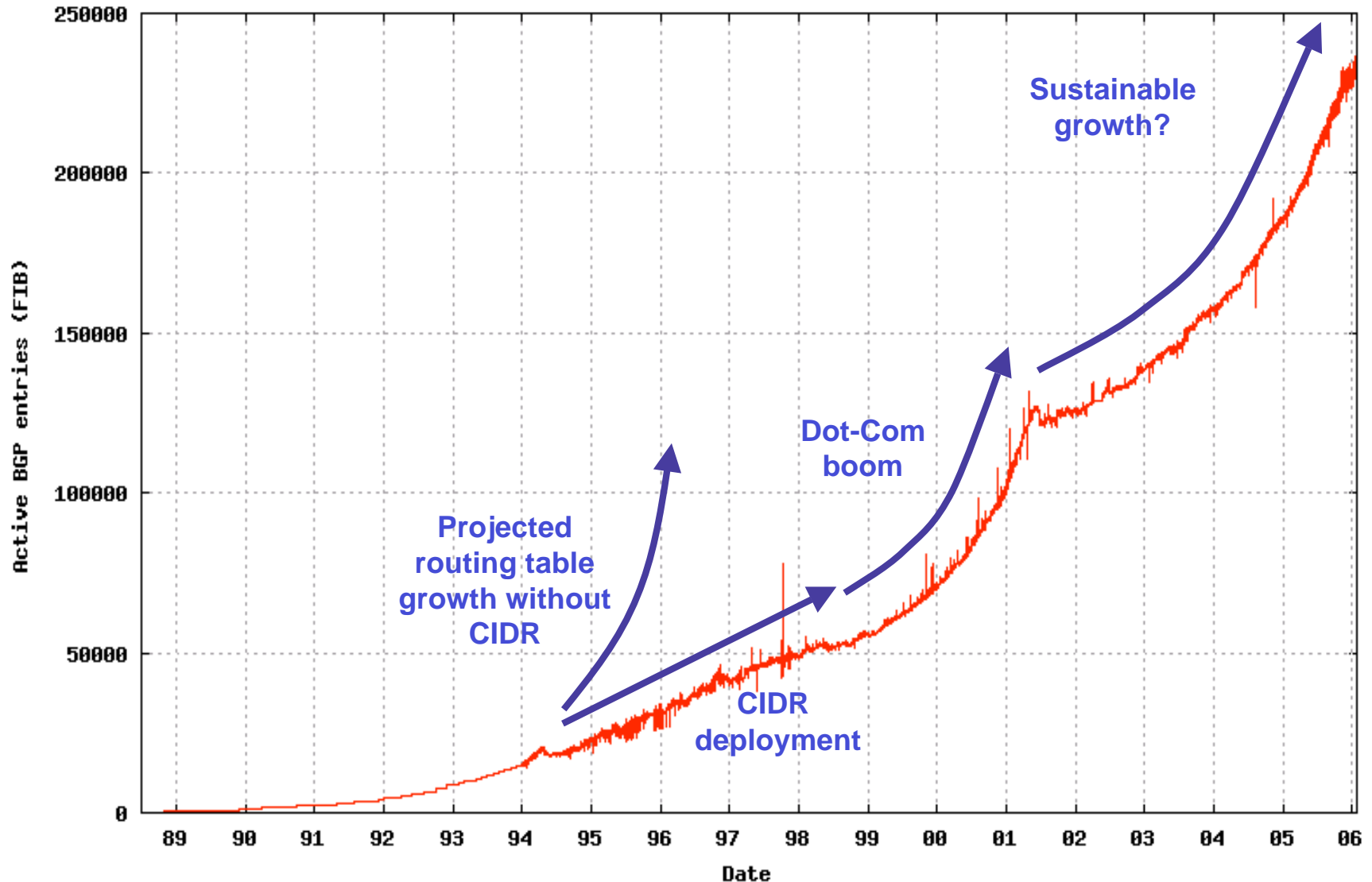
Why do we need policies?

- Global IPv4 Delegations (in /8)



Total /8 blocks: 256

Growth of global routing table



<http://bgp.potaroo.net/as1221/bgp-active.html>

APNIC policy environment

“IP addresses not freehold property”

- Assignments & allocations on license basis
 - Addresses *cannot* be bought or sold
 - Internet resources are public resources
 - ‘Ownership’ is contrary to management goals

“Confidentiality & security”

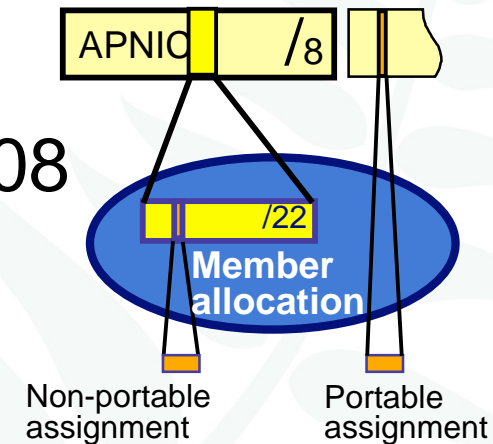
- APNIC to observe and protect trust relationship
 - Non-disclosure agreement signed by staff

APNIC allocation policies

- Aggregation of allocation
 - Provider responsible for aggregation
 - Customer assignments /sub-allocations must be non-portable
- Allocations based on demonstrated need
 - Detailed documentation required
 - All address space held to be declared
 - Address space to be obtained from one source
 - routing considerations may apply
 - Stockpiling not permitted

Initial IPv4 allocation

- prop-053: Changing minimum IPv4 allocation size to /22
 - Implemented on 4th August 2008
 - The minimum allocation size has been reduced to /22
 - Two of the criteria for an initial allocation have been updated to show:
 - An LIR must have used a /24 from their upstream provider or demonstrate an immediate need for a /24
 - An LIR must demonstrate a detailed plan for use of a /23 within a year



prop-53

- prop-053: Changing minimum IPv4 allocation size to /22
- Initial allocation criteria be changed
 - **From**
 - Initial allocation size /21
 - **To**
 - Initial allocation size /22
- Implemented on 4th August 2008

APNIC allocation policies

- Transfer of address space
 - Not automatically recognised
 - Return unused address space to appropriate IR
- Effects of mergers, acquisitions & take-overs
 - Will require contact with IR (APNIC)
 - contact details may change
 - new agreement may be required
 - May require re-examination of allocations
 - requirement depends on new network structure

Address assignment policies

- Assignments based on requirements
 - Demonstrated through detailed documentation
 - Assignment should maximise utilisation
 - minimise wastage
- Classless assignments
 - showing use of VLSM
- Size of allocation
 - Sufficient for up to 12 months requirement

Portable assignments

- Small multihoming assignment policy
 - *For (small) organisations who require a portable assignment for multi-homing purposes*

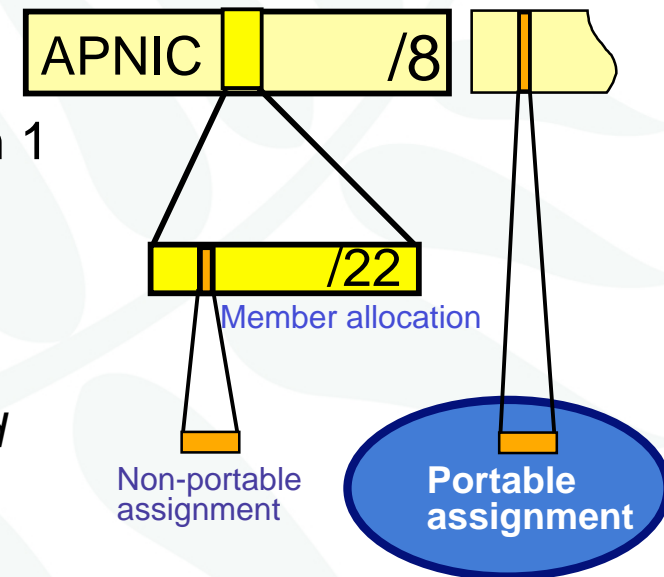
Criteria

1a. Applicants currently multihomed
OR

1b. Demonstrate a plan to multihome within 1 month

2. Agree to renumber out of previously assigned space

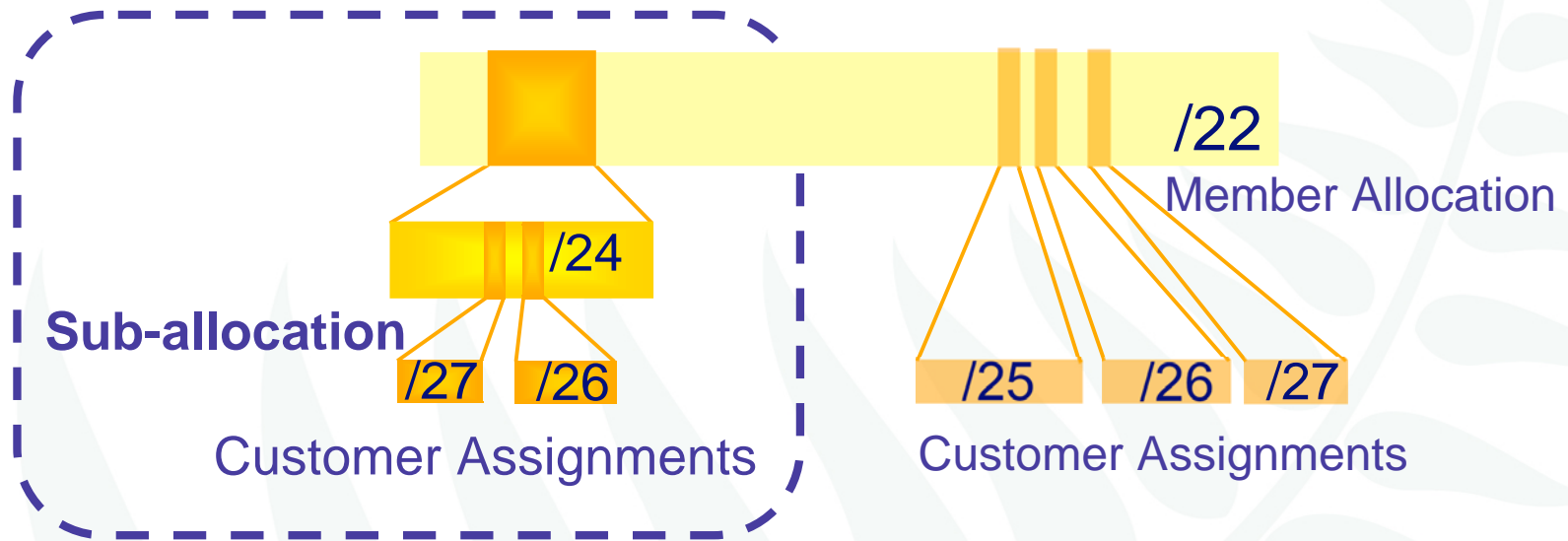
Demonstrate need to use 25% of requested space immediately and 50% within 1 year



Policy for IXP assignments

- Criteria
 - 3 or more peers
 - Demonstrate “open peering policy”
- APNIC has a reserved block of space from which to make IXP assignments

Sub-allocations



- No max or min size
 - Max 1 year requirement
- Assignment Window & 2nd Opinion applies
 - to both sub-allocation & assignments
 - Sub-allocation holders don't need to send in 2nd opinions

Sub-allocation guidelines

- Sub-allocate cautiously
 - Seek APNIC advice if in doubt
 - If customer requirements meet min allocation criteria:
 - Customers should approach APNIC for portable allocation
- Efficient assignments
 - LIRs responsible for overall utilisation
 - Sub-allocation holders need to make efficient assignments
- Database registration
 - Sub-allocations & assignments to be registered in the db

Portable critical infrastructure assignments

- What is Critical Internet Infrastructure?
 - Domain registry infrastructure
 - Root DNS operators, gTLD operators, ccTLD operators
 - Address Registry Infrastructure
 - RIRs & NIRs
 - IANA
- Why a specific policy ?
 - Protect stability of core Internet function
- Assignment sizes:
 - IPv4: /24
 - IPv6: /32

Supporting historical resource transfer

- Bring historical resource registrations into the current policy framework
 - Allow transfers of historical resources to APNIC members
 - the recipient of the transfer must be an APNIC members
 - no technical review or approval
 - historical resource holder must be verified
 - resources will then be considered "current"
- Address space subject to current policy framework
- We will talk this topic in more details later

APNIC policy update



Status of recent policy proposals

<http://www.apnic.net/policy/proposals/index.html>

The screenshot shows the APNIC website's 'Policy proposals' page. The page is titled 'APNIC policy proposals' and is part of the Asia Pacific Network Information Centre. It features a navigation menu on the left and a main content area with a table of proposal statuses. A sidebar on the right provides information on how policies are developed and how to submit proposals.

APNIC policy proposals

You are here: [Home](#) » [Policy](#) » [Proposals](#)

Status of recent proposals

To be discussed at APNIC 26	<p>[prop-050] IPv4 address transfers</p> <p>[prop-055] Global policy for the allocation of the remaining IPv4 address space</p> <p>[prop-059] Using the Resource Public Key Infrastructure to construct validated IRR data</p> <p>[prop-060] Change in the criteria for the recognition of NIRs in the APNIC region</p> <p>[prop-061] 32-bit ASNs for documentation purposes</p> <p>[prop-062] Use of final /8</p> <p>[prop-063] Reducing timeframe of IPv4 allocations from twelve to six months</p> <p>[prop-064] Change to assignment policy for AS numbers</p> <p>[prop-065] Format for delegation and recording of 4-byte AS numbers</p> <p>[prop-066] Ensuring efficient use of historical IPv4 resources</p>
Endorsed by all RIRs Ratified by ICANN Board of Directors	[prop-049] IANA policy for allocation of ASN blocks to RIRs
Implemented 4 August 2008	<p>[prop-053] Changing minimum IPv4 allocation size to /22</p> <p>[prop-054] NIR operational policy document revision</p> <p>[prop-057] Proposal to change IPv6 initial allocation criteria</p>
Abandoned	<p>[prop-058] Proposal to create IPv4 shared use address space among LIRs</p> <p>[prop-052] Cooperative distribution of the end of the IPv4 free pool</p>
Withdrawn	[prop-056] IPv4 soft landing

Past proposals

- [Policy proposal archive](#)

How policies are developed

[View movie](#)
[Flash movie | 7 minutes]

How to submit your own policy proposal

1. Submit your proposal via the [online policy proposal form](#).
2. The APNIC Secretariat assigns your proposal a tracking number.
3. The Chair of the appropriate APNIC SIG sends your proposal to the SIG's mailing list.

Related links

- [Special Interest Groups \(SIGs\)](#)
- [Working Groups \(WGs\)](#)
- [Birds of a Feather \(BOFs\)](#)
- [Policy proposals](#)

Done 2001:dc0:2001:0:4608:20::+1 DWL: loading ... 3:46 PM

prop-53

- prop-053: Changing minimum IPv4 allocation size to /22
- Initial allocation criteria be changed
 - **From**
 - Initial allocation size /21
 - **To**
 - Initial allocation size /22
- Implemented on 4th August 2008

prop-57

- Proposal to change IPv6 initial allocation criteria
 - Proposed by the JPNIC community
 - to remove barrier from current IPv6 initial allocation criteria
 - Adding one condition
 - Current LIRs with IPv4 allocations to receive IPv6 initial allocations without a plan for 200 assignments
 - See next slide for more details
- Current status
 - Implemented on 4th August 2008

prop-57

- Initial allocation criteria be changed

- **From**

- Have a plan for making at least 200 assignments to other organizations within two years.

- **To**

- Have a plan for making at least 200 assignments to other organizations within two years;
 - OR
 - Be an existing LIR with IPv4 allocations from an RIR/NIR which makes IPv6 assignments and/or sub-allocations to other organizations and announces the allocation in the inter-domain routing system within two years.



APNIC procedures

Ongoing request from

ISP address request

- Hostmaster Administrivia

- <hostmaster@apnic.net> mailbox filtered

- Requires member account name

- Subject: IP Address Request [CONNECT-AU]

- Ticketing system

- Every request is assigned a ticket

- Please keep # in subject line of email eg.

- [APNIC #14122] [CHINANET-CN]

- New staff at ISP

- Require an ‘introduction’ to APNIC

- To ensure confidentiality

members
only

ISP address request - Overview

- Contact Details
- Network Information
- Existing Customer Network Information
- Existing Infrastructure Network Information
- Future Network Plan
- Additional Information

How to apply Internet number resources

How to apply for Internet number resources - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/guide/eligibility.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

http://www.apnic.net/services/guide/eligibility.html

Asia Pacific Network Information Centre

You are here: [Home](#) » [Resource services](#) » [How to apply for Internet number resources](#) Quick Links ▾

How to apply for Internet number resources

Please use the tables below to find out which APNIC-delegated resources you may be eligible for.

If you have concerns about the current criteria or other APNIC policies that may affect your eligibility, you can propose changes to APNIC policy. For more information, see the [policy development process](#).

IPv4

Criteria	More information	Request form	
Allocation of /21 or greater			
<ul style="list-style-type: none"> Have used a /23 from upstream or need a /23 immediately Have a plan to use a /22 within a year Commit to renumber into the new address space within one year 	Policies for IPv4 address space management in the Asia Pacific region	Initial request	Ongoing request
Experiment documented in <ul style="list-style-type: none"> experimental RFC alternative publication approved by APNIC 	Experimental allocations policy	Please contact helpdesk@apnic.net for more information.	
Assignment			
Assignments of /24 or more can be made to: <ul style="list-style-type: none"> IXPs Critical infrastructure 	Policies for IPv4 address space management in the Asia Pacific region	Initial request	Ongoing request
Assignments of any size can be made if you are multihomed	Policies for IPv4 address space management in the Asia Pacific region	Initial request	Ongoing request

IPv6

Done

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Microsoft PowerPoi... How to apply for Int...

EN 11:30 AM

IPv4 ISP request form

IPv4 resource guide - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/ipv4_guide.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

http://www.apnic.net/services/ipv4_guide.html

Request forms

	Format	Help
APNIC IPv4 ISP Request Form Use this form to request IPv4 allocations. <i>APNIC account name holders only.</i> See also: ISP checklist	Online	
	Text	?
APNIC Portable Assignment Request Form Use this form to request IPv4 or IPv6 assignments for Internet Exchange Points. <ul style="list-style-type: none"> Multihoming (IPv4 or IPv6) Internet Exchange Points (IPv4 or IPv6) Critical infrastructure (IPv4 or IPv6) <i>APNIC account name holders only.</i>	Online	?
	Text	?
APNIC Second Opinion Request Form Use this form to request a second opinion for: <ul style="list-style-type: none"> Customer address assignments Customer address sub-allocations <i>APNIC account name holders only.</i>	Online	?
	Text	?
Historical maintain form Use this form to request updates to information about historical Internet resources registrations in the APNIC Whois Database. This includes IP address ranges and AS numbers that were transferred to the APNIC Whois Database as part of the ERX and AUNIC transfer projects.	Text	?
Historical resource transfer form Use this form to transfer historical Internet resources to an APNIC account holder under the policies for the transfer of historical Internet resources described in section 6 of Policies for historical Internet resources in the APNIC Whois Database .	Text	?
IP Address Request Form for Confederations APNIC confederations should use this form to request additional IP address space.	Text	?

Done

2001:d:c0:2001:0:4608:20::+1 DWL: 39.39%

jp-seminar-july-200... IPv4 resource guide ...

5:41 PM

Ongoing request

APNIC - ISP Address Request - Start - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/ipv4/index.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI http://csrc.ni.../PubsSPs.html 紹介の検索結果(451件):... APNIC - ISP Address Requ... Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community Search

You're here: Home » Resource services Quick Links

APNIC - ISP Address Request Form

Before you start

- Both members and non-member account holders may use this form.
 - If you do not have an **APNIC account name**, please see [APNIC membership information](#).
- Prepare the information needed for the request before starting the request form by reading:
 - [Quick tips for requesting IP addresses](#)

How to get help

Click where you see ? for specific help with this form.

For further assistance you can chat live with APNIC Hostmasters via **APNIC Helpdesk chat** [available only during Secretariat office hours].

See also:

- [Quick tips for requesting IP addresses](#)
- [Using the Parser/Validator on the ISP Request Form](#)

Saving your work

You can save your work on this form at any time by clicking on the "Save" button at the bottom of each page. All the details you have entered will be securely saved on APNIC's server.

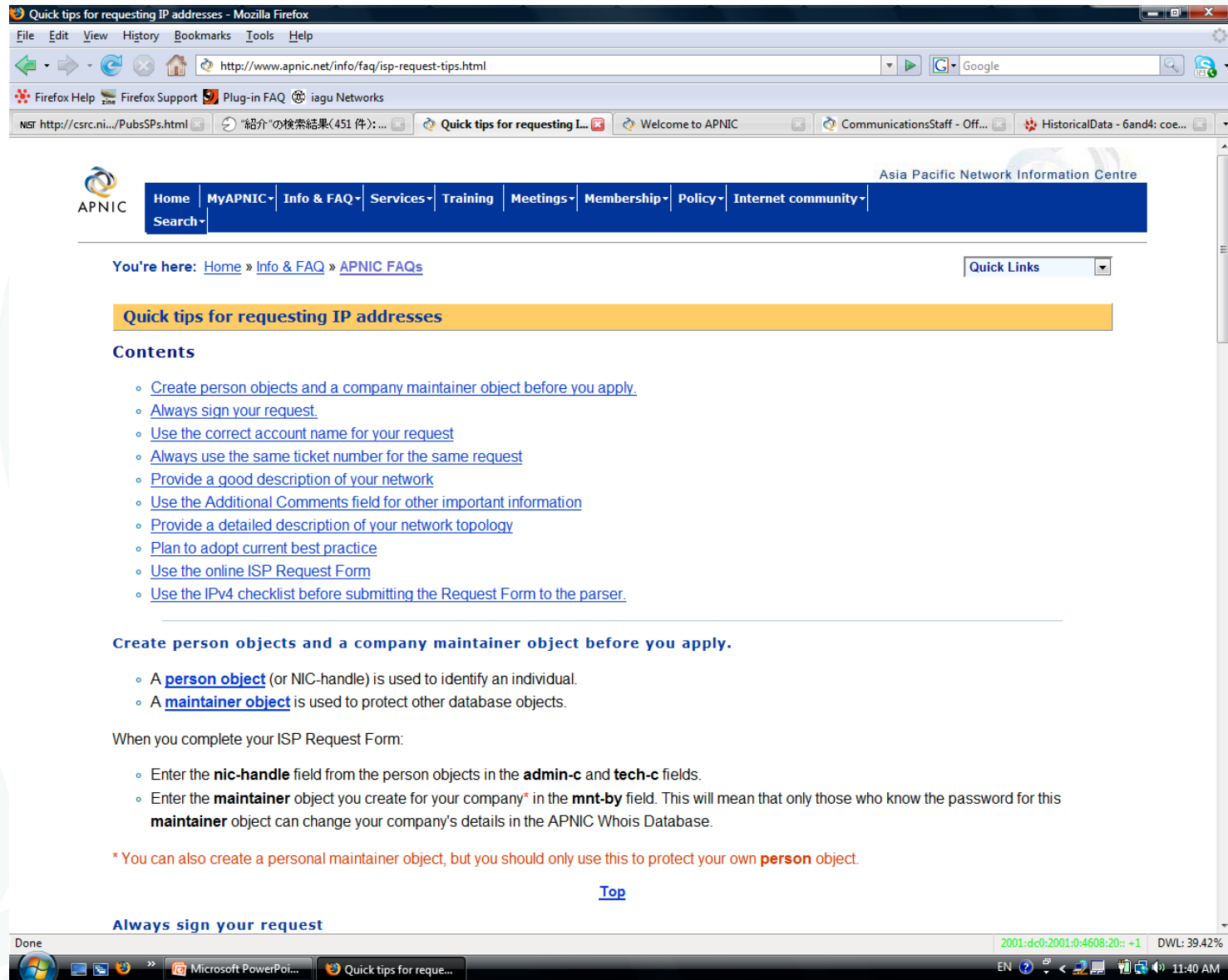
You will be asked to create a password that is to be used for returning to your saved work. When you save your work, you will be emailed a URL which will allow you to access the information you have saved and continue to complete the request.

Please note, your details will be held on the APNIC server for a maximum of 14 days.

Done 2001:d0:2001:0:4608:20: +1 DWL: 39.42%

Microsoft PowerPoi... APNIC - ISP Address... EN 11:32 AM

Quick tips for requesting IP addresses



The screenshot shows a Mozilla Firefox browser window displaying the APNIC website. The address bar shows the URL <http://www.apnic.net/info/faq/isp-request-tips.html>. The website header includes the APNIC logo and navigation links: Home, MyAPNIC, Info & FAQ, Services, Training, Meetings, Membership, Policy, and Internet community. A search bar is also present. The main content area is titled "Quick tips for requesting IP addresses" and includes a "Contents" section with a list of links:

- [Create person objects and a company maintainer object before you apply.](#)
- [Always sign your request.](#)
- [Use the correct account name for your request](#)
- [Always use the same ticket number for the same request](#)
- [Provide a good description of your network](#)
- [Use the Additional Comments field for other important information](#)
- [Provide a detailed description of your network topology](#)
- [Plan to adopt current best practice](#)
- [Use the online ISP Request Form](#)
- [Use the IPv4 checklist before submitting the Request Form to the parser.](#)

Below the list, there is a section titled "Create person objects and a company maintainer object before you apply." with two bullet points:

- A **person object** (or NIC-handle) is used to identify an individual.
- A **maintainer object** is used to protect other database objects.

When you complete your ISP Request Form:

- Enter the **nic-handle** field from the person objects in the **admin-c** and **tech-c** fields.
- Enter the **maintainer** object you create for your company* in the **mnt-by** field. This will mean that only those who know the password for this **maintainer** object can change your company's details in the APNIC Whois Database.

*You can also create a personal maintainer object, but you should only use this to protect your own **person** object.

At the bottom of the page, there is a "Top" link and a section titled "Always sign your request".

The browser's taskbar at the bottom shows the system tray with the date and time: 2001:dc0:2001:0:4608:20: +1, DWL: 39.42%, and the time 11:40 AM.

APNIC Helpdesk chat

APNIC - Helpdesk - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/helpdesk/

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI http://csrc...bsSPs.html "紹介"の検索結果(45... Logon - Version 9.3.02 APNIC - ISP Address ... 401 Authorization Req... HistoricalData - Gand... APNIC - Helpdesk

APNIC Asia Pacific Network Information Centre

You're here: [Home](#) » Member Services Helpdesk Quick Links

Member Services Helpdesk

The Helpdesk gives APNIC members and clients direct access to APNIC Hostmasters to resolve all enquiries.

Helpdesk languages

- Bengali
- Cantonese
- English
- Filipino (Tagalog)
- Hindi
- Mandarin
- Tamil
- Telugu
- Thai

More languages will be added in the future.

Contact details

9:00 am to 7:00 pm (UTC + 10 hours)
Monday - Friday

Phone: + 61 7 3858 3188
Fax: + 61 7 3858 3199

Email: helpdesk@apnic.net

APNIC Helpdesk chat

Helpdesk queries

Faster responses for:

- Status of requests
- Help in completing application forms
- Membership enquiries
- Billing issues

javascript:void(0) 2001:dc0:2001:0:4608:20: +1 DWL: 39.39%

EN 5:46 PM

Ongoing request


The screenshot shows a Mozilla Firefox browser window displaying the APNIC - ISP Address Request Form. The browser's address bar shows the URL <http://www.apnic.net/services/ipv4/index.html>. The page title is "APNIC - ISP Address Request Form".

APNIC - ISP Address Request Form

Before you start

1. Both members and non-member account holders may use this form.
 - If you do not have an APNIC account name, please see [APNIC membership information](#).
2. Prepare the information needed for the request before starting the request form by reading:
 - [Quick tips for requesting IP addresses](#)

How to get help

Click where you see  for specific help with this form.

For further assistance you can chat live with APNIC Hostmasters via [APNIC Helpdesk chat](#) [available only during Secretariat office hours].

See also:

- [Quick tips for requesting IP addresses](#)
- [Using the Parser/Validator on the ISP Request Form](#)

Saving your work

You can save your work on this form at any time by clicking on the "Save" button at the bottom of each page. All the details you have entered will be securely saved on APNIC's server.

You will be asked to create a password that is to be used for returning to your saved work. When you save your work, you will be emailed a URL which will allow you to access the information you have saved and continue to complete the request.

Please note, your details will be held on the APNIC server for a maximum of 14 days.

Start the request form

[[Help](#)] [[Text Only Version](#)]

[Home](#) | [MyAPNIC](#) | [Info & FAQ](#) | [Services](#) | [Training](#) | [Meetings](#) | [Membership](#) | [Policy](#) | [Internet community](#) | [Search](#)

Last modified Thursday, 06-Dec-2007 14:54:44 EST | © 1999 - 2008 APNIC Pty. Ltd.
Comments to: webmaster@apnic.net | [Privacy statement](#) | [RSS](#)

Done 2001:dc0:2001:0:4608:20::+1 DWL: 39.42%

Microsoft PowerPoi... APNIC - ISP Address...

EN 11:42 AM

Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI http://csrc.ni.../PubsSPs.html "紹介"の検索結果(451件):... APNIC IPv4 request Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community Search

APNIC IPv4 request

Applicant information

APNIC will use these contact details for all correspondence relating to this request. Please enter the APNIC account name of the organisation that requires the address space.

Your name: ?

Your email address: ?

APNIC account name: ?
Example: SPARKYNET-ID

Your relationship to organisation applying for resources: ?

Create password for this request: Minimum 8 characters ?

Confirm password: ?

Next

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Proceed to IPv4 Request Form

Done 2001:d0:2001:0:4608:20: +1 DWL: 39.42%

Microsoft PowerPoi... APNIC IPv4 request ... EN 11:44 AM

Ongoing request form

APNIC IPv4 request

Assignments made to your network infrastructure.

Please provide information about your infrastructure to help justify your request for additional IPv4 address space.

Option 1: Subnet builder

Use this to build your current infrastructure assignments from scratch. It will calculate the correct prefix needed for the address range you specify. To add a new infrastructure assignment, complete both fields, then select "Add".

Address range: Format: `<start-ip> - <end-ip>`
Example: 10.0.1.0 - 10.0.1.15

Descriptive remark about this infrastructure assignment Format: `<remark>`
Example: 2 DNS, 1 web, 1 mail, proxy, 8 workstations

Add

Option 2: upload infrastructure

Upload a file containing your assignment using the format:

`<address>/<prefix> <remark>`

Example:

10.0.1.0/28 2 DNS, 1 web, 1 mail, proxy, 8 workstations

Browse... Upload

Save Cancel Previous Next

Done 2001:dc0:2001:0:4608:20: +1 DWL: 39.42% 11:45 AM

Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI http://csrc.ni.../PubsSPs.html "紹介"の検索結果(451件):... APNIC IPv4 request Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC IPv4 request

Network plan

This information is used by APNIC to establish the patterns of address assignment in this network. Please use this field to provide a summary of the address assignments planned for your organisation's network infrastructure over the coming year.

There are two options for completing this section. **Complete one option only.**

Option 1: Subnet builder

Use this to calculate your network plan from scratch. It will calculate the correct prefix needed for the number of hosts on a subnet. Each new subnet will be created as the next available subnet in the example address range. To add a new subnet, complete all the fields, then select "Add".

Number of hosts required on this subnet now: ?
Example: 10

Number of hosts on this subnet in 6 months: ?
Example: 15

Number of hosts on this subnet in 1 year: ?
Example: 27

Brief description of the subnet's use: ?

Add

Option 2: Upload network plan

Upload a file containing your network plan using the format:

<current-prefix-length> <prefix-length-in-6-month> <prefix-length-in-1-year> <remarks>

Example:

```
/29 /29 /28 Router, Mail, Web, DNS and 10 workstations  
/30 /28 /28 Research and Development
```

Browse... Upload

New cable or DSL services

Do you want APNIC to evaluate your request under the bootstrap criteria for new cable or DSL services? Yes No ?

Save Cancel Previous Next

Done 2001:dc0:2001:0:4608:20: +1 DWL: 39.42%

Microsoft PowerPoi... APNIC IPv4 request ... EN 11:52 AM

Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

Firefox Help Firefox Support Plug-in FAQ iagu Networks

APNIC IPv4 request

Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community

Search

APNIC IPv4 request

Network plan

This information is used by APNIC to establish the patterns of address assignment in this network. Please use this field to provide a summary of the address assignments planned for your organisation's network infrastructure over the coming year.

There are two options for completing this section. **Complete one option only.**

Option 1: Subnet builder

Use this to calculate your network plan from scratch. It will calculate the correct prefix needed for the number of hosts on a subnet. Each new subnet will be created as the next available subnet in the example address range. To add a new subnet, complete all the fields, then select "Add".

Number of hosts required on this subnet now: ?
Example: 10

Number of hosts on this subnet in 6 months: ?
Example: 15

Number of hosts on this subnet in 1 year: ?
Example: 27

Brief description of the subnet's use: ?

Add

Your network plan: /28 /28 /27 infrastructure

Option 2: Upload network plan

Done

2001.d.c0:2001.0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... APNIC IPv4 request ... Inbox for miwa@ap... Fw: CALL FOR PAPE...

EN 11:54 AM

Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

Firefox Help Firefox Support Plug-in FAQ iagu Networks

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APNIC IPv4 request

Additional information

Additional support material

Please add any additional information that would support your request:

Please attach your organisation's network diagram:

Browse... Upload

Save Cancel Previous Next

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Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

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APNIC IPv4 request

Network template

The details you provide here will be used to identify the proposed network in the APNIC Whois Database.

Network name:
Example: SPARKYNET

Description of network:

Economy:
Example: KX9-AP

Administrative contact:
Example: KX9-AP

Technical contact:
Example: KX9-AP

Maintainer authorised to create customer records (mnt-lower):
Example: MAINT-AP-SPARKY

Whois person object

Whois maintainer object

Information extracted from the most recent allocation/assignment Whois inetnum object

Save Cancel Previous Next

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Done 2001:dc0:2001:0:4608:20: -1 DWL: loading ...

Microsoft PowerPoi... APNIC IPv4 request ... Inbox for miwa@ap...

EN 12:04 PM

Ongoing request form

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI http://csrc.ni.../PubsSPs.html "紹介"の検索結果(451件):... APNIC IPv4 request Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community Search

APNIC IPv4 request

Confirm your request

Your name: miwa fuji
Your email address: miwa@apnic.net
APNIC account name: apnic-ap
Your relationship to organisation requesting for resources: employee/manager
Infrastructure: 10.0.1.0/28 2 DNS, 1 web
10.0.1.16/28 1 mail, proxy
Network plan: /28 /28 /27 infrastructure
/27 /27 /26 dns
Additional information to justify request: asdfasd
Network name: TEST-BLOCK
Description: APNIC Helpdesk
Country: AU
Administrative contact: ADP1-AP
Technical contact: ADP1-AP
Maintainer authorised to create customer records (mnt-lower): MAINT-APNIC-DEBOGON

Save Cancel Previous Next

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Done 2001:dc0:2001:0:4608:20::+1 DWL: loading ...

Microsoft PowerPoi... APNIC IPv4 request ... Inbox for miwa@ap...

