

# **An IPv4 - IPv6 multicast translator**

**draft-venaas-behave-mcast46-00.txt**

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# Overview (1)

- Translates between IPv4 and IPv6 multicast
- Might be placed at border between IPv4-only and IPv6-only networks
- Can also be placed anywhere in a dual-stack network
- IPv4 multicast space embedded into IPv6
- Uses a /96 IPv6 prefix. Last 32 bits are the IPv4 address
- Need one prefix for ASM and another for SSM
- Also a unicast /96 IPv6 prefix for multicast source addresses

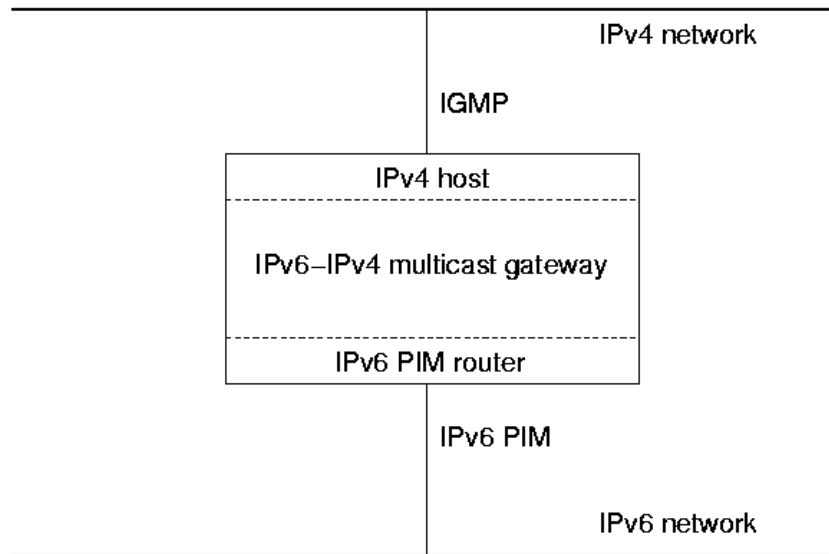
# Overview (2)

- Can serve an IPv6 PIM domain by being RP for the /96 prefix
  - Or “Inter-domain” with use of embedded-RP
  - Could possibly do only MLD to support only a link
- May act only as an IPv4 host
  - Sending translated packets, IGMP joins
- Or can be an IPv4 PIM router
  - Sending PIM joins
  - May use MSDP to only join when active IPv4 sources
- May be an IPv4 RP
  - To know if there are IPv4 receivers
  - Can then translate only when receivers
- Can do SSM (of course without MSDP/RP)

# Overview (3)

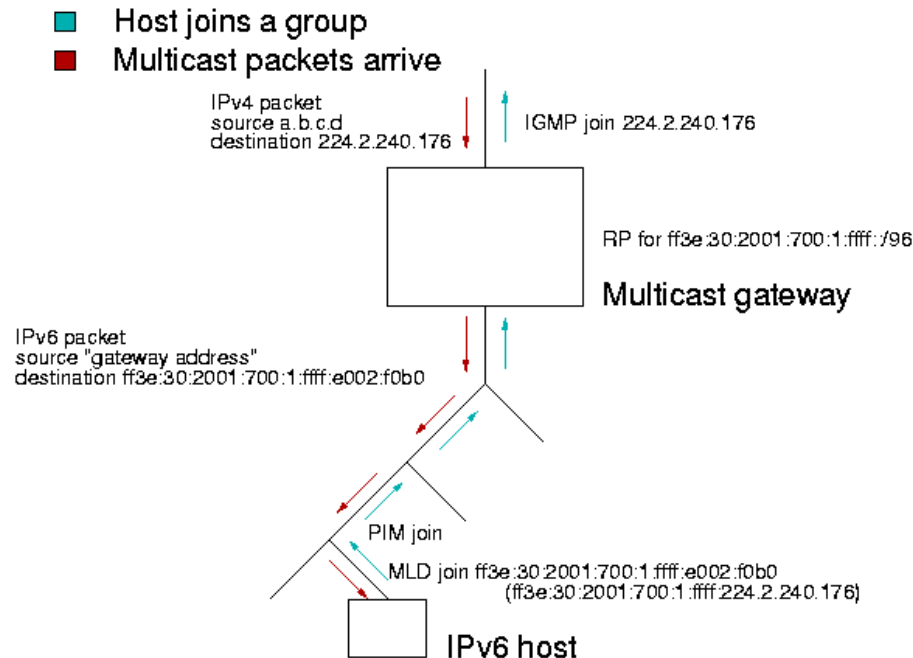
- An IPv6 host can receive data from an IPv4 group a.b.c.d by joining the IPv6 group PREFIX:a.b.c.d
- An IPv6 host can send data to an IPv4 group a.b.c.d by sending to the IPv6 group PREFIX:a.b.c.d
- An IPv6 host can send without joining
- Allows e.g. videoconferencing with IPv4 and IPv6 participants; where all can send to and/or receive from all others

