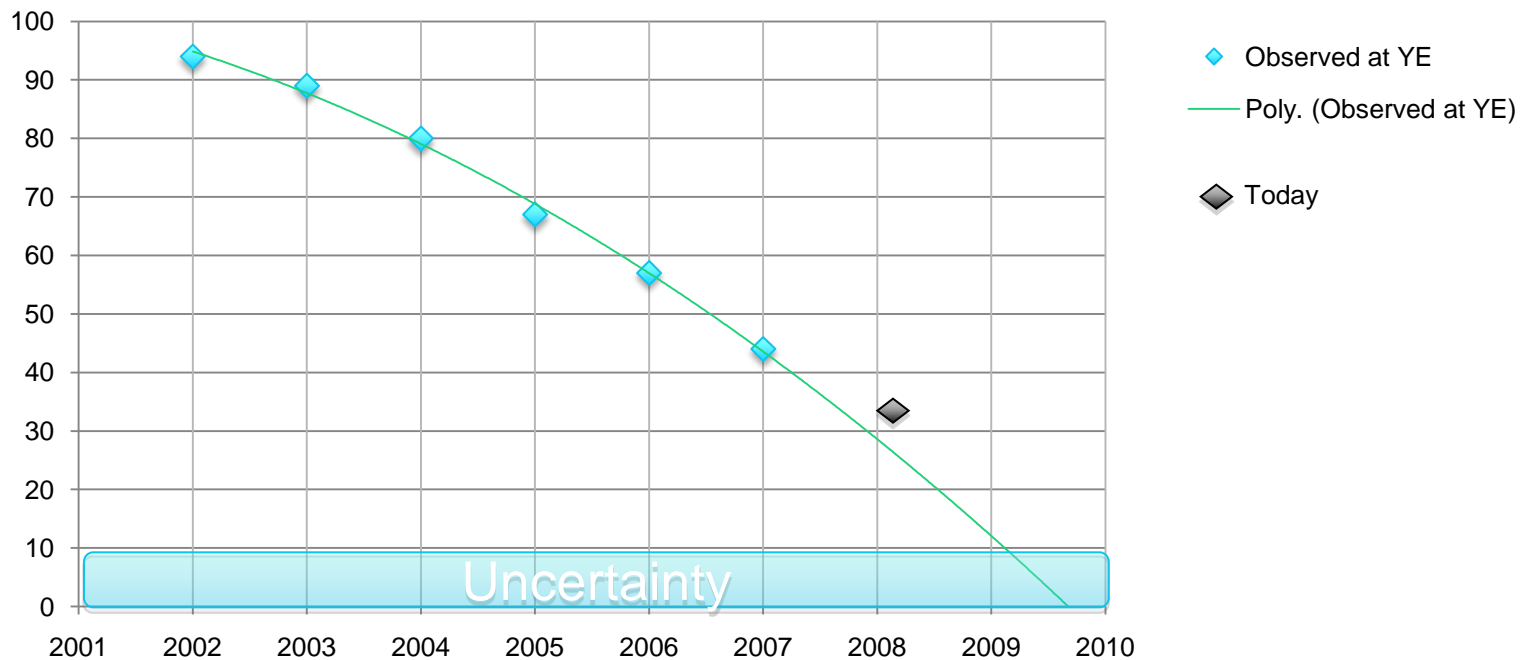


Dual-Stack lite: a scalable CGN story

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June 17th, 2009

IPv4 reality check: completion of allocation is real



After completion:

Existing IPv4 addresses will not stop working.
Current networks will still operate.

IPv6 reality check: the IPv4 long tail

- Post IPv4 allocation completion:
 - Many hosts in the home (eg Win 95/98/2000/XP, Playstations, consumer electronic devices) are IPv4-only.
 - They will not function in an IPv6-only environment.
 - Few of those hosts can and will upgrade to IPv6.
 - Content servers (web, email,...) hosted on the Internet by many different parties will take time to upgrade to support IPv6.

