Anycasting and the root-servers

Vancouver, Canada
ICANN Meeting
What is Anycasting

• In the case of the root-servers it is the replication of server systems in multiple peering locations.
• Users see same service address everywhere
How the root is different

• The one thing everybody needs, no matter what gTLD or ccTLD is popular among a particular community of interest

• Attractive attack target….often inadvertently
  – 90%+ of root query traffic is the result of error or misconfiguration on a normal day.
Technical/Operational Reasons

• Additional capacity
• Localisation of “issues”
  – Attack response
  – Maintenance
• Service improvement (Faster replies)
“Interesting” Reasons

• Politics
  – Solving the issue of centralisation of the roots in one geographical area.
  – Trophy collecting.

• Economics
  – Value-add for local operators
What does a root anycast instance look like

• Main forms of anycasting
  – Visible within limited topology
    • Only to those connected to an exchange
    • Using “No Export”
  – Globally visible

• Management by root-server operator
  – Partnership: local support, operator responsibility
Originally all Root Servers in USA
Root Servers added to j-m
Will this continue?

- The number of root servers is growing.
  - As Internet continues to grow, so does the need for good DNS service
  - More than 70% are now situated outside the USA.

So probably….yes!
How do we get one?

• Talk to a root-server operator.
  – Is clear from www.root-servers.org who is anycasting.
  – There are requirements for hosting a server.
    • Talk to the operators to get details of their requirement set.
    • It’s ok to have more than one server ;)