EN 12:08 PM

Ongoing request form

The screenshot shows a Mozilla Firefox browser window displaying the APNIC IPv4 request form submission confirmation page. The browser's address bar shows the URL `http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en`. The page features the APNIC logo and navigation menu at the top, including links for Home, MyAPNIC, Info & FAQ, Services, Training, Meetings, Membership, Policy, and Internet community. A yellow banner at the top of the main content area reads "APNIC IPv4 request". Below this, a blue box contains the message "Your request has been submitted", which is circled in red. The text below the box states: "Thank you for submitting your request. You will soon receive an email from APNIC confirming your request details and providing you with a ticket number used to track your request." The phrase "ticket number" is also circled in red. A link for "APNIC home" is provided below the message. At the bottom of the page, the copyright notice "© 1999 - 2006 APNIC Pty. Ltd." and contact information "Comments to: webmaster@apnic.net | [Privacy statement](#)" are visible. The Windows taskbar at the bottom shows the system tray with the time 12:10 PM and the system clock displaying 2001.d.c0:2001.0:4608:20:-+1.

APNIC IPv4 request - Mozilla Firefox

File Edit View History Bookmarks Tools Help

`http://www.apnic.net/cgi-bin/ipv4-request.pl?lang=en`

Firefox Help Firefox Support Plug-in FAQ iagu Networks

MSI `http://csrc.ni.../PubsSPs.html` "紹介"の検索結果(451件):... APNIC IPv4 request Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community Search

APNIC IPv4 request

Your request has been submitted

Thank you for submitting your request. You will soon receive an email from APNIC confirming your request details and providing you with a ticket number used to track your request.

[APNIC home](#)

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Done 2001.d.c0:2001.0:4608:20:-+1 DWL: loading ...

Microsoft PowerPoi... APNIC IPv4 request ...

EN 12:10 PM

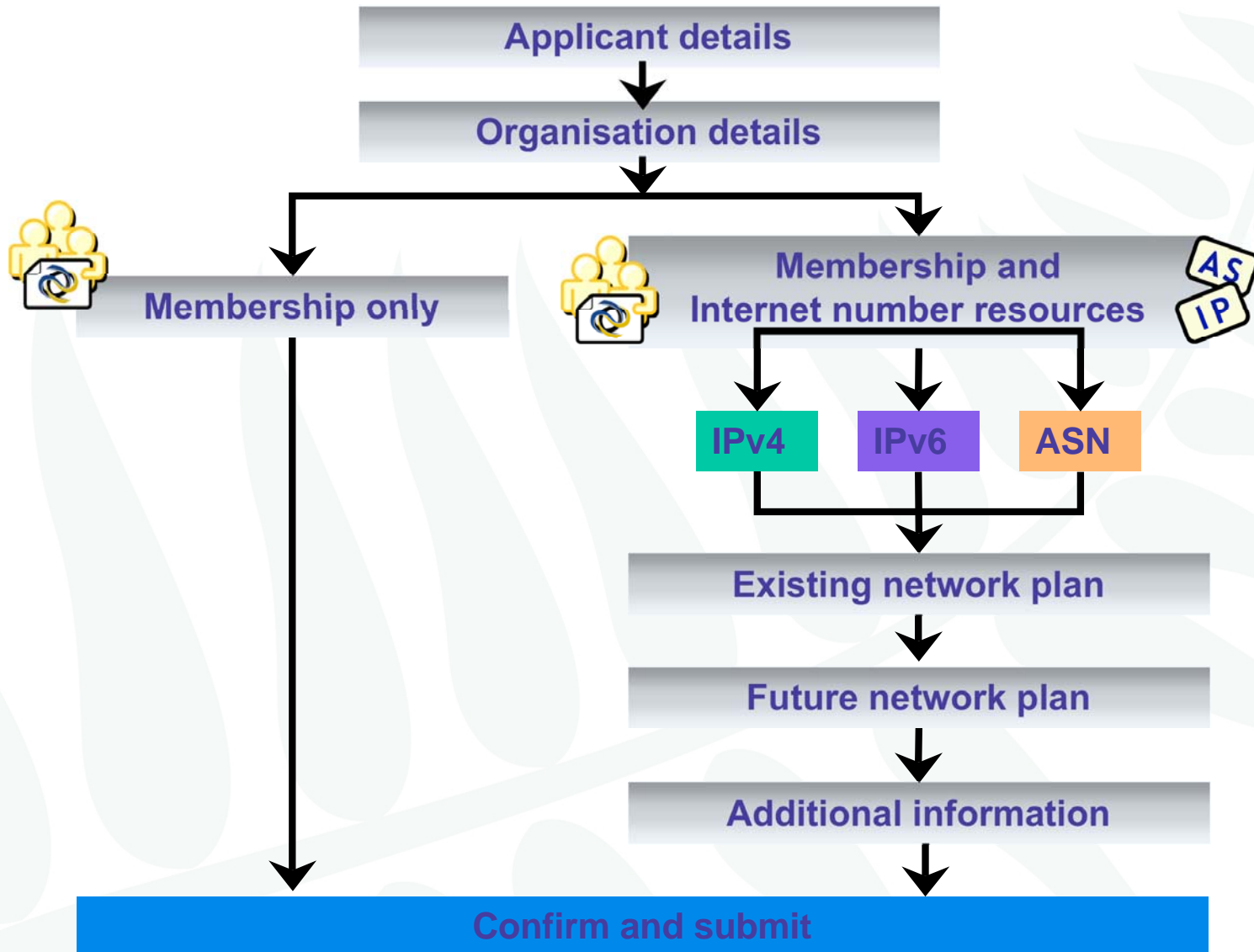


APNIC procedures

Initial request

Applying for APNIC membership and Internet resources

2. Streamline processes



Initial request

APNIC - Membership and resource application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/member/

Firefox Help Firefox Support Plug-in FAQ iagu Networks

NSF http://csrc.ni.../PubsSPs.html 紹介の検索結果(451件):... APNIC - Membership and ... Welcome to APNIC CommunicationsStaff - Off... HistoricalData - 6and4: coe...

APNIC Asia Pacific Network Information Centre

You are here: [Home](#) » **Membership and resource application** [Quick Links](#)

APNIC membership application and initial resource request

This application is for membership and initial internet number resource requests only. If you have already received internet number resources from APNIC and want to request more, please go to the [IPv4 and IPv6 resource guides](#).

To complete your application you must provide the following information:

- Your full organisation details including contact names and billing address.
- Organisation ABN (if your organisation is registered in Australia).

Please note:

- Internet number resource request approval is subject to **criteria**, and **fees apply** only after application approval.
- If you are a consultant completing this form please supply **at least** one authorised organisation contact in the 'Applicant contact details' section. Applicants must be able to enter into a binding [agreement](#) on the organisation's behalf.

Need assistance with this form? [Contact the APNIC helpdesk.](#) **helpdesk@apnic.net**

If you want to save this form and return to it later you can bookmark it in your web browser.

Apply for APNIC membership only

OR

Apply for APNIC membership and Internet number resources

[Back to top](#)

[Home](#) | [MyAPNIC](#) | [Info & FAQ](#) | [Services](#) | [Training](#) | [Meetings](#) | [Membership](#) | [Policy](#) | [Internet community](#) | [Search](#)

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W3C XHTML W3C CSS

Done

2001.d0:2001.0:4608:20:: +1 DWL: 39.42%

Microsoft PowerPoi... APNIC - Membershi...

EN 11:33 AM

APNIC membership and Internet resource application

APNIC - Membership - Agreement - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/agreement.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details Organisation contacts Account details Resource request Confirm

* fields are required

Agreement

Print

[APNIC-079] Standard APNIC Membership Agreement

Recitals

A. APNIC Pty Ltd ("the Company") is a non-profit proprietary limited company incorporated under Australian law.

B. The Company is committed to acting in accordance with the interests and wishes of its membership in pursuing the

* agree to the terms and conditions of the Standard APNIC Membership Agreement. I confirm that I am authorised to act on behalf of the organisation entering into this binding agreement.

Save

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

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Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Membershi...

EN 3:52 PM

APNIC membership and Internet resource application

APNIC - Membership - Organisation details - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/organisation-details.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details Organisation contacts Account details Resource request Confirm

* fields are required

Organisation details

Organisation name* ABC ?

Organisation address* 123 aaaa street

City* Meguro ku

State / Province / District* Tokyo

Postcode

Economy* JAPAN

Organisation ABN ?

URL

Billing details

Postal address for billing* 123 aaaa street

City* Meguro ku

State / Province / District* Tokyo

Postcode

Economy* JAPAN

Save

Need help? [Contact the APNIC helpdesk](#)

Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Membershi... 3:51 PM

APNIC membership and Internet resource application

APNIC - Membership - Organisation contacts - Mozilla Firefox

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/contacts.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details **Organisation contacts** Account details Resource request Confirm

* fields are required

Applicant contact details

First name * Miwa
Last name * Fujii
Email * miwa@apnic.net
Confirm email * miwa@apnic.net
Preferred contact number * +81-3-1234-5678
Fax

Billing contact details

Same as above

First name * Miwa
Last name * Fujii
Email * miwa@apnic.net
Confirm email * miwa@apnic.net
Preferred contact number * +81-3-1234-5678
Fax

Public contact details

This information will be used to register your resource allocation in the public [APNIC Whois Database](#).

Contact name * ABC - network administrator
Address * 30 Park Road
Email * miwa@apnic.net
Confirm email * miwa@apnic.net
Economy * JAPAN
Preferred contact number * +81-3-1234-5678
Fax

Save

Need help? [Contact the APNIC helpdesk](#)

Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Membershi... 3:54 PM

Whois person object will be automatically created.

APNIC membership and Internet resource application

APNIC - Membership - Account details - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/account-details.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details Organisation contacts **Account details** Resource request Confirm

* fields are required

Account details

Preferred APNIC account name* -JP ?

Examples:

- ✓ SparkNet3
- ✓ Spark-3-Net
- ✗ 3Spark-Net
- ✗ Spark--Net
- ✗ SparkNet-
- ✗ Spark Net

Membership tier* Associate ?

- Very small
- Small
- Medium
- Large
- Very large
- Extra large

Membership renewal

Your organisation must renew its APNIC membership every 12 months. **At each renewal APNIC will assess your membership tier and fee based on the IP address space held under your account.** If your holdings exceed the limits of your current tier you will be upgraded to a higher tier and your membership fee will be adjusted accordingly.

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

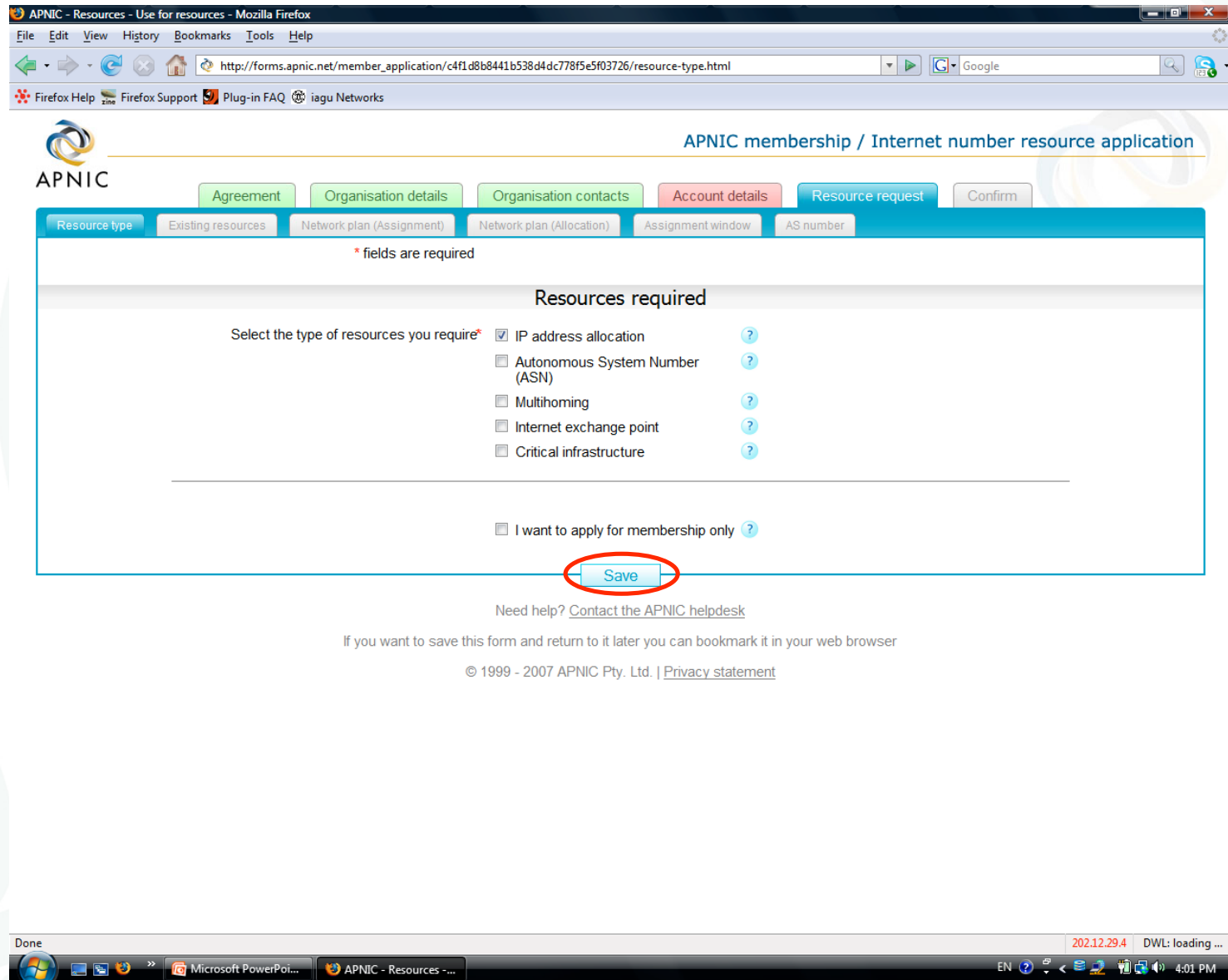
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Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Membershi...

EN 3:58 PM

APNIC membership and Internet resource application



The screenshot shows a web browser window displaying the APNIC membership application form. The browser's address bar shows the URL: http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5ef03726/resource-type.html. The page title is "APNIC membership / Internet number resource application".

The form has several tabs: "Resource type", "Existing resources", "Network plan (Assignment)", "Network plan (Allocation)", "Assignment window", and "AS number". The "Resource type" tab is active.

At the top of the form, there are navigation buttons: "Agreement", "Organisation details", "Organisation contacts", "Account details", "Resource request", and "Confirm".

The main content area is titled "Resources required" and contains the following text: "Select the type of resources you require*". Below this, there is a list of resource types with checkboxes and help icons:

- IP address allocation ?
- Autonomous System Number (ASN) ?
- Multihoming ?
- Internet exchange point ?
- Critical infrastructure ?

Below the list, there is a checkbox: I want to apply for membership only ?

A red circle highlights the "Save" button at the bottom of the form.

Below the form, there is a link: "Need help? [Contact the APNIC helpdesk](#)".

Below the link, there is a note: "If you want to save this form and return to it later you can bookmark it in your web browser".

At the bottom of the page, there is a copyright notice: "© 1999 - 2007 APNIC Pty. Ltd. | [Privacy statement](#)".

The Windows taskbar at the bottom shows the system tray with the date "202.12.29.4" and the time "4:01 PM". The taskbar also shows the "APNIC - Resources" window and the "Microsoft PowerPoi..." window.

APNIC membership and Internet resource application

APNIC - Resources - Existing resources - Mozilla Firefox

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/existing-resources.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details Organisation contacts Account details Resource request Confirm

Resource type Existing resources Network plan (Allocation) Assignment window

* fields are required

Existing resources

Note: You are only required to complete this page if you **currently have ASN or IP resources.**

Please enter all ASNs you currently use.

Please enter any IP address ranges you currently use

IP address range	Source	Utilisation (0-100%)	Intend to return?
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

What services do you provide with these resources?

Save

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

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Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Resources - ...

EN 4:02 PM

Required information for requesting resources will be asked in the following steps (see next slides)

APNIC membership and Internet resource application

APNIC - Resources - Network plan (Allocation) - Mozilla Firefox

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/network-plan-allocation.html

APNIC membership / Internet number resource application

Agreement Organisation details Organisation contacts Account details Resource request Confirm

Resource type Existing resources Network plan (Allocation) Assignment window

* fields are required

Resource request - network plan

Service type	(if 'other')	Resource type	Total number of hosts				
			Now	6 months	12 months	24 months	
broadband		IPv4	200	300	400	600	-
voip		IPv6	200	300	400	600	-
							+

Totals	Now	6 months	12 months	24 months
IPv4	200	300	400	600
IPv6	200	300	400	600

If you have additional information to support your request enter it here

Pop diagram attached ?

If you want to provide supporting documentation upload it here (max 5Mb)

Browse... ? Upload

Supporting documentation

N/A

Save

Need help? Contact the APNIC helpdesk

Done 202.12.29.4 DWL: loading ... 4:05 PM

APNIC membership and Internet resource application

APNIC - Resources - Assignment window - Mozilla Firefox

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/assignment-window.html

APNIC membership / Internet number resource application

APNIC

Agreement Organisation details Organisation contacts Account details Resource request Confirm

Resource type Existing resources Network plan (Allocation) Assignment window

* fields are required

Resource request - Assignment Window

When you assign addresses to your customers, you must follow the 'Assignment Window' procedures described below.

When we allocate address space to you we will give you an Assignment Window (AW). Your AW specifies the maximum assignment you may make to a single customer without seeking approval from APNIC. If you wish to make an assignment larger than your AW you must submit a 'second opinion' request to APNIC.

The AW procedure only applies to customer assignments. You do not have to submit a second opinion request for assignments to your own network infrastructure.

Please see the [AW FAQ](#) for more information.

Do you understand the AW and second* opinion procedure explained above? Yes

Save

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

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Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Resources - ...

EN 4:07 PM

APNIC membership and Internet resource application

Confirm - Mozilla Firefox

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/confirm.html#aw-procedure-agree_missing

APNIC membership / Internet number resource application

Agreement Organisation details Organisation contacts Account details Resource request Confirm

Confirm

Agreement

Agree: yes

Organisation details

Name:	ABC
Business address Line 1:	123 aaaa streat
Business address Line 2:	
Business address Line 3:	
City:	Meguro ku
State:	Tokyo
Postcode:	
Economy:	JP
ABN:	
URL:	
Billing address Line 1:	123 aaaa streat
Billing address Line 2:	
Billing address Line 3:	
City:	Meguro ku
State:	Tokyo
Postcode:	
Economy:	JP

Organisation

Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... Confirm - Mozilla Fi...

4:09 PM

APNIC membership and Internet resource application

Confirm - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/confirm.html#aw-procedure-agree_missing

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Organisation contacts

Applicant Name: Miwa Fujii

Applicant Email: miwa@apnic.net

Applicant Phone: +81-3-1234-5678

Applicant Fax:

Billing Name: Miwa Fujii

Billing Email: miwa@apnic.net

Billing Phone: +81-3-1234-5678

Billing Fax:

Public Contact Name: ABC - network administrator

Public Contact Address: 30 Park Road

Public Contact Email: miwa@apnic.net

Public Contact Economy: JP

Public Contact Phone: +81-3-1234-5678

Public Contact Fax:

Account Details

Preferred Account Name: MIWA-TEST-JP

Preferred Account Tier: very small

Resource request

Existing resources

AS numbers:

Services provided with resources:

Existing resources:

Network plan (Allocation)

Done

202.12.29.4 DWL: loading ...

Microsoft PowerPoi... Confirm - Mozilla Fi...

EN 4:10 PM

APNIC membership and Internet resource application

Confirm - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/confirm.html#aw-procedure-agree_missing

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resource request

Existing resources

AS numbers:

Services provided with resources:

Existing resources:

Network plan (Allocation)

Additional info: Pop diagram attached

Documentation upload filename:

Peering contacts:

- Service type: broadband
- (Other):
- Resource type: IPv4
- Now: 200
- In 6 months: 300
- In 12 months: 400
- In 24 months: 600

- Service type: voip
- (Other):
- Resource type: IPv6
- Now: 200
- In 6 months: 300
- In 12 months: 400
- In 24 months: 600

Resource request totals: IPv4

- Now: 200

Done

202.12.29.4 DWL: loading ...

Microsoft PowerPoi... Confirm - Mozilla Fi...

EN 4:10 PM

APNIC membership and Internet resource application

The screenshot shows a Mozilla Firefox browser window displaying the APNIC membership application confirmation page. The address bar shows the URL: http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/confirm.html#aw-procedure-agree_missing. The page content includes:

- In 24 months: 600

- Service type: voip
- (Other):
- Resource type: IPv6
- Now: 200
- In 6 months: 300
- In 12 months: 400
- In 24 months: 600

Resource request totals: IPv4

- Now: 200
- In 6 months: 300
- In 12 months: 400
- In 24 months: 600

IPv6

- Now: 200
- In 6 months: 300
- In 12 months: 400
- In 24 months: 600

Assignment window

Agreed to AW procedure: yes

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

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APNIC membership and Internet resource application

APNIC - Membership Application Success - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://forms.apnic.net/member_application/c4f1d8b8441b538d4dc778f5e5f03726/complete.html#aw-procedure-agree_missing

Firefox Help Firefox Support Plug-in FAQ iagu Networks

APNIC

APNIC membership / Internet number resource application

Agreement Organisation details Organisation contacts Account details Confirm

Success

Your application has been submitted.

- Account name: MIWAST-JP
- Member ticket ID: 1201284

APNIC staff will contact you by the end of the next business day.

Need help? [Contact the APNIC helpdesk](#)

If you want to save this form and return to it later you can bookmark it in your web browser

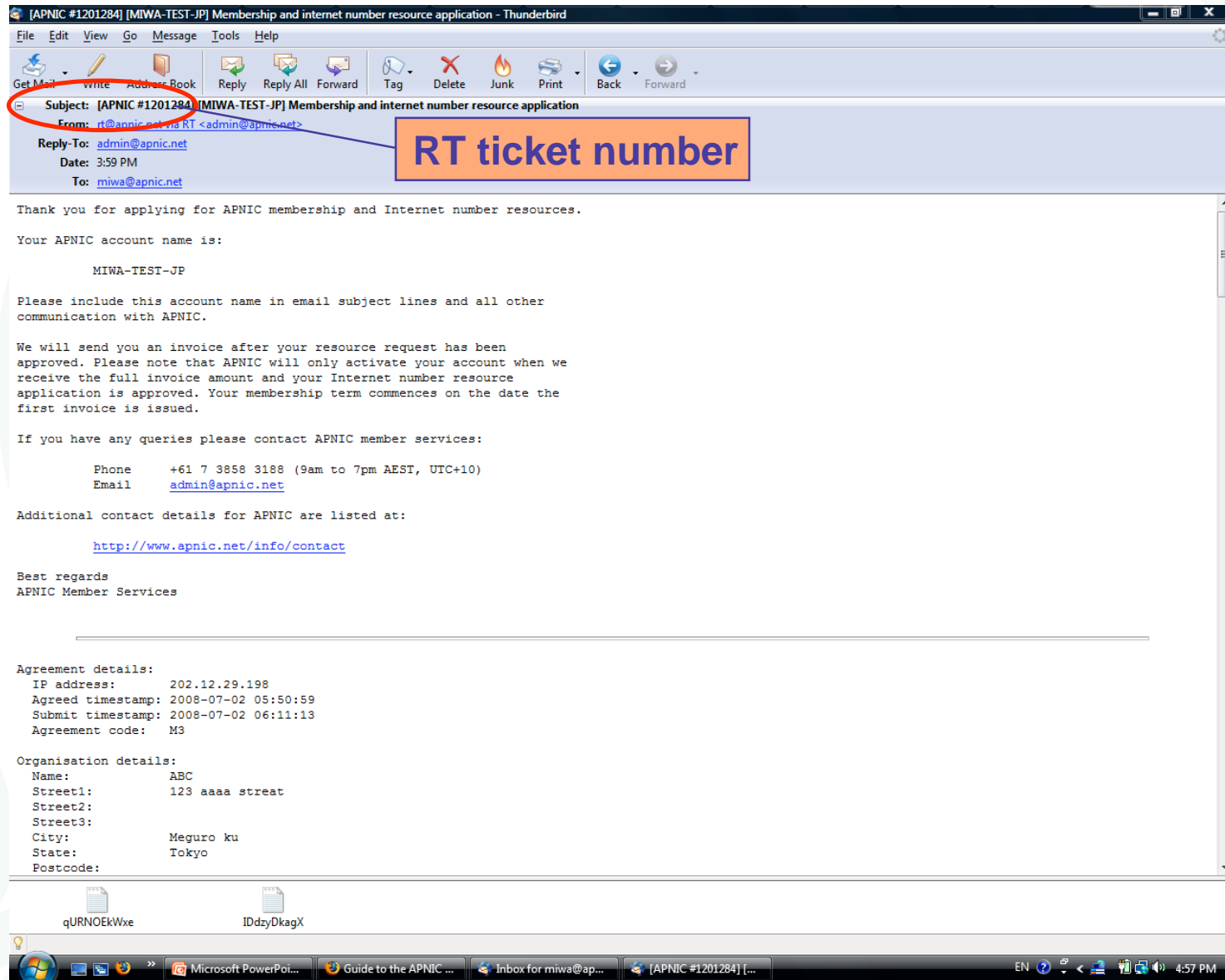
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Done 202.12.29.4 DWL: loading ...

Microsoft PowerPoi... APNIC - Membershi...

EN 4:11 PM

RT ticket



[APNIC #1201284] [MIWA-TEST-JP] Membership and internet number resource application - Thunderbird

File Edit View Go Message Tools Help

Get Mail Write Address Book Reply Reply All Forward Tag Delete Junk Print Back Forward

Subject: [APNIC #1201284] [MIWA-TEST-JP] Membership and internet number resource application

From: rt@apnic.net via RT <admin@apnic.net>

Reply-To: admin@apnic.net

Date: 3:59 PM

To: miwa@apnic.net

RT ticket number

Thank you for applying for APNIC membership and Internet number resources.

Your APNIC account name is:

MIWA-TEST-JP

Please include this account name in email subject lines and all other communication with APNIC.

We will send you an invoice after your resource request has been approved. Please note that APNIC will only activate your account when we receive the full invoice amount and your Internet number resource application is approved. Your membership term commences on the date the first invoice is issued.

If you have any queries please contact APNIC member services:

Phone +61 7 3858 3188 (9am to 7pm AEST, UTC+10)

Email admin@apnic.net

Additional contact details for APNIC are listed at:

<http://www.apnic.net/info/contact>

Best regards
APNIC Member Services

Agreement details:

IP address: 202.12.29.198

Agreed timestamp: 2008-07-02 05:50:59

Submit timestamp: 2008-07-02 06:11:13

Agreement code: M3

Organisation details:

Name: ABC

Street1: 123 aaaa streat

Street2:

Street3:

City: Meguro ku

State: Tokyo

Postcode:


qURN0EkWxe IDDzyDKagX

Microsoft PowerPoi... Guide to the APNIC ... Inbox for miwa@ap... [APNIC #1201284] [...]

EN 4:57 PM

ISP request and evaluation

ISP address request instructions

- Complete the documentation
 - ISP Address Request Form 
 - Web Form:
 - <http://www.apnic.net/services/ipv4/>
 - Plain text
 - <http://ftp.apnic.net/apnic/docs/isp-address-request>
- The more detailed and precise
 - Fewer iterations with APNIC
 - Quicker resolution time
- *Read the quick tips!*
<http://www.apnic.net/faq/isp-request-tips.html>

ISP request evaluation

- ‘Infrastructure’ & ‘network-plan’
 - Policy
 - Technical descriptions are detailed enough so APNIC can understand why subnet size was chosen
 - Do customer projections match infrastructure plans?
 - Efficient subnet assignments
 - ‘Best current practice’
 - Name based virtual web hosting
 - Dynamic dial up

Additional Information - Topology & deployment

- POP topology
 - Diagrams showing network design
 - Diagrams showing POP design
 - does network/POP topology description correlate with addressing plan and current infrastructure?
 - larger requests will require additional documentation
- Deployment plan
 - Give details of phases of deploying equipment
 - does deployment plan match information in network-plan fields?

Additional Information - Equipment and services

- Equipment and services
 - Specifications, number of ports
 - information that cannot fit onto fields of form
 - Details of how implement services
 - explain acronyms or special services
- Miscellaneous
 - Anything not covered by the form, anything unusual also can be declared
 - Supplementary information very useful to the hostmaster when evaluating your request

Additional information

- Renumbering & return policy

- Renumbering?
 - one-for-one exchange to assist renumbering
 - needs confirmation from upstream ISP to confirm renumbering will take place
- ‘No Questions Asked’ return prefix policy
 - swap 3 or more discontinuous prefixes (ISP or customers) for single prefix, no charge
 - <ftp://ftp.apnic.net/apnic/docs/no-questions-policy>
 - Form for returning addresses
 - <ftp://ftp.apnic.net/apnic/docs/address-return-request>

Virtual web hosting

- Name based hosting
 - ‘*Strongly recommended*’
 - Use ‘infrastructure’ field to describe web servers
- IP based hosting
 - Permitted on technical grounds
 - SSL, virtual ftp..
 - Use ‘infrastructure’ field to describe web servers
 - Special verification for IP based
 - If more than /22 used for this purpose
 - Requestor must send list of URLs of virtual domain and corresponding IP address

Cable, DSL services

- 1:1 contention ratio
 - Can be either statically or dynamically assigned
 - Means 1 IP address per customer
- Greater than 1:1 contention ratio
 - Preferred because conserves address space
- Choice of addressing is optional for members
 - dynamic addressing is encouraged
- Verification for DSL Services
 - Equipment details
 - Ex: BRAS, Number of ports
 - Purchase receipts

Evaluation by APNIC

- All address space held should be documented
 - Check other RIR, NIR databases for historical allocations
- ‘No reservations’ policy
 - Reservations may never be claimed
 - Fragments address space
 - Customers may need more or less address space than is actually reserved

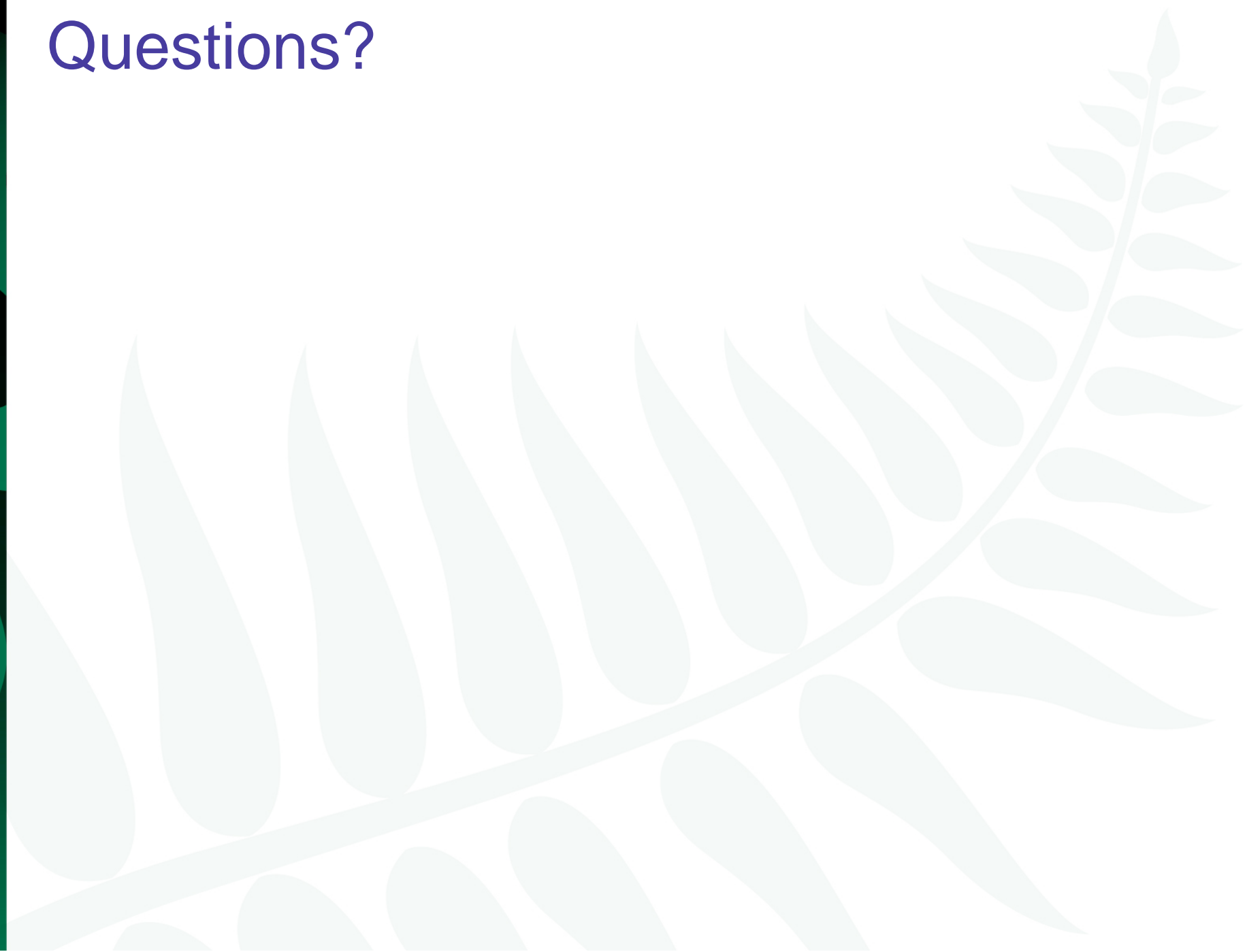
First allocation

- Must meet criteria
 - (discussed in policy section)
- Requires clear detailed and accurate request
- Implementation of 'Best Current Practice'
- Efficient assignments planned
- Always a /22 'slow start' (newly implemented on 04/08/2008)
 - Exceptions made for very large networks but not common

Subsequent allocations

- 80% overall utilisation
 - Unless large assignment pending
- Demonstrated conservative assignments
- Correct customer registrations in db
 - Need to fix inconsistencies before next allocation
- Allocation size to cover 1 year need
 - Based on previous utilisation rate
- Contiguous allocation not guaranteed
 - But every effort made

Questions?



Assignment and sub-allocation procedures

Assignment Window &
2nd Opinion process

Second opinion request

- Assignment Window
- Second Opinion Request Form
- Evaluation

What is an Assignment Window?

“The amount of address space a member may assign without a ‘second opinion’”

- All members have an AW
 - Starts at zero, increases as member gains experience in address management
- Second opinion process
 - Customer assignments require a ‘second-opinion’ when proposed assignment size is larger than members AW

Assignment Window

- Size of assignment window
 - Evaluated after about three 2nd-opinion requests
 - Increased as member gains experience and demonstrates understanding of policies
 - Assignment window may be reduced, in rare cases
- Why an assignment window?
 - Monitoring ongoing progress and adherence to policies
 - Mechanism for member education

Why Assignment Window?

