IPv6 Policy Musings

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* At RIPE83, the WG chairs asked for volunteers to look into an overhaul of the IPv6 policy

* we went for a „back to the roots" check

  * what motivations went into the current policy?

  * are these still valid, 23 years after ripe-196 („Provisional IPv6 Assignment And Allocation Policy Document") has been published?

  * what areas do we see that cause friction, or are no longer relevant?

* results sent to APWG list last weekend

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Fundamentals – the easy bits

* It should be *easy* to get IPv6 addresses

* RIPE IPv6 address policy should *encourage* IPv6 rollout

* Aggregation is very important, both inside ISP network and in the global routing system

* Conservation is less important than for IPv4 space (but still relevant)

* N:1 NAT for end user networks is undesirable

* we think that these are still relevant, and the policy works well

Fundamentals – The Friction

* „address space should be easy to get“
* „do not be more conservative than necessary“
* … and the needs of Very Large Networks

* Initial Allocation size grew from /35 to /32 to /29-if-asked-for over time – affordable, and beneficial
* Allocations of /28 or larger require „appropriate documentation“, which can be hard to produce
* Step from „nothing“ (/29) to „full“ (/28) seen as very steep

Fundamentals – The Confusion

* HD Ratio
  * this is a mathematical formula to take into account that „larger networks" can not be as densely populated as „smaller networks"
  * aggregation loss on multiple levels of aggregation

* seen as very complicated (even if appendix has table)
* maybe too „scientifically correct" for everyday needs?
* policy text relating to /56 units also quite complicated

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* Special policies for „special networks"
  * Root DNS operators (ripe-636)
  * Anycast DNS operators, servicing TLDs or ENUM
    (ripe-738, section 6)
  * IXP fabrics (ripe-451)
  * special cases from a time where no IPv6 PI existed, but the need for „provider independent" space for this sort of services was recognized
* these could possibly be handled by regular IPv6 PI today
* if not, some document work might be in order (remove ENUM, include IXP and root DNS into main IPv6 policy document)

Multihoming and IPv6 PI

* „Can IPv6 networks renumber"?
    * easy(-ish) for mostly-unmanaged SoHo networks
    * hard to impossible for „enterprise" networks
    * mostly impossible for „ISP style" networks serving end users
* If renumbering is impossible, ISP change is only possible if address space can be taken along
* multihoming without BGP (for non-trivial networks) is still not solved @ IETF

* IPv6 PI for those entities that do not want to become LIRs

* „Why do we have two colours of IPv6 addresses?"
* „Why do we have two classes of RIPE NCC ‚customers' that pay differently for IPv6 space?"
* I've heard rumors that the NCC board does not like IPv6 PI either („these indirect contracts are so complicated") – though, in contrast, the customers *do* like dealing with their local LIR only
* everybody wants My Own Space, For Ever
* every routing slot in the global table costs real money

* current model („50 EUR/year per PI net") is a compromise
* is it (still?) a *good* compromise?

Aggregation and BCOP?

* Existing policy text recommends aggregation „wherever possible" (ripe-738, 3.4)
* policy *enables* doing so (HD-ratio, large allocations)
* but there is *no mandate*, and *no clear guidance* („up to 7.5 more specifics are ok!")
* some players interpret this as „I can announce whatever I want" and it is hard to convince them otherwise

* enforcing routing policy is outside APWG mandate (but routing WG was not enthusiastic about agreeing on something either)
* could this be done as a BCOP document?

* let's hear your thoughts about any of these…

* … discuss this more over the coffee break, and come to new and surprising conclusions…

* Main work will happen on the APWG list
  * agree on particular problem statements
  * find volunteers
  * draft formal proposals