Dealing with both realities: a two prong approach

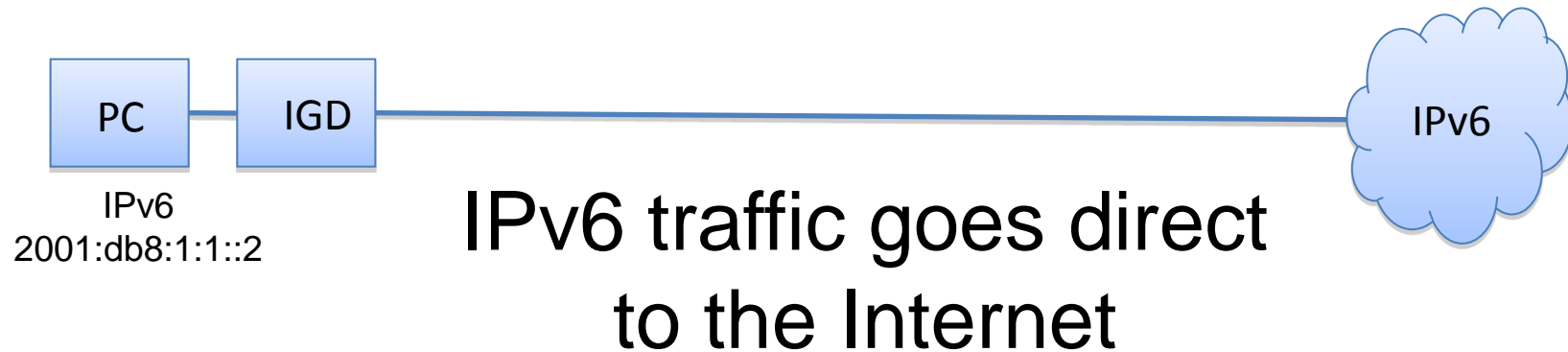
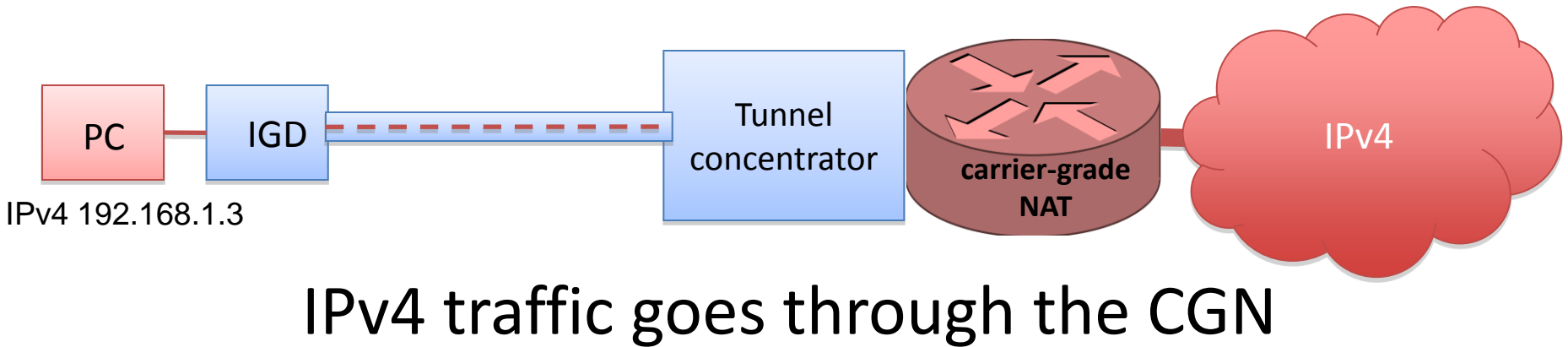
① Embrace IPv6

- Move as many devices/services to IPv6 as possible to lower dependency on IPv4 addresses