- Motivation
 - Support the LIR during start up
 - Standardise criteria for request evaluation
 - Familiarise the LIR with APNIC policies
 - Ensure accurate data is being kept
 - Treat everyone fairly

FAQ

- <http://www.apnic.net/faq/awfaq.html>

Second opinion request form

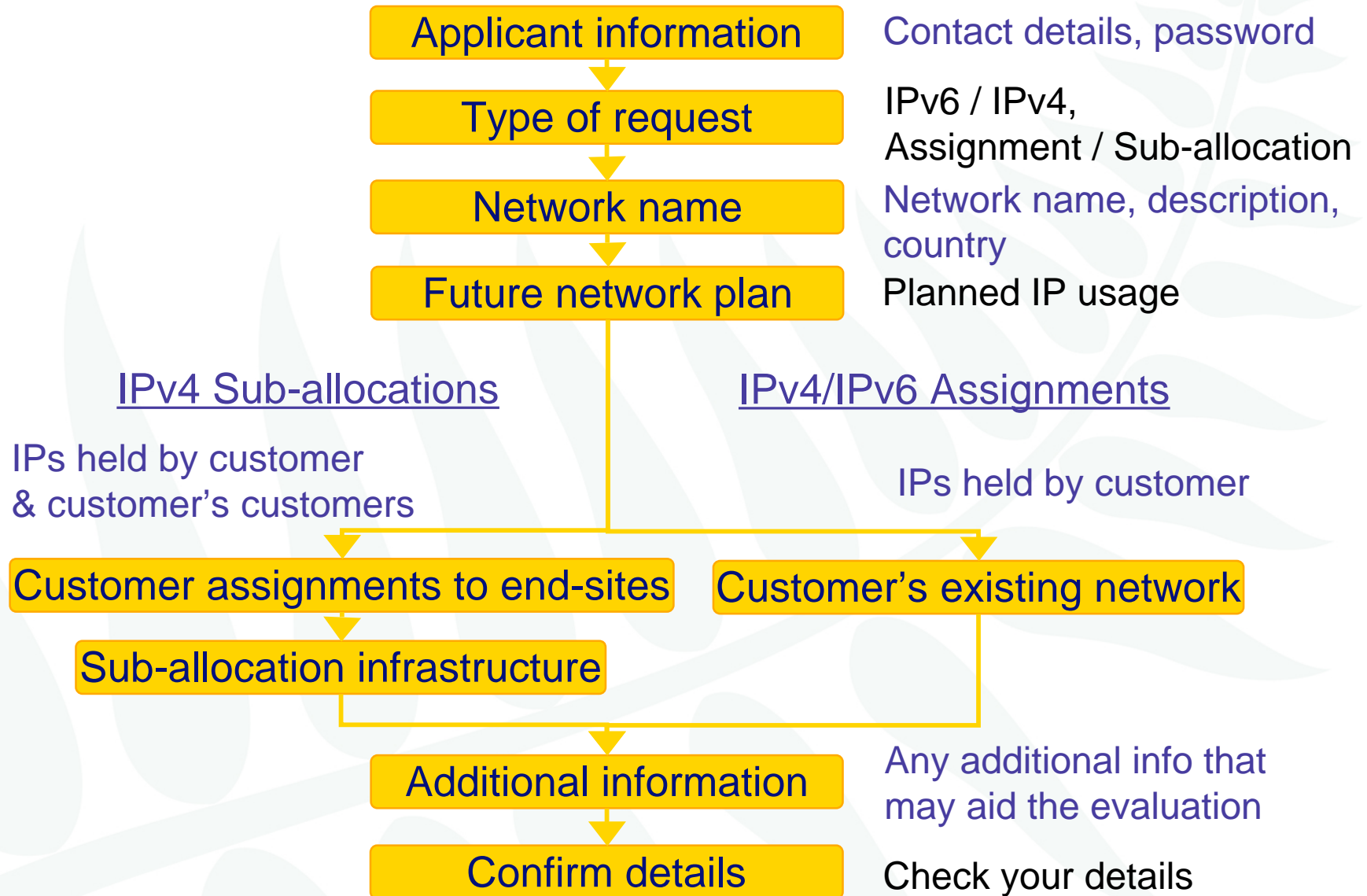
Used to seek approval for:

- IPv4 assignments & sub-allocations
- Multiple/additional IPv6 /48s to a single customer

Before you start:

- Separate form for each request
- Help buttons available
- Form can be saved by use of password

Overview of 2nd opinion form



APNIC 2nd opinion request form

APNIC second opinion request

APNIC second opinion request form

Before you start

The APNIC Second Opinion Request Form will lead LIRs through the steps required to seek APNIC's approval to:


- make assignments or sub-allocation of IPv4 address space to customers that exceed the LIR's Assignment Window
- assign multiple or additional IPv6 /48s to a single customer

Important:

- For each type of request, you must submit a separate request form.
- Only APNIC members may use this form.

If you are an APNIC member, but have forgotten your account name, please contact billing@apnic.net. You will need to provide details of the name and location of your organisation.

How to get help

Click where you see  for specific help with this form.

Saving your work

You can save your work on this form at any time by clicking on the "Save" button at the bottom of the page you are working on. All the details you have entered will be securely saved on APNIC's server.

You will be asked to create a password that is to be used for returning to your saved work.

When you save your work, you will be emailed a URL which will allow you to access the information you have saved and continue to complete the request.







Please note, your details will be held on the APNIC server for a maximum of 14 days.

[Start the form](#)

APNIC second opinion request

Applicant information

APNIC will use these contact details for all correspondence relating to this request. Please enter the APNIC account name of the organisation that requires the address space assignment.

Your name:	<input type="text" value="Amante Alvaran"/>	
Your email address:	<input type="text" value="amante@apnic.net"/>	
APNIC account name:	<input type="text" value="APNIC-AP"/> <small>Example: SPARKYNET-ID</small>	
Your relationship to organisation applying for resources:	<input type="text" value="Employee / Manager"/>	
Create a password for this request: <small>(min. 8 characters)</small>	<input type="password" value="....."/>	
Confirm password:	<input type="password" value="....."/>	

[Next](#)

APNIC second opinion request

Type of second opinion request

This provides information about the type of second opinion you are requesting.

Which IP version do you wish to request? IPv4 ?
 IPv6

Which type of second opinion are you requesting? Assignment (IPv4 or IPv6) ?
Select this if you are distributing IP addresses for the end user's infrastructure.
 Sub-allocation (IPv4 only)
Select this if you are distributing IP addresses to an organisation that will further distribute the address space to their end users.

Address prefix requested: ?
IPv4 example: /26
IPv6 example: /47

Save

Previous

Next

APNIC second opinion request

Save request

The information you have entered to this point has been saved. It will be retained on APNIC's server for **14 days**.

- To return to your request now, select "Continue"
- To return to your request later, use the following URL.

http://www.apnic.net/apnic-bin/second-opinion-form.pl?form_id=c9935b7049dc9d3305dd6a19a0db6cc9

For your convenience, APNIC has sent an email with this URL to you at **amante@apnic.net**

- To leave this form now, select "Exit"

Exit

Continue

APNIC second opinion request

Network name

The details you provide here will be used to identify the proposed network in the APNIC Whois Database.

Name of network:



Example: SPARKYNET

Description of organisation:



Example: SparkyNet, Sdn Bhd, Internet Service Provider, Pinang, Indonesia

ISO 3166 code:



APNIC second opinion request

Future network plan

The information you provide here summarises how the customer will use the IPv4 address space within the next year.

Size of planned subnet:
Example: 0.0.0.0/28

Deploy now:
Example: /29

Deploy within 6 months:
Example: /29

Deploy within 1 year:
Example: /28

Detailed description of subnet:
Example: 12 web servers

How to complete this page

There are two options for using this page to provide details of your customer's network infrastructure:

Use the form to build your assignment details

Use the fields on the left of the form to specify the required elements for each assignment to your network infrastructure. When you have completed the fields, click "Add information" to transfer that assignment information to the text box in the correct format.

Repeat this process for each assignment to your customer's network infrastructure.

Upload a text file

If you have a text file on a local drive describing your network infrastructure assignments in the correct format, you may click "Upload text file". Follow the prompts to locate the file and attach it to this request form.

no file selected

APNIC second opinion request

Additional information

This section is for you to provide whatever other details you feel may help justify your IPv4 second opinion request. In particular, it will help APNIC evaluate the request if you can provide:

- network topology diagrams
- detailed explanations of address space usage and subnetting plans

This for the NOC Network

How to complete this page

There are two options for using this section to provide additional comments:

1. Enter your comments directly into the text field
2. Upload a file of any type
 - If you have a file on a local drive setting out your additional comments, you may select "Upload file"
 - Follow the prompts to locate the file and have it automatically attached to this request form.

Choose File no file selected

Upload file

Save

Previous

Next

APNIC second opinion request**Confirm details**

You have completed a second opinion request for an assignment to an end-site.

Please check your information:

Your name: Amante Alvaran

Your email address: amante@apnic.net

Account name: APNIC-AP

Your relationship to organisation requesting second opinion: Employee / Manager

Address type: IPv4

Opinion type: Assignment

Prefix second opinion requested for: /24

Netname: MANTSTESTONLY

Description: Amante Test Only for training purpose

ISO 3166 code: AU

Network plan: 0.0.0.0/27 /29,/28,/27 NOC Network

Customer's existing network:

Additional Information: This for the NOC Network

[Save](#)[Previous](#)[Submit](#)

2nd opinion evaluation (policy)

- Efficiency
 - More than 50% used in any one subnet?
 - Can different subnet sizes be used?
 - More than 80% used for previous assignment?
- Stockpiling
 - Is all address space held declared on form?
 - Has organisation obtained address space from more than one member/ISP?
- Registration
 - Is previous assignment in APNIC database and are they correct and up to date?

2nd opinion evaluation

- APNIC & Member evaluation
 - Should be the same
 - If NO, APNIC will ask member to obtain more information
 - iterative process
 - If YES, APNIC approves 2nd opinion request

2nd opinion request approval

Dear XXXXXXXX,

APNIC has approved your "second opinion" request to make the following assignment:

[netname]

[address/prefix]

* Please ensure that you update the APNIC whois database to register this assignment before informing your customer or requesting reverse DNS delegation. Do this using the form at:

<http://www.apnic.net/apnic-bin/inetnum.pl>

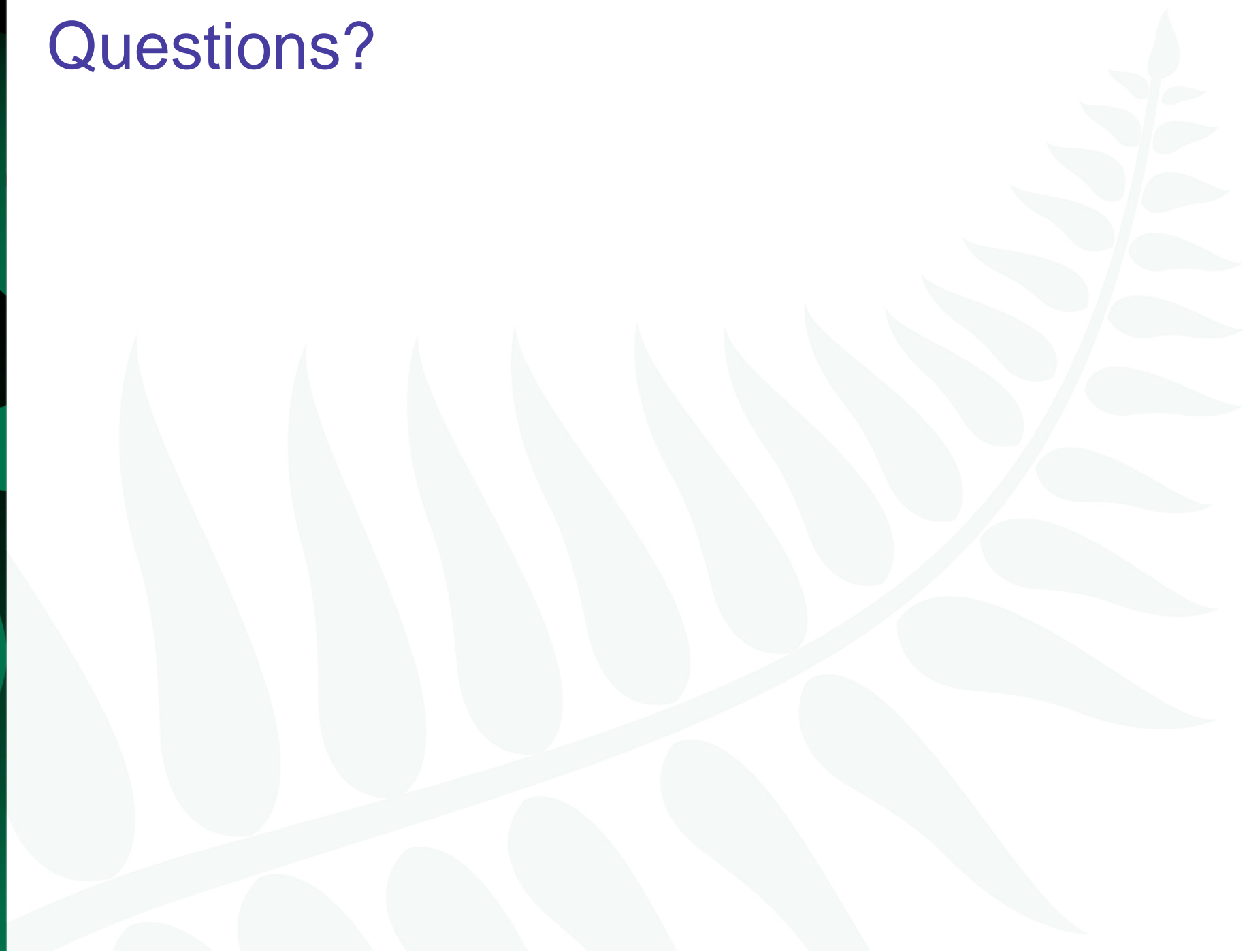
Important:

Unregistered assignments are considered as "unused"

Customer assignment

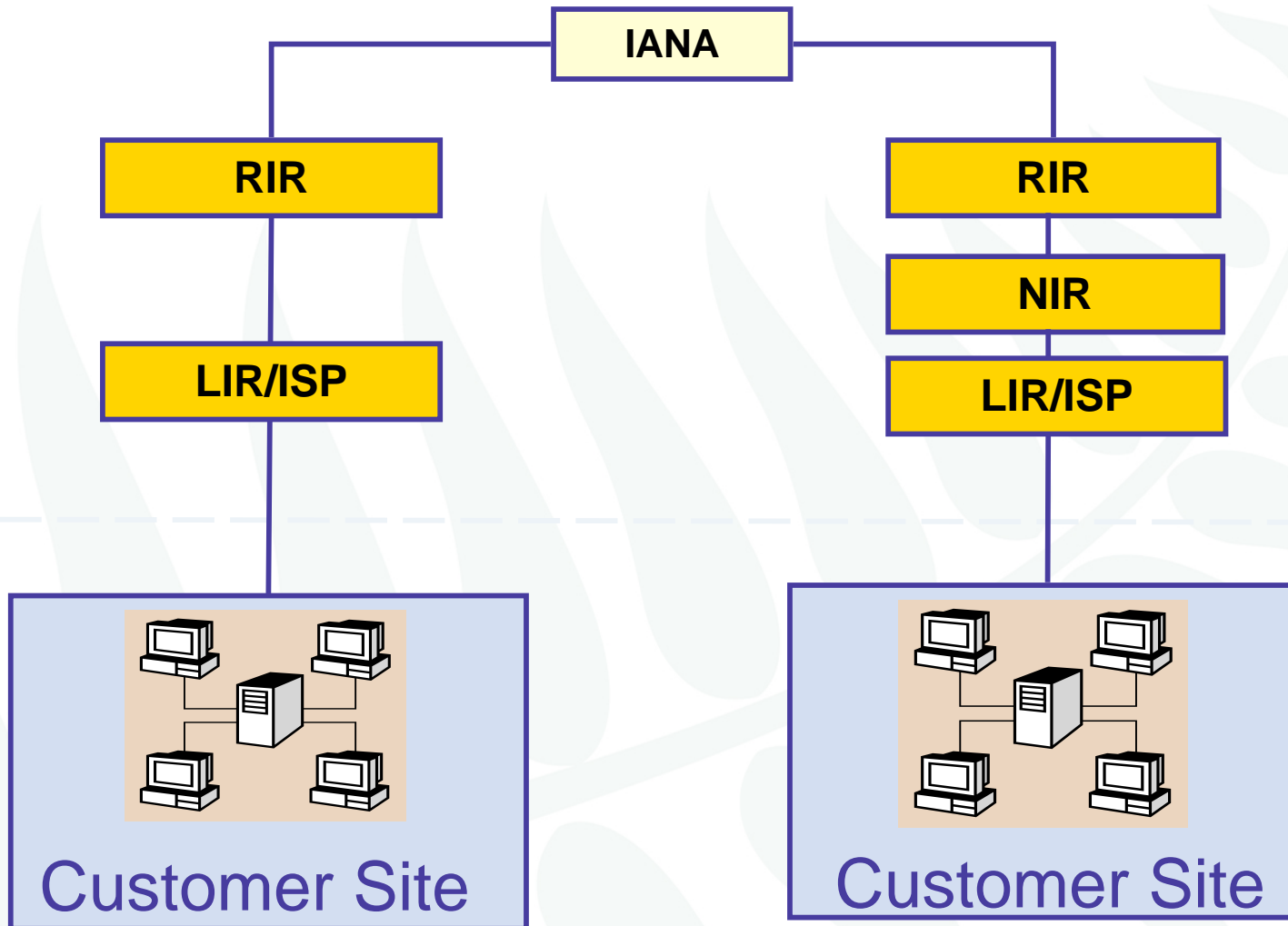
- Member updates internal records
 - Select address range to be assigned
 - Archive original documents sent to APNIC
 - Update APNIC database
- Clarify status of address space
 - APNIC requirement is 'Non portable'
 - 'Portable' assignments are made by APNIC only with the end-user request form
 - Organisation must have technical requirement

Questions?



IPv6 policy and procedures

IPv6 address management hierarchy



IPv6 address policy goals

- Efficient address usage
 - Avoid wasteful practices
- Aggregation
 - Hierarchical distribution
 - Aggregation of routing information
 - Limiting number of routing entries advertised
- Minimise overhead
 - Associated with obtaining address space
- Registration, Uniqueness, Fairness & consistency
- Balance conflict of interests

IPv6 initial allocation

- Initial allocation criteria
 - Plan to connect 200 end sites within 2 years
 - Default allocation (“slow start”)
 - Or be an existing LIR with IPv4 allocations from an RIR/NIR which makes IPv6 assignments and/or sub-allocations to other organizations and announces the allocation in the inter-domain routing system within two years
- Initial allocation size is /32
 - Larger initial allocations can be made if justified according to:
 - IPv6 network infrastructure plan
 - Existing IPv4 infrastructure and customer base
- License model of allocation
 - Allocations are not considered permanent, but always subject to review and reclamation

End site assignment policy for IPv6

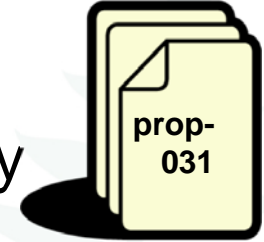
- Any size longer than /48
 - Decision is up to LIRs or ISPs
 - Implication: any size between /64 - /48
 - Global coordination is required
 - Assuming the HD ratio changes to a larger value
 - HD ratio measurement unit: /48 => /56
 - Implication: Register all assignments shorter than /56?
 - HD ratio: 0.8 => 0.94
 - Achieve more efficient address utilisation
 - useful lifetime of IPv6 to encompass a period in excess of 100 years



IPv6 utilisation

- Utilisation determined from end site assignments
 - LIR responsible for registration of all /48 assignments
 - Intermediate allocation hierarchy not considered
- Utilisation of IPv6 address space is measured differently from IPv4
 - Use HD ratio to measure
- Subsequent allocation may be requested when IPv6 utilisation requirement is met

Amend IPv6 assignment and utilisation requirement



- IPv6 assignment and utilisation requirement policy
 - HD ratio: 0.8 => 0.94
 - Measurement unit: /48 => /56
- The HD ratio threshold is
 - $HD = \log(/56 \text{ units assigned}) / \log(16,777,216)$
 - $0.94 = 6,183,533 \times /56 \text{ units}$
- Calculation of the HD ratio
 - Convert the assignment size into equivalent /56 units
 - Each /48 end site = $256 \times /56 \text{ units}$
 - Each /52 end site = $16 \times /56 \text{ units}$
 - Each /56 end site = $1 \times /56 \text{ units}$
 - Each /60 end site = $1/16 \times /56 \text{ units}$
 - Each /64 end site = $1/256 \times /56 \text{ units}$
- Current status
 - Implemented

IPv6 utilisation (HD = 0.94)

- The ratio 0.94 will be implemented soon (March 2007)
- Percentage utilisation calculation

IPv6 Prefix	Site Address Bits	Total site address in /56s	Threshold (HD ratio 0.94)	Utilisation %
/42	14	16,384	9,153	55.9%
/36	20	1,048,576	456,419	43.5%
/35	21	2,097,152	875,653	41.8 %
/32	24	16,777,216	6,185,533	36.9%
/29	27	134,217,728	43,665,787	32.5 %
/24	32	4,294,967,296	1,134,964,479	26.4 %
/16	40	1,099,511,627,776	208,318,498,661	18.9 %

RFC 3194

“In a hierarchical address plan, as the size of the allocation increases, the density of assignments will decrease.”

Subsequent allocation

- Must meet $HD = 0.94$ utilisation requirement of previous allocation (subject to change)
 - From March 2007
- Other criteria to be met
 - Correct registrations (all /48s registered)
 - Correct assignment practices etc
- Subsequent allocation results in a doubling of the address space allocated to it
 - Resulting in total IPv6 prefix is 1 bit shorter
 - Or sufficient for 2 years requirement

IXP IPv6 assignment policy

- Criteria
 - Demonstrate ‘open peering policy’
 - 3 or more peers
- Portable assignment size: /48
 - All other needs should be met through normal processes
 - /64 holders can “upgrade” to /48
 - Through NIRs/ APNIC
 - Need to return /64



IPv6 portable assignment for multihoming



- The current policy did not allow IPv6 portable assignment to end-sites
 - Obstructs setting redundancy connectivity for stable network operation
 - Size: /48, or a shorter prefix if the end site can justify it
 - To be multihomed within 3 months
 - Assignment from a specified block separately from portable allocations address space
- Current status
 - Implemented

How do I apply for IPv6 addresses?

Check your eligibility for IPv6 addresses



Read IPv6 policies

<http://www.apnic.net/docs/policy/ipv6-address-policy.html>

Read IPv6 guideline

<http://www.apnic.net/docs/policy/ipv6-guidelines.html>



Do you have an APNIC account?

If not, become an APNIC member or open a non-member account



Complete an IPv6 address request form



Submit the form hostmaster@apnic.net

Questions:

email: helpdesk@apnic.net

Helpdesk chat: <http://www.apnic.net/helpdesk>



IPv6 address request form

- <http://ftp.apnic.net/apnic/docs/ipv6-alloc-request.txt>

IPv6 address request form

http://ftp.apnic.net/apnic/docs/ipv6-alloc-request.txt - Microsoft Internet Explorer provided by OptusNet

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Stop

Address <http://ftp.apnic.net/apnic/docs/ipv6-alloc-request.txt> Go Links

APNIC Document identity

Title: APNIC IPv6 Allocation Request Form
Short title:
Document ref.:
Version:
Date of original:
Date of this version:
Review scheduled:
Obsoletes:
Status: Active
Comments: n/a

APNIC IPv6 Allocation Request Form

What is this form used for?

This form is for use by organisations requesting IPv6 allocations that they will use for addressing their own infrastructure and making assignments to customers.
It may be used by APNIC account holders only.

Other IP address request forms

If you are an APNIC member seeking an IPv4 allocation, then use the "IPv4 ISP Request Form", at:

http://www.apnic.net/services/ipv4/index.html (web)
ftp://ftp.apnic.net/apnic/docs/isp-address-request (text)

If you are seeking a portable address assignment under APNIC's multihoming, IXP or critical infrastructure policies, then use the "APNIC Portable Assignment Request Form", at:

ftp://ftp.apnic.net/apnic/docs/portable-assign-request

Eligibility for IPv6 allocation

Done Internet

start cfp Microsoft PowerPoint ... http://ftp.apnic.net/... EN 3:32 PM

IPv6 address request form

- Requester template
 - Name, email, acct-name, org-relationship:
- Network template
 - Netname, descr, country, admin-c, tech-c, remarks, changed, mnt-lower
- IPv6 usage template
 - Services, cust-types, cust-network, infrastructure, network-plan
- Additional information



APNIC procedures

IPv6

For existing APNIC members

IPv6 resource guide

http://www.apnic.net/services/ipv6_guide.html#forms

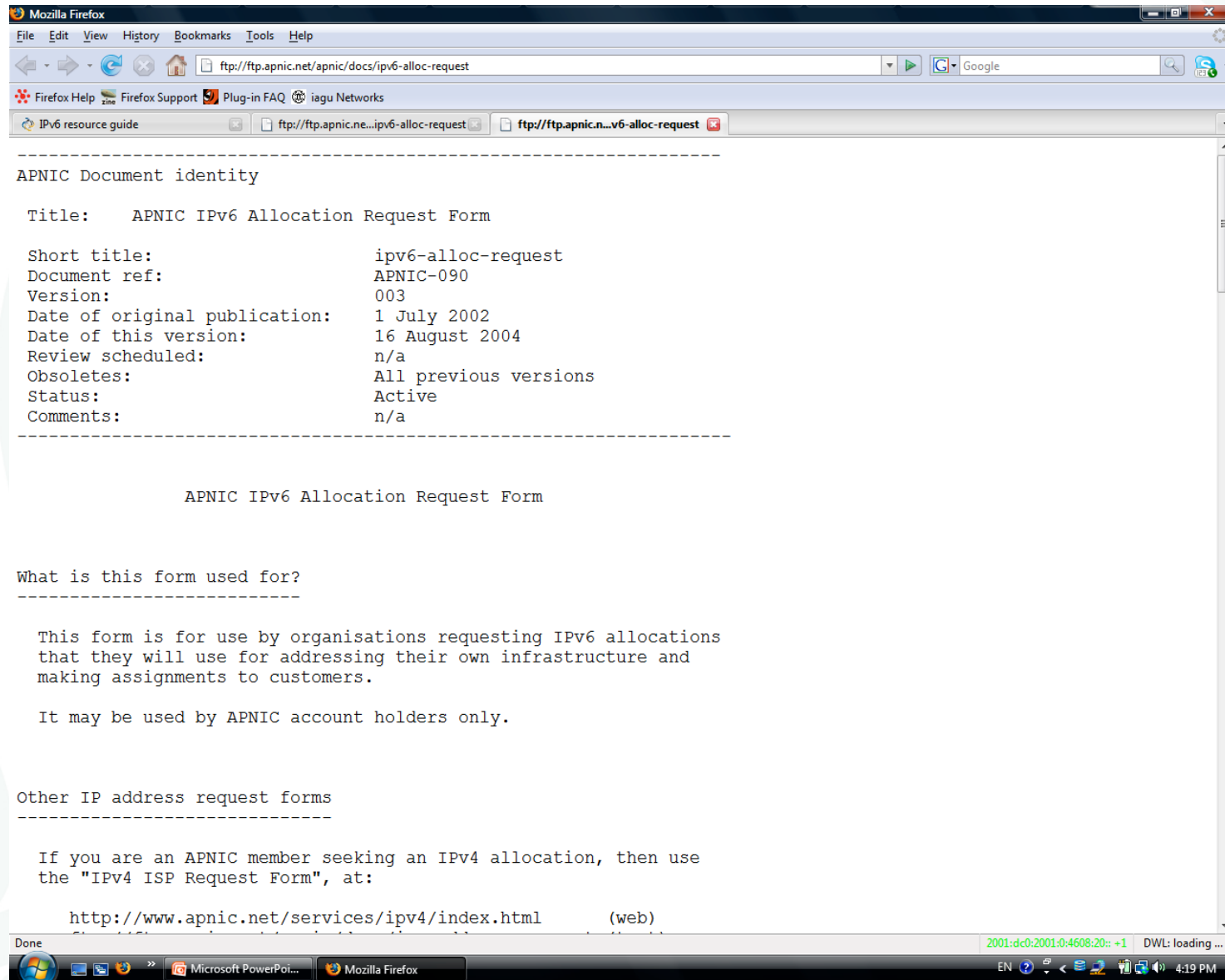
Request forms

<p>APNIC IPv6 Allocation Request Form</p> <p>Use this form to request IPv6 allocations.</p> <p><i>APNIC account name holders only.</i></p>	<p>Format</p> <p>Text</p>	<p>Help</p> <p>?</p>
<p>APNIC Portable Assignment Request Form</p> <p>Use this form to request IPv4 or IPv6 assignments for Internet Exchange Points.</p> <ul style="list-style-type: none"> ◦ Multihoming (IPv4 and IPv6) ◦ Internet Exchange Points (IPv4 and IPv6) ◦ Critical infrastructure (IPv4 and IPv6) <p><i>APNIC account name holders only.</i></p>	<p>Format</p> <p>Online</p> <p>Text</p>	<p>Help</p> <p>?</p> <p>?</p>
<p>APNIC Second Opinion Request Form</p> <p>Use this form to request a second opinion for:</p> <ul style="list-style-type: none"> ◦ Customer address assignments ◦ Customer address sub-allocations <p><i>APNIC account name holders only.</i></p>	<p>Format</p> <p>Online</p> <p>Text</p>	<p>Help</p> <p>?</p> <p>?</p>
<p>APNIC Reverse DNS Delegation Form</p> <p>Use this form to request IPv6.ARPA domain delegation.</p> <p>See Reverse DNS delegation resource guide for more information.</p>	<p>Format</p> <p>Online</p> <p>Text</p>	<p>Help</p> <p>?</p>

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ftp://ftp.apnic.net/apnic/docs/ipv6-alloc-request 2001:d0:2001:0:4608:20: +1 DWL: loading ... EN 4:16 PM

IPv6 allocation request txt form



APNIC Document identity

Title: APNIC IPv6 Allocation Request Form

Short title: ipv6-alloc-request
Document ref: APNIC-090
Version: 003
Date of original publication: 1 July 2002
Date of this version: 16 August 2004
Review scheduled: n/a
Obsoletes: All previous versions
Status: Active
Comments: n/a

APNIC IPv6 Allocation Request Form

What is this form used for?

This form is for use by organisations requesting IPv6 allocations that they will use for addressing their own infrastructure and making assignments to customers.

It may be used by APNIC account holders only.

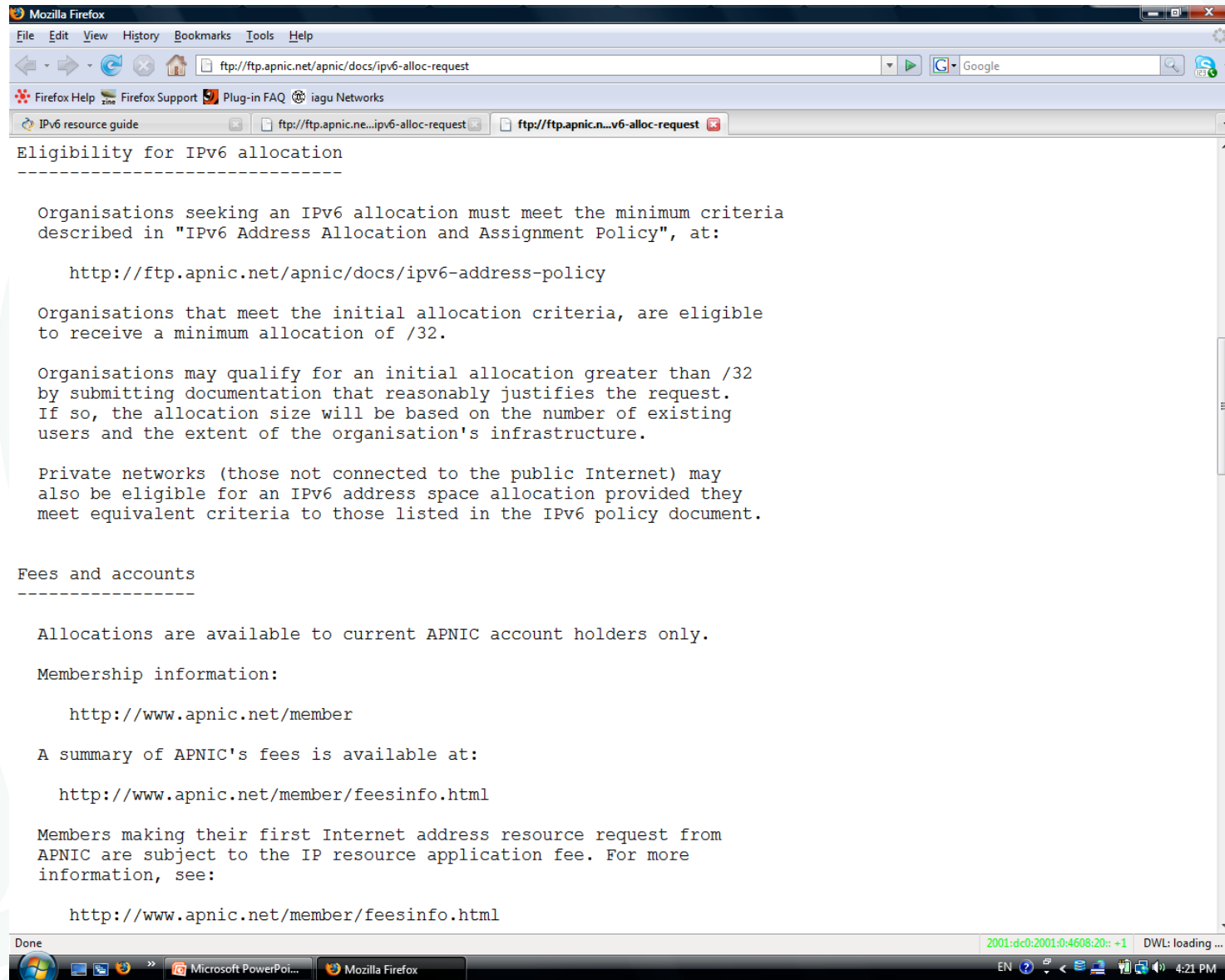
Other IP address request forms

If you are an APNIC member seeking an IPv4 allocation, then use the "IPv4 ISP Request Form", at:

<http://www.apnic.net/services/ipv4/index.html> (web)

Done 2001:dc0:2001:0:4608:20: +1 DWL: loading ...
Microsoft PowerPoi... Mozilla Firefox EN 4:19 PM

IPv6 allocation request txt form



The screenshot shows a Mozilla Firefox browser window with the address bar set to `ftp://ftp.apnic.net/apnic/docs/ipv6-alloc-request`. The page content is as follows:

Eligibility for IPv6 allocation

Organisations seeking an IPv6 allocation must meet the minimum criteria described in "IPv6 Address Allocation and Assignment Policy", at:

`http://ftp.apnic.net/apnic/docs/ipv6-address-policy`

Organisations that meet the initial allocation criteria, are eligible to receive a minimum allocation of /32.

