2005-6: IPv4 Micro-allocations for Anycast Services

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IPv4 Micro-allocations for Anycast Services

4.4.2 Micro-allocations for anycast services - ARIN will make micro-allocations to organizations wishing to deploy anycast based services, provided they meet the following criteria:

- All of the criteria normally required to receive IPv4 space, AND
- The organization must have multiple (at least two) discrete multi-homed networks.
- The organization must identify which networks, ASNs, or sites will host the new service.
- The organization must provide a description of the anycast service.

Micro-allocations for anycast services will be no longer than a /24. These allocations will be made out of blocks reserved for micro-allocation purposes. ISPs and other organizations receiving these micro-allocations will be charged under the ISP fee schedule, while end-users will be charged under the fee schedule for end-users.

Why a new policy?

Anycast services are on the rise
- Root name servers are an obvious example
- Commercial services are starting to appear

Allocation efficiency –
- Use case: "Hello, ARIN. I'd like to get a minimum size allocation (i.e., /22) for a new service I have. I'm only going to use one (or two or three) addresses." ARIN's response: "No."

Competitive advantage for older companies
- Legacy IP owners can just allocate a block from their (frequently large) reserves
- New companies require new allocations

Lack of existing policy
- At present, there is zero ARIN policy related to anycast services

Why micro-allocation? (Or, why /24?)

Goldilocks and the three networks:

- /22 is too big (inefficient)
- /28 is too small (not globally routable)
- /24 is just right!

Minimum required policy change to make this work –

- Micro-allocations already exist for exchange points
- ARIN has reserved space for /24 assignments
- Intent is for allocation requirements to match existing requirements, plus a bit extra to ensure that the requestor is really running an anycast service

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Possible problems

Based on feedback from the ppml mailing list:

- "My concern though is does the policy as written open up the floodgates and/or create loopholes with great abound. Meeting the requirements as listed is not hard. What happens if people end up not using these blocks for anycast services, but rather just as unicast blocks?" I.e., is the proposal a sufficiently high barrier to abuse?

- In a similar vein: "I think the requirements to obtain an address block under the proposed text of the policy are not rigid enough. I'm not sure yet how we could rework this to make it more rigid."

- Can an organization qualify for more than one anycast block? (Not presently prevented by the as-written proposal.)

- There's nothing to prevent an organization receiving an allocation from using it for something besides anycast – should the policy identify how to deal with this?

My expectations

Balance between strict requirements and valid organizational need

- This was hard to write!
- The feedback on the ppml was generally positive – I think we came as close as possible to something reasonable in balancing these demands.

Real demand should be low

- I have no way to know if this is true.
- There may be an initial rush of orgs that have been waiting for this policy.
- If demand is high and sustained, this policy needs to get rewritten to be much tougher…but I still don't expect that.

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