Status report on primary and secondary DNS load

DNS Operations SIG

APNIC 18

2nd September 2004, Fiji

Summary

- New data collection method
- Primary load
- Secondary load
- Conclusions
- Discussion

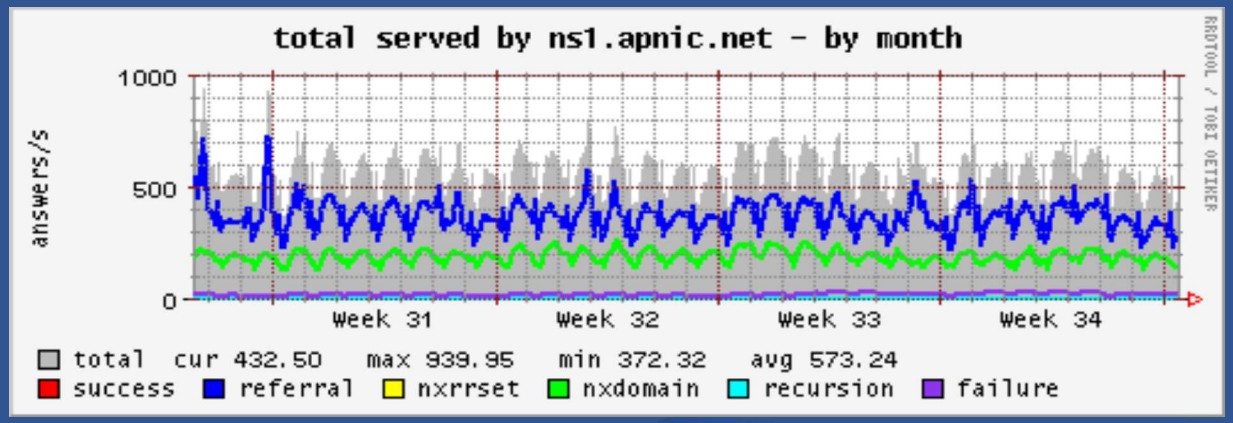
New Statistics gathering process

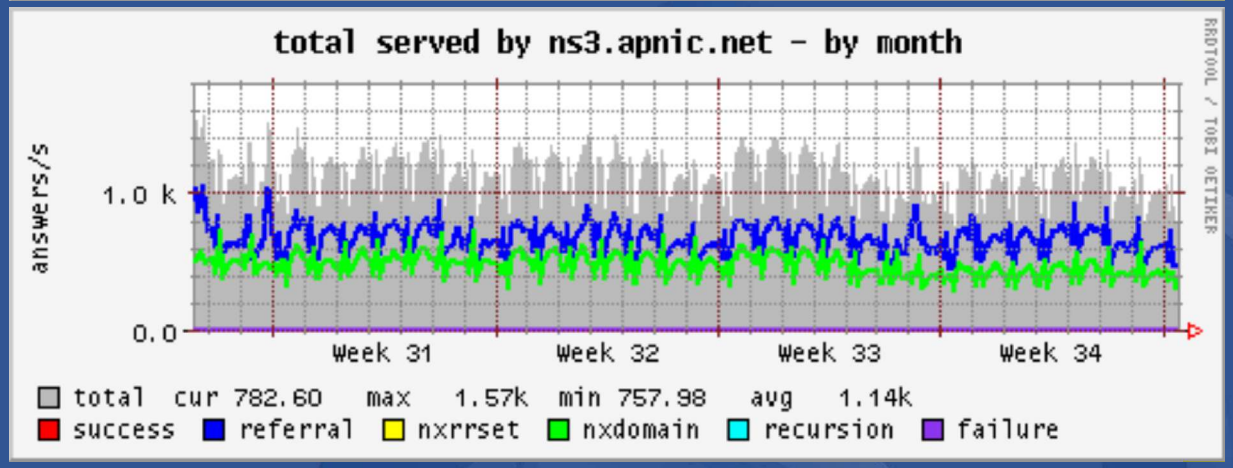
- Started May ‘04
- Improved accuracy
  - Every query/answer counted
- Allowing quantitative analysis
  - Per zone inspection
  - Query response analysis
- Historical data not yet imported
  - Measures not fully compatible
  - Does not ‘replace’ old method - augments!

