

# RSSAC Report

Lars-Johan Liman  
with input from  
Jun Murai and Bill Manning

Some issues that have been on  
RSSAC's table since the last update  
report by Jun Murai:

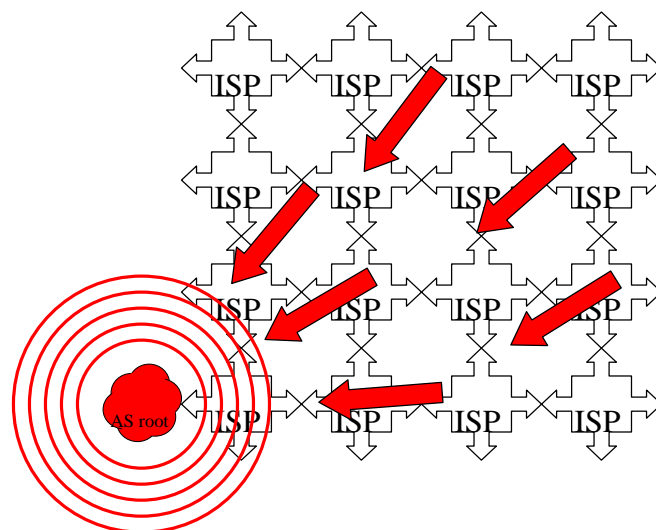
# Anycast

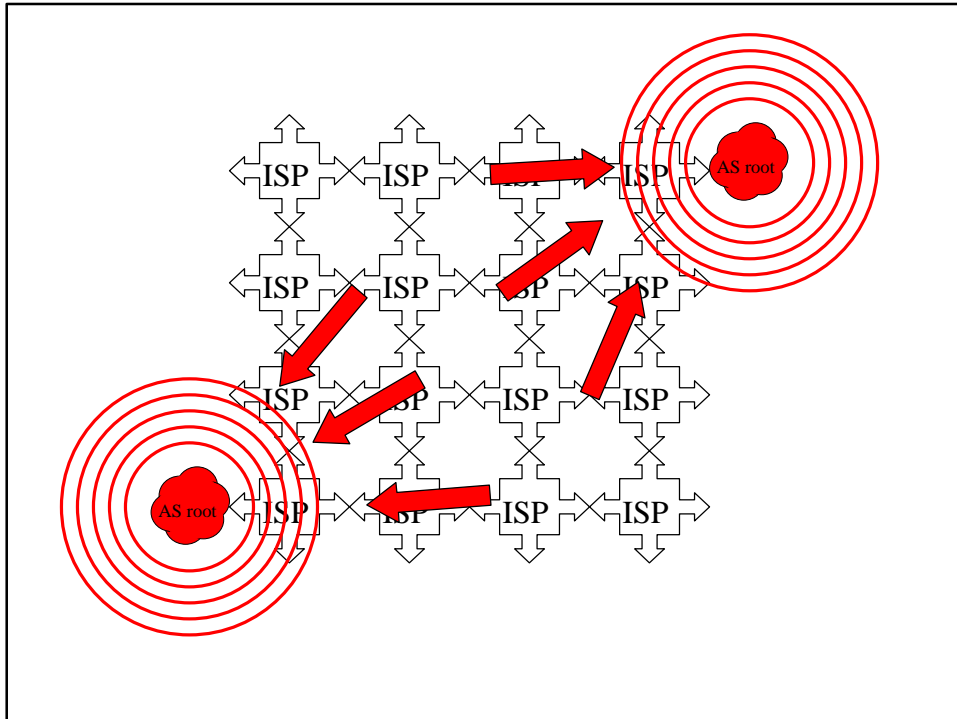
What is anycast?

- A way to install more servers in more places.

Why anycast?

