

# IPv6 multihoming

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## † The problem

- † A client network wants to connect to two providers
  - † Resilience, load balancing, ...
- † It receives addressing space from both providers
- † If it announces both ranges on both links:
  - † the IPv6 routing table explosion is programmed
  - † It will come quicker than in IPv4

# Strategy

- † **KISS (keep it simple & sensible) approach to network multihoming**
- † **Based on well-known technologies**
- † **Simple proof of concept possible today**
- † **But remember**
  - † Just trying to solve the routing problem.

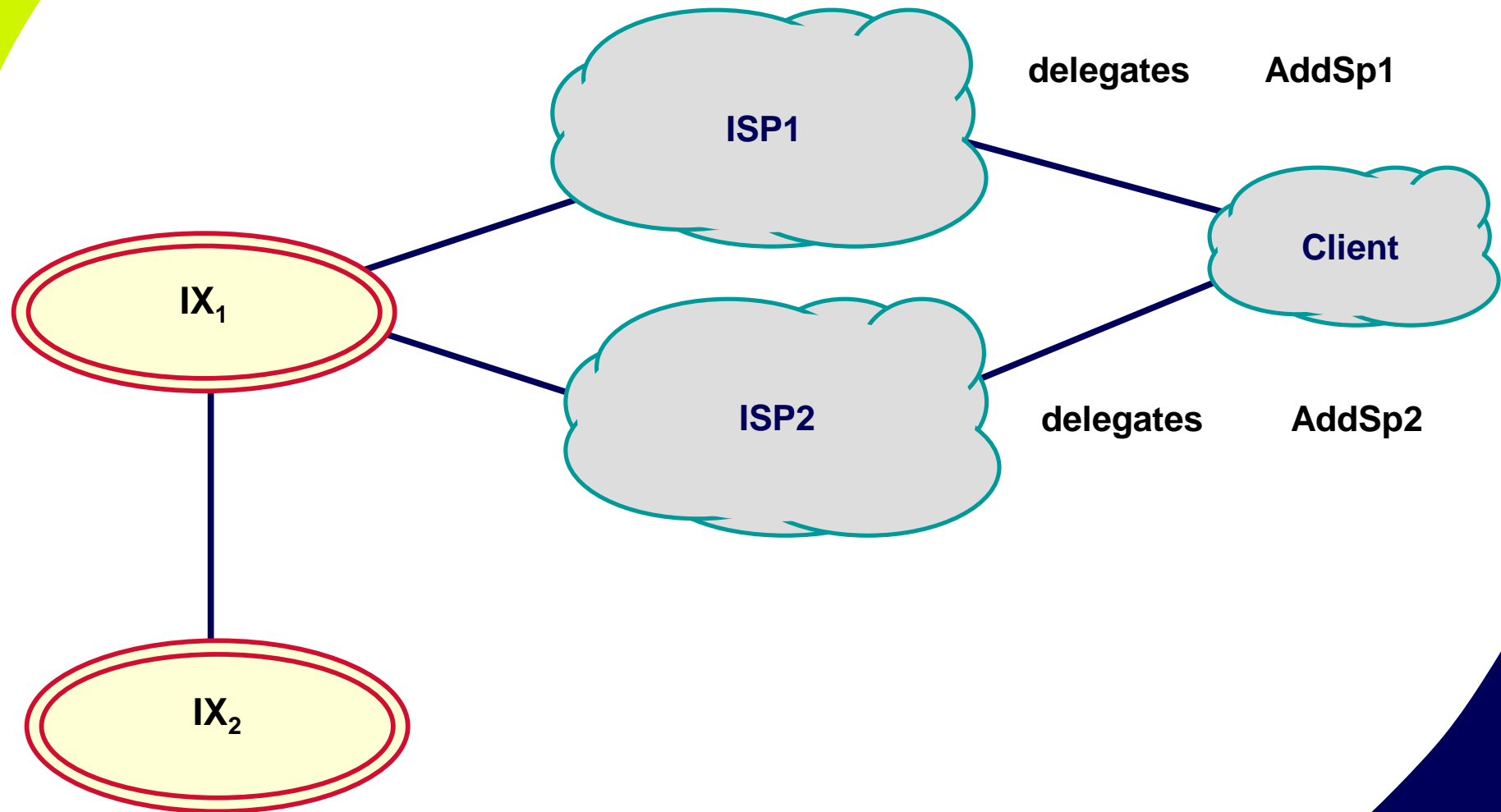
# Precedents

- † **Communities have been used in BGP-4 for a long time to implement routing policies**
- † **Well-known communities (localAS, no-export,...) are used to limit the propagation of an advertisement to an AS, an AS confederation, etc.**

