

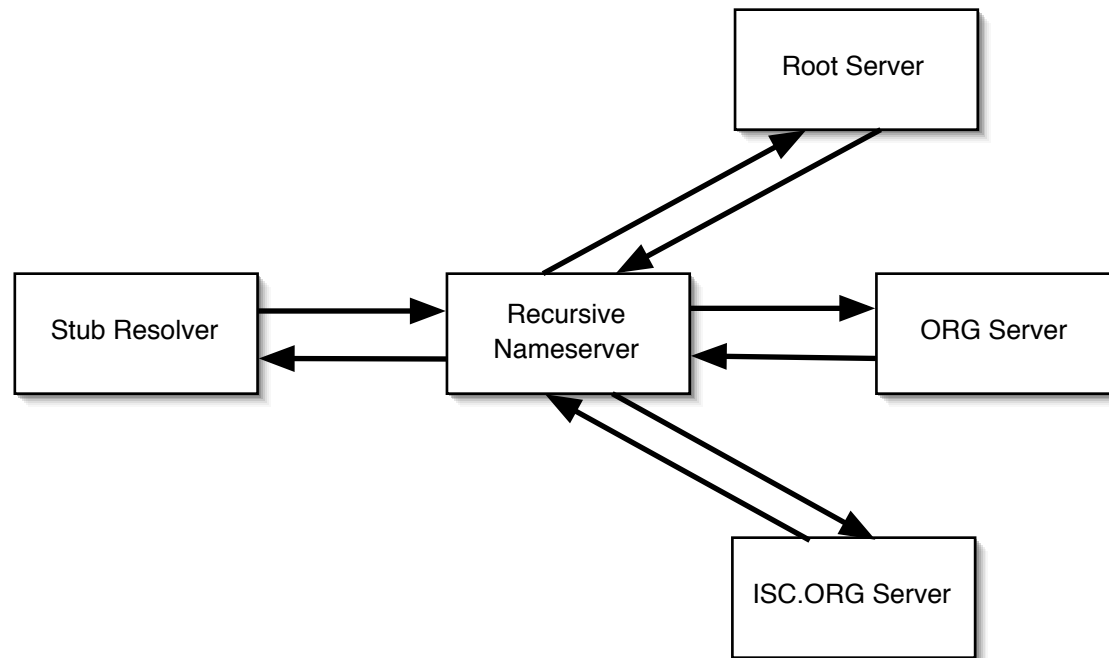


# f.root-servers.net

NZNOG 2005 Lightning Talks

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# How DNS Works (in one slide)