Organisations may qualify for an initial allocation greater than /32 by submitting documentation that reasonably justifies the request. If so, the allocation size will be based on the number of existing users and the extent of the organisation's infrastructure.

Private networks (those not connected to the public Internet) may also be eligible for an IPv6 address space allocation provided they meet equivalent criteria to those listed in the IPv6 policy document.

Fees and accounts

Allocations are available to current APNIC account holders only.

Membership information:

`http://www.apnic.net/member`

A summary of APNIC's fees is available at:

`http://www.apnic.net/member/feesinfo.html`

Members making their first Internet address resource request from APNIC are subject to the IP resource application fee. For more information, see:

`http://www.apnic.net/member/feesinfo.html`

The browser's status bar at the bottom shows the system tray with the time 4:21 PM and the date 2001:dc0:2001:0:4608:20: +1.

IPv6 allocation request txt form

Mozilla Firefox

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ftp://ftp.apnic.net/apnic/docs/ipv6-alloc-request

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IPv6 resource guide ftp://ftp.apnic.net/ipv6-alloc-request ftp://ftp.apnic.net/ipv6-alloc-request

Help guide for this form

A full help guide for this form is available at:

<http://www.apnic.net/services/help/ipv6-alloc-txt>

Questions

If you have other questions, please contact us at:

[<helpdesk@apnic.net>](mailto:helpdesk@apnic.net)

Or, if you would prefer to phone or fax us with your questions, please refer to our contact details and office hours at:

<http://www.apnic.net>

Submitting this form

First, complete the form templates below in plain ASCII text. Then, submit the completed templates (not including this introductory information) by email to:

[<hostmaster@apnic.net>](mailto:hostmaster@apnic.net)

Please note that this form will first be parsed by machine. Therefore, you must ensure that:

- your account name, enclosed in square brackets, is included in the subject line. For example, [SPARKYNET-MY]
- your email is sent in plain ASCII text only
- you do not modify any of the template lines starting with #[
- you do not modify any of the field names in the templates.

Done 2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoint Mozilla Firefox EN 4:22 PM

IPv6 allocation request txt form

```
NOTE: PLEASE DO NOT INCLUDE THIS HEADER WITH YOUR APPLICATION.

----- FORM STARTS -----

#[REQUESTOR TEMPLATE]#

name:
email:
acct-name:
org-relationship:

#[NETWORK TEMPLATE]#

netname:
descr:
descr:
country:
admin-c:
tech-c:
remarks:
changed:
mnt-lower:

#[IPv6 USAGE TEMPLATE]#

services:
cust-types:
cust-network:
infrastructure:
network-plan:

#[TEMPLATES END]#

#[ADDITIONAL INFORMATION]#
Please answer the following questions that apply to your request.

1. If your organisation has published information online about its
```




IPv6 allocation request txt form

```
#[TEMPLATES END]#  
#[ADDITIONAL INFORMATION]#  
Please answer the following questions that apply to your request.  
  
1. If your organisation has published information online about its  
proposed IPv6 services, please provide a URL where APNIC view that  
information.  
  
2. Please provide a network diagram showing your planned IPv6 network.  
In your diagram, please indicate approximate deployment dates for  
planned infrastructure and estimates of the amount of IPv6 address  
space to be assigned in each part of the network.  
  
3. If you are requesting an initial allocation greater than the /32  
minimum allocation, please provide details of your existing IPv4  
network using the format shown in the "Additional Information"  
section of the help guide.  
  
existing-network:  
existing-network:  
existing-network:  
  
4. Do you have any additional comments to include here? Refer to  
"Additional Information" in the help guide for appropriate examples.  
  
Note: Acceptable formats for diagrams: ASCII, JPEG, GIF, PostScript,  
PDF, Visio, MS Word, MS PowerPoint.  
  
----- END OF FORM -----
```

Guide to the IPv6 allocation request form

The screenshot shows a web browser window displaying the APNIC website. The address bar shows the URL <http://www.apnic.net/services/help/ipv6-alloc-txt/>, which is highlighted in an orange box. The page content includes a navigation menu on the left, a breadcrumb trail "You're here: Home » Resource services", and a main heading "Guide to the APNIC IPv6 Allocation Request Form (text version)". Below this, there are sections for "Before you start", "Need more information", and "How to complete the APNIC IPv6 Allocation Request Form (text version)". A list of links under "Help contents" includes "Requestor template", "Network template", "IPv6 usage template", and "Additional information". The "Requestor template" link is circled in red, and a blue box with the text "4 attributes" has a line pointing to it. The browser's status bar at the bottom shows the time as 4:26 PM.

Guide to the APNIC IPv6 Allocation Request Form (text version) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

<http://www.apnic.net/services/help/ipv6-alloc-txt/>

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IPv6 resource guide Guide to the APNIC IPv6 Allocation

<http://www.apnic.net/services/help/ipv6-alloc-txt/>

Asia Pacific Network Information Centre

You're here: [Home](#) » [Resource services](#)

Quick Links

Guide to the APNIC IPv6 Allocation Request Form (text version)

Before you start

The guide is used to request IPv6 address space allocations from APNIC. If you are not already a member of APNIC, please contact member-apply@apnic.net before completing the form.

Use this guide if you are completing the [APNIC IPv6 Allocation Request Form](#).

Need more information

Apart from this guide, you can refer to [APNIC's IPv6 resource guide](#)

How to complete the APNIC IPv6 Allocation Request Form (text version)

The text form is intended to be completed in text and submitted by email to APNIC. Please ensure that:

- your email is sent in plain ASCII text only
- you do not modify any of the template lines starting with #
- you do not modify any of the field names in the templates.

Help contents

- [Requestor template](#)
- [Network template](#)
- [IPv6 usage template](#)
- [Additional information](#)

4 attributes

[Top](#) | [Resource services](#)

Done

2001:dc0:2001:0:4608:20: -1 DWL: loading ...

EN 4:26 PM

Request template

Name of person making request (name)

Provide the full name of the person completing the request form. APNIC will use this name for any correspondence regarding the progress of this request.

[Top](#)

Email address of person making request (email)

Provide the email address of the person completing the request form. APNIC will use this address for any correspondence regarding the progress of this request.

[Top](#)

APNIC account name (acct-name)

The **acct-name** attribute should contain your unique APNIC account name.

If you do not have an account name but wish to become an APNIC member, please see [APNIC membership information](#).

If you are an APNIC member, but have forgotten your account name, please contact admin@apnic.net. You will need to provide details of the name and location of your organisation.

Note, IPv6 allocations are available only to current APNIC members. APNIC will not accept resource request forms without a completed account field, and requests will not be processed until required fees have been paid.

Example:

```
acct-name: SPARKYNET-ID
```

[Top](#)

Relationship to organisation (org-relationship)

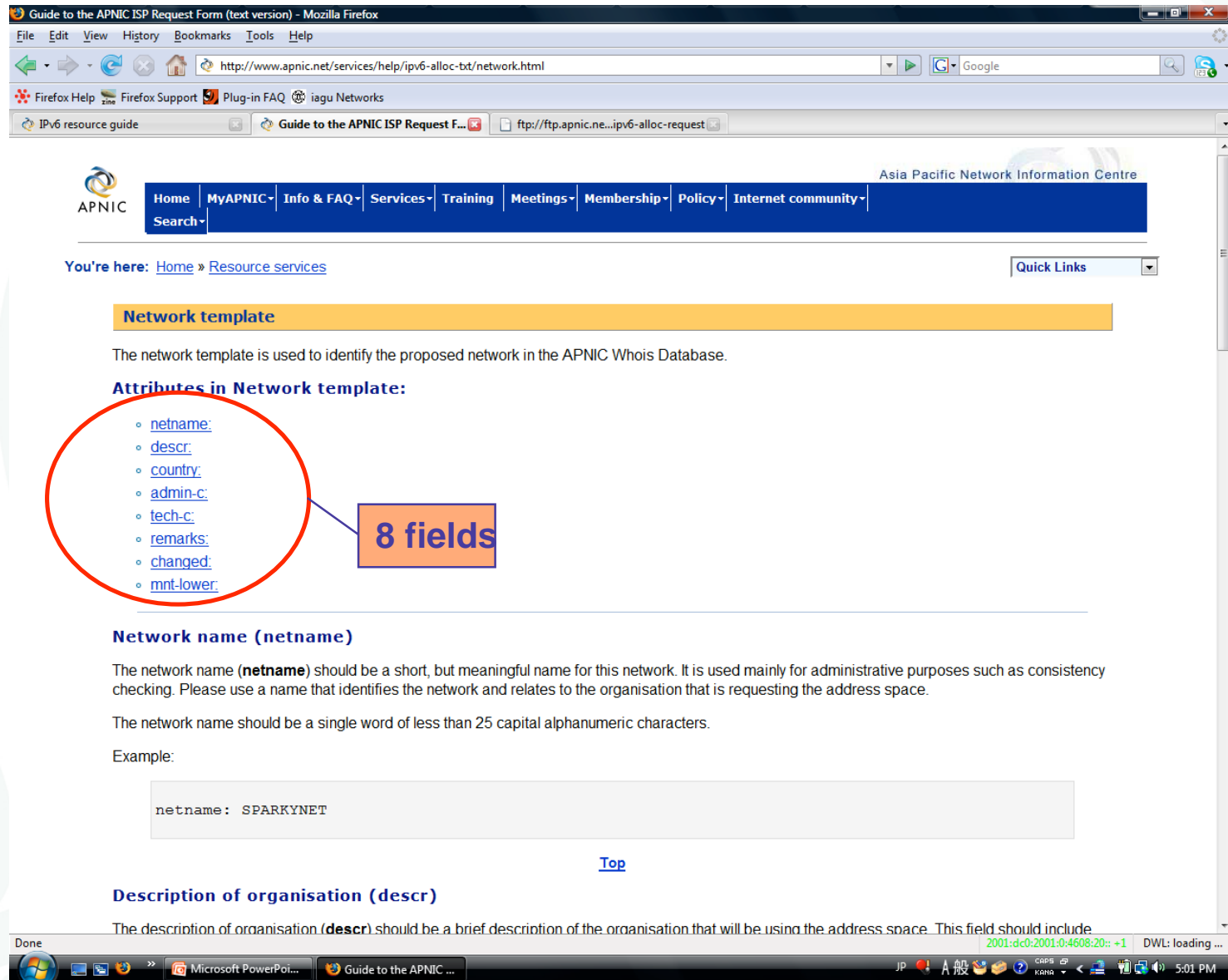
The relationship attribute describes the **relationship** of the person completing the request form to the organisation intending to use the address space.

Common values for this attribute are: employee, officer, manager, or consultant.

[Top](#) | [Guide to the APNIC IPv6 Allocation Request Form](#)

[Home](#) | [MyAPNIC](#) | [Info & FAQ](#) | [Services](#) | [Training](#) | [Meetings](#) | [Membership](#) | [Policy](#) | [Internet community](#) | [Search](#)

Network template



Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

http://www.apnic.net/services/help/ipv6-alloc-bt/network.html

Asia Pacific Network Information Centre

Home MyAPNIC Info & FAQ Services Training Meetings Membership Policy Internet community

You're here: [Home](#) » [Resource services](#)

Network template

The network template is used to identify the proposed network in the APNIC Whois Database.

Attributes in Network template:

- [netname:](#)
- [descr:](#)
- [country:](#)
- [admin-c:](#)
- [tech-c:](#)
- [remarks:](#)
- [changed:](#)
- [mnt-lower:](#)

8 fields

Network name (netname)

The network name (**netname**) should be a short, but meaningful name for this network. It is used mainly for administrative purposes such as consistency checking. Please use a name that identifies the network and relates to the organisation that is requesting the address space.

The network name should be a single word of less than 25 capital alphanumeric characters.

Example:

```
netname: SPARKYNET
```

[Top](#)

Description of organisation (descr)

The description of organisation (**descr**) should be a brief description of the organisation that will be using the address space. This field should include

Done 2001:d0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ... 5:01 PM

Network template

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

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http://www.apnic.net/services/help/ipv6-alloc-tx/network.html

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IPv6 resource guide Guide to the APNIC ISP Request F... ftp://ftp.apnic.net.../ipv6-alloc-request

Network name (netname)

The network name (**netname**) should be a short, but meaningful name for this network. It is used mainly for administrative purposes such as consistency checking. Please use a name that identifies the network and relates to the organisation that is requesting the address space.

The network name should be a single word of less than 25 capital alphanumeric characters.

Example:

```
netname: SPARKYNET
```

[Top](#)

Description of organisation (descr)

The description of organisation (**descr**) should be a brief description of the organisation that will be using the address space. This field should include the location of the organisation and enough detail to distinguish it from other organisations.

This field should not be used to contain any advertising information.

Please limit the **descr** field to no more than five lines.

Example:

```
descr: SparkyNet, Sdn Bhd
descr: Internet Service Provider
descr: Pinang, Malaysia
```

[Top](#)

ISO 3166 code (country)

The **country** attribute should contain the most appropriate two-letter [ISO 3166 code](#) for the organisation that will be using the space.

In cases where the more than one country or economy may be appropriate, please use the ISO 3166 code for the country or economy where the administrative contact is located.

Example:

```
country: MY
```

[Top](#)

Administrative contacts (admin-c)

An administrative contact (**admin-c**) must be someone who is physically located at the site of the network, subject to the following exceptions:

Done

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ... JP A 般 Kana 5:04 PM

Network template

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

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http://www.apnic.net/services/help/ipv6-alloc-bt/network.html

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Administrative contacts (admin-c)

An administrative contact (**admin-c**) must be someone who is physically located at the site of the network, subject to the following exceptions:

- For residential networks or users, the IR's technical contact may be registered as **admin-c**.
- For networks in exceptional circumstances that make it impractical to maintain an on-site administrative contact, an off-site person may be registered as the **admin-c**.

You may specify more than one **admin-c** for the network.

You should enter these contacts in the NIC handle (**person object**) format.

Example:

```
admin-c: KX9-AP
```

If these contacts do not yet have valid NIC-handles, [please create them](#) before submitting this form (this process may take 15-20 minutes).

APNIC recommends that you consider using [role objects](#) for this attribute.

[Top](#)

Technical contacts (tech-c)

A technical contact (**tech-c**) must be a person responsible for the day-to-day operation of the network, but does not need to be physically located at the site of the network. You may specify more than one **tech-c** for the network.

You should enter these contacts in the NIC handle (**person object**) format.

Example:

```
tech-c: KX9-AP
```

If these contacts do not yet have valid NIC handles, [please create them](#) before submitting this form (this process may take 15-20 minutes).

APNIC recommends that you consider using [role objects](#) for this attribute.

[Top](#)

Remarks (remarks)

The **remarks** attribute can be used for any remarks about the address space in this network that cannot be expressed in any of the other attributes. Remarks should be only be included if they provides extra information to users of the database.

You may use multiple lines, but please keep remarks to a minimum.

Example:

Done

2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ...

JP A 般 Kana 5:04 PM

Network template

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http://www.apnic.net/services/help/ipv6-alloc-txt/network.html

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IPv6 resource guide Guide to the APNIC ISP Request F... ftp://ftp.apnic.net/ipv6-alloc-request

Remarks (remarks)

The **remarks** attribute can be used for any remarks about the address space in this network that cannot be expressed in any of the other attributes. Remarks should be only be included if they provides extra information to users of the database.

You may use multiple lines, but please keep remarks to a minimum.

Example:

```
remarks: Production IPv6 network servicing commercial clients in Jakarta
```

[Top](#)

Changed by (changed)

The **changed** attribute is used to record the e-mail address of the person completing or updating this template, followed by the corresponding date.

The date should be in the format of YYYYMMDD (YYYY - year, MM - month, and DD - day, all values 0 filled).

You should provide exactly one **changed** attribute per network template.

Example:

```
changed: ahmad.ali@sparkynet.com.my 20020225
```

[Top](#)

Maintainer object (mnt-lower)

A **maintainer** object is a database object used to authorise updates to the APNIC database. If your database details are protected by a **maintainer** object, then only persons with access to the security information of that **maintainer** object will be able to change details.

You must [create a maintainer object](#) to prevent unauthorised creation of assignment objects within your IP address range.

You should enter this in the correct **maintainer** object format.

Example:

```
mnt-lower: MAINT-AP-SPARKY
```

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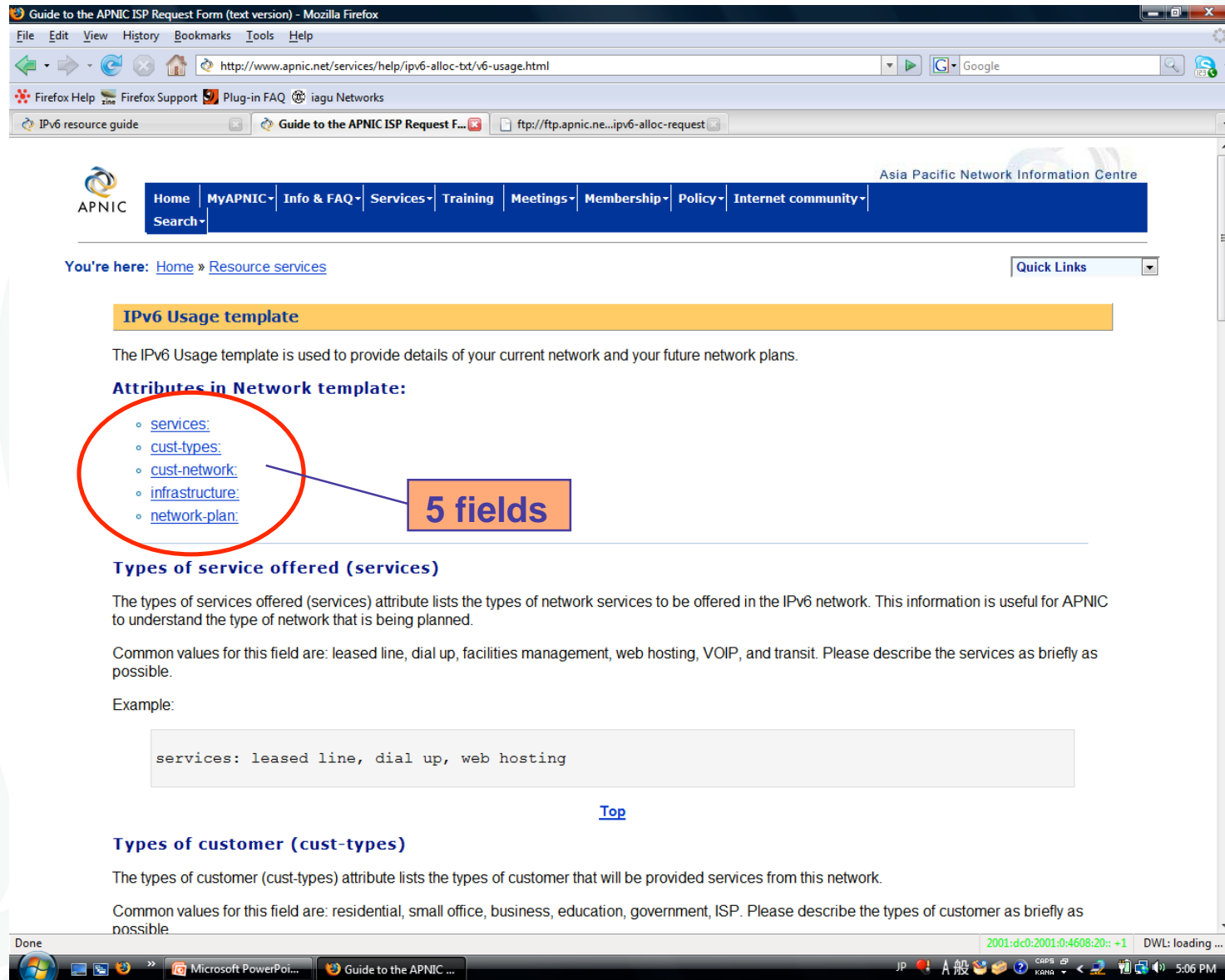
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Comments to: webmaster@apnic.net | [Privacy statement](#) | [RSS](#)

Done 2001:d0:2001:0:4608:20: +1 DWL: loading ...

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IPv6 usage template



Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

http://www.apnic.net/services/help/ipv6-alloc-bt/v6-usage.html

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IPv6 Usage template

The IPv6 Usage template is used to provide details of your current network and your future network plans.

Attributes in Network template:

- [services:](#)
- [cust-types:](#)
- [cust-network:](#)
- [infrastructure:](#)
- [network-plan:](#)

5 fields

Types of service offered (services)

The types of services offered (services) attribute lists the types of network services to be offered in the IPv6 network. This information is useful for APNIC to understand the type of network that is being planned.

Common values for this field are: leased line, dial up, facilities management, web hosting, VOIP, and transit. Please describe the services as briefly as possible.

Example:

```
services: leased line, dial up, web hosting
```

[Top](#)

Types of customer (cust-types)

The types of customer (cust-types) attribute lists the types of customer that will be provided services from this network.

Common values for this field are: residential, small office, business, education, government, ISP. Please describe the types of customer as briefly as possible.

Done 2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ... 5:06 PM

IPv6 usage template

Types of service offered (services)

The types of services offered (services) attribute lists the types of network services to be offered in the IPv6 network. This information is useful for APNIC to understand the type of network that is being planned.

Common values for this field are: leased line, dial up, facilities management, web hosting, VOIP, and transit. Please describe the services as briefly as possible.

Example:

```
services: leased line, dial up, web hosting
```

[Top](#)

Types of customer (cust-types)

The types of customer (cust-types) attribute lists the types of customer that will be provided services from this network.

Common values for this field are: residential, small office, business, education, government, ISP. Please describe the types of customer as briefly as possible.

Example:

```
cust-type: residential, small office, business, ISP
```

[Top](#)

Customer network assignments (cust-network)

The **cust-network** attribute summarises past IPv6 assignments made to customers of this network. This field is used by APNIC to establish the patterns of address assignment in this network.

IPv6 usage template

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

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http://www.apnic.net/services/help/ipv6-alloc-txt/v6-usage.html#services

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[Top](#)

Customer network assignments (cust-network)

The **cust-network** attribute summarises past IPv6 assignments made to customers of this network. This field is used by APNIC to establish the patterns of address assignment in this network.

If you have not been allocated any IPv6 addresses in the past, please leave this section blank.

If you have assigned IPv6 networks to customers, you must provide the assignment information for those networks in the following format (using multiple lines as necessary):

```
<subnet-size> <netname>
```

Attribute (long)	Attribute (short)	Definition/explanation
Size of customer subnet	subnet-size	The size of the subnet assigned to the customer, as a prefix in slash notation. Example: /48
Name of customer subnet	netname	The name you assigned to this customer's network, as found in the APNIC database.

Important notes on the cust-network attribute

- Do not list IPv4 assignments in this attribute.
- Please enter the netname exactly as it appears in the assignment details registered in the APNIC Whois database.
- APNIC considers the sum of the addresses described in both the cust-network field and the infrastructure field when evaluating the address utilisation of an organisation. This is used to determine whether that organisation qualifies for a subsequent allocation.

Example:

```
cust-network: /48 FOONET-AP
cust-network: /48 BARNET-AP
```

[Top](#)

Done

2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ... JP A 般 Kana 5:08 PM

IPv6 usage template

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/help/ipv6-alloc-bt/v6-usage.html#services

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[Top](#)

Network Infrastructure (infrastructure)

The **infrastructure** attribute summarises the IPv6 address assignments made to the organisation's network infrastructure. These addresses are not used for customer assignments.

This field is used by APNIC to establish the patterns of address assignment within this network.

You should provide descriptions of all assignments made to your network infrastructure in the following format:

```
<subnet-size> <descr>
```

Attribute (long)	Attribute (short)	Definition/explanation
Size of infrastructure subnet	subnet-size	The size of the subnet assigned to the infrastructure, as a prefix in slash notation. Example: /48
Description of infrastructure subnet	descr	A brief description of this element of your infrastructure.

Important notes on the infrastructure attribute

- Do not list IPv4 assignments in this attribute.
- Do not use the infrastructure field to describe networks which you are not yet using.
- APNIC considers the sum of the addresses described in both the cust-network field and the infrastructure field when evaluating the address utilisation of an organisation. This is used to determine whether that organisation qualifies for a subsequent allocation.

Example:

```
infrastructure: /58 2 routers, 32 serial ports,16 FastEthernet ports, 3 ATM ports (Backbone)
infrastructure: /64 Internal LAN for Head office
infrastructure: /62 LANs of branch Offices
infrastructure: /48 Network Segment for DMZ POP
```

Done

2001:dc0:2001:0:4608:20: +1 DWL: loading ...

Microsoft PowerPoi... Guide to the APNIC ... JP A 般 Kana 5:08 PM

IPv6 usage template

Guide to the APNIC ISP Request Form (text version) - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/help/ipv6-alloc-tvt/v6-usage.html#services

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IPv6 resource guide Guide to the APNIC ISP Request F... ftp://ftp.apnic.net/ipv6-alloc-request

Future network plan (network-plan)

The **network-plan** attribute summarises the address assignments planned for the organisation's network infrastructure, for up to two years. If specific customer assignments are known then they may also be included here.

This field is used by APNIC to evaluate whether the organisation has a realistic plan for making at least 200 assignments to other organisations within two years.

You should provide details of your future network plan in the following format (using multiple lines as necessary):

```
<subnet-size> <now/1yr/2yr> <descr>
```

Attribute (long)	Attribute (short)	Definition/explanation
Size of planned subnet	subnet-size	The size of the planned subnet assignment, as a prefix in slash notation. Example: /48
Deploy now	now	Use this value if you plan to make the assignment to this subnet upon receiving an IPv6 allocation.
Deploy within 1 year	1yr	Use this value if you plan to make the assignment to this subnet within one year of receiving an IPv6 allocation.
Deploy within 2 years	2yr	Use this value if you plan to make the assignment to this subnet within two years of receiving an IPv6 allocation.
Description of assignment	descr	A brief description of this planned assignment. Example: Web hosting facility

Important notes on the network-plan attribute

- Do not list IPv4 assignments in this attribute.
- APNIC will use the information provided in this attribute to determine whether the network you are planning appears to be capable of supporting at least 200 customer assignments within two years. It is not necessary for you to list all of those customer assignments.

Example:

```
network-plan: /50 /56,/56,/50 Head Office Lan (Support, marketing, sales etc)
network-plan: /64 /64,/64,/64 100 FreeBSD servers for web and mail hosting
network-plan: /48 /48,/48,/48 8x7600 Series ACME router for Mabuhay POP
```

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Done 2001:dc0:2001:0:4608:20::+1 DWL: loading ...

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Additional information

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File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/help/ipv6-alloc-txt/add-info.html

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Additional information area

The additional information area allows you to provide other information that may be helpful for your request.

Other details you may need to provide in additional information

1. If your organisation has published information online about its proposed IPv6 services, please provide a URL where APNIC view that information.
You are not required to provide a public link to your network services plan; however, if it is available, it may help to provide APNIC a better understanding of your request.
2. Please provide a network diagram showing your IPv6 network. In your diagram, please indicate approximate deployment dates for planned infrastructure and estimates of the IPv6 address space to be assigned in each part of the network.
Under the IPv6 allocation policy, you are required to demonstrate that you have a plan for making at least 200 /48 assignments to other organisations within two years. Your network diagram must support this requirement.
An [example of a network diagram](#) is provided below.
You can send your diagram in one of the following formats: ASCII, JPEG, GIF, PostScript, PDF, Visio, MS Word, or MS PowerPoint.
3. If you are requesting an initial allocation greater than the /32 minimum allocation, please provide details of your IPv4 network here. This information is separate from the IPv6 customer network details provided in the ["IPv6 Usage Template"](#).
You should provide information regarding your existing IPv4 network services and projected IPv6 services in the following format:

```
<service>, <ports>, <ipv4-static>, <ipv4-dynamic>, <ipv6-static>, <ipv6-dynamic>
```

Attribute (long)	Attribute (short)	Definition/explanation
Service	service	List the type of service provided, eg. ADSL, dial-up, cable. Fill out a new line for each type of service provided. Example: ADSL
Number of ports	ports	List the number of ports provided for this service. Example: 65000
Number of static IPv4 customers	ipv4-static	List the number of customers to whom you currently provide static IPv4 addresses.

Done

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Additional information

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Number of static IPv4 customers	ipv4-static	List the number of customers to whom you currently provide static IPv4 addresses. Example: 10000
Number of dynamic IPv4 customers	ipv4-dynamic	List the number of customers to whom you currently provide dynamic IPv4 addresses. Example: 10000
Number of static IPv6 customers	ipv6-static	List the number of customers to whom you plan to provide static IPv6 addresses. Example: 10000
Number of dynamic IPv6 customers	ipv6-dynamic	List the number of customers to whom you plan to provide dynamic IPv6 addresses. Example: 10000

Important notes on the existing network field

- The IPv6 allocation policy allows the extent of existing IPv4 infrastructure to be considered when the amount of address space requested exceeds the minimum allocation size (/32). If you are simply requesting a /32 address range, then you do not need to provide any IPv4 information here.

Example:

```
existing-network: ADSL, 20000, 10000, 5000, 10000, 5000
existing-network: Cable, 65536, 20000, 500, 20000, 500
existing-network: Dial-up, 120, 60, 300, 60, 300
```

4. Do you have any additional comments?

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4. Do you have any additional comments?

Only provide additional comments here if you feel that any aspects of your application may not be clear from the information provided above.

Example of a network diagram:

```

    graph TD
      subgraph Tunneling
        G6TAP[6TAP] --- ITunnel[IPv4 to IPv6 Tunnel]
        GIPv6IX[IPv6 IX] --- ITunnel
      end
      ITunnel --- R1[1 ACME 9333 Router]
      ITunnel --- R2[1 ACME 9333 Router]
      R1 --- ASwitch[Backbone- ATM Switch 16ports]
      ASwitch --- SPOP[Sydney POP ACME 7333 Router]
      SPOP --- IPTelephony[IP Telephony]
      SPOP --- PSTN[PSTN]
      SPOP --- CMTS[4 ACME CMTS 300 CM Capacity]
      SPOP --- NAS[2 ACME XYZ NAS 2000 ADSL ports]
      SPOP --- ASwitch128[ACME Switch 128 ports]
      SPOP --- LAN[Head Office LAN 2000 CPEs]
      SPOP --- RemoteLAN[Remote offices LAN 1,2,3...]
      SPOP --- NATIVE[NATIVE IPv6]
      NATIVE --- MELB[Melbourne POP ACME 6333 router]
      NATIVE --- BRIS[Brisbane POP ACME 6333 router]
      NATIVE --- ADELA[Adelaide POP ACME 5222 router]
      NATIVE --- PERTH[Perth POP ACME 5222 router]
      NATIVE --- PHASEII[Phase II 02/03-10/03 Major POP Implementation]
      NATIVE --- PHASEIII[Phase III 01/03-12/04 Extended POP Implementation in Asia]
      PHASEIII --- CHINA[China POP ACME3255]
      PHASEIII --- JAPAN[Japan POP ACME3255]
      PHASEIII --- KOREA[Korea POP ACME3255]
      PHASEIII --- SINGAPORE[Singapore POP ACME3255]
  
```

* Border Routers - 8 serial ports, 16 fastEthernet ports

Phase I (December 10, 2002) Implementation of Additional Services Cable, ADSL & IP Telephony

Phase II (02/03-10/03) Major POP Implementation

Phase III (01/03-12/04) Extended POP Implementation in Asia

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Done

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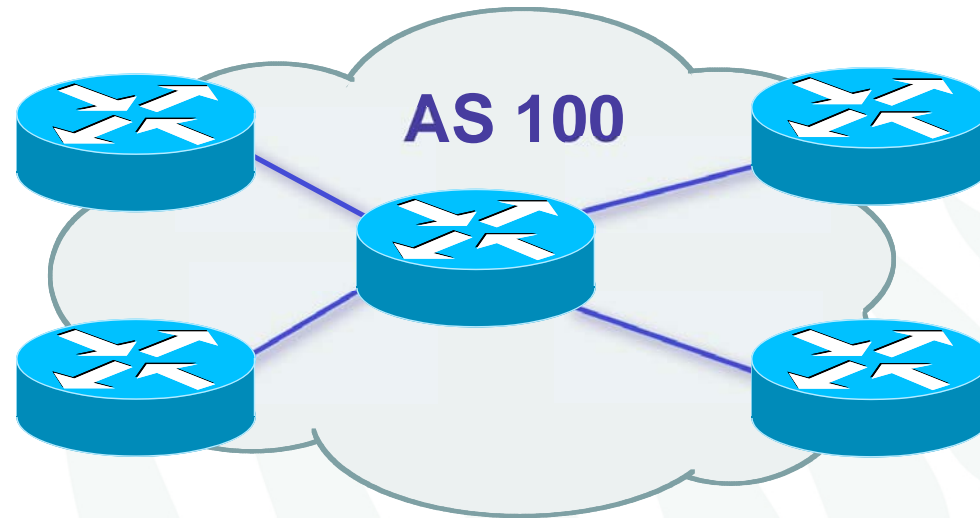
Sample inet6num object

```
inet6num:      2001:0DB8::/32
netname:       IPV6-DOC-AP
descr:         IPv6 prefix for documentation purpose
country:       AP
admin-c:       HM20-AP
tech-c:        HM20-AP
status:        ALLOCATED PORTABLE
remarks:       This address range is to be used for documentation
remarks:       purpose only. For more information please see
remarks:       http://www.apnic.net/info/faq/ipv6-documentation-
                prefix-faq.html
mnt-by:        APNIC-HM
changed:       hm-changed@apnic.net 20040115
changed:       hm-changed@apnic.net 20040211
source:        APNIC
```


ASN



What is an Autonomous System?



- Collection of networks with same routing policy
- Usually under single ownership, trust and administrative control

ASN policies

- An organisation is eligible for an ASN assignment if it:
 - is multihomed; and
 - has a single, clearly defined routing policy that is different from its providers' routing policies
- Registration requirement
 - All ASNs assigned must be publicly registered in the APNIC, or relevant NIR, Whois database
 - APNIC, or the relevant NIR, will create the aut-num object

ASN policies

- Providing ASN to customers
 - Same criteria as listed in the previous slide is applied
 - The requesting organisation is responsible for maintaining the registration on behalf of the customer
- If the customer ceases to receive connectivity from the requesting organisation
 - It must return the ASN
 - The requesting organisation is expected to enter into an agreement with the customer to this effect
- Any ASNs returned to the requesting organisation must then be returned to APNIC or the relevant NIR

ASN policies

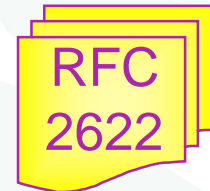
- Current 2 byte ASN (16 bits)
 - Possibly run into the exhaustion by 2010
 - 4 byte ASN is developed by IETF
- 4 byte ASN distribution policy (32 bits)
 - Reached consensus in APNIC in 2006
- Timeline
 - Jan 2007: APNIC started allocating 4 byte ASN upon specific request default 2 byte ASN
 - Jan 2009: Default 4 byte ASN, 2 byte ASN on request
 - Jan 2010: 4 byte ASN only

prop-064-v002

- prop-064-v002: Change to assignment policy for AS numbers
 - To create awareness earlier within the community for the need to support 4-byte AS numbers without mandating an absolute final adoption of 4-byte AS numbers

Requesting an ASN

- Complete the request form
 - web form available:
 - <http://www.apnic.net/db/aut-num.html>
- Request form is parsed - real time
 - Must include routing policy
 - multiple import and export lines
 - Is checked for syntactical accuracy
 - based on RPSL (rfc2622)
 - Peers verified by querying routing table
 - [NO-PARSE] will not send request to parser



ASN request form

http://www.apnic.net/apnic-bin/creform.pl

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Create Aut-num Object

Aut-num Object

What is this form to be used for?
This form assists in the creation and maintenance of aut-num objects. The aut-num describes the details of the registered owner of an Autonomous System and their routing policy for that AS. See [RFC 2622](#) for details.