# Example (1)



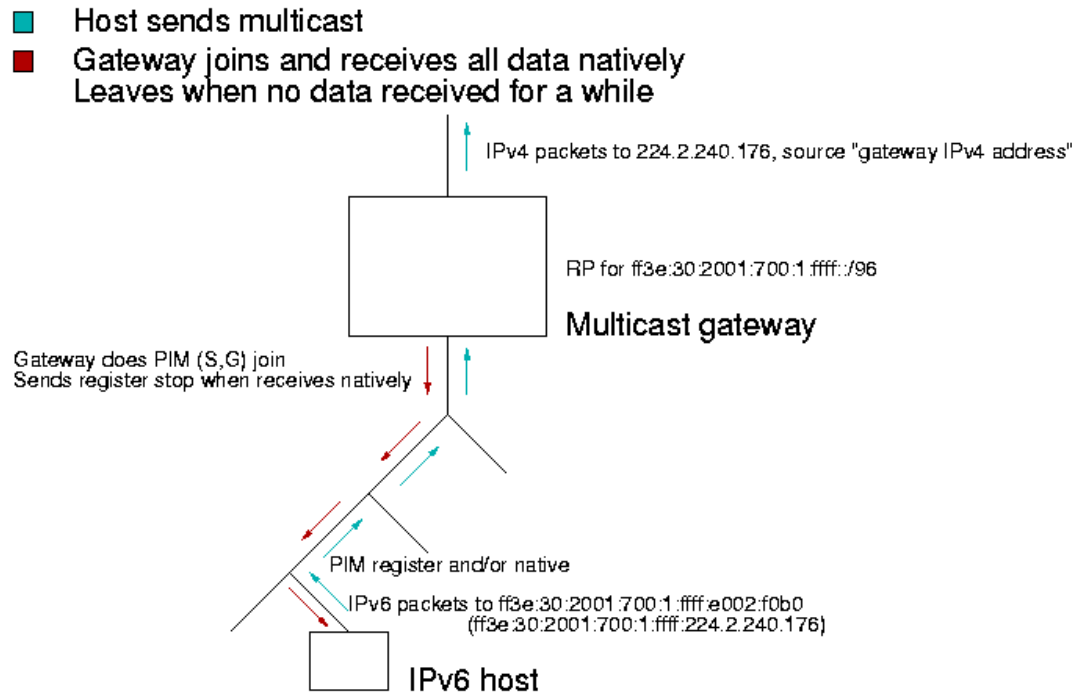
- Consider the case where the translator is:
  - In IPv4: multicast host using IGMP
  - In IPv6: PIM router and RP for some ASM /96 prefix

# Example (2)



- All IPv6 joins in PIM domain reaches the translator
- Translator joins the corresponding IPv4 group
- Translator resends all IPv4 multicast for joined IPv6 groups

# Example (3)



- IPv6 host sends packets to a group
- Translator may join the IPv6 group to receive data natively
- Translator resends all IPv6 packets to the respective IPv4 groups

# Issues/Questions

- As specified the translator only works for IPv6 groups that are inside the /96 ASM/SSM prefix and maps to a valid IPv4 multicast group
- But can address all IPv4 multicast groups
- Allow additional mappings for specific IPv6 multicast groups to IPv4?
  - Override the other mapping or map one IPv4 group to two IPv6 groups?
- Should applications know which prefix is used?
  - They can then use an IPv4 SDP and join the right IPv6 group? How do they know which prefix?
  - Requires application changes
- Could consider translating SDPs etc but this can get very complicated
  - Could work without application changes