# Proposal

- † **Define an other well-known community value, i.e. 'ipv6-multihomed'**
- † **Tag client advertisements with this community**
  - † We could start with manual configuration for proof of concept
  - † Later define extensions to do this automatically if needed
- † **Define points in the routing hierarchy which will block further propagation of the advertisements tagged with this**
  - † Program filters by hand now
  - † 'Hardwired' in the future (like no-export et.al. now)

# Addressing space delegation

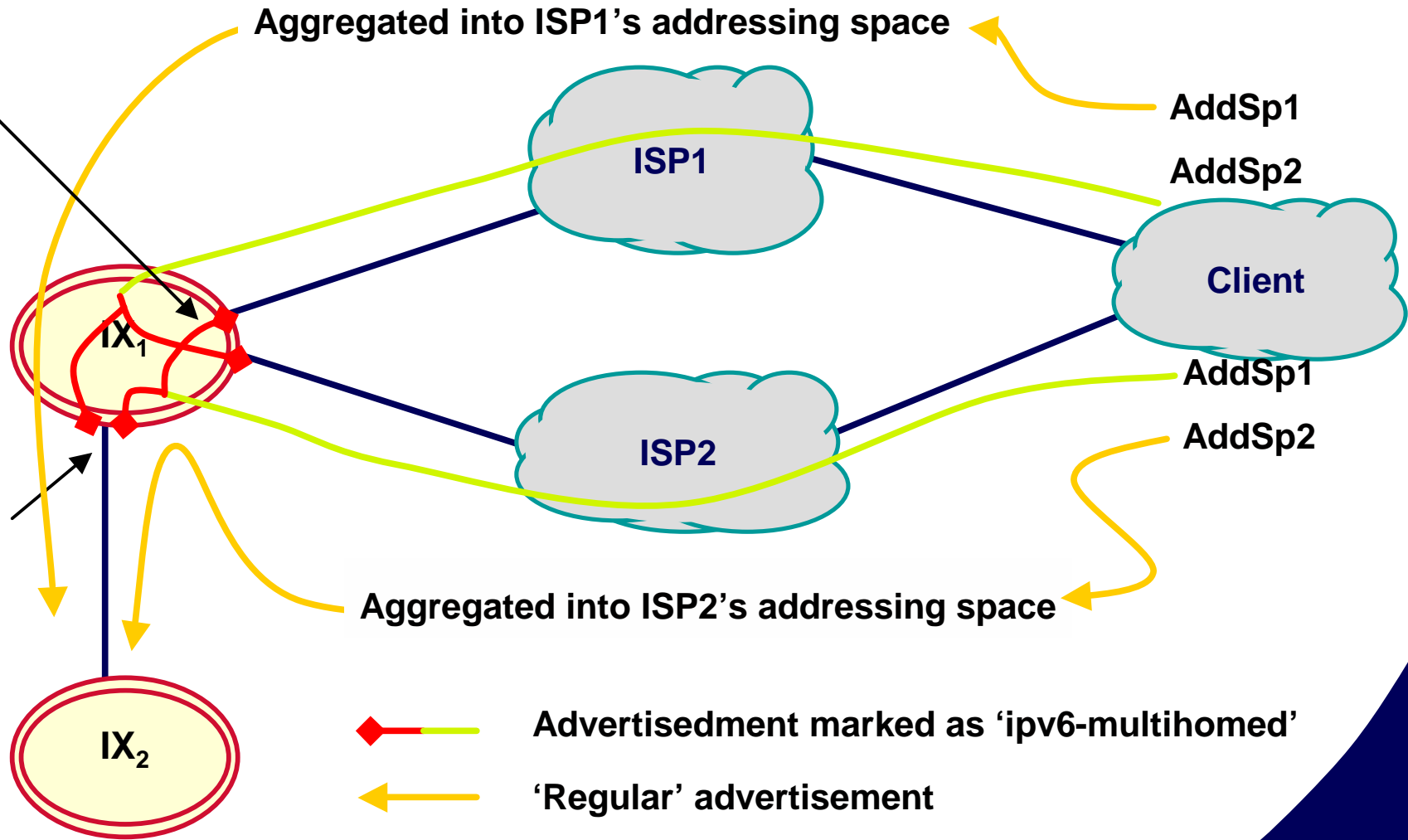


# The strategy

- † **ISP1 delegates AddSp1 to client**
- † **ISP2 delegates AddSp2 to client**
- † **Client advertises **both** delegations through his links and marks multihomed addressing space with 'ipv6-multihomed' community**
- † **These advertisements can progress up to the IX level**
- † **The advertisements marked with 'ipv6-multihomed' community are blocked by the IX's outbound BGP-4 sessions**

# The complete picture: Routing advertisements

Community makes sure the advertisement  
doesn't progress on outbound BGP4 sessions





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