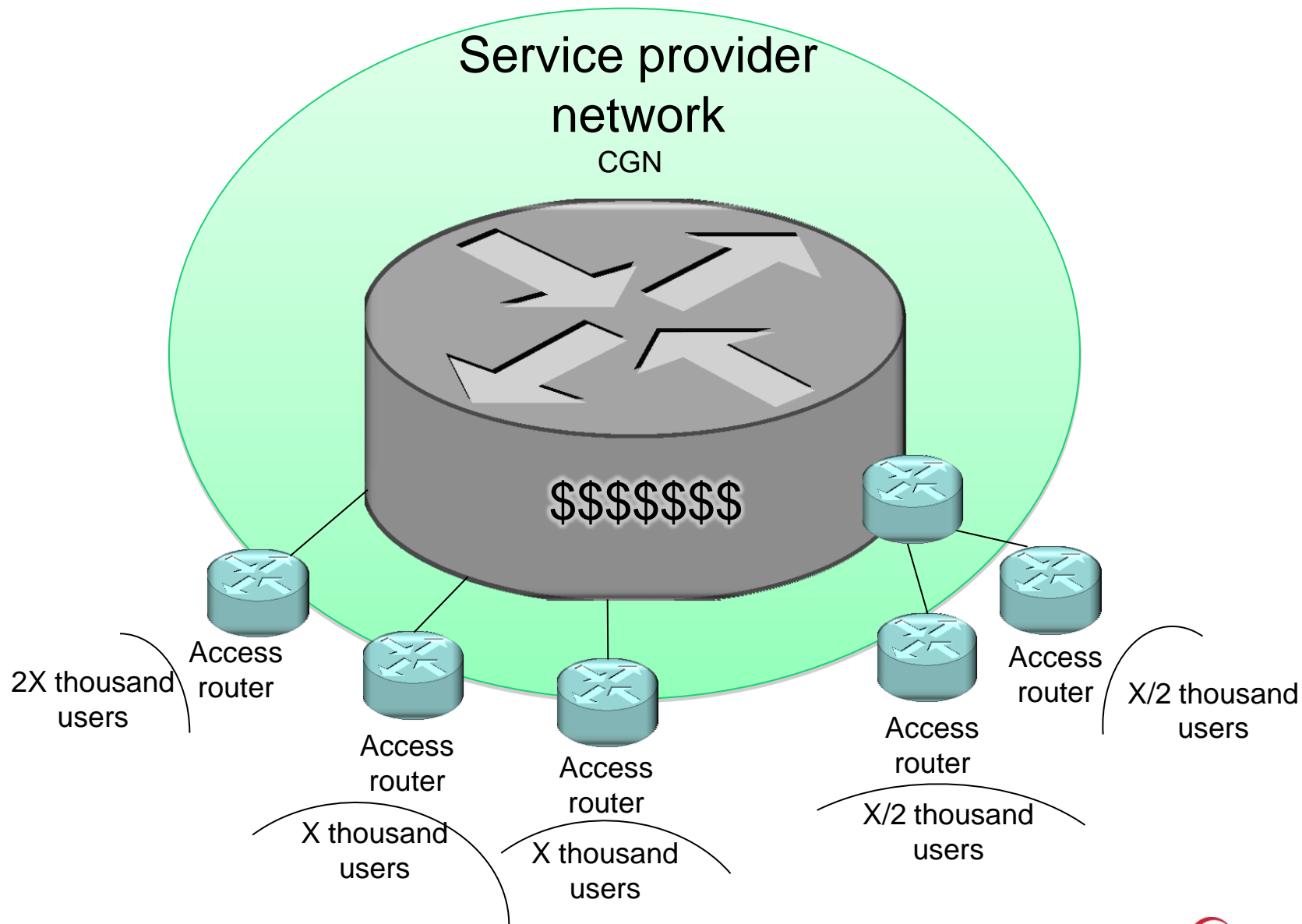
② Build an IPv6 transition bridge for the IPv4 long tail

- Goal:
 - Provide IPv4 service without providing a dedicated IPv4 address
- Technology:
 - Leverage IPv6 access infrastructure
 - Provide only IPv6 addresses to endpoint
 - Share IPv4 addresses in the access networks
 - DS-lite: IPv4/IPv6 tunnel + provider NAT

Migrating Internet traffic to native IPv6 reduces stress on the CGN



Avoiding the Mega CGNs



Horizontal scaling with DS-lite

- Uses DHCPv6 option to configure tunnel end-point
- Sends the traffic to as many CGNs as necessary
- Provides flexibility in network design and enable 'soft-wiring' of CGNs