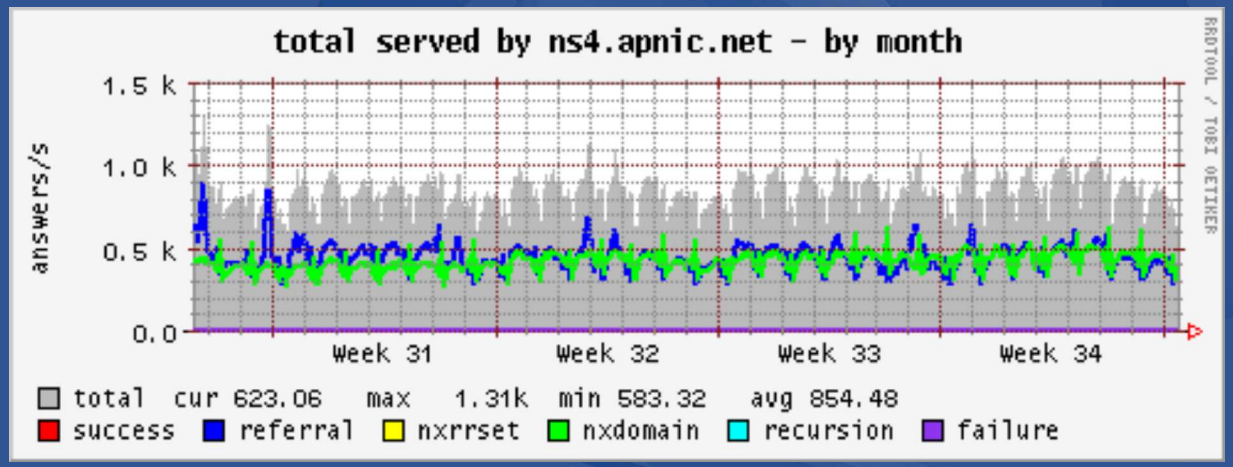
Primary load

- Primary Servers
  - ns1.apnic.net (AU)
  - ns3.apnic.net (JP)
  - ns4.apnic.net (HK)
- All servers authoritative for the same zones.

Primary

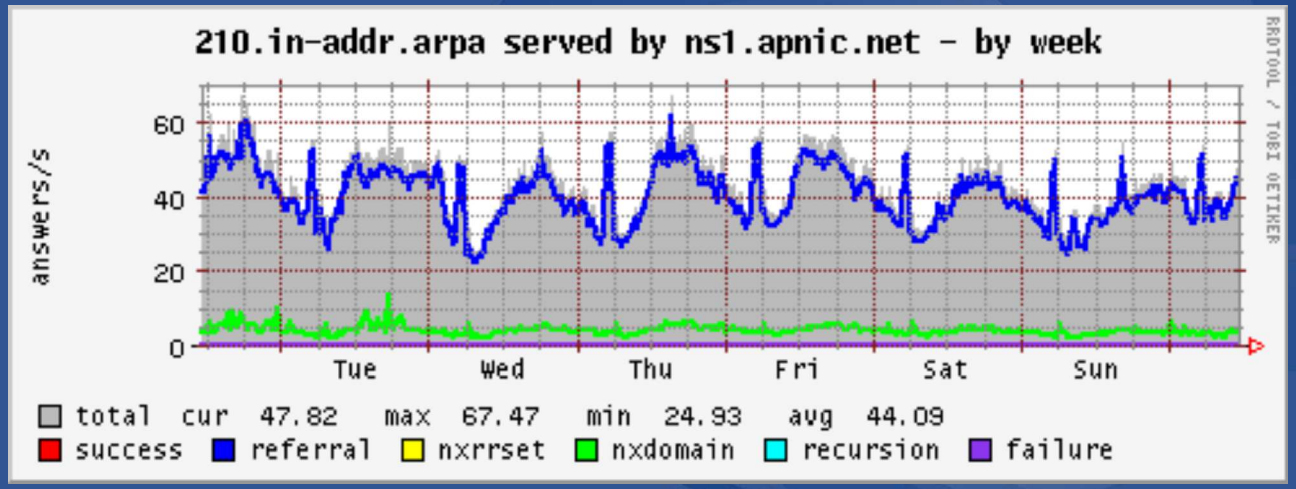

total served by ns1.apnic.net - by month
answers/s
1000
500
0
Week 31
Week 32
Week 33
Week 34
total cur 432.50 max 939.95 min 372.32 avg 573.24
success referral nxrrset nxdomain recursion failure
RRDTOOL / TOBI OETIKER