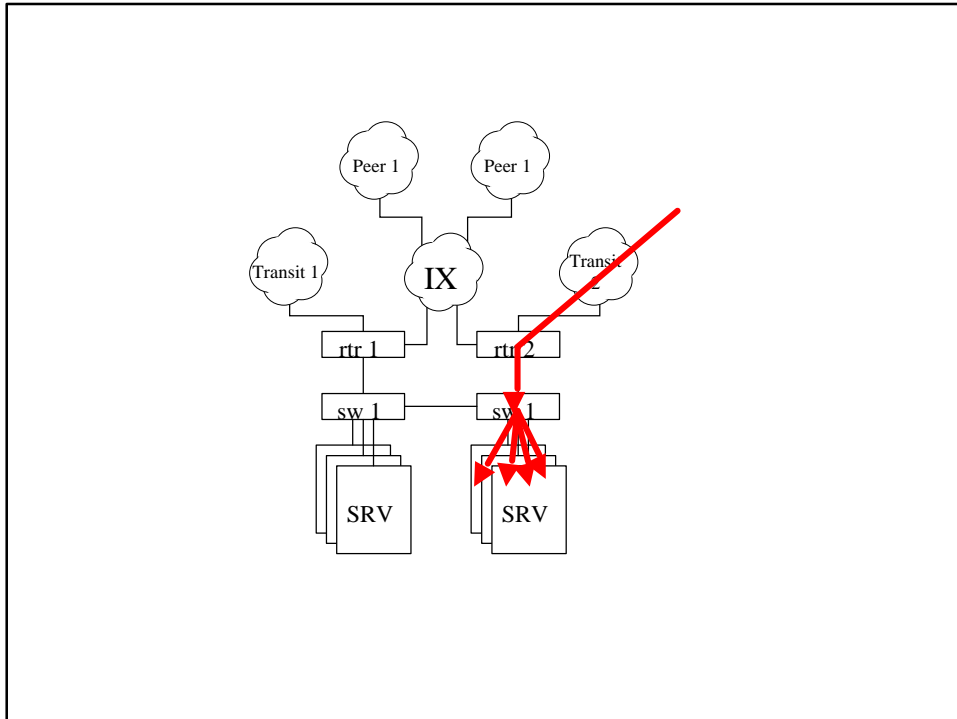
- Better service to more users.
- Mitigates impact of distributed denial of service attacks (DDoS).





## Local anycast

- Load balancing
  - Queries are spread over several servers in same installation.
  - Nearly all instances do this now.



## Current anycast situation

- Currently 7 of 12 root server administrators are doing anycast in some form.
  - M has been doing this since 1998.
  - Not particularly dangerous – lots of experience.

## List of plans

- C Cogent: in their datacenters at the edges.
- F ISC: international exchanges. 21 sites in pipeline. One transit instance, everyone else is peering, which gives localised failure.
- G DISA: survivable service for parent org.
- I Autonomica: plans for about 10 instances world wide.

## List of plans

- J Verisign: colocated with their gTLD server nodes.
- K RIPE NCC: do AMSIX/LINX first, then add more in Europe.
- M WIDE: more in East Asia.

## IPv6

- IPv6 transport proposal draft.
  - Written by Akira Kato (M).
- We are stuck with old 512 byte limit (RFC 1035).
- Can fit only two AAAA records (v6 addresses) and remain below 512 bytes.

## IPv6

- Use IPv4 style anycast services for these two AAAAs.
- Will need to add to the root-servers.net zone.
- Goal: AAAA records for all servers.
- More AAAA records require EDNS (Extended DNS).

## Delegation response size

- Draft proposal written by Paul Vixie (F) and Akira Kato (M)
- Also related to 512 bytes limit.
- Responses include a copy of the query.
  - The larger the query, the smaller the delegation information.

## Delegation response size

- TLD operators can use the common "name hack" to increase the number of servers.
  - Naming all servers in same domain, like for the root servers: [a-m].root-servers.net.
- Adding AAAA will impact the response.
- What should we do with mixed A/AAAA replies?
  - generally push A first, then AAAA?
  - Sort by transport?

## IDN

- Open interoperability testing May 28-30.
  - Working with the community on testing.
- Will impact response size, even more than existing or contemplated techniques.
- There is a potential impact of ambiguous interpretation of the label separator.
  - Not "." everywhere?
  - Will lead to more strange queries to the root servers.
- We already see more traffic due to new queries with IDN encoding.

## Report available at

[http://www.autonomica.se/liman/  
presentations/icann/](http://www.autonomica.se/liman/presentations/icann/)