Help completing this form
See the [Guide to the APNIC AS Number Request Form](#).

(* indicates mandatory field.)

*** Name:** eg: Ky Xander
The name of the person completing this form

*** Account-name:** eg: ACME-PH
Your APNIC account name

*** Org-relationship:** eg: Consultant (or employee or...)
Your APNIC account name

Internet

Request form – routing policy

*** Descr:**
A short description of this object and the name of the organisation associated with it.
eg: Global Transit Inc. Transit AS Content Service Provider Tokyo

*** Country:**
Name of the country of the admin-c
eg: JP

Import:
Routing information your AS will accept from neighbouring Autonomous Systems
from AS1 Action pref=100; accept ANY
from AS2 Action pref=100; accept ANY
eg: from AS9386 Action pref=100

More information regarding RPSL syntax can be found in [RFC 2622](#)

Export:
generated routing information your AS will send to peer Autonomous Systems
To AS1 Action pref=100; announcet ANY
To AS2 Action pref=100; announcet ANY
eg: to AS9444 Announce THIS-AS

More information regarding RPSL syntax can be found in [RFC 2622](#)

Default:
If applicable, a description of how default routing policy is applied.
To AS1 Action pref=100; announcet ANY
To AS2 Action pref=100; announcet ANY
eg: to AS9386 Action pref=10

More information regarding RPSL syntax can be found in [RFC 2622](#)

Aut-num object example

```
aut-num:          AS4777
as-name:          APNIC-NSPIXP2-AS
descr:            Asia Pacific Network Information Centre
descr:            AS for NSPIXP2, remote facilities site
import:          from AS2500 action pref=100; accept ANY
import:          from AS2524 action pref=100; accept ANY
import:          from AS2514 action pref=100; accept ANY
export:          to AS2500 announce AS4777
export:          to AS2524 announce AS4777
export:          to AS2514 announce AS4777
default:         to AS2500 action pref=100; networks ANY
admin-c:          PW35-AP
tech-c:           NO4-AP
remarks:          Filtering prefixes longer than /24
mnt-by:           MAINT-APNIC-AP
changed:          paulg@apnic.net 19981028
source:           APNIC
```

POLICY
RPSL

4 byte AS number

Updated Jan 2007

This module is developed based on several articles written by Geoff Huston, APNIC Chief Scientist and George Michaelson, APNIC Senior R&D Officer

Acknowledgements

The material used in this course was created in collaboration Geoff Huston (APNIC) and George Michaelson (APNIC) and includes material provided by them.

APNIC acknowledges with thanks and appreciation the contribution and support of the above.

Background

- Current 2 byte ASN (16 bits)
 - Possibly run into the exhaustion by 2010
 - 4 byte ASN is developed by IETF
- 4 byte ASN distribution policy (32 bits)
 - Reached consensus in APNIC in 2006
- Timeline
 - APNIC started allocating 4 byte ASN upon specific request Jan 2007, default 2 byte ASN
 - Jan 2009: Default 4 byte ASN, 2 byte ASN on request
 - Jan 2010: 4 byte ASN only

Canonical textual form of 4 byte ASN

- 2 byte only ASN
 - May be represented as a 16 bit value decimal number, with no leading zeros, or “.” character.
 - They may be represented as 4 byte ASN.
- 4byte ASN
 - If their value lies in the range 0 – 65535
 - 4 byte ASN may be represented identically as 2 byte only ASN.
 - Otherwise, they **MUST** be represented identically as for 4 byte only ASN.
 - For values in the range 0 – 65535 the canonical 4 byte ASN representation
 - 0. <16 bit decimal value>
- 4 byte only ASN
 - **MUST** be represented as two pairs of 16 bit decimal values with no leading zeros, separated by the “.” character.
 - <high order 16 bit value in decimal> . <low order 16 bit value in decimal>
 - E.g., a 4 byte ASN of value 65546 (decimal)
 - 1.10
- APNIC resource range: 2.0 ~ 2.1023

4 byte ASN approach

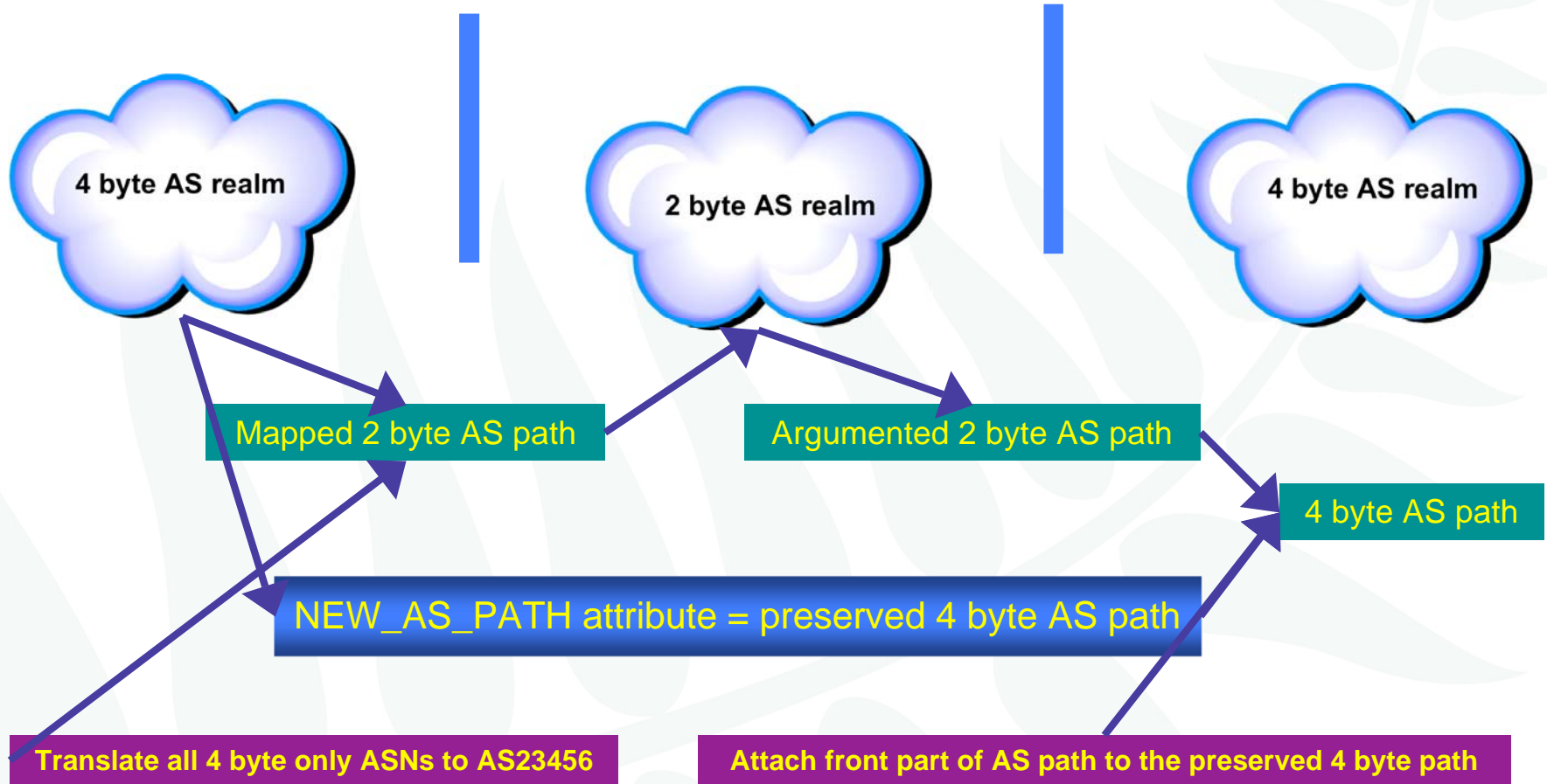
- Change as little as possible in the BGP spec
- Be 'backward compatible' with 2 byte BGP implementations
- Preserve AS semantics
 - Preserve loop detection capability
 - Preserve AS path length metric
- No 'flag day'
 - Allow 2 byte implementations to continue to operate indefinitely in a mixed 2 / 4 byte AS world



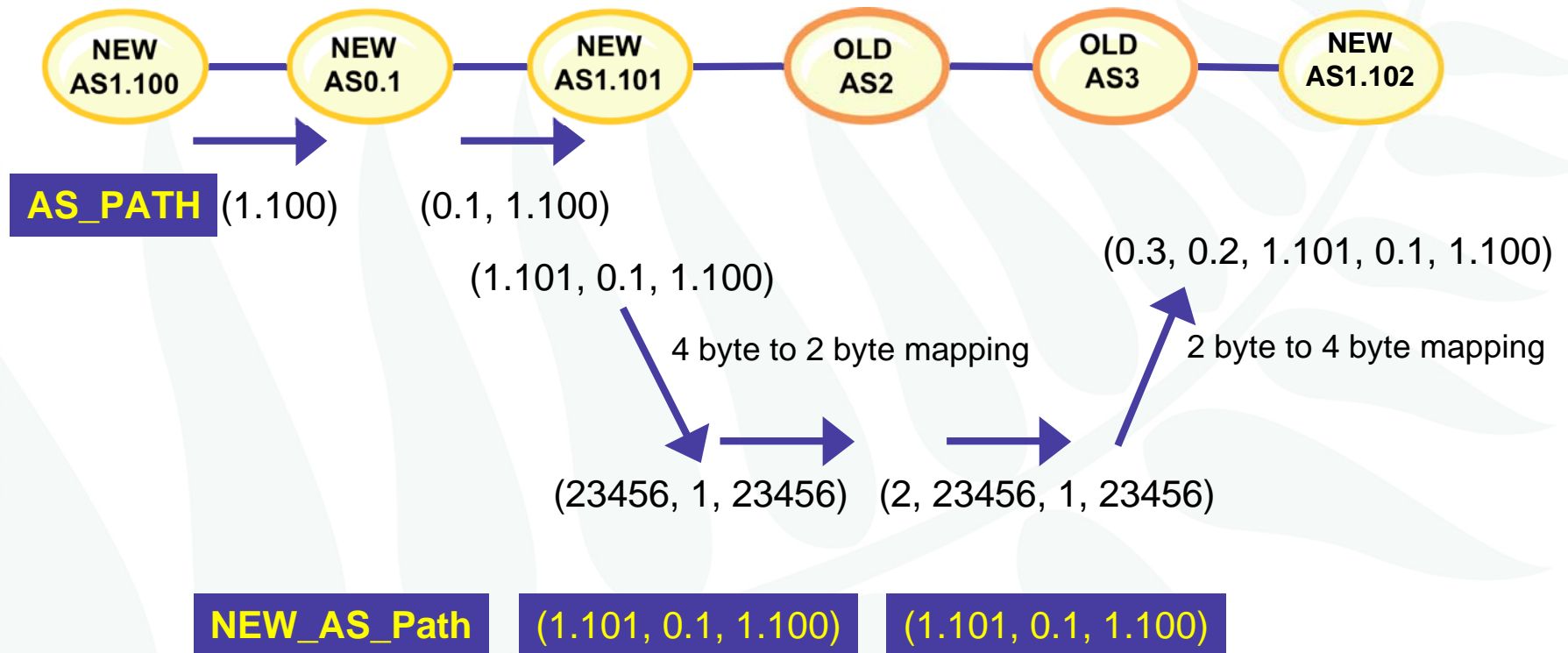
4 byte AS transition

- In the 2 byte world we 'lie' about the 4 byte path
 - 4 byte ASs appear as AS23456 (AS_TRANS) in the 2 byte world
 - AS23456 is reserved for use in AS number pool transition.
 - As long as you preserve the integrity of path length and don't change 2 byte values in the 2 byte world
 - BGP works in terms of path metric and loop detection
- In the 4 byte world we preserve 4 byte values of the entire AS path

4 byte AS transition



NEW to OLD BGP AS Path mapping



Implications

- BGP speakers in 2 byte AS domains should support a new attribute
 - NEW_AS_PATH
 - But nothing fatally breaks even if you don't
 - Mixed 2/4 byte loops will get detected in the 2 byte world as a fallback
- AS23456 will appear in 2 byte AS paths
 - Both origin and transit
 - E.g. AS1.2 gets translated into AS23456 in a number of places, including in your Operations Support System (OSS).
 - You may need to
 - peer with AS23456
 - transit across AS23456, and
 - have multiple customers on AS23456
 - Your OSS to be confused?

Implications

- If you want to explicitly signal to a 4 byte AS using communities
 - Need to explicitly signal the 4 byte AS using BGP extended communities
 - RFC 4360:
 - BGP Extended Community Attribute (Feb 2006)
 - draft-rekhter-as4octet-ext-community-01.txt :
 - Four-octet AS Specific BGP Extended Community
- BGP memory requirements will increase
- BGP bandwidth requirements will increase
- BGP convergence times may increase in some cases
- If you proxy aggregate in the 2 byte world then make sure that the aggregate is strictly larger than the components
 - Otherwise loop detection may be harder
 - But proxy aggregation is not a common occurrence in today's BGP environment



Implications

- No dynamic capability for 2 / 4 byte ASN support
 - You cannot flick from “2-byte OLD” to “4 byte NEW” mode within an active BGP session on the fly
- In a complex iBGP AS that wants to transition to using a 4 byte “home” AS then you are going to have to think about the transition very carefully
- Whois DB objects
 - E.g., aut-num, as-block, as-set, route, etc.

Current testing

- APNIC (Geoff Huston and George Michaelson) and Randy Bush (IIJ) conducted several tests on 4 byte ASNs in Jan 2007
- Test environments:
 - In a lab environment and in the public network
- The BGP implementations they tested:
 - The open source implementations Quagga and OpenBGPD
- Three types of test are conducted:
 1. Interoperability of the BGP implementations with each other and with 2 byte BGP (including Cisco BGP) – successful
 2. Tunneling of the NEW_AS_PATH attribute across old BGP speakers - so far the tests have all been successful
 3. Loop detection - successful

Available patches

- Code releases of BGP implementations with 4 byte AS number supported (<http://www.potaroo.net/tools/bgpd/>):
 - OpenBGPD 3.9
 - FreeBSD-patched OpenBGPD 3.9
 - OpenBGPD 4.0
- Quagga patch
 - <http://quagga.ncc.eurodata.de/>

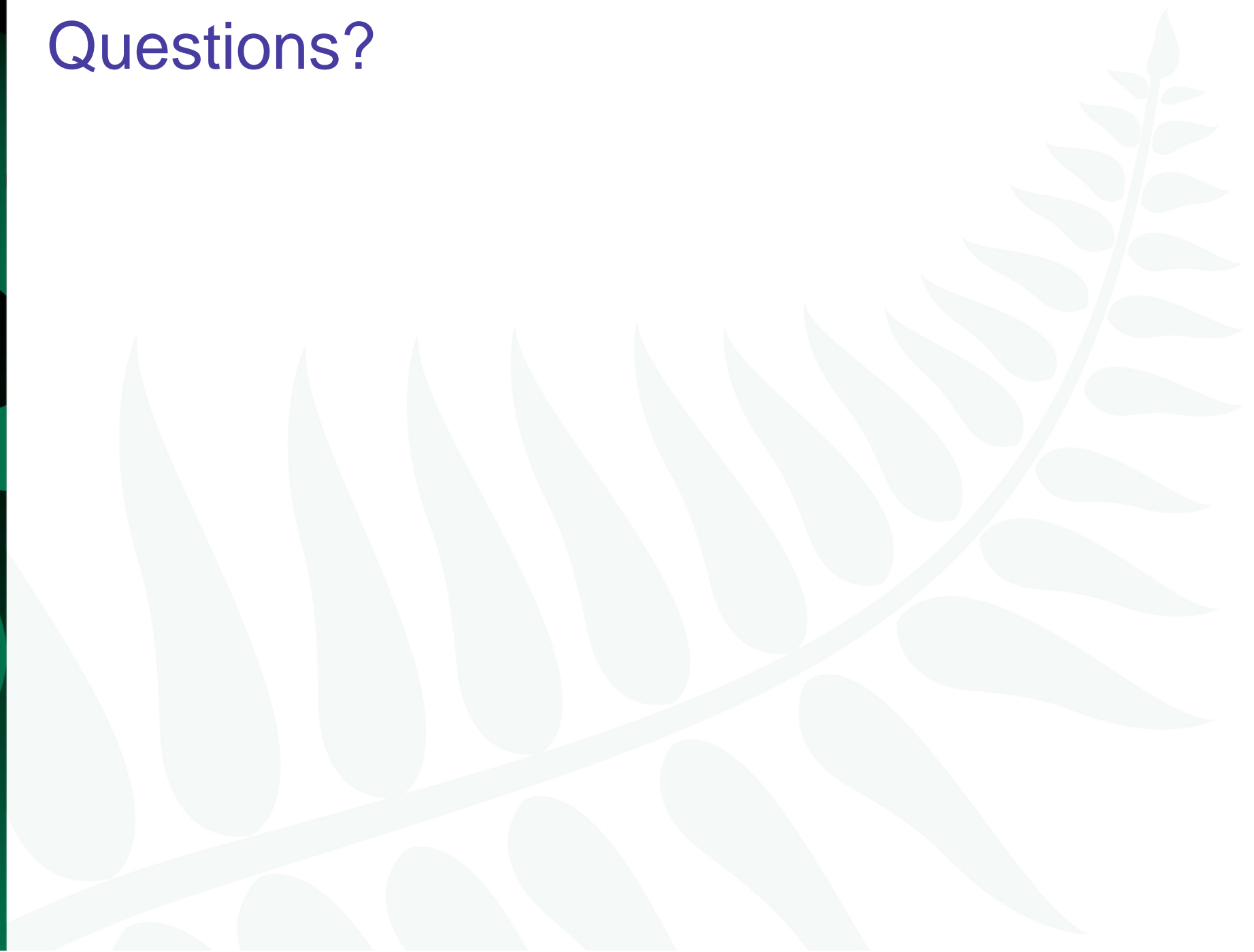
Vendor implementation

- Cisco
 - IOS XR 3.4 (27/11/2006)
 - http://www.cisco.com/univercd/cc/td/doc/product/ioxsoft/iox34/reln_34.htm
 - IOS
 - 4 byte ASN will be available in IOS in the future but no fixed dates yet
- Juniper
 - JUNOSe 4-1-0 and later
 - BGP support for 4 byte ASNs
 - <http://www.juniper.net/techpubs/software/erx/erx410/bookpdfs/sw-rn-erx410.pdf>

References

- prop-032-v002: 4-byte AS number policy proposal
 - <http://www.apnic.net/docs/policy/discussions/prop-032-v002.txt>
- Canonical Textual Representation of 4-byte AS Numbers draft-michaelson-4byte-as-representation-02
 - <http://www.ietf.org/internet-drafts/draft-michaelson-4byte-as-representation-02.txt>
- BGP Support for Four-octet AS Number Space draft-ietf-idr-as4bytes-12.txt
 - <http://www.ietf.org/internet-drafts/draft-ietf-idr-as4bytes-12.txt>

Questions?





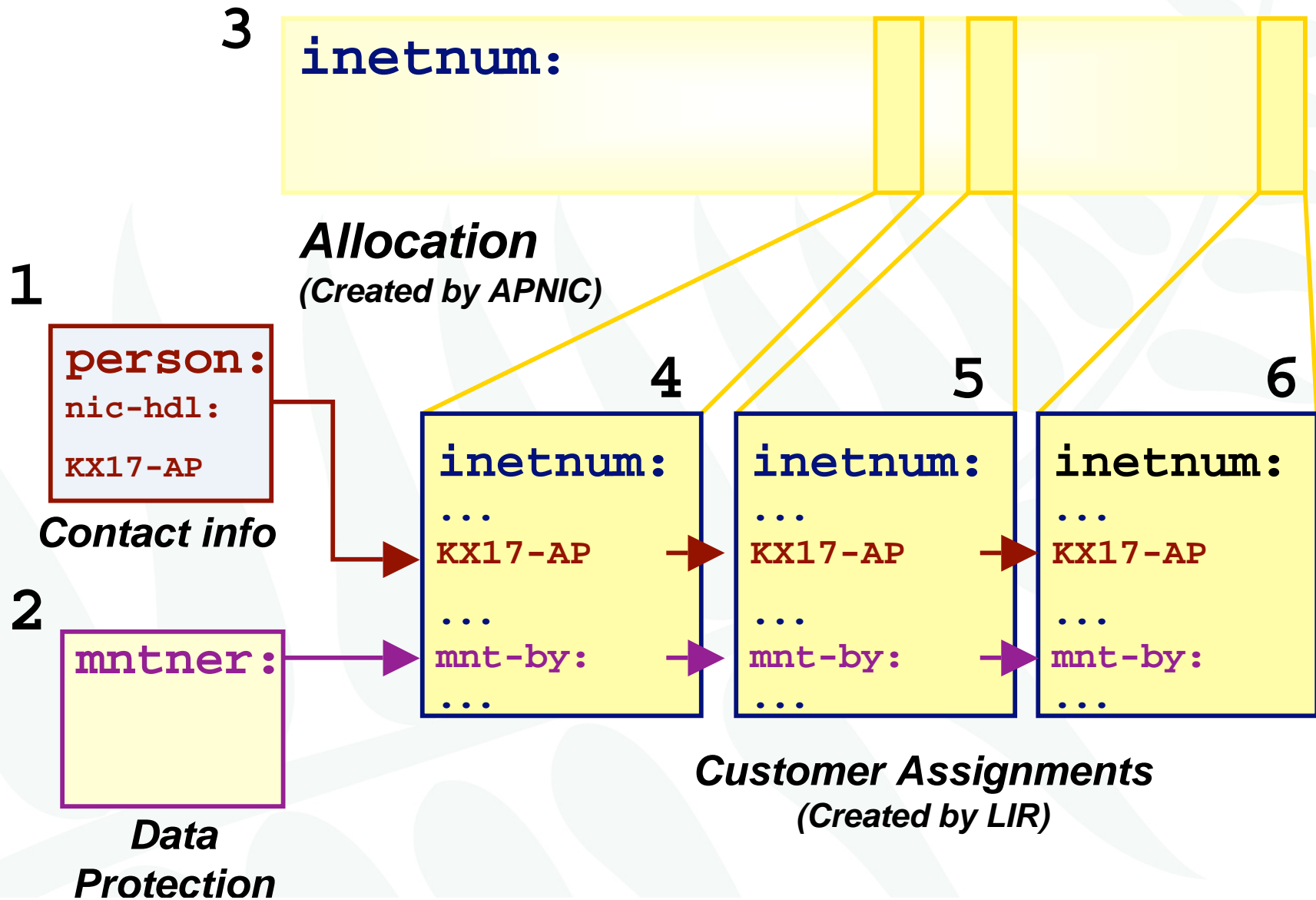
APNIC Whois database

Recap

LIR/ISP registration responsibilities

1. Create person objects for contacts
 - To provide contact info in other objects
2. Create mntner object
 - To provide protection of objects
 - (To be discussed later)
3. Create inetnum objects for all customer address assignments as private data
 - But you may change to be public data if you wish
 - Allocation object created by APNIC

Using the db – step by step



Role object

- Represents a *group* of contact persons for an organisation
 - Eases administration
 - Can be referenced in other objects instead of the person objects for individuals
- Also has a nic-hdl
 - Eg. HM20-AP

<http://www.apnic.net/db/role.html>

Role object - example

- Contains contact info for several contacts

Attributes

Values

role:	OPTUS IP ADMINISTRATORS
address:	101 Miller Street North Sydney
country:	AU
phone:	+61-2-93427681
phone:	+61-2-93420813
fax-no:	+61-2-9342-0998
fax-no:	+61-2-9342-6122
e-mail:	noc@optus.net.au
admin-c:	NC8-AP
tech-c:	NC8-AP
tech-c:	SC120-AP
nic-hdl:	OA3-AP
mnt-by:	MAINT-OPTUSCOM-AP
source:	APNIC

Replacing contacts in the db - *using person objects*

K. Xander is leaving my organisation. Z. Ulrich is replacing him.

1. Create a person object for new contact (Z. Ulrich).
2. Find all objects containing old contact (K. Xander).
3. Update all objects, replacing old contact (KX17-AP) with new contact (ZU3-AP).
4. Delete old contact's (KX17-AP) person object.

~~person:
...
KX17-AP~~

person:
...
ZU3-AP

inetnum:
202.0.10.0
...
ZU3-AP

inetnum:
202.0.12.127
...
ZU3-AP

inetnum:
202.0.15.192
...
ZU3-AP

Replacing contacts in the db – using a role object

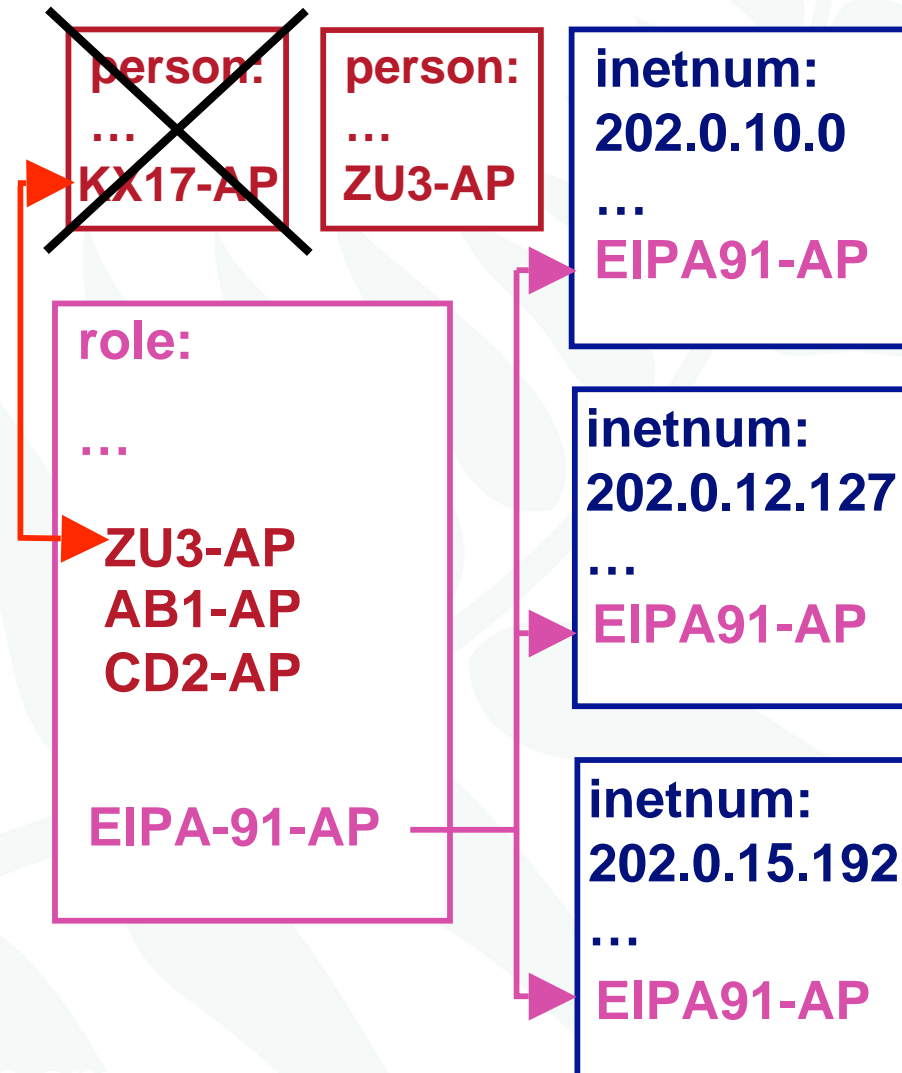
K. Xander is leaving my organisation. Z. Ulrich is replacing him.

I am using a role object containing all contact persons, which is referenced in all my objects.

1. Create a person object for new contact (Z. Ulrich).

2. Replace old contact (KX17-AP) with new contact (ZU3-AP) in role object

3. Delete old contact's person object.



No need to update any...

Database protection – maintainer object

```
mntner:      MAINT-AU-APNICTRAINING
descr:       APNIC Training
country:     AU
admin-c:     AA196-AP
tech-c:      AA196-AP
auth:        CRYPT-PW apuTnWlktOVWQ
mnt-by:      MAINT-AU-APNICTRAINING
referral-by: APNIC-HM
changed:     hm-changed@apnic.net 20080424
source:      APNIC
```

Creating a maintainer object



1. Fill out webform
 - Provide:
 - Admin-c & tech-c
 - password
 - email address etc
2. Completed form will be sent to you
3. Forward request to maint-request@apnic.net
4. Maintainer will be created *manually*
 - Manual verification by APNIC Hostmasters
5. Update your person object with mntner

http://www.apnic.net/services/whois_guide.html

Database protection



- Authorisation

- “mnt-by” references a mntner object
 - Can be found in all database objects
 - “mnt-by” should be used with every object!

- Authentication

- Updates to an object must pass authentication rule specified by its maintainer object

Authorisation mechanism

```
inetnum:      202.137.181.0 – 202.137.185.255
netname:      EXAMPLENET-WF
descr:        ExampleNet Service Provider
.....
mnt-by:       MAINT-WF-EX
```

```
mntner:       MAINT-WF-EX
descr:        Maintainer for ExampleNet Service Provider
country:      WF
admin-c:      ZU3-AP
tech-c:       KX17-AP
upd-to:       kxander@example.com
mnt-nfy:      kxander@example.com
auth:         CRYPT-PW apHJ9zF3o
mnt-by:       MAINT-WF-EX
changed:      kxander@example.com 20020731
source:       APNIC
```

Authentication methods

- 'auth' attribute
 - Crypt-PW
 - Crypt (Unix) password encryption
 - Use web page to create your maintainer
 - PGP – GNUPG
 - Strong authentication
 - Requires PGP keys
 - MD5
 - Available



Mnt-by & mnt-lower

- ‘mnt-by’ attribute
 - Can be used to protect any object
 - Changes to protected object must satisfy authentication rules of ‘mntner’ object.
- ‘mnt-lower’ attribute
 - Also references mntner object
 - Hierarchical authorisation for inetnum & domain objects
 - The creation of child objects must satisfy this mntner
 - Protects against unauthorised updates to an allocated range - highly recommended!

Authentication/authorisation

– APNIC allocation to member

- Created and maintained by APNIC


```
Inetnum:      203.146.96.0 - 203.146.127.255
netname:      LOXINFO-TH
descr:        Loxley Information Company Ltd.
Descr:        304 Suapah Rd, Promprab, Bangkok
country:      TH
admin-c:      KS32-AP
tech-c:       CT2-AP
mnt-by:       APNIC-HM
mnt-lower:    LOXINFO-IS
changed:      hostmaster@apnic.net 19990714
source:       APNIC
```



1. Only APNIC can change this object
2. Only Loxinfo can create assignments within this allocation

Authentication/authorisation

- Member assignment to customer
 - Created and maintained by APNIC member



```
Inetnum:      203.146.113.64 - 203.146.113.127
netname:      SCC-TH
descr:        Sukhothai Commercial College
Country:      TH
admin-c:      SI10-AP
tech-c:       VP5-AP
mnt-by:       LOXINFO-IS
changed:      voraluck@loxinfo.co.th 19990930
source:       APNIC
```

Only LOXINFO-IS can change this object

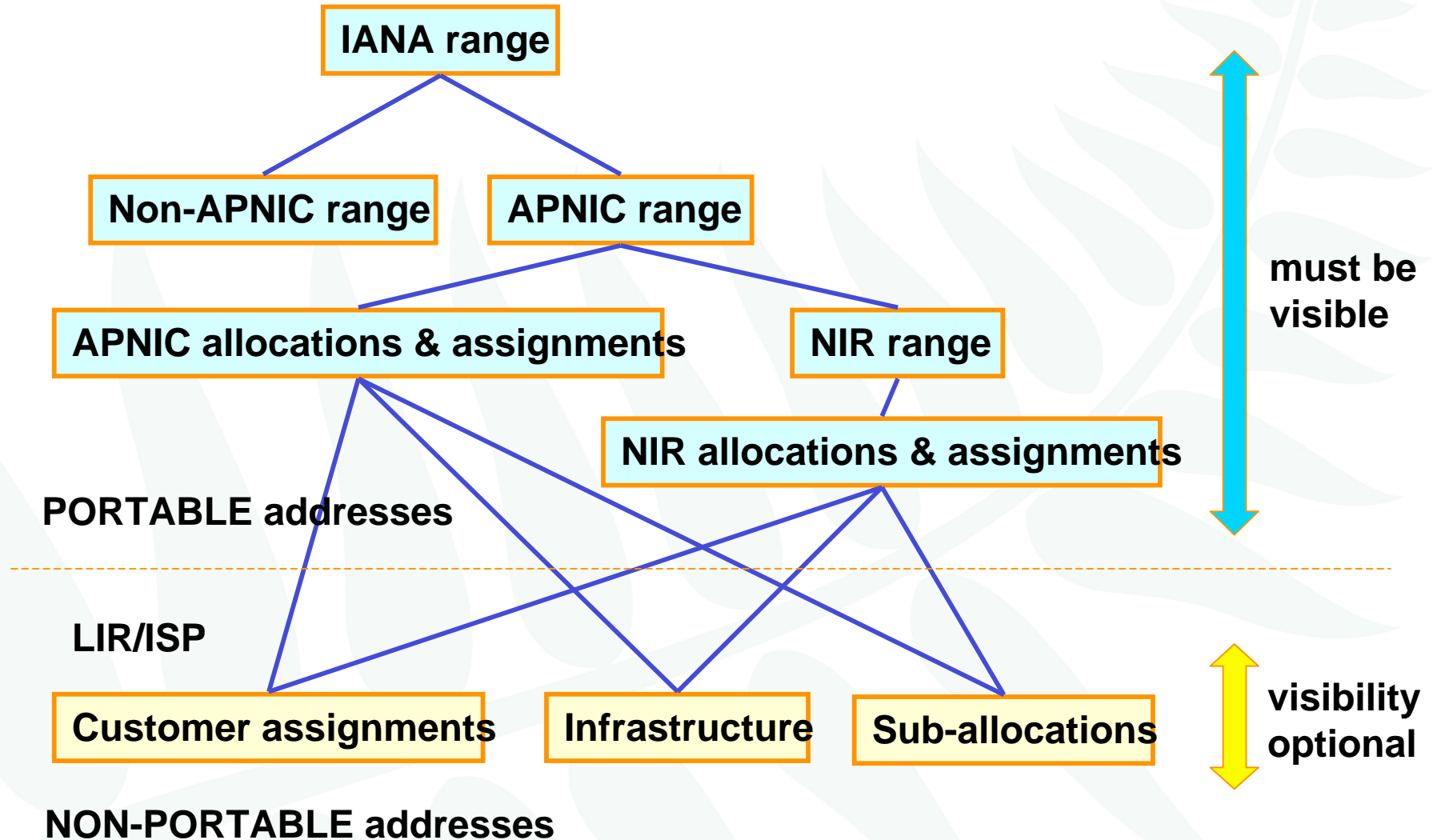
Privacy of customer assignments



Customer privacy

- Privacy issues
 - Concerns about publication of customer information
 - Increasing government concern
- APNIC legal risk
 - Legal responsibility for accuracy and advice
 - Damages incurred by maintaining inaccurate personal data
- Customer data is hard to maintain
 - APNIC has no direct control over accuracy of data
- Customer assignment registration is still mandatory

What needs to be visible?