total served by ns3.apnic.net - by month
answers/s
1.0 k
0.0
Week 31
Week 32
Week 33
Week 34
total cur 782.60 max 1.57k min 757.98 avg 1.14k
success referral nxrrset nxdomain recursion failure
RRDTOOL / TOBI OETIKER


total served by ns4.apnic.net - by month
answers/s
1.5 k
1.0 k
0.5 k
0.0
Week 31
Week 32
Week 33
Week 34
total cur 623.06 max 1.31k min 583.32 avg 854.48
success referral nxrrset nxdomain recursion failure
RRDTOOL / TOBI OETIKER

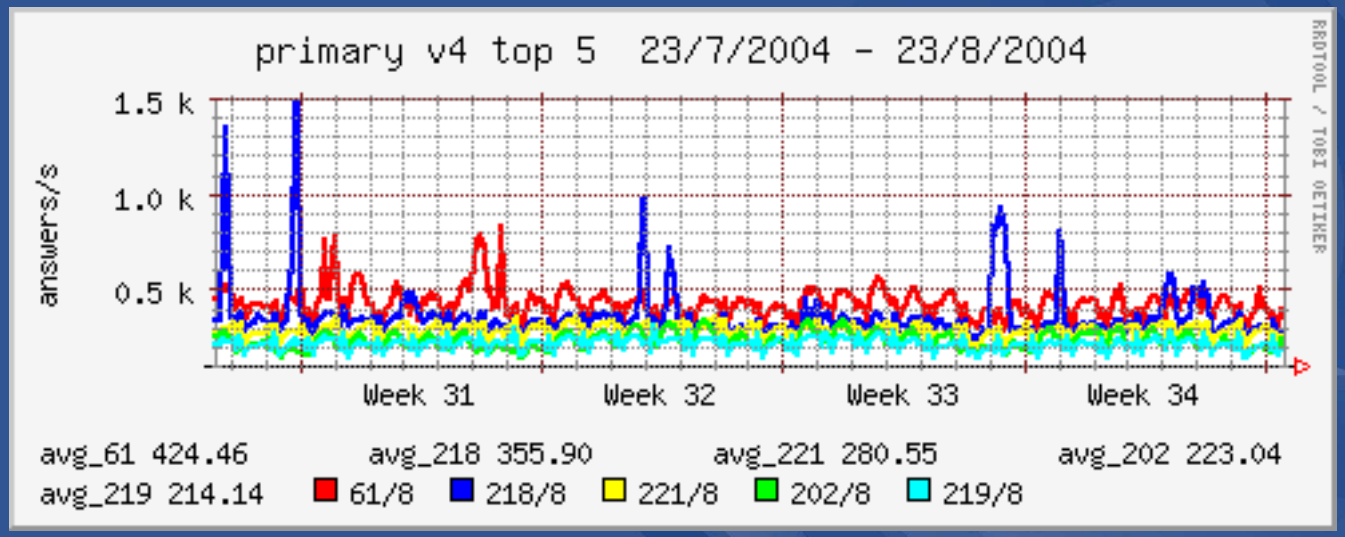
Primary zones

- Zones
  - 15 in-addr.arpa zones
  - 6 ip6.arpa zones
- A “good” zone
  - Low NXDOMAIN
  - High referral



