RIPE ncc

Experiences with the net-39 experiment

Geert Jan de Groot

RIPE NCC

<GeertJan.deGroot@ripe.net>

(ftp://ftp.ripe.net/ripe/presentations/ietf-geertj-EXP39.ps.Z)

RIPE ncc

Why

- IPV4 ALE is (currently) predicted at 2018 plusminus 8 years
- Prediction includes use of reserved class A address space [64.0.0.0 - 126.0.0.0]
- Reserved A's is 25% of the IPv4 address space!
- Expect to see chunks of class A's assigned (e.g. 64.1.2.0/22) instead of blocks of C's
- This might cause problems for equipment with outdated classful routing protocols
- Better start experimenting now!

RIPE ncc

What

- Assign chunks of a class A network number to various parties
- Watch the routing table for unexpected behaviour
- Have a ping / traceroute ‘party’ to find problems
- Investigate / document / fix problems as they pop up
- Test overlapping announcements
- Experiment without affecting customers at this time

- Later: move ‘well-known’ servers to these nets (such as popular FTP servers) and see what happens

RIPE ncc

Shopping list

For classless assignments, one needs:

- Allocation (NICs)
- TCP/IP software support (esp multihomed hosts)
- Classless routing protocols
- User doc!
- (classless in-addr delegation)

RIPE ncc

Ramblings

- “Blocks of C’s” was downward compatible
- “Chunks of A’s” could give problems
  - Classful multihomed customers loose
  - ISP’s with classful IGP’s & full routing loose
  - (are there still people using BGP-3 or EGP?)

Better get the word out now!

RIPE ncc

Logistics

- Allocation document is RFC1797
  Net 39.0.0.0/8 temporary assigned to this experiment by IANA (till 951201)
- Additional information in i-d IETF cidrd WG
  draft-ietf-cidrd-classa-00.txt
- Mailing-list <exp39@isi.edu>

RIPE ncc

Net39 today

- 22 prefixes visible at RIPE NCC
  (no overlapping prefix)
- Most prefixes only have loopback interfaces, but
- 69 hosts listed in DNS,
  51 of ietf33 terminal room
  (note: DNS problems at time of counting)
- ftp.ripe.net moved to 39.13.5.97

Experiences (1)

Cisco will, under certain conditions, announce 39/8 if it learns of a longer prefix in net39 (asp@uunet):

- `no auto-summary`
- Filter 39.0.0.0 0.255.255.255 in announcements
- `ip classless`

‘Aggregated’ 39/8 announcements still pop up from time to time

RIPE ncc

Experiences (2)

Europanet (EMPB, Telebit) filtered ‘subnet’ info (bc@sunet)

- ❍ Configuration change
- ❍ Customer needs to ask (NORDUnet, WIN, SWITCH)

Classfull IGP’s break, sometimes in unexpected ways

RIPE ncc

Experiences (3)

Verified to work:

- Cisco
- BSD 4.4 (BSD/OS 2.0)
- Telebit (EMPB)
- ANS routers
- Most end systems (using default routing)

RIPE ncc

Experiences (4)

Need to put Real Hosts on net 39

- Announcement of renumbering of info.ripe.net caused flurry of responses, even though this was announced 2 months ago!
- Now 41 OK reports, 2 FAIL reports

RIPE ncc

Open problems

- Classful nets + default still works
  (ideas how to break these nets, anybody?)

- Nets without local net39 still work

- Too less experience with large IGP clouds
  (most nets are directly attached to BGP4 router, big deal!)

- Proposed relation between prefix length and portability may negate efforts in using remaining address space efficiently