# RIPE
# Policy Development Process
# A Case Study

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# Overview

- Background

- Why a change was needed

- Initial ideas over the problem

- Proposal

- PDP Phases and Discussions

- Benefits

- Conclusions

# Case: Anycasting Assignments

- Background

  - DNS runs in a hierarchy and all levels need to be reachable

  - cc/gTLDs sit on the top in this tree (such as ".uk", ".nl", ".org")

  - More people in Internet over the years resulted in more DNS queries on cc/gTLD name servers

  - So number and diversity of name servers has been increased

  - Anycasting Technology allows the same IP to be used on several name servers that are in different locations

  - Anycasting is good for stability and redundancy – helps to reduce the impact of DoS (Denial of Service) attacks

  - Anycasting requires independent address space due to different peerings in different locations for the same IP address

# Background: Summary

- Anycasting is a popular solution for cc/gTLDs for better DNS

- cc/gTLDs need independent address space to use it

- Routability is a factor

  - In todays Internet, less than a /24 (256 IPs) has a risk to be filtered

# Why a change was needed

- Policy at the time applied in all cases:
  - Assignments should be justified
  - Justification is based on the number of IP addresses to be actually used
  - Size of the assignment is based on this demonstrated need

- Problem for cc/gTLDs
  - They needed minimum 256 IPs (a /24) to ensure global reachability
  - But they needed just a few IP addresses to be used on name servers
  - So they were not able to justify and receive a /24

# Building the proposal

- Problem raised in RIPE 47

- Solution: Build a specific policy

- Proposer collected feedback

- Revised the initial idea with further details

    - Fine tune criteria

    - Make it to be a selective policy

    - Clearly define how much space is under discussion

# PDP

- Proposal published

- Initial discussions took place
  - Discussion Phase (on Mailing list and the RIPE meetings)

- Draft policy document published
  - Documentation

- Discussions over the drafted document took place
  - Review Phase

- Last Call
  - Concluding Phase resulting with consensus

# Discussion Points

- Principles revisited

  - Conservation

  - Aggregation

  - Registration

- Careful analysis of the proposal made during discussions by the community

- Community decided that

  - Everyone will benefit from better DNS

  - Address consumption impact is minimum

    - Single /24 (256 IPs) per TLD operator

  - Extra routes impact is minimum

# Policy is changed

- Announcements made

  - policy-announce@ripe.net

- Active since September 2006

  - Documented in ripe-387 (obsoleted ripe-368)

  - Specific policy only for anycasting cc/gTLDs

  - cc/gTLDs can receive a single /24 to use only for Anycasting name servers

  - They need to justify that anycasting is required for their DNS setup

    - Criteria based on IANA Administrative Procedure for Name Server Delegation
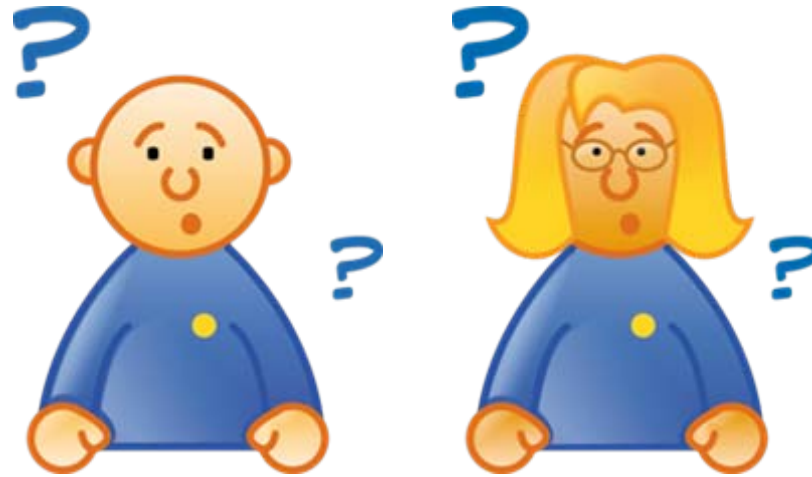
# Benefits

- cc/gTLDs can get space that will be routable

- More name servers can be run diversely in different locations

- Less impact of a DoS attack on name servers

- More redundancy and stability in DNS

- Better reachability for overall Internet and its users

- Awareness in the technology raised

# **Conclusion**

- Industry environment and business requirements change

- PDP is a bottom-up process

- It is there to meet this demand for change

- So do the policies do change

- But the principles remain the same

- Many policies stayed stable since the beginning

# References

- http://www.ripe.net/ripe/docs/

- http://www.ripe.net/ripe/docs/ipv4-policies.html

- http://www.ripe.net/ripe/policies/proposals/

- http://www.ripe.net/ripe/policies/proposals/archive/

- https://www.ripe.net/ripe/maillists/archives/policy-announce/

- https://www.ripe.net/ripe/maillists/archives/address-policy-wg/index.html

- http://www.ripe.net/ripe/meetings/archive/index.html

- https://www.ripe.net/ripe/docs/pdp.html

# **Questions?**