Top 5 primary zones

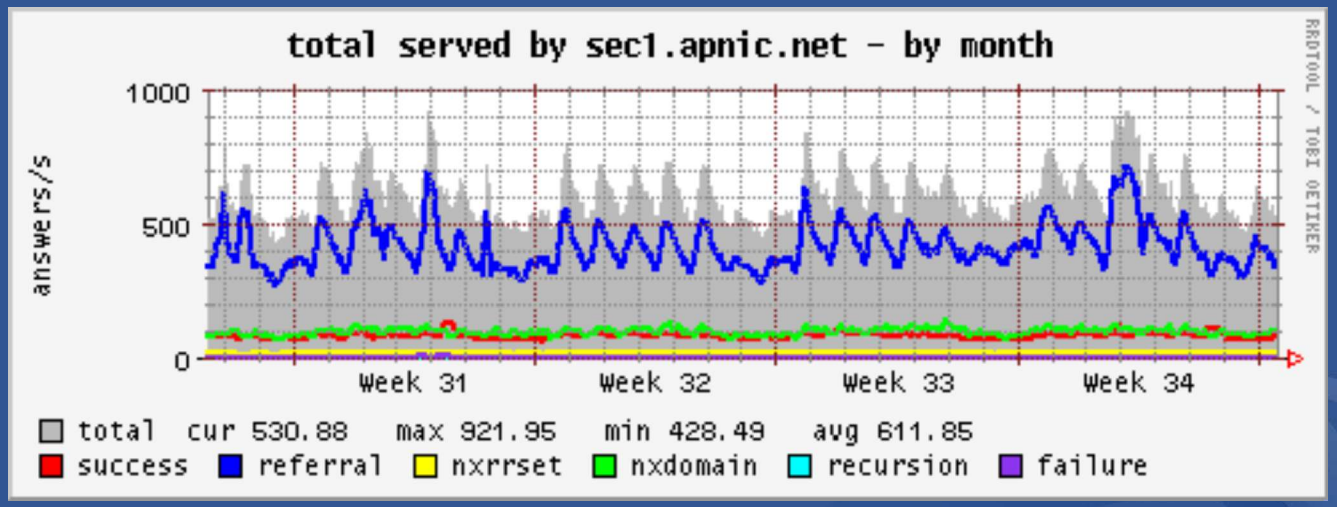
1. 61.in-addr.arpa
2. 218.in-addr.arpa
3. 221.in-addr.arpa
4. 202.in-addr.arpa
5. 219.in-addr.arpa

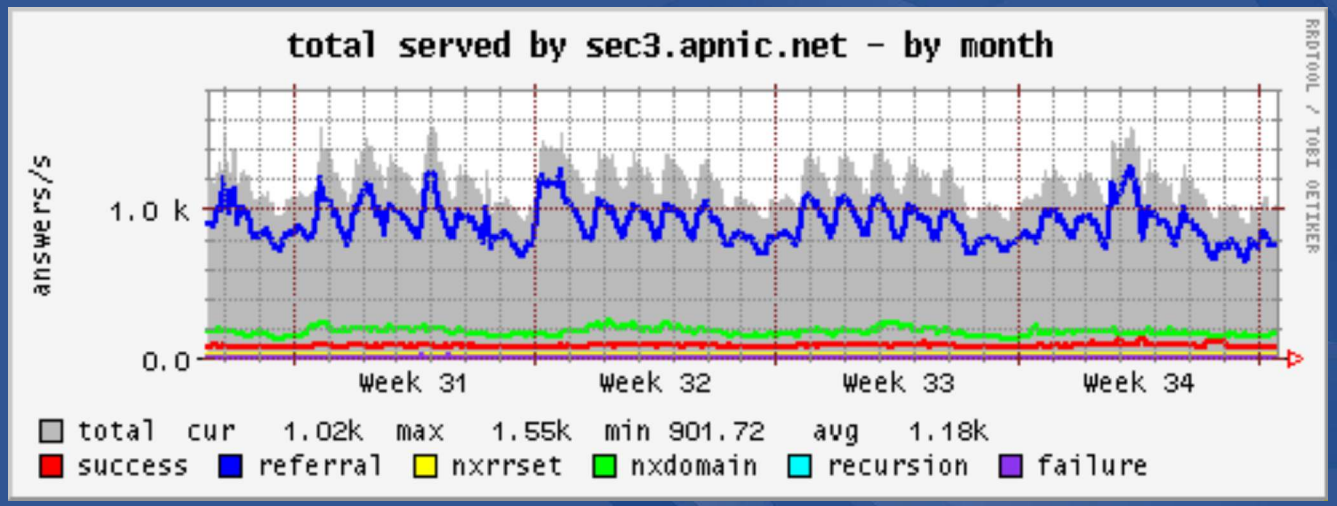


Secondary load

- Secondary Servers
  - sec1.apnic.net (AU)
  - sec3.apnic.net (JP)