MyAPNIC

Secured APNIC members website

What can you do with MyAPNIC

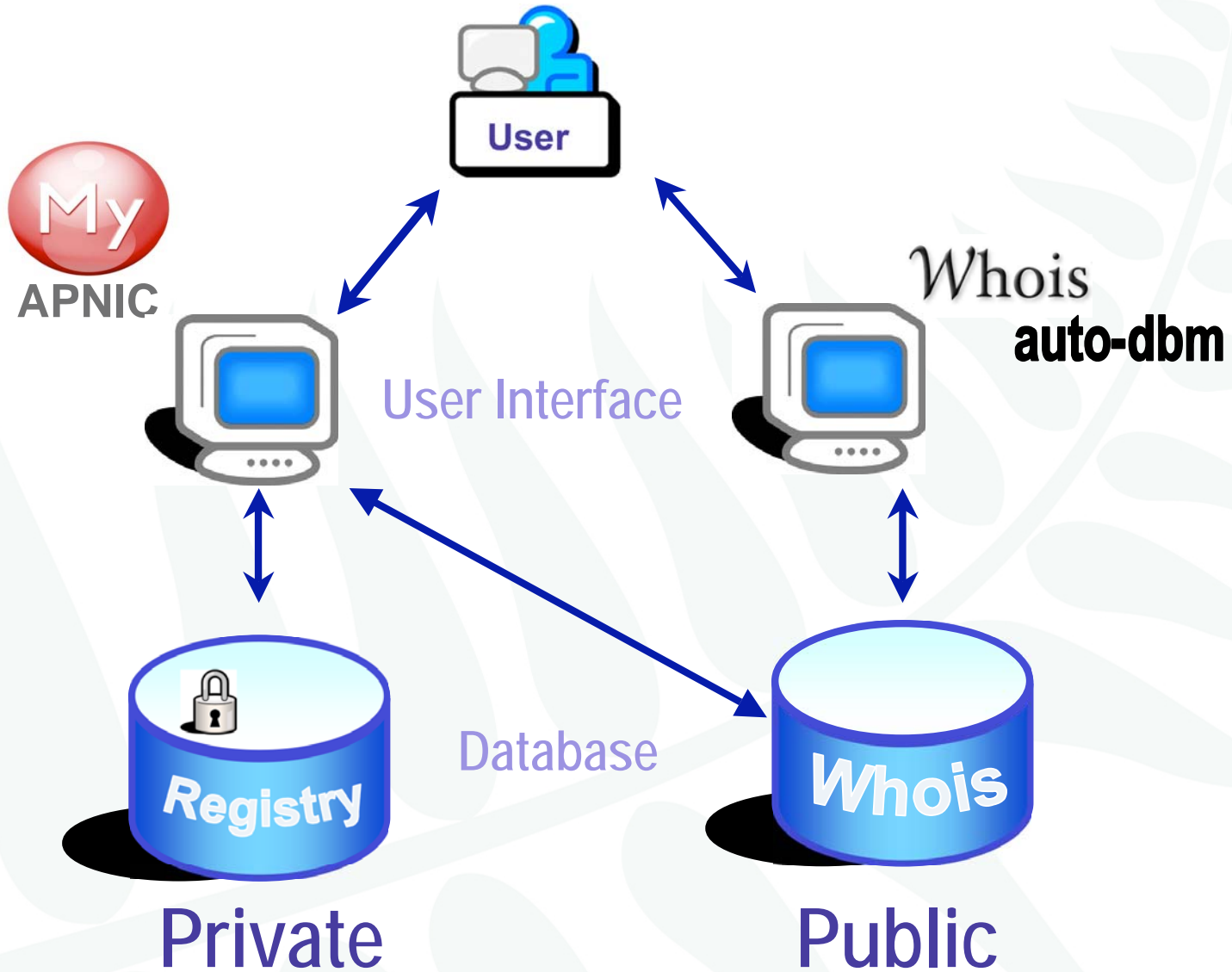
- View all APNIC resources held by your organization
- Monitor the percentage of address space assigned to customers
- View current and past membership payments
- View the organization's current open tickets in the APNIC email ticketing system
- Vote in online elections
- View staff attendance at APNIC training and meetings

MyAPNIC

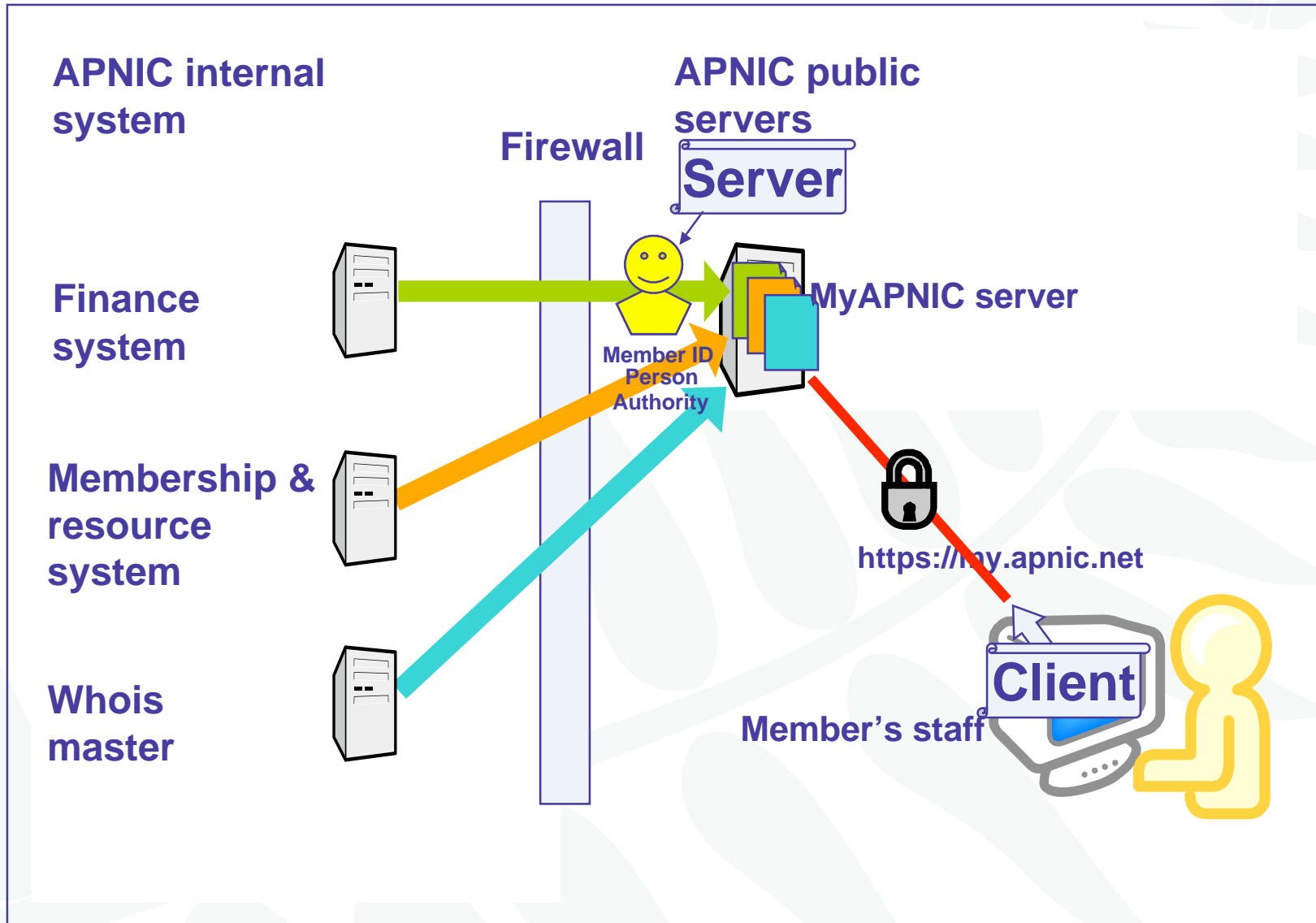


A day-to-day tool to manage your APNIC account and resources

Database tools



How it works



How to access MyAPNIC?

Managing APNIC resources with MyAPNIC - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.apnic.net/services/myapnic/index.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

IPv6 resource guide Managing APNIC resources with ... ftp://ftp.apnic.net...ipv6-alloc-request

How to access MyAPNIC

To gain access to MyAPNIC to view membership and resource details:

- You must have an APNIC account name
- If you are unsure of your account name, please contact helpdesk@apnic.net
- Install an APNIC digital certificate in your web browser
- To request a certificate, please go to the [APNIC Certification Authority](#)

Future developments

In the future, members will also be able to use MyAPNIC to:

- Reduce the time it takes to complete resource request forms
- Details of previous assignments will automatically be inserted into the request from MyAPNIC. Administrative and technical contacts can be chosen from drop-down lists of existing administrative and technical contacts at the member organization.
- Perform a search and replace for APNIC Whois database updates
- Set up username and password access
- Forward and reverse secondary DNS hosting
- Add, update, and delete Whois inet6num objects

More information

- [MyAPNIC entry page](#) - Note: you must have a digital certificate
- [APNIC Certification Authority](#)
- [APNIC corporate contacts](#)
- [About APNIC online voting](#)

[Top](#) | [Resource services](#)

[Home](#) | [MyAPNIC](#) | [Info & FAQ](#) | [Services](#) | [Training](#) | [Meetings](#) | [Membership](#) | [Policy](#) | [Internet community](#) | [Search](#)

Last modified Tuesday, 10-Jun-2008 11:45:10 EST | © 1999 - 2008 APNIC Pty. Ltd.
Comments to: webmaster@apnic.net | [Privacy statement](#) | [RSS](#)

Done 2001:d:c0:2001:0:4608:20::+1 DWL: loading ...

Microsoft PowerPoi... Managing APNIC re... miwa@durian:~

JP A 般 Kana 6:01 PM

APNIC certificate authority



The screenshot shows a Mozilla Firefox browser window displaying the APNIC Certification Authority website. The address bar shows the URL <https://www.apnic.net/ca/index.html>, which is highlighted with a red box. The website header includes the APNIC logo and the text "Asia Pacific Network Information Centre". A navigation menu contains links for "Info & FAQ", "Services", "Training", "Meetings", "Membership", "Documents", "Whois & Search", and "Internet community". Below the navigation menu, there is a "You're here" breadcrumb trail: "Home » Resource services". A "Quick Links" dropdown menu is visible. The main content area features a yellow banner with the heading "APNIC Certification Authority". The text below the banner states: "The APNIC Certification Authority issues digital certificates (according to the X.509 standard) to APNIC account holders. The certificates allow:" followed by a bulleted list: "secure exchange of email between the member and APNIC" and "secure access to [MyAPNIC](#)". Below this, it says "If you have an APNIC account, you may obtain a certificate." and "Obtaining or renewing a certificate" followed by a numbered list: "1. Read the [terms and conditions of participation](#)." and "2. Make sure you have installed the APNIC root certificate". A button labeled "Install root certificate" is positioned below the second step. The third step is "3. Complete the all three steps of the certificate request process:" followed by a bulleted list: "Online APNIC certificate request form", "APNIC certificate identity check (not needed if you're renewing your certificate)", and "Load client certificate". Below this, it says "Please note: your digital certificate will not be installed until you have completed the full request process." and a button labeled "Request a certificate" is positioned below the note. At the bottom of the page, there is a "See also" section with a bulleted list: "APNIC Certification Authority FAQ" and "Terms and conditions". A footer navigation bar contains links for "Home", "MyAPNIC", "Info & FAQ", "Services", "Training", "Meetings", "Membership", "Policy", "Internet community", and "Search". The browser's status bar at the bottom shows "Done", the system clock "2001:d:c0:2001:0:4608:20::+1", and "DWL: loading ...". The Windows taskbar at the very bottom shows several open applications, including "Microsoft PowerPoi...", "APNIC Certification ...", and "miwa@durian::~", along with system icons and the time "6:02 PM".

APNIC certificate request form

APNIC Certificate Request Form - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://www.apnic.net/cgi-bin/ca/pki?cmd=basic_csr&CSR_TYPE=spkac

Firefox Help Firefox Support Plug-in FAQ iagu Networks

APNIC Asia Pacific Network Information Centre

Info & FAQ | Resource services | Training | Meetings | Membership | Documents | Whois & Search | Internet community

You're here: [Home](#) → [Resource services](#) → APNIC Certification Authority

APNIC Certificate Request Form

Your details

Attention: We are currently having issues handling certificate requests from Windows Vista + Internet Explorer users. Please refer to our [FAQ](#).

Your name

Your email address

Your APNIC account name

Password

The password is used to verify this certificate request. It must be at least 8 characters.
Please write it down now. Please do not use a password you use somewhere else.

Re-enter your password

Please make sure not to submit this form more than once.

Done www.apnic.net 2001.12.01:2001.04608:20: +1 DWL: loading ...

Inbox for miwa@ap... APNIC Certificate R... 203.176.189.2 - PuTTY 203.176.189.2 - PuTTY Microsoft PowerPoi... EN 11:49 AM

How can I obtain an APNIC digital certificate? (part A)

1. Fill in the online form:
<https://www.apnic.net/ca>
2. Submit the form
3. For faster processing, scan the form and your photo ID, attach the images to an e-mail, and send it to:
helpdesk@apnic.net
 - Without the form, APNIC will not process your request

How to use an APNIC digital certificate? (part B)

1. Load client certificate

- Once a new certificate is issued to you, load it into your browser
 - You can export your certificate to a different computer or to a different browser

2. Verify client certificate

3. Go to <https://my.apnic.net> to make sure everything is working fine

Common issues

- Issues in getting a certificate
 - Forgetting to send the photo ID
 - Downloading the certificate to the wrong computer
- Accessing MyAPNIC
 - Using a computer without a digital certificate
 - Expired certificate
 - It's easy to renew! Just send a new request via <https://www.apnic.net/ca> (renewals do not require photo ID)



MyAPNIC

Screen caputer

MyAPNIC: log in

MyAPNIC - Resources - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/index.html?

Firefox Help Firefox Support Plug-in FAQ Iagu Networks

NIST http://csrc.nist.gov...ations/PubsSPs.html 地球人ネットワークを創るアルク: スペー... Logon - Version 9.3.02 MyAPNIC - Resources

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC MY

Hello Izumi! Log out

REMINDER

Please register your whois maintainer.

[04 October 2007]

IP Calculator

The Internet Protocol Address Calculator is an open-source java-based tool. Network administrators can use this calculator to perform calculations on IPv4 and IPv6 address ranges. It can be downloaded for free from: <http://sourceforge.net/projects/ipcalculator>

[16 August 2007]

What's new!

Pay and renew your membership online

Download your whois data at any subnet level

Generate prefix report of your IP range

Add/update/delete whois objects

You're here: Home > Resources

Resources

Maintainer registration
Register your whois maintainer object with myapnic. You can create, update or delete your whois objects via MyAPNIC.

Your maintainer is not registered in MyAPNIC. Register now

Internet resources

Use MyAPNIC to view and update your information about the following Internet resources:

- IPv4
- IPv6
- AS numbers
- Whois updates

See also:

- Open correspondence
Lists any emails between organisation and hostmaster@apnic.net (including resource requests) that have not yet been resolved.

© 2001 - 2007 MyAPNIC. Comments to: webmaster@apnic.net

Done my.apnic.net DWL: 20.55%

start Microsoft PowerPoint ... MyAPNIC - Resource... EN 5:34 PM

MyAPNIC: Maintainer registration

MyAPNIC - Whois maintainers - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/maintainer.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC

Hello Amante! Log out

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. Register now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: [Home](#) » [Resources](#) » [Maintainer registration](#)

Resources

Maintainer registration

Please register your maintainer here. MyAPNIC will automatically insert the correct password whenever you update a whois object using any one of the registered maintainer. Only CRYPT-PW and MD5-PW authentication can be registered.

Registered Maintainer	Authentication method	Password	Delete
MAINT-AU-APNICTRAINING	CRYPT-PW	Valid password	<input type="checkbox"/>
Add new maintainer	Password		
<input type="text"/>	<input type="text"/>		

Save

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

MyAPNIC: home page

MyAPNIC - Preferences - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/prefs/index.html?

Firefox Help Firefox Support Plug-in FAQ iagu Networks

APNIC

Hello **Amante!** Log out

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. Register now to avail early-bird rates.

[12 May 2008]

Relief.Asia
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Resources Administration Training & Events Technical Tools

IPv4
IPv6
AS numbers
Maintainer
Whois updates
Certification
Correspondence

MyAPNIC My

Preferences

Please select the MyAPNIC page you would like to see when you first open a connection to MyAPNIC:

<input type="radio"/>	Administration
<input type="radio"/>	Training
<input type="radio"/>	Security
<input checked="" type="radio"/>	Preferences
<input type="radio"/>	Resources

Update

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

MyAPNIC: IPv4 resources

MyAPNIC - IPv4 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/ipv4.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC My

Hello Amante! [Log out](#)

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. [Register](#) now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: [Home](#) » [Resources](#) » [IPv4 details](#)

Resources

IPv4

Assignment window		Date last reviewed					
Start IP	Length	Date	Usage	Assignment status	Rev.DNS	Download Private	Download Public
203.176.189.0	/24	2008-04-24	100%			<input type="checkbox"/>	<input type="checkbox"/>

[Add reverse DNS domain object](#)
[Add public assignment](#)
[Add private assignment](#)

Legend: < 20% = 20% = 40% = 60% = 80% > 80%

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

Done my.apnic.net 2001:dc0:2001:0:4608::4 +1 DWL: 39.42%

jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - IPv4 - M... EN 3:19 PM

MyAPNIC: Private assignments registration

MyAPNIC - Update record - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/update.html?whois_private=1&whois_object=inetnum

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC MY

Hello **Amante!** [Log out](#)

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. [Register](#) now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: Home » Resources » Whois database update

Resources

Private data

Add object

Your assignment window	Date last reviewed
Please make sure that your assignment size is not larger than your current assignment window. If you need to make an assignment larger than your current assignment window, please use our second opinion process .	

inetnum:

netname:

descr:

country:

admin-c:

tech-c:

status:

Status can be either [ALLOCATED NON-PORTABLE](#) or [ASSIGNED NON-PORTABLE](#)

mnt-by:

changed:

source: APNIC

Add new field:

descr after the netname field

Done my.apnic.net 2001:dc0:2001:0:4608::4 +1 DWL: 39.42%

jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - Update ... EN 3:19 PM

MyAPNIC: Reverse DNS delegation

The screenshot shows a Mozilla Firefox browser window displaying the MyAPNIC website. The page title is "MyAPNIC - Add reverse DNS - Mozilla Firefox". The address bar shows the URL "https://my.apnic.net/resources/ReverseDNS.html". The website header includes the APNIC logo, navigation links (Resources, Administration, Training & Events, Technical, Tools), and the MyAPNIC logo. The main content area is titled "Add reverse DNS delegation" and includes a "You're here" breadcrumb trail: Home » Resources » Reverse DNS. A "Resources" section contains a reminder about APNIC 26 registration and a Relief.Asia logo. The main form has three sections: "Address range" with a text input field and an example of "202.12.28.0/22" and "202.120.0.0/20"; "Name servers" with a text input field and an example of "ns1.example.com" and "ns2.example.com"; and "Maintainer" with a text input field and an example of "MAINT-AU-EXAMPLE". A "Next" button is located at the bottom of the form. The footer of the page contains the copyright notice "© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net". The browser's taskbar at the bottom shows several open windows, including "jp-seminar-july-200...", "th-tot-20080613-irm...", and "MyAPNIC - Add rev...". The system tray shows the time as 3:20 PM and the date as 2001-dc0-2001:0:4608:4 +1.

MyAPNIC - Add reverse DNS - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/ReverseDNS.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC MY

Hello Amante! Log out

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. Register now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: Home » Resources » Reverse DNS

Resources

Add reverse DNS delegation

Important: Please make sure that your name servers are up and running and are authoritative for the zone.

Address range:
Use CIDR address prefix notation. Multiple range allowed, one range per line.

Example:
202.12.28.0/22
202.120.0.0/20

Name servers:
List fully qualified domain names of at least 2 servers.
Important: Do not list IP addresses or reverse DNS names.

Example:
ns1.example.com
ns2.example.com

Maintainer:
Optional.
If no maintainer is specified, the maintainer of the parent inetnum will be used.

Example:
MAINT-AU-EXAMPLE

Next

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

Done my.apnic.net 2001-dc0-2001:0:4608:4 +1 DWL: 39.42%

jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - Add rev... EN 3:20 PM

MyAPNIC: IPv6 resources

MyAPNIC - IPv6 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/ipv6.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC

Hello Amante! Log out

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. Register now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: Home » Resources » IPv6 details

Resources

IPv6

Add public assignment
Add private assignment

Start IP	Length	Date	Assignment status	Download Public
2001:0DF0:000A::	/48	2008-04-24	■	<input type="checkbox"/>

Select All

Download as .ZIP

Legend: ■ < 0.2 HD ■ = 0.2 HD ■ = 0.4 HD ■ = 0.6 HD ■ = 0.8 HD ■ > 0.8 HD

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

Done my.apnic.net 2001:dc0:2001:0:4608::4 +1 DWL: 39.42%

jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - IPv6 - M... EN 3:20 PM

MyAPNIC: Public assignments registration

The screenshot shows a Mozilla Firefox browser window displaying the MyAPNIC website. The browser's address bar shows the URL: `https://my.apnic.net/resources/update.html?whois_object=inet6num`. The website has a navigation menu with links for Resources, Administration, Training & Events, Technical, and Tools. The main content area is titled "MyAPNIC" and "MY".

On the left side, there is a sidebar with a "Hello Amante!" message and a "Log out" link. Below this is a "REMINDER" section with a date of [15 May 2008] and a heading "APNIC 26 registration". The text states: "APNIC 26 registration is now open. Register now to avail early-bird rates." Below this is another reminder dated [12 May 2008] for "Relief.Asia Myanmar Cyclone Relief 2008".

The main content area is titled "You're here: Home » Resources » Whois database update". Below this is a "Resources" section with a sub-heading "Public data" and a link "Add object".

The "Add object" form contains the following fields:

- inet6num:
- netname:
- descr:
- country:
- admin-c:
- tech-c:
- status:
- mnt-by:
- changed:
- source: APNIC

Each field has a menu icon to its right. The status field has a note: "Status can be either ALLOCATED NON-PORTABLE or ASSIGNED NON-PORTABLE".

Below the form is an "Add new field:" section with a dropdown menu set to "descr", a "after" dropdown, the text "the netname field", and an "Add" button. A "Submit update" button is located below the form.

The footer of the page contains the copyright notice: "© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net".

MyAPNIC: APNIC Whois Database (public) update



Resources Administration Training & Events Technical Tools

APNIC MyAPNIC MY

Hello **Amante!** [Log out](#)


REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. [Register](#) now to avail early-bird rates.

[12 May 2008]

 **Relief.Asia**
Myanmar Cyclone Relief 2008

You're here: [Home](#) » [Resources](#) » [Update Whois object](#)

MyAPNIC Public Whois update

[APNIC Whois Database objects help?](#)

[Update](#) [Add](#) [Delete](#)

Update object

- Person (person object)
- Role (role object)
- Route (route object)

© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net



MyAPNIC: Certification

The screenshot shows a Mozilla Firefox browser window displaying the MyAPNIC website. The address bar shows the URL <https://my.apnic.net/resources/certification/>. The website header includes the APNIC logo, navigation tabs for Resources, Administration, Training & Events, Technical, and Tools, and the MyAPNIC logo. A sidebar on the left contains a user greeting for 'Amante!', a 'Log out' link, and a 'REMINDER' section with two announcements: one for APNIC 26 registration (dated 15 May 2008) and one for Relief.Asia Myanmar Cyclone Relief 2008 (dated 12 May 2008). The main content area displays a breadcrumb trail 'You're here: Home > Resources > Certification' followed by the heading 'Resource Certification' and an error message: 'ERROR: the resource certification system is currently unreachable. Please wait a short while and then try again. If the problem persists, please contact the APNIC Help Desk.' The footer of the page contains the copyright notice '© 2001 - MyAPNIC Comments to: webmaster@apnic.net'. The Windows taskbar at the bottom shows the system tray with the time 3:24 PM and the date 2001-dc0-2001:0:4608:4 +1.

MyAPNIC - Resources - Mozilla Firefox

File Edit View History Bookmarks Tools Help

<https://my.apnic.net/resources/certification/> Google

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC

Hello **Amante!** [Log out](#)

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. [Register](#) now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: Home > Resources > Certification

Resource Certification

ERROR: the resource certification system is currently unreachable. Please wait a short while and then try again. If the problem persists, please contact the APNIC Help Desk.

© 2001 - MyAPNIC Comments to: webmaster@apnic.net

Done my.apnic.net 2001-dc0-2001:0:4608:4 +1 DWL: 39.42%

jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - Resourc...

EN 3:24 PM

MyAPNIC: Correspondence

MyAPNIC - Hostmaster correspondence - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://my.apnic.net/resources/rt-tickets.html

Firefox Help Firefox Support Plug-in FAQ iagu Networks

Resources Administration Training & Events Technical Tools

APNIC MyAPNIC

Hello **Amante!** [Log out](#)

REMINDER

[15 May 2008]

APNIC 26 registration

APNIC 26 registration is now open. [Register](#) now to avail early-bird rates.

[12 May 2008]

Relief.Asia
Myanmar Cyclone Relief 2008

You're here: [Home](#) » [Resources](#) » [Open correspondence](#)

Resources

Open correspondence

[New request](#)

Ticket#	Status	Subject	Requestor	Created
[Empty table body]				

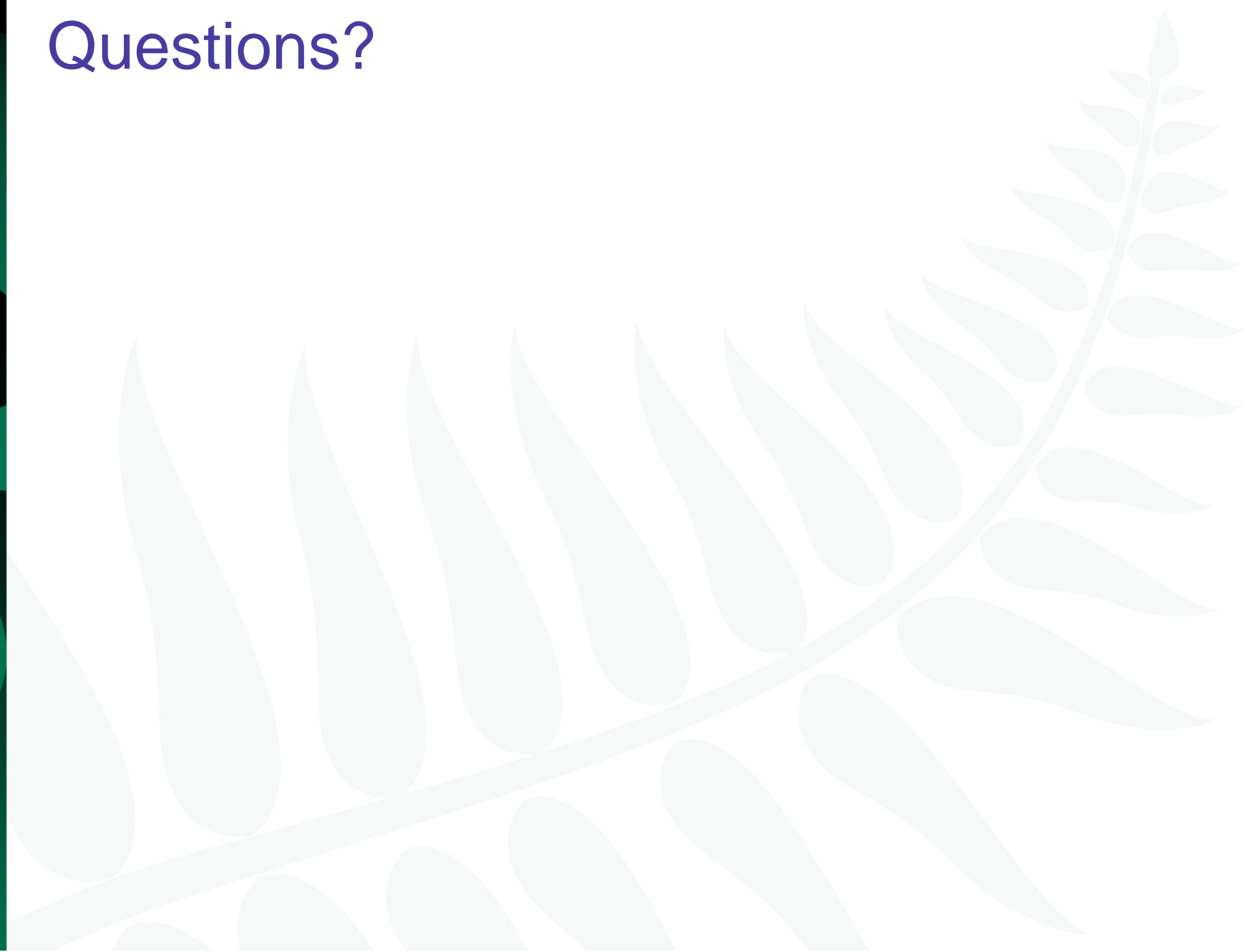
© 2001 - 2008 MyAPNIC Comments to: webmaster@apnic.net

Done my.apnic.net 2001:dc0:2001:0:4608::4 +1 DWL: 39.42%

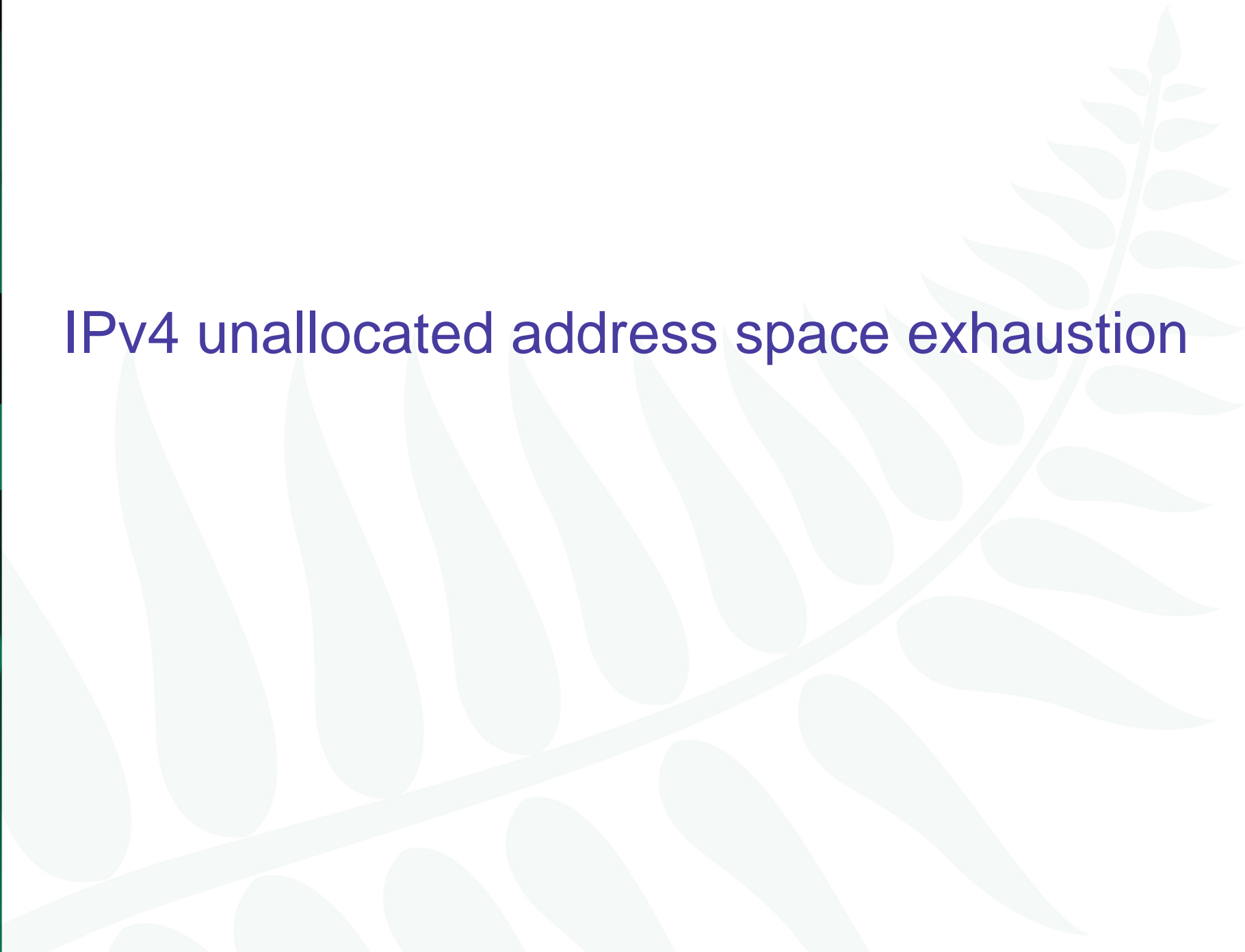
jp-seminar-july-200... th-tot-20080613-irm... MyAPNIC - Hostma...

EN 3:23 PM

Questions?



IPv4 unallocated address space exhaustion



Acknowledgements

The material used in this course was created in collaboration with Randy Bush (IIJ) and Geoff Huston (APNIC) and includes material provided by them.