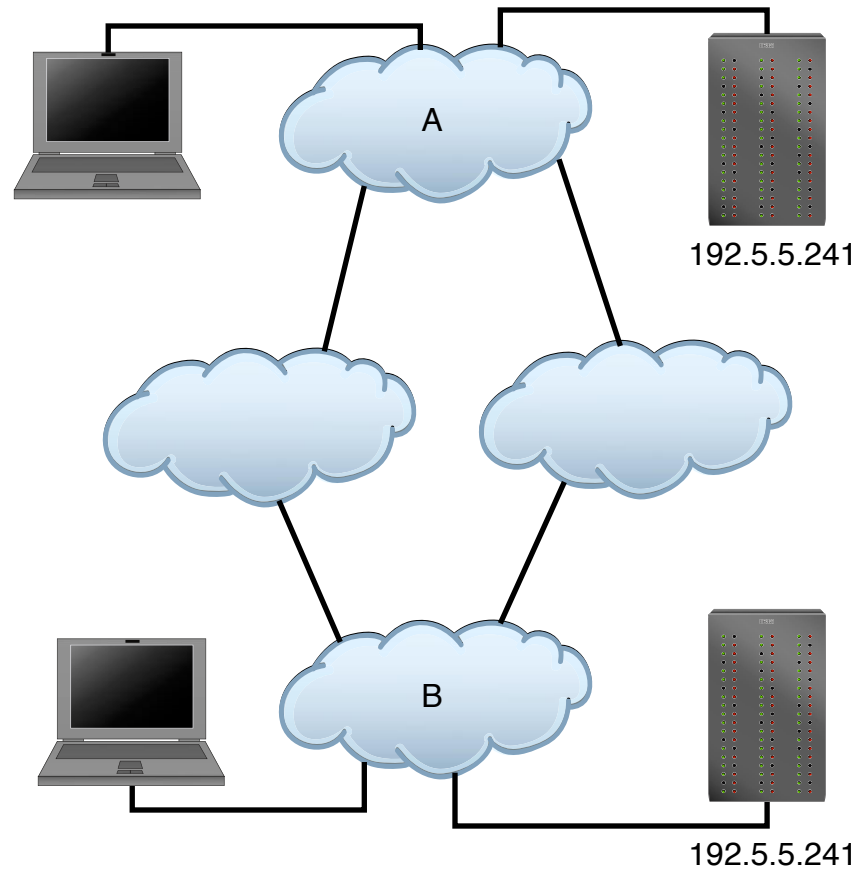
# The Root Servers

A.ROOT-SERVERS.NET	Verisign Global Registry Services	Herndon, VA, US
B.ROOT-SERVERS.NET	EP.Net	Marina del Rey, CA, US
C.ROOT-SERVERS.NET	Cogent Communications	Herndon, VA, US
D.ROOT-SERVERS.NET	University of Maryland	College Park, MD, US
E.ROOT-SERVERS.NET	NASA Ames Research Centre	Mountain View, CA, US
F.ROOT-SERVERS.NET	Internet Systems Consortium	Various Places
G.ROOT-SERVERS.NET	US Department of Defence	Vienna, VA, US
H.ROOT-SERVERS.NET	US Army Research Lab	Aberdeen, MD, US
I.ROOT-SERVERS.NET	Autonomica	Stockholm, SE
J.ROOT-SERVERS.NET	Verisign Global Registry Services	Herndon, VA, US
K.ROOT-SERVERS.NET	RIPE	London, UK
L.ROOT-SERVERS.NET	IANA	Los Angeles, CA, US
M.ROOT-SERVERS.NET	WIDE Project	Tokyo, JP

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- Has a single IP address (192.5.5.241)
- Requests sent to 192.5.5.241 are routed to different nameservers, depending on where the request is made from
- this behaviour is transparent to devices which send requests to F

# Anycast Routing



# Hierarchical Anycast

- Some of the F root nameserver nodes provide service for 192.5.5.241 to the entire Internet (global nodes)
  - very large, well-connected, secure and over-engineered nodes
- Others provide service for 192.5.5.241 to a particular region (local nodes)
  - smaller

# Deployment Status

- First local node deployed was Madrid, in late 2002
- F arrived at the APE in July 2003
- We have 28 nodes deployed today

# Asia Pacific

Site Code	Location	IPv4/IPv6	Node Type
AKLI	Auckland	IPv4	Local Node
BNEI	Brisbane	IPv4	Local Node
CGKI	Jakarta	IPv4	Local Node
HKGI	Hong Kong	IPv4	Local Node
KIXI	Osaka	IPv4 and IPv6	Local Node
PEKI	Beijing	IPv4	Local Node
SELI	Seoul	IPv4 and IPv6	Local Node
TPEI	Taipei	IPv4	Local Node



# Americas

Site Code	Location	IPv4/IPv6	Node Type
AKLI	São Paulo	IPv4	Local Node
LAXI	Los Angeles	IPv4 and IPv6	Local Node
LGAI	New York	IPv4 and IPv6	Local Node
MTYI	Monterrey	IPv4	Local Node
PAOI	Palo Alto	IPv4 and IPv6	Global Node
SFO2	San Francisco	IPv4 and IPv6	Global Node
SQLI	Redwood City	IPv4 and IPv6	Local Node
SJCI	San Jose	IPv4	Local Node
YOWI	Ottawa	IPv4 and IPv6	Local Node
YYZI	Toronto	IPv4	Local Node

# Rest of World

Site Code	Location	IPv4/IPv6	Node Type
CDGI	Paris	IPv4 and IPv6	Local Node
DXBI	Dubai	IPv4	Local Node
JNBI	Johannesburg	IPv4	Local Node
LISI	Lisbon	IPv4 and IPv6	Local Node
MADI	Madrid	IPv4	Local Node
MUCI	Munich	IPv4 and IPv6	Local Node
PRGI	Prague	IPv4	Local Node
ROMI	Rome	IPv4	Local Node
SVOI	Moscow	IPv4	Local Node
TLVI	Tel Aviv	IPv4	Local Node

# Which Node?

- `traceroute f.root-servers.net`
- `traceroute6 f.root-severs.net`
- `dig @f.root-servers.net  
hostname.bind chaos txt`

# AKLI

- We are on the APE – to peer, send your details to [peering@isc.org](mailto:peering@isc.org)
- We have dedicated ports available in order to connect to other people who for some reason don't want to use the APE



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