Secondary


total served by sec1.apnic.net - by month
answers/s
1000
500
0
Week 31
Week 32
Week 33
Week 34
total cur 530.88 max 921.95 min 428.49 avg 611.85
success
referral
nxrrset
nxdomain
recursion
failure
RRDTOOL / TOBI OETIKER

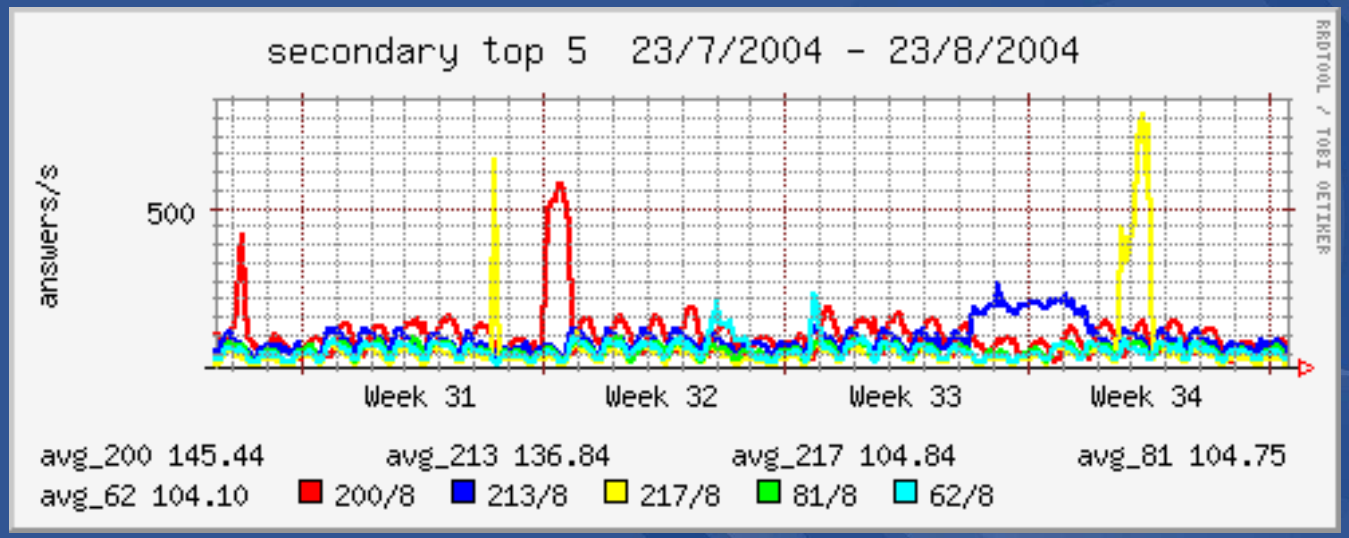

total served by sec3.apnic.net - by month
answers/s
1.0 k
0.0
Week 31
Week 32
Week 33
Week 34
total cur 1.02k max 1.55k min 901.72 avg 1.18k
success
referral
nxrrset
nxdomain
recursion
failure
RRDTOOL / TOBI OETIKER

Secondary zones

- 13 ccTLD
- 88 Member's in-addr.arpa
- 22 in-addr.arpa from other RIRs
- 32 ip6.arpa zones
  - All from RIRs

Top 5 secondary zones

1. 200.in-addr.arpa (LACNIC)
2. 213.in-addr.arpa (RIPE)
3. 217.in-addr.arpa (RIPE)
4. 81.in-addr.arpa (RIPE)
5. 62.in-addr.arpa (RIPE)



Conclusions

- Capacity planning / Server load
  - Servers running free from strain
- APNIC can house additional member secondary services for *.arpa
- Will be able to handle DNSSEC
  - Based on measures from inter RIR co-ordination.
- Less than 10mb in total network traffic

Discussion?