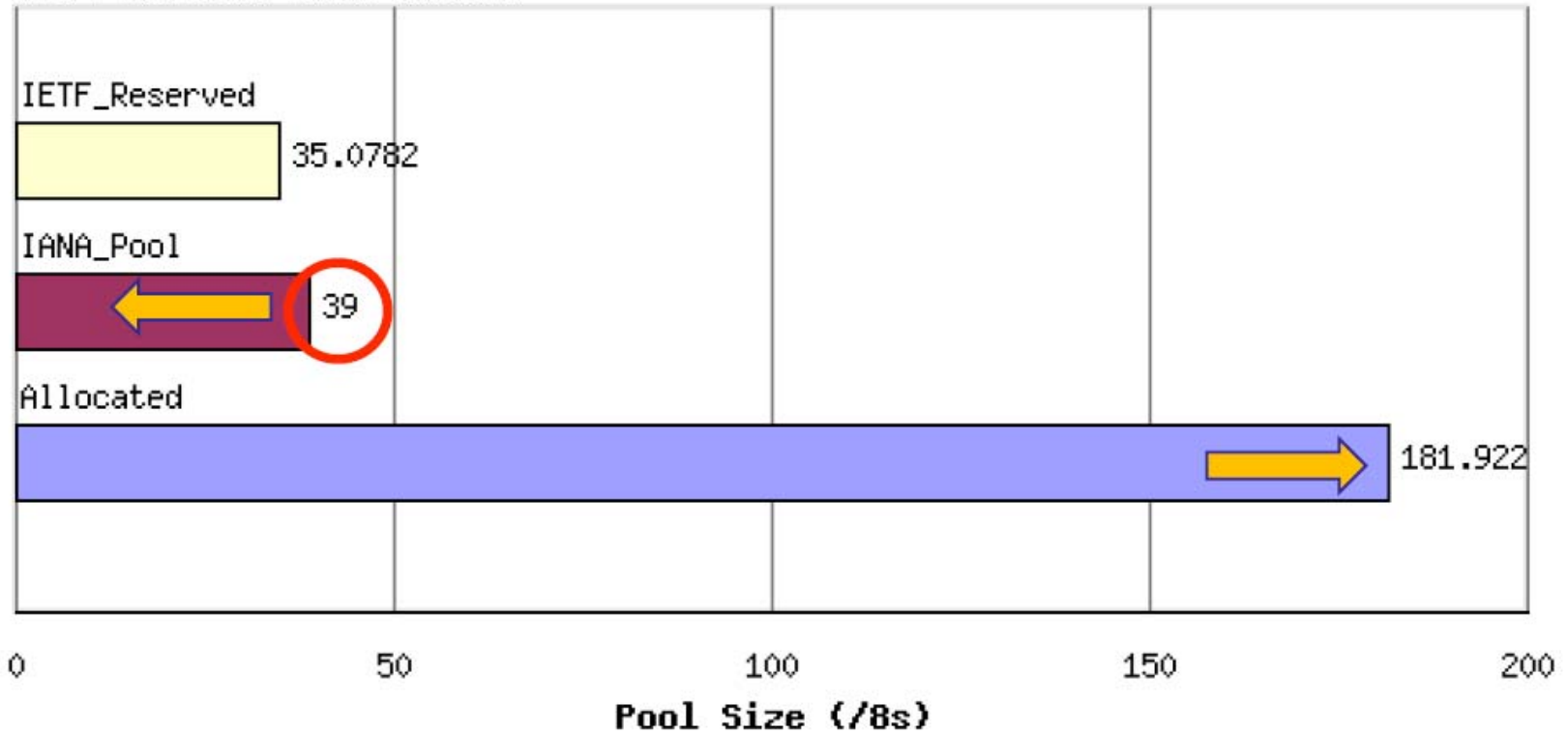
APNIC acknowledges with thanks and appreciation the contribution and support of the above.

IPv4 address exhaustion and IPv6 implementation

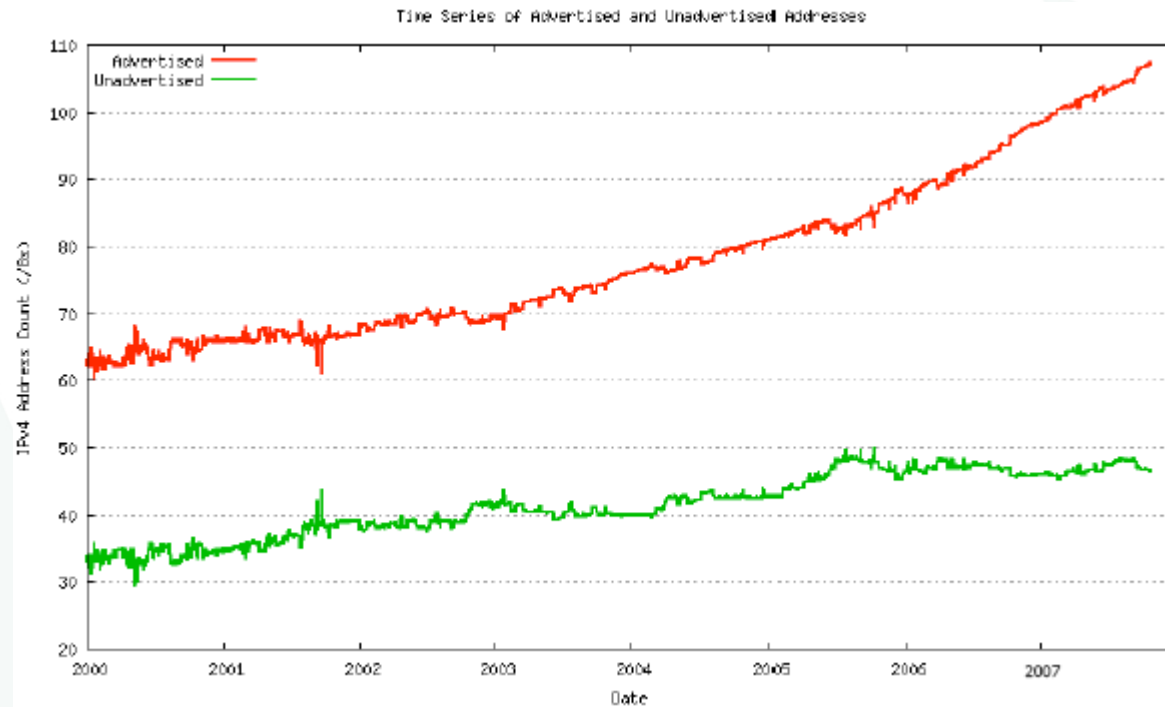
- Discussion
 - Does your company have a plan for coping with IPv4 unallocated address space exhaustion?
 - Are your staff educated about IPv6 technical knowledge?
 - Is your network equipment ready to deploy IPv6?
 - What other thought do you have?
- JPNIC community's effort
 - <http://www.nic.ad.jp/en/ip/ipv4pool/ipv4exh-report-071207-en.pdf>

Current status of IPv4

IPv4 Address Pool Status

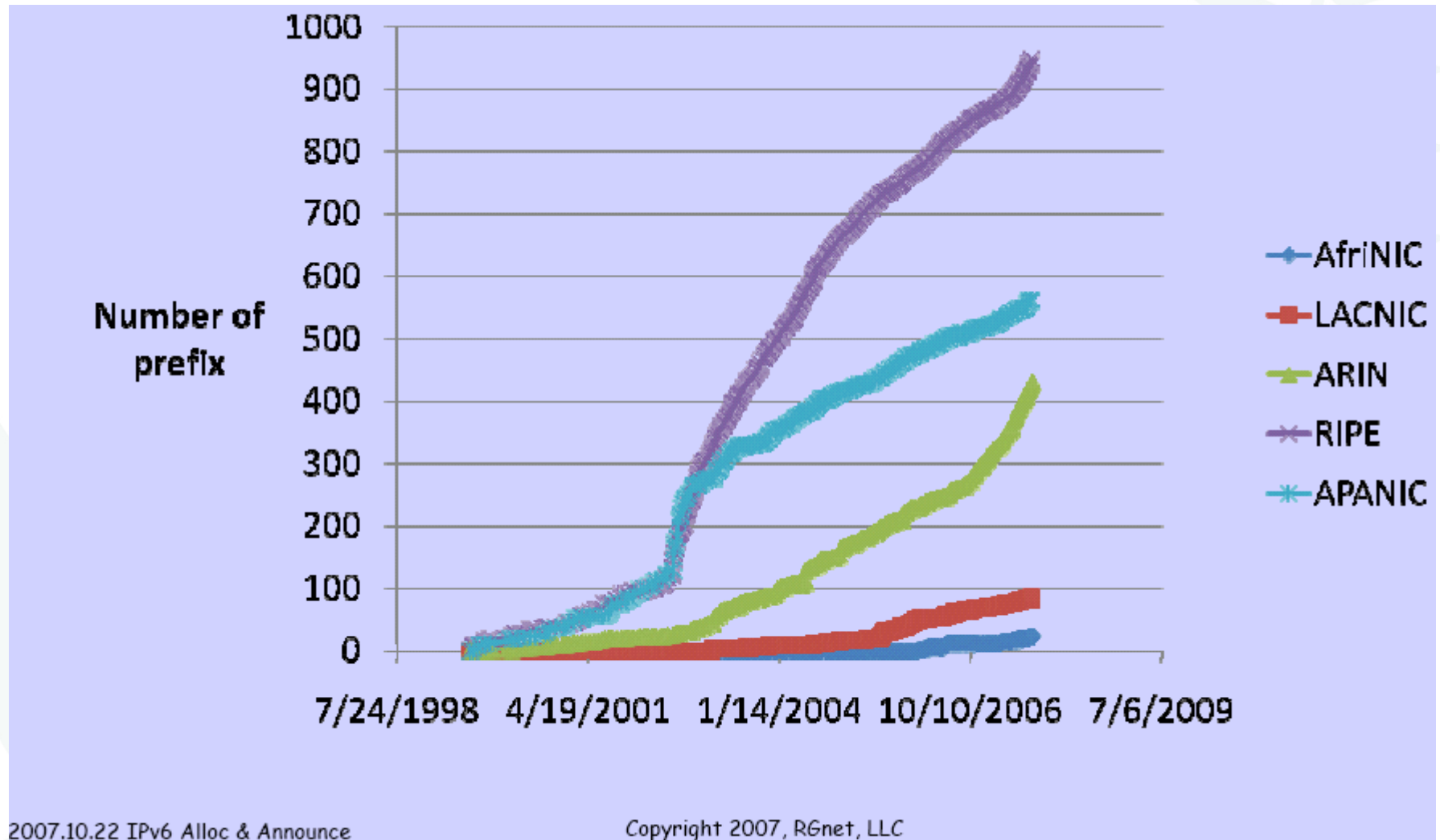


Advertised and unadvertised addresses



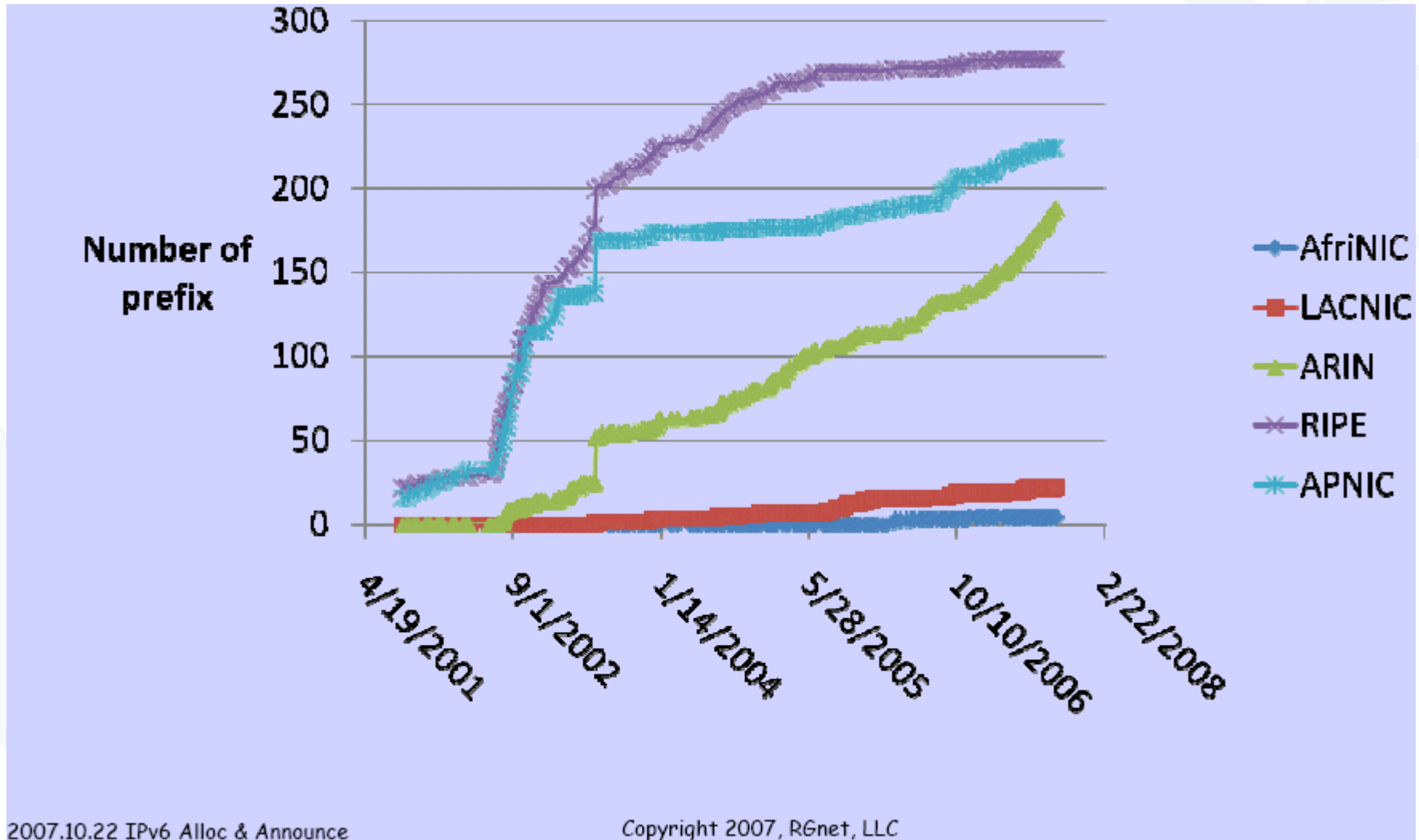
IPv6 allocation and announcements

- Prefix allocation distribution



IPv6 allocation and announcements

- Prefix announcement distribution



APNIC 24 community resolution

- Endorsed at APNIC 24
 - [Community resolution on IPv4 and IPv6 issues, 7 September 2007](#)
- The APNIC community recognises that the remaining free pool of IPv4 address space is likely to be consumed within 2 to 4 years
 - Requires a concerted effort by the community
 - Responsible measures in managing remaining IPv4 addresses
 - Promote the adoption of IPv6
 - Call upon leading senior and expert members to provide strong leadership in the search of solutions to these issues

Where are we heading?

- IPv4 address consumption is speeding up
 - But remember “number of advertised address block” is about 1/3 of actually assigned/allocated address space
 - Gradually “Advertised addresses” will increase
 - Where is rapid consumption happening?
 - APNIC region
 - Possibly such address space will be traded in the market
- IPv4 UNALLOCATED address space exhaustion
 - According to Geoff’s model (dated: 22 Oct 2007), IANA will allocate its last IPv4 /8 to an RIR on 22 May 2010
 - Tomorrow’s prediction will be different!

Where are we heading?

- Some possible scenarios (but may need to implement all):
 - Persist in IPv4 networks using more NATs
 - NAT's deployment cost can be internalised by ISPs
 - NATs on steroid
 - Standardise its specification?
 - Address markets emerging for IPv4
 - Remember so much “unadvertised address space”
 - Routing fragmentation
 - IPv6 transition
 - But IPv6 is not backward compatible with IPv4 on the wire
 - So dual stack is mandatory
 - Dual stack requires IPv4 addresses
 - So we need to stretch IPv4

Where are we heading?

- We should preserve the functionality and integrity of the Internet as a service platform
 - Functionality of applications
 - Viability of routing
 - Capability to sustain continued growth
 - Integrity of the network infrastructure



Current policy discussion



Current policy proposals


<http://www.apnic.net/policy/proposals/index.html>

The screenshot displays the APNIC website's 'Policy proposals' page. The browser window shows the URL <http://www.apnic.net/policy/proposals/index.html>. The page features a navigation menu on the left, a breadcrumb trail 'You are here: Home » Policy » Proposals', and a 'Quick Links' dropdown. The main content area is titled 'APNIC policy proposals' and is divided into sections for 'Status of recent proposals', 'How policies are developed', and 'Past proposals'.

Status of recent proposals

To be discussed at APNIC 26	<p>[prop-050] IPv4 address transfers</p> <p>[prop-055] Global policy for the allocation of the remaining IPv4 address space</p> <p>[prop-059] Using the Resource Public Key Infrastructure to construct validated IRR data</p> <p>[prop-060] Change in the criteria for the recognition of NIRs in the APNIC region</p> <p>[prop-061] 32-bit ASNs for documentation purposes</p> <p>[prop-062] Use of final /8</p> <p>[prop-063] Reducing timeframe of IPv4 allocations from twelve to six months</p> <p>[prop-064] Change to assignment policy for AS numbers</p> <p>[prop-065] Format for delegation and recording of 4-byte AS numbers</p> <p>[prop-066] Ensuring efficient use of historical IPv4 resources</p>
Endorsed by all RIRs Ratified by ICANN Board of Directors	[prop-049] IANA policy for allocation of ASN blocks to RIRs
Implemented 4 August 2008	<p>[prop-053] Changing minimum IPv4 allocation size to /22</p> <p>[prop-054] NIR operational policy document revision</p> <p>[prop-057] Proposal to change IPv6 initial allocation criteria</p>
Abandoned	<p>[prop-058] Proposal to create IPv4 shared use address space among LIRs</p> <p>[prop-052] Cooperative distribution of the end of the IPv4 free pool</p>
Withdrawn	[prop-056] IPv4 soft landing

How policies are developed


[View movie](#)
 [Flash movie | 7 minutes]

How to submit your own policy proposal

1. Submit your proposal via the [online policy proposal form](#).
2. The APNIC Secretariat assigns your proposal a tracking number.
3. The Chair of the appropriate APNIC SIG sends your proposal to the SIG's mailing list.

Related links

- [Special Interest Groups \(SIGs\)](#)
- [Working Groups \(WGs\)](#)
- [Birds of a Feather \(BOFs\)](#)
- [Policy proposals](#)

Past proposals

- [Policy proposal archive](#)

[Back to top](#)

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Key issues driving current discussion

- IPv4 depletion
 - How to distribute remaining IPv4 fairly
 - How to manage IPv4 after remaining free pool is exhausted
- Security and authentication of IP address stewards
 - Routing security
 - Accurate whois data
- Note:
 - “problem” and “solution” text in the coming slides is based on each proposal author’s ideas
 - do not necessarily reflect the views of the community or the Secretariat

IPv4 proposals under discussion

- Discussion continuing from APNIC 25
 - [\[prop-050\]](#) IPv4 address transfers
 - [\[prop-055\]](#) Global policy for the allocation of the remaining IPv4 address space
- New proposals
 - [\[prop-059\]](#) Using the Resource Public Key Infrastructure to construct validated IRR data
 - [\[prop-060\]](#) Change in the criteria for the recognition of NIRs in the APNIC region
 - [\[prop-061\]](#) 32-bit ASNs for documentation purposes
 - [\[prop-062\]](#) Use of final /8
 - [\[prop-063\]](#) Reducing timeframe of IPv4 allocations from twelve to six months
 - [\[prop-064\]](#) Change to assignment policy for AS numbers
 - [\[prop-065\]](#) Format for delegation and recording of 4-byte AS numbers
 - [\[prop-066\]](#) Ensuring efficient use of historical IPv4 resources

prop-050: IPv4 address transfers

- Problems this proposal aims to address
 - Current APNIC policies limit registration of transfers to resources related to mergers and acquisitions of operational networks
 - There will continue to be a demand for IPv4 after the exhaustion of the unallocated address pool
 - The APNIC resource registry needs to accurately reflect current address distribution information

prop-050: IPv4 address transfers

- Proposed solution
 - Remove APNIC policy restrictions on registrations of IPv4 transfers between current APNIC account holders.
- Address blocks transferred:
 - Must be /24 or larger
 - Must be in APNIC administered range
 - Are subject to all current APNIC policies from the time of transfer
- Source of transfer ineligible to receive IPv4 address blocks from APNIC for 24 months after transfer

prop-050:IPv4 address transfers

- Proposal statistics
 - Version 1 presented APNIC 24
 - No consensus sought
 - Version 2 presented at APNIC 25
 - No consensus
 - Author asked to continue refining proposal
 - Version 3 to be presented at APNIC 26
 - Summarizes discussion held in other RIR regions

prop-50: Global policy for the allocation of the remaining IPv4 address space

- The problem...
 - Issues each RIR region will face during the exhaustion period vary by region as the level of development of IPv4 and IPv6 are widely different.
 - As a result, applying a global co-ordinated policy may adequately address issues in a certain region while it may not work for the others.

prop-50: Global policy for the allocation of the remaining IPv4 address space

- Proposed solution...
 - IANA reserves one /8 for each RIR now.
 - Later, when IANA receives a request for IPv4 address space that cannot be fulfilled using the remaining IANA IPv4 free pool, IANA will allocate each RIR a single /8 from the reserved block.
 - Any remaining /8s in the IANA free pool will then be allocated to the RIR that makes the last request to IANA.

prop-055: Global policy for the allocation of the remaining IPv4 address space

- Proposal statistics
 - Proposal is amalgamation of APNIC 24 proposals:
 - prop-051: Global policy for the allocation of the remaining IPv4 address space
 - prop-046: IPv4 countdown policy proposal
 - Presented at APNIC 25
 - Majority support but not consensus
 - Returned to mailing list for more discussion

prop-062: Use of final /8

- The problem...
 - How should APNIC use the final /8 if prop-055 is implemented?
 - How can new networks connected to a dual IPv4/IPv6 Internet after the free pool exhaustion
 - What happens if a new disruptive technology needs IPv4?

prop-062: Use of final /8

- The solution...
 - Reserve the final /8 in the APNIC region for three things:
 - Each new LIR can receive a single /22 allocation
 - Each existing LIR can receive a single /22 allocation
 - Reserve a /16 for potential future technologies that may need IPv4 addresses
- To be presented at APNIC 26

prop-063: Reducing timeframe of IPv4 allocation from 12 to 6 months

- The problem...
 - With the imminent depletion of the free pool, it's possible that networks receiving an allocation to meet their needs for the next 12 months may mean that other networks don't have a chance to get any allocation before the free pool is exhausted
- Proposed solution
 - Make allocations based on a six months needs basis, reducing it from 12 months
- To be presented at APNIC 26

prop-066: Ensuring efficient use of historical IPv4 resources

- The problem...
 - While the remaining free pool is gradually being depleted, a lot of historical IPv4 addresses are still being unused.
 - When LIRs request more space from APNIC, they do not have to demonstrate that their historical address space is being used.
 - LIRs can currently justify resources from the APNIC free pool while still not utilising their historical resources.
- The solution
 - Include historical resources when calculating an LIR's usage rate.
- To be presented at APNIC 26

Other policy proposals at APNIC 26

- prop-059: Using the Resource Public Key Infrastructure to construct validated IRR data
- prop-060: Change in the criteria for the recognition of NIRs in the APNIC region
- prop-061: 32-bit ASNs for documentation purposes
- prop-064: Change to assignment policy for AS numbers
- prop-065: Format for delegation and recording of 4-byte AS numbers

prop-059: Using the Resource Public Key Infrastructure to construct validated IRR data

- The problem...
 - Resource Public Key Infrastructure (RPKI) is an attempt to improve routing security.
 - But most ideas for implementing RPKI are hard to implement because trust models for Internet Routing Registries and RPKI are different.
- Proposed solution
 - Create an IRR that contains 'route' objects generated using an RPKI
 - Network operators can choose to prioritise routes in this new IRR over other IRRs.
- To be presented at APNIC 26

prop-060: Change in the criteria for the recognition of NIRs in the APNIC region

- The problem
 - To recognise a new NIR under current policy, it must have the support of both the community and the relevant government body in the country of the proposed NIR.
 - NIRs can be dominated by government interests.
- Proposed solutions
 - Allow NIRs to be approved with community approval only.
 - New NIRs are approved through a vote by APNIC members.
 - Limit government positions on NIR boards
- To be presented at APNIC 26



prop-061: 32-bit ASNs for documentation purposes

- The problem...
 - There is currently no range of four-byte AS numbers that is dedicated for use in Internet documentation.
 - Any AS number used now in documentation may be used by a real network in future, leading to problems.
- Proposed solutions
 - Designate four four-byte AS numbers to be used in documentation.
- To be presented at APNIC 26

prop-064: Change to assignment policy for AS numbers

- The problem...
 - Lack of awareness of 4 byte ASNs in the general provider community to support 4-byte AS numbers or equipment vendors to implement and support 4-byte AS numbers
- Proposed solutions
 - To create an intermediary stage where LIRs will be assigned a 4-byte AS number by default unless it is unsuitable
 - 1 July 2009
- To be presented at APNIC 26

prop-065: Format for delegation and recording of 4-byte AS numbers

- The problem...
 - ASDOT is widely regarded as being incompatible with a number of operational systems and router configurations.
 - Specifically, the '.' within the AS number is incompatible with IRR and RPSL.
 - It also has the potential to break many regular expressions in existing router configurations.
 - Due to these issues, the operator community is hesitant to adopt ASDOT.
- Proposed solution
 - APNIC adopt ASPLAIN as the default format for documenting 4-byte AS numbers.
 - APNIC Whois Database be modified to return the same record for queries submitted in either ASDOT or ASPLAIN format
 - APNIC would document delegations of all 4-byte AS numbers in ASPLAIN format and migrate existing whois data
- To be discussed at APNIC 26

Reverse DNS Delegation

Registry Procedures

Reverse DNS - why bother?

- Service denial
 - That only allow access when fully reverse delegated
eg. anonymous ftp
- Diagnostics
 - Assisting in trace routes etc
- Spam identification
- Registration
 - Responsibility as a member and Local IR

APNIC & Member responsibilities

- APNIC
 - Manage reverse delegations of address block distributed by APNIC
 - Process members requests for reverse delegations of network allocations
- Members
 - Be familiar with APNIC procedures
 - Ensure that addresses are reverse-mapped
 - Maintain nameservers for allocations
 - Minimise pollution of DNS

Reverse delegation requirements

- /24 Delegations
 - Address blocks should be assigned/allocated
 - At least two name servers
 - Can ask APNIC to be the secondary zone
- /16 Delegations
 - Same as /24 delegations
 - APNIC delegates entire zone to member
 - Recommend APNIC secondary zone
- < /24 Delegations
 - Read “classless in-addr.arpa delegation”



Delegation procedures

- Upon allocation, member is asked if they want /24 place holder domain objects with member maintainer
 - Gives member direct control
- Standard APNIC database object,
 - can be updated through online form or via email.
- Nameserver/domain set up verified before being submitted to the database.
- Protection by maintainer object
 - (auths: CRYPT-PW, PGP).
- Zone file updated 2-hourly

Example 'domain' object

```
domain:      124.54.202.in-addr.arpa
descr:      co-located server at mumbai
country:    IN
admin-c:    VT43-AP
tech-c:     IA15-AP
zone-c:     IA15-AP
nserver:    dns.vsnl.net.in
nserver:    giasbm01.vsnl.net.in
mnt-by:     MAINT-IN-VSNL
changed:    gpsingh@vsnl.net.in 20010612
source:     APNIC
```

Delegation procedures

– request form

- Complete the documentation
 - <http://www.apnic.net/db/domain.html>
- On-line form interface
 - Real time feedback
 - Gives errors, warnings in zone configuration
 - serial number of zone consistent across nameservers
 - nameservers listed in zone consistent
 - Uses database ‘domain’ object
 - examples of form to follow..

Reverse DNS request form

The screenshot shows a web browser window titled "Create Domain Object - Microsoft Internet Explorer". The address bar contains "http://www.apnic.net/apnic-bin/creform.pl". The page header includes the APNIC logo and the text "Asia Pacific Network Information Centre" with a navigation menu: "Info & FAQ | Resource services | Training | Meetings | Membership | Documents | Whois & Search | Internet community".

Create Domain Object

Domain Object

What is this form to be used for?
This form assists in the creation and maintenance of domain objects. The domain class:

(* indicates mandatory field)

***Domain:**

***Descr:**

Country:

***Adminc:**
List the NIC handles for the administrative contacts (admin-c). Other texteg : DNS4 -AP

An admin -c must be someone physically located at the site of the network.

Request form

The screenshot shows a web browser window titled "Create Domain Object - Microsoft Internet Explorer". The address bar displays "http://www.apnic.net/apnic-bin/creform.pl". The form contains several fields:

- *Nserver:** A dropdown menu with "dns.vsnl.net.in" and "giasbm01.vsnl.net.in" selected.
- Remarks:** An empty text input field.
- Notify:** A dropdown menu with the text "This email address will be notified by the APNIC database when this object changes."
- *Mntby:** A dropdown menu with "MAINT-WF-EX" selected.
- *Password:** An empty text input field. Below it, a pink error message reads: "You must supply a password for one of the maintainers listed in this field".
- Mntlower:** A dropdown menu with the text "This stops ad-hoc additions beneath this zone".

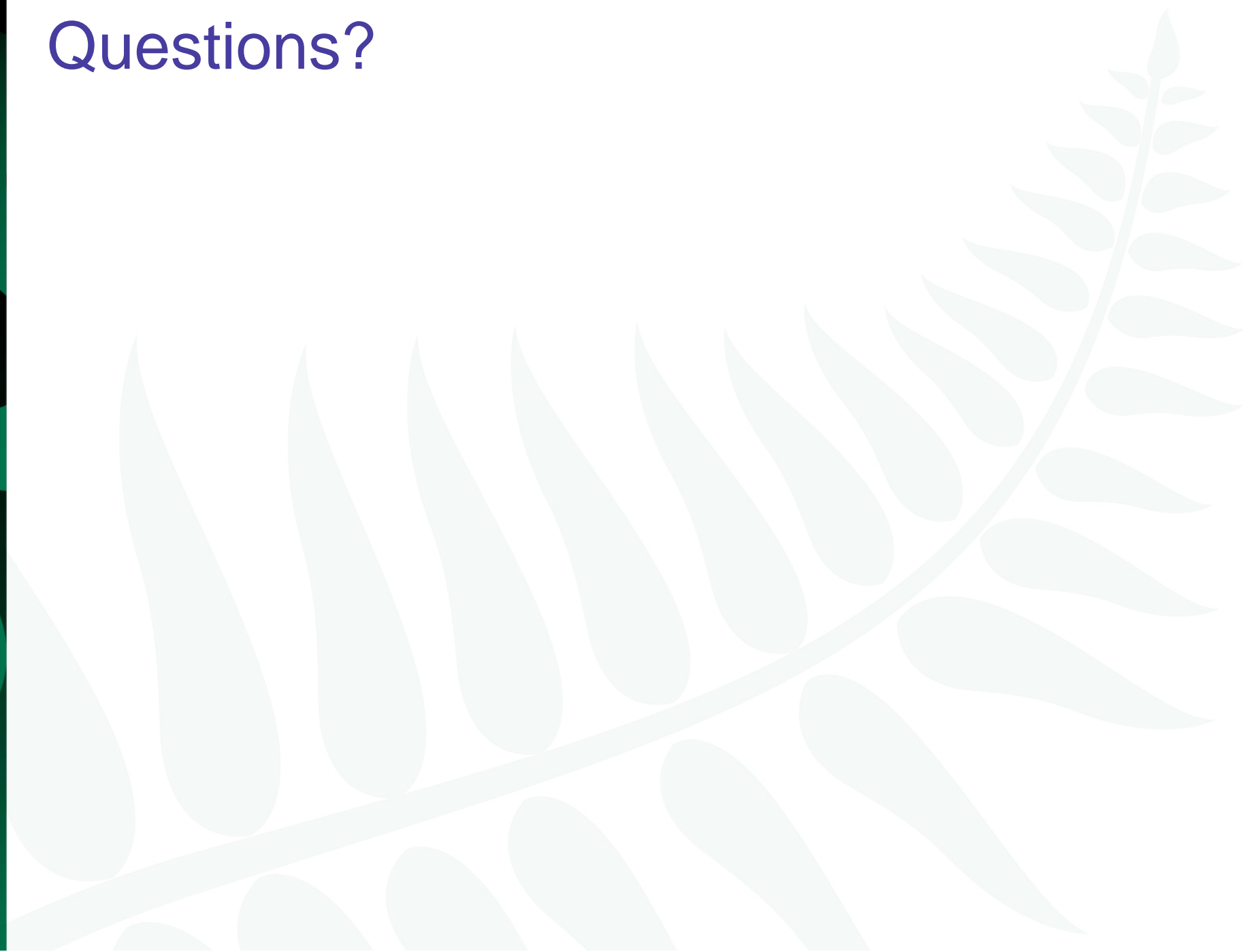
Evaluation

- Parser checks for
 - ‘whois’ database
 - IP address range is assigned or allocated
 - Must be in APNIC database
 - Maintainer object
 - Mandatory field of domain object
 - Nic-handles
 - zone-c, tech-c, admin-c

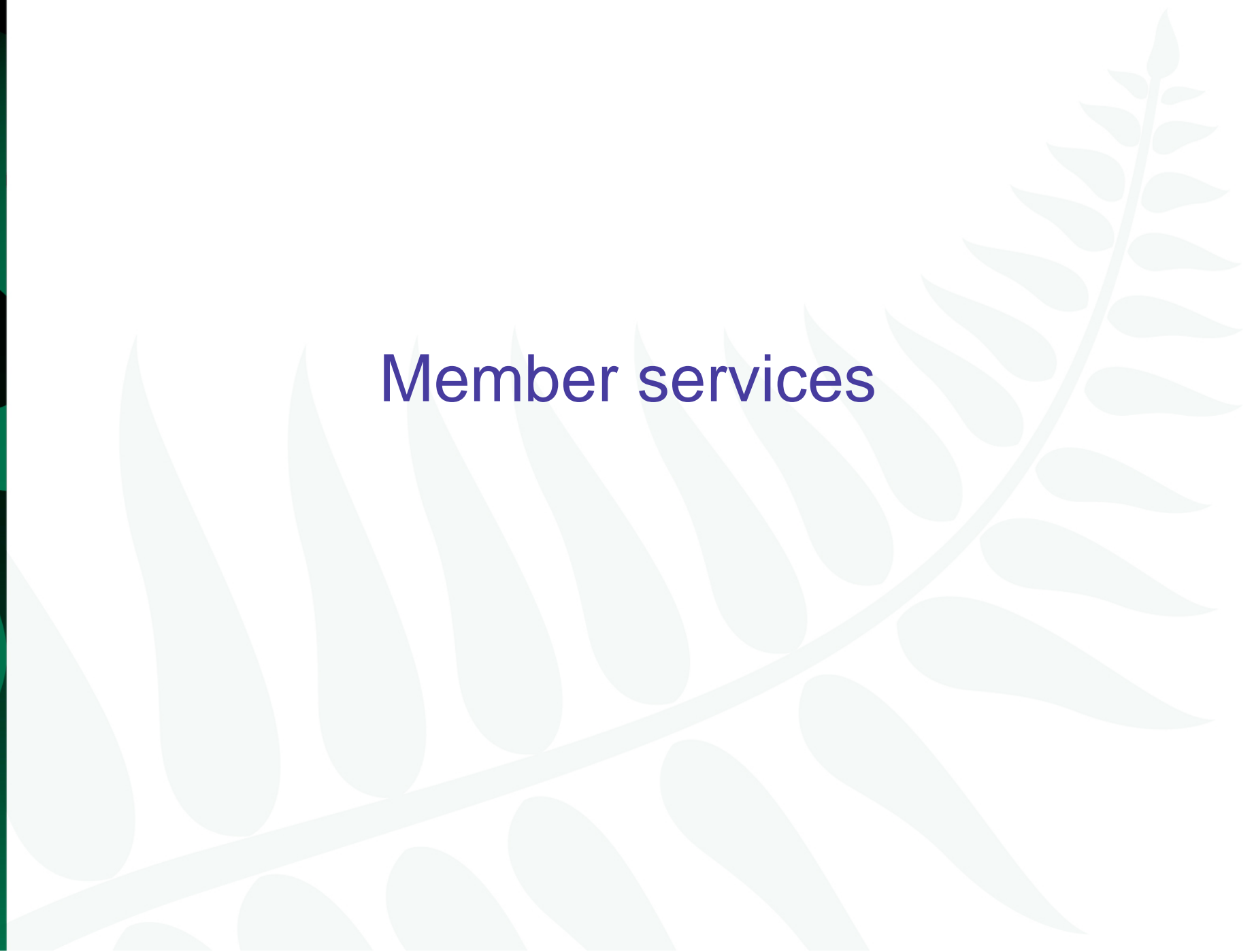
Creation of domain objects

- APNIC highly recommend you to use MyAPNIC when creating domain objects
 - MyAPNIC parser will check the maintainer of 'inetnum' object
 - If the password matches no errors will be returned
- Can use MyAPNIC to create multiple domain objects at once
 - ex: If you are allocated a /19, you can provide the full IP range and 32 domain objects can be created in one go

Questions?



Member services



Member Services Helpdesk

- One point of contact for all member enquiries
- Online chat services

Helpdesk hours

9:00 am – 7:00 pm (AU EST, UTC + 10 hrs)

ph: +61 7 3858 3188

fax: 61 7 3858 3199



- *More personalised service*
 - Range of languages:
Cantonese, Filipino, Mandarin, Thai, Vietnamese etc.
- *Faster response and resolution of queries*
 - IP resource applications, status of requests, obtaining help in completing application forms, membership enquiries, billing issues & database enquiries

APNIC Helpdesk chat

The screenshot shows a Microsoft Internet Explorer browser window displaying the APNIC Helpdesk chat interface. The browser title is "The APNIC Member Services Helpdesk - Microsoft Internet Explorer provided by OptusNet". The address bar shows "http://livehelp.apnic.net - miwa: Support Request - Mic...".

The chat window is open, showing a conversation with "George of Helpdesk". The chat history includes:

- miwa: You are now speaking with George of Helpdesk.
- George: Hello miwa, You are chatting to APNIC helpdesk. This is

The main page content includes:

- Asia Pacific Network Information Centre
- Quick Links
- its direct access to APNIC Hostmasters to resolve all enquiries.
- APNIC Helpdesk chat**
- APNIC Helpdesk Chat Online (Click here for help)
- Available during office hours except: (UTC + 10 hours)
 - Monday 26 - Tuesday 27 December 2005
 - 2 January 2006
 - Wednesdays, 14:30 - 15:30
- Helpdesk queries**
- Faster responses for:
 - Status of requests
 - Help in completing application forms
 - Membership enquiries
 - Billing issues
 - Database enquiries
- Note:** Please send all resource requests to hostmaster@apnic.net.
- Contact details**
 - 9:00 am to 7:00 pm (UTC + 10 hours)
 - Monday - Friday
 - Phone: + 61 7 3858 3188
 - Fax: + 61 7 3858 3199
 - Email: helpdesk@apnic.net
- See also:**
 - [APNIC resource services](#)
 - [Help for APNIC forms](#)
 - [APNIC membership information](#)
 - [Contact APNIC](#)

The browser's taskbar shows the Start button and several open applications: Microsoft Excel, Microsoft PowerPoint, The APNIC Mem..., http://livehelp.a..., and Inbox for miwa... The system clock shows 3:28 PM.

ICONS

ICONS - Home - Microsoft Internet Explorer provided by OptusNet

Address: http://icons.apnic.net/index.php?option=com_frontpage&Itemid=1

Home

Internet Community of Online Networking Specialists
Sharing knowledge and experience for Internet development

Home | ICONS blog | How-to guides | Network tools | News feeds | Community | Photo gallery | Events

Search

Search by keywords

- apnic
- bind
- cidr
- consumption
- dns
- dnssec
- internet
- governance
- ipv6
- jpnic
- malaysia
- pacnog
- porn
- icons
- root
- server
- routing
- sanog
- search
- security
- spam
- tao
- voip

Member login

Hello, miwa

Why ICONS?

A site to share network operation experience and knowledge, and promote events happening in the Internet operators community.

Latest news

- BGP Routing Table
- Social Networking

Partners

APNIC

AfriNIC

SONOG

Latest ICONS blogs

- Tuesday, 06. March 2007
[**Afrinic**] 6th AfriNIC Open Policy Meeting
- Monday, 26. February 2007
[**IPv6**] Ask not what you can do for IPv6, but rather what IPv6 can do for you
- Tuesday, 09. January 2007
[**General**] ISOC Fellowship to the IETF
- Monday, 08. January 2007
[**IPv6**] IP Addresses on Endangered List
- [**DNS**] Testing Firewalls for IPv6 and EDNS0 Support
- [**Security**] 10 things to know about info security in '07
- Monday, 27. November 2006
[**General**] The end of the web as we know it?
- Tuesday, 21. November 2006
[**IPv6**] Packet Filter and Route Filter Recommendation for IPv6
- Monday, 20. November 2006
[**SPAM**] Six steps to stopping spam
- Friday, 17. November 2006
[**Internet governance**] Summary of Internet Governance Forum (IGF) in Athens

Popular ICONS blogs

- Using FREE VoIP technology to phone APNIC - v2.0 for OSX, Linux and Windows
- Report on "Analysis and Recommendations on the Exhaustion of IPv4 Address Space"
- Using FREE VoIP technology to phone APNIC - v3.0 for Windows only
- IP addressing in China
- 2-byte and 4-byte AS Numbers
- The APNIC debogon project
- Open standards and processes on the Internet
- Grey power enlisted in the fight against spam
- Certifying Internet address resources

start

NP-IRME-17042007.ppt NP-IPv6-18-2004200... ICONS - Home - Micro... ICONS - Mozilla Firefox

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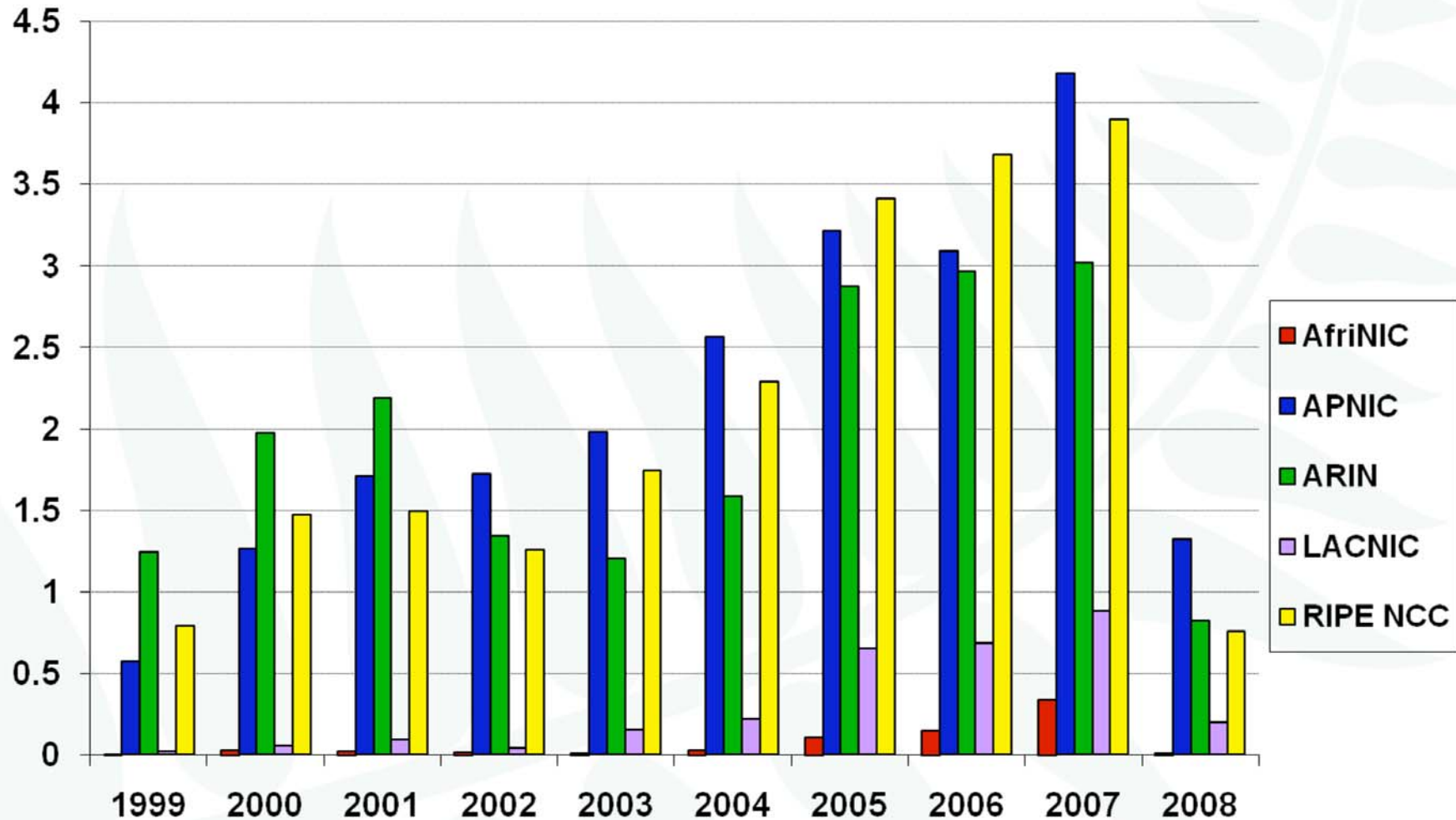


Number resource allocation statistics



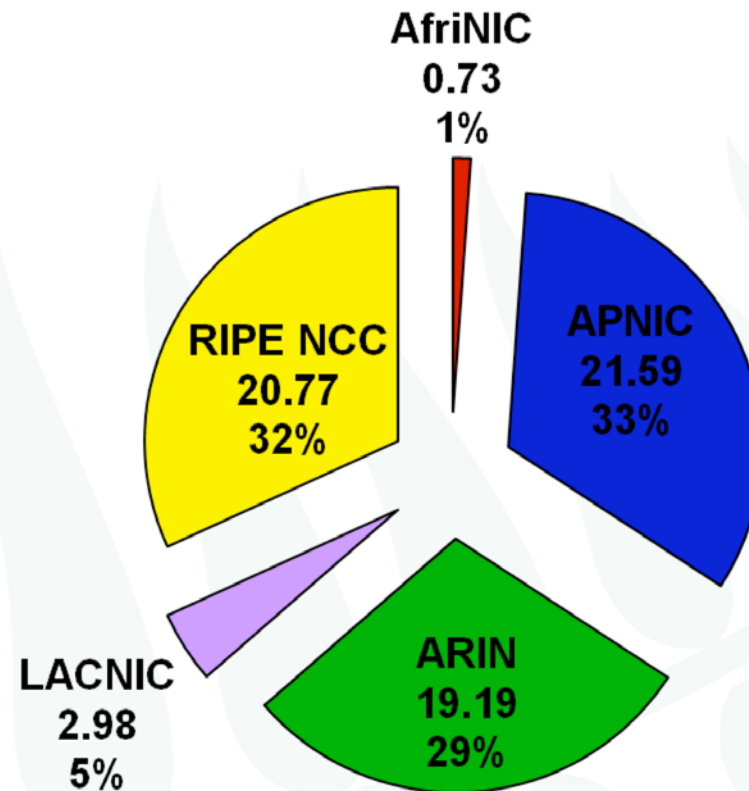
IPv4 allocations RIRs to LIRs/ISPs

Yearly comparison (/8s) - data up to Mar 2008



IPv4 allocations RIRs to LIRs/ISPs

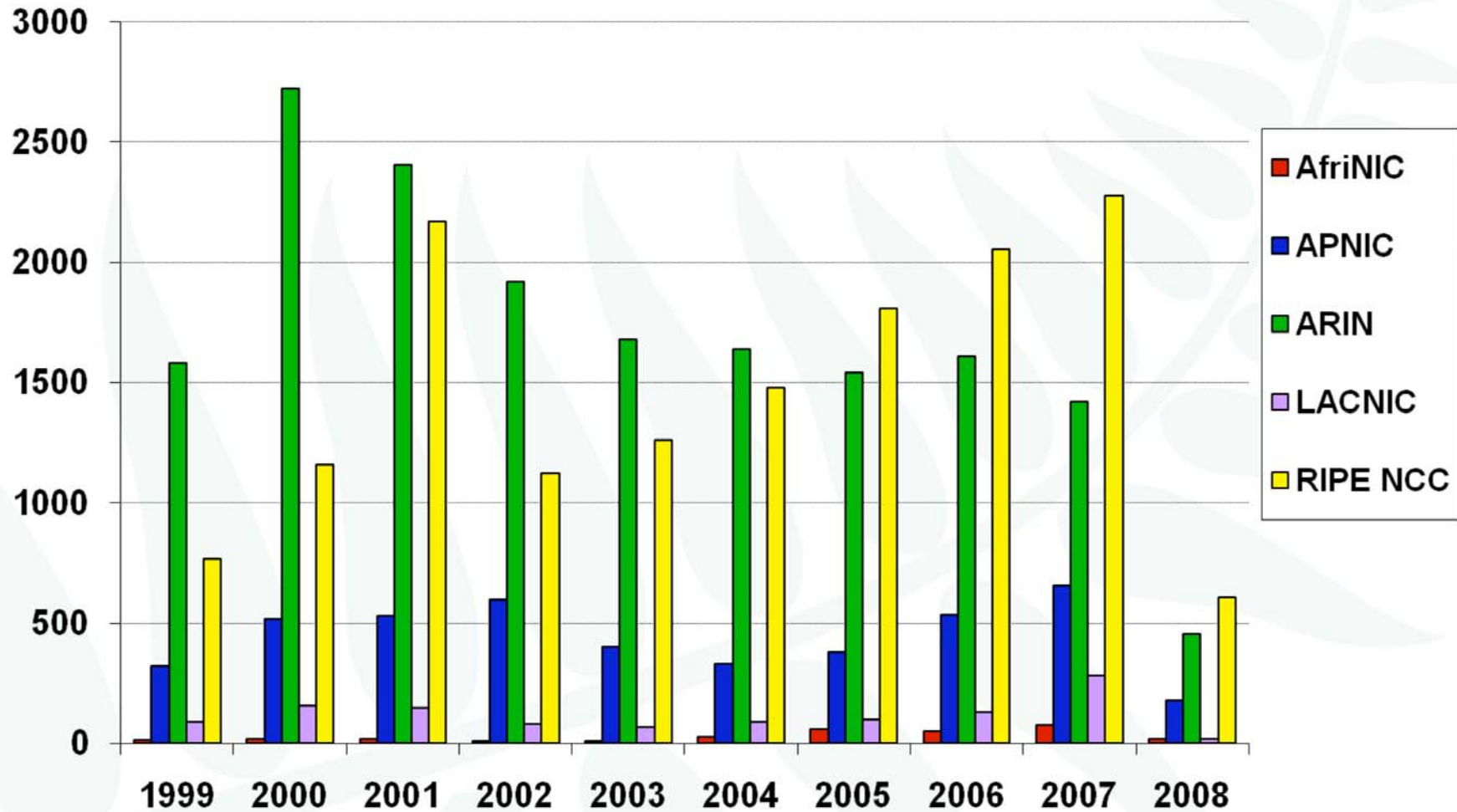
Cumulative total (Jan 1999 – Mar 2008)





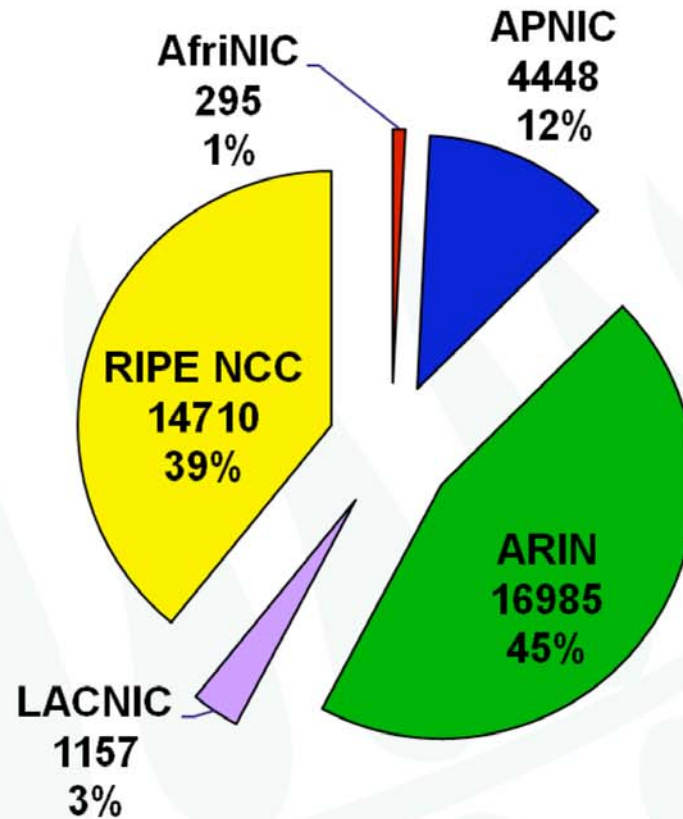
ASN assignments: RIRs to LIRs/ISPs

Yearly comparison - data up to Mar 2008



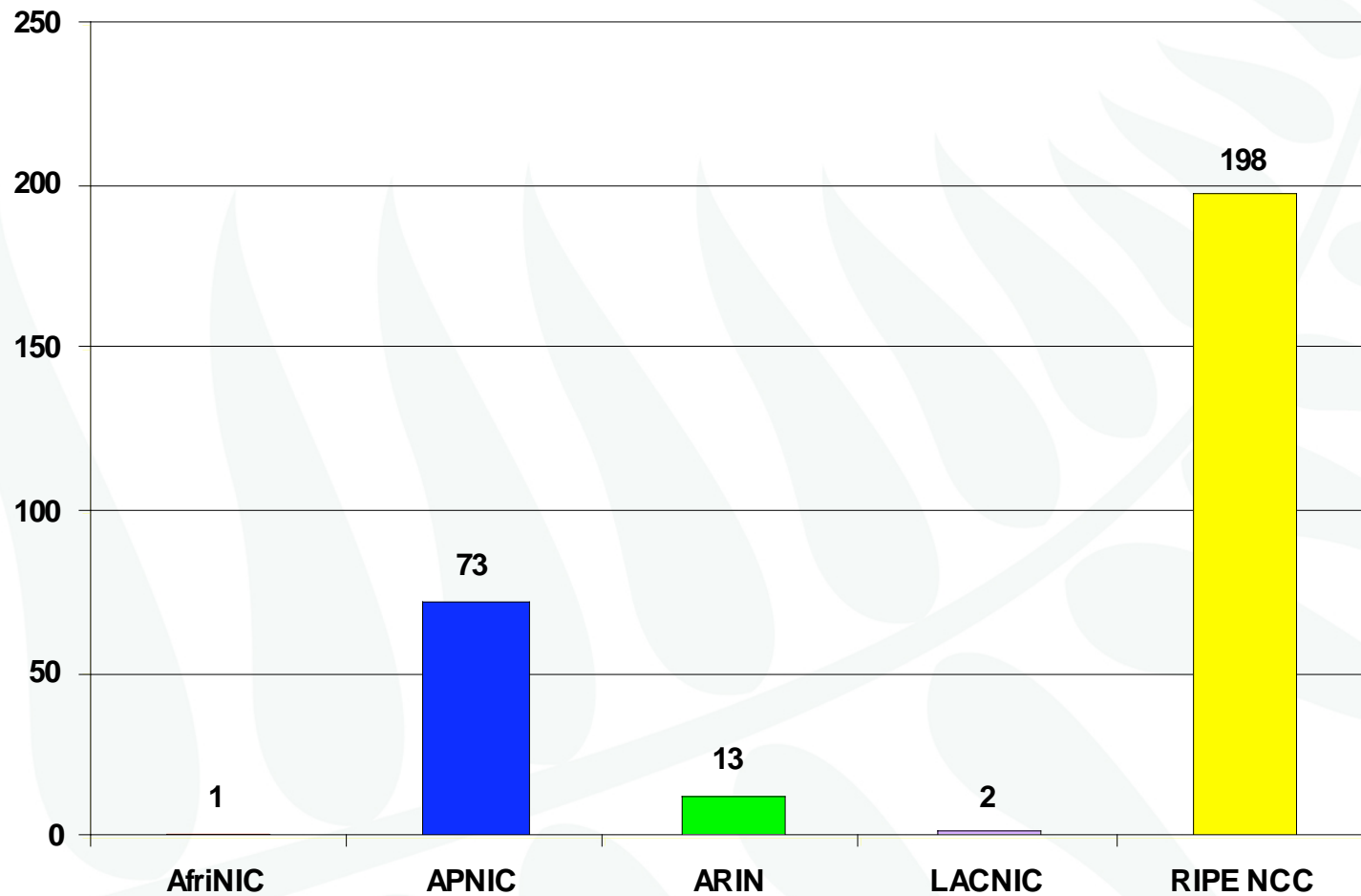
ASN assignments: RIRs to LIRs/ISPs

Cumulative total (Jan 1999 – Mar 2008)



IANA IPv6 allocations to RIRs

issued as /23s prior to Oct 2006



IANA IPv6 allocations to RIRs

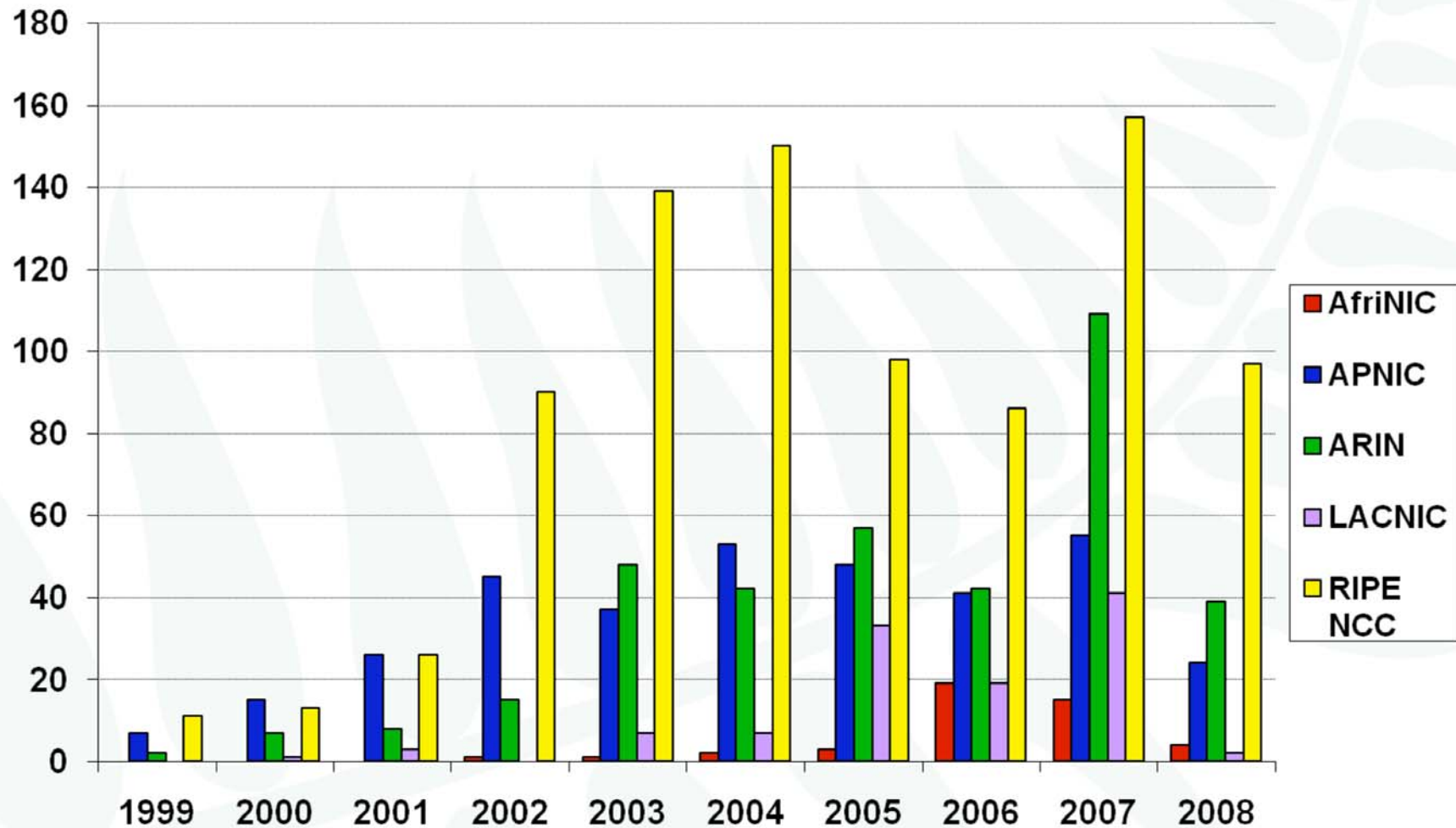
issued in Oct 2006

RIR	IPv6 Address
AfriNIC	2C00:0000::/12
APNIC	2400:0000::/12
ARIN	2600:0000::/12
LACNIC	2800:0000::/12
RIPE NCC	2A00:0000::/12

Some /23s from the previous slide are incorporated in these /12s

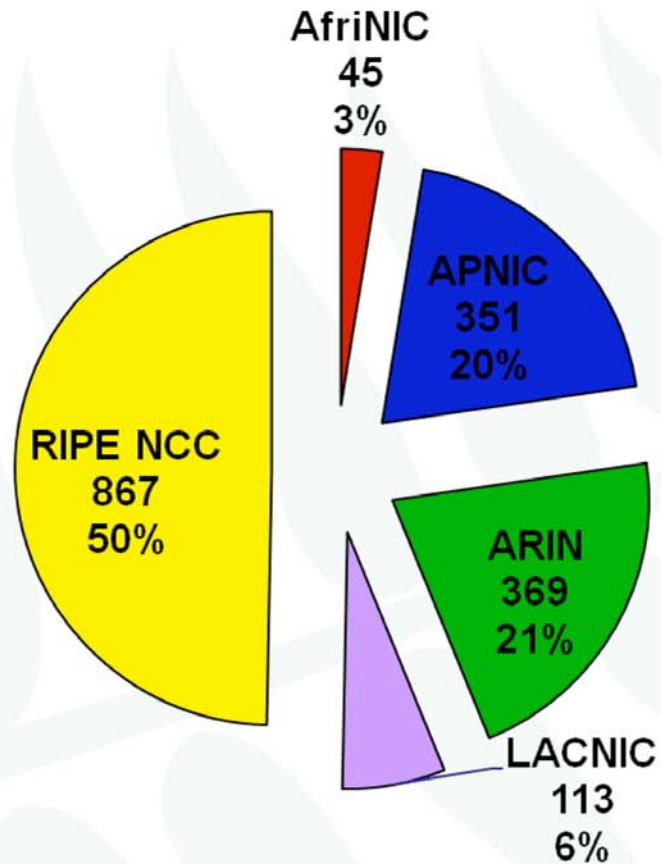
IPv6 Allocations: RIRs to LIRs/ISPs

Yearly comparison – data up to Mar 2008

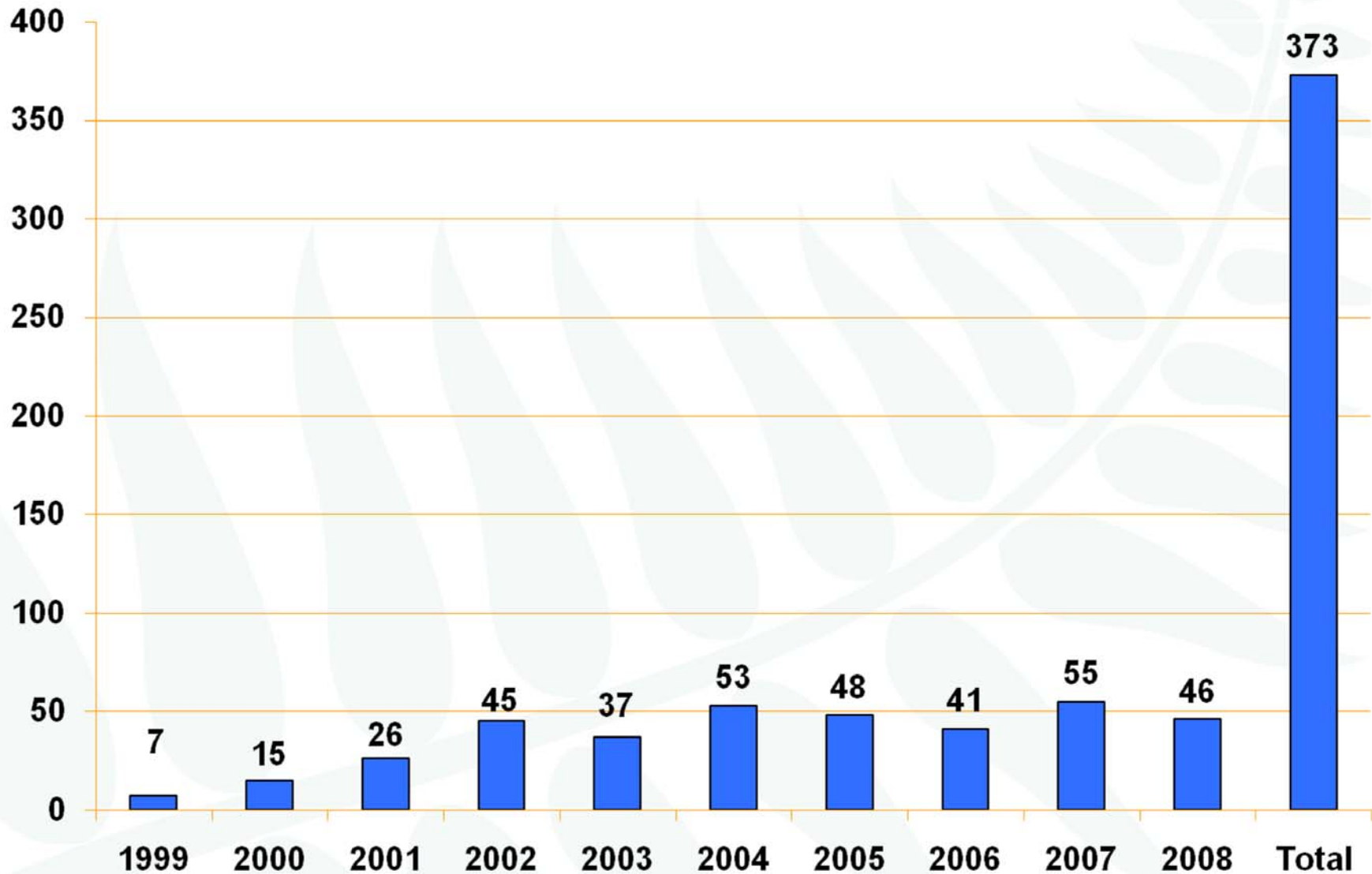


IPv6 allocations RIRs to LIRs/ISPs

Cumulative total (Jan 1999 – Mar 2008)

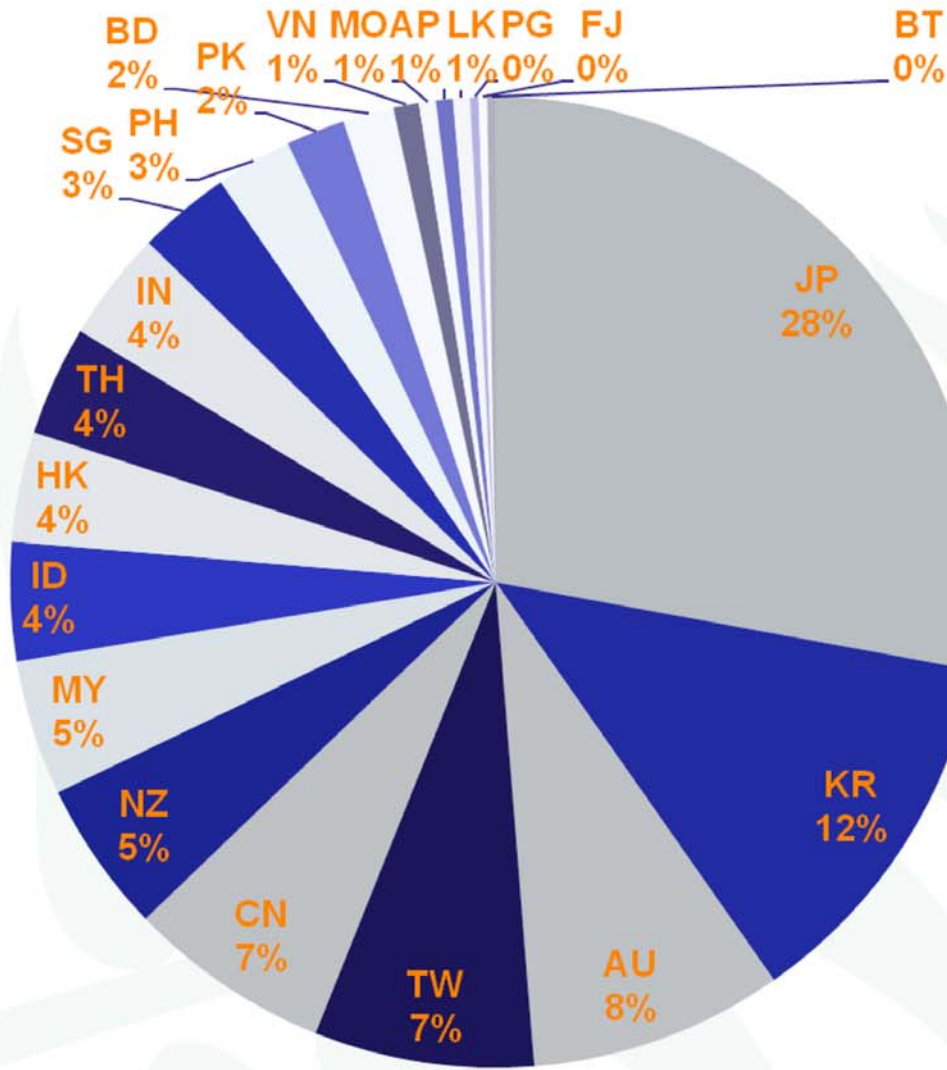


APNIC delegations by year (allocation)



Source: APNIC statistic data, as of May 2008

APNIC IPv6 allocation by economy



Source APNIC statistics data, as of May 2008

Discussion



Thank you!

