

# **BIS & mBIS**

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**Munechika Sumikawa**

(sumikawa@ebina.hitachi.co.jp)

Enterprise Server Division

**Hitachi, Ltd.**

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## ■ What is mBIS?

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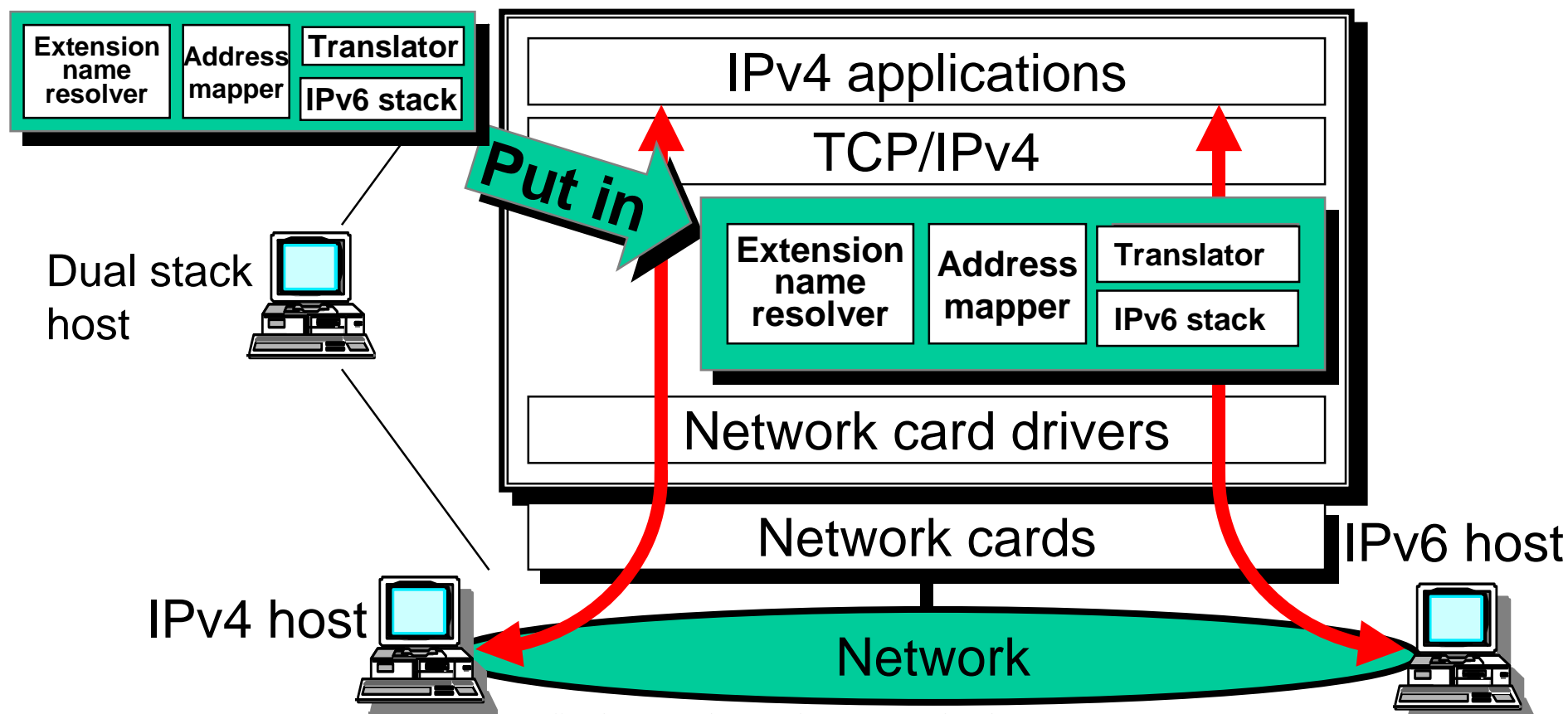
# What is BIS?

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- BIS = Bump In the Stack
  - RFC 2767
- Self translator at the driver level
  - translates IPv4 into IPv6 and vice versa, into the hosts
- Legacy IPv4 host acts as dualstack host
- No modification for legacy IPv4 applications

# Self translator at the driver level

- Host acts as dualstack host
- BIS is used when IPv4 applications connect to IPv6 host



# Component

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## ■ Extension Name Server

- Return temporary IPv4 address only when IPv6 address is returned

## ■ Address Mapper

- Manages IPv4<->IPv6 mapping table

## ■ Translator

- IPv4<->IPv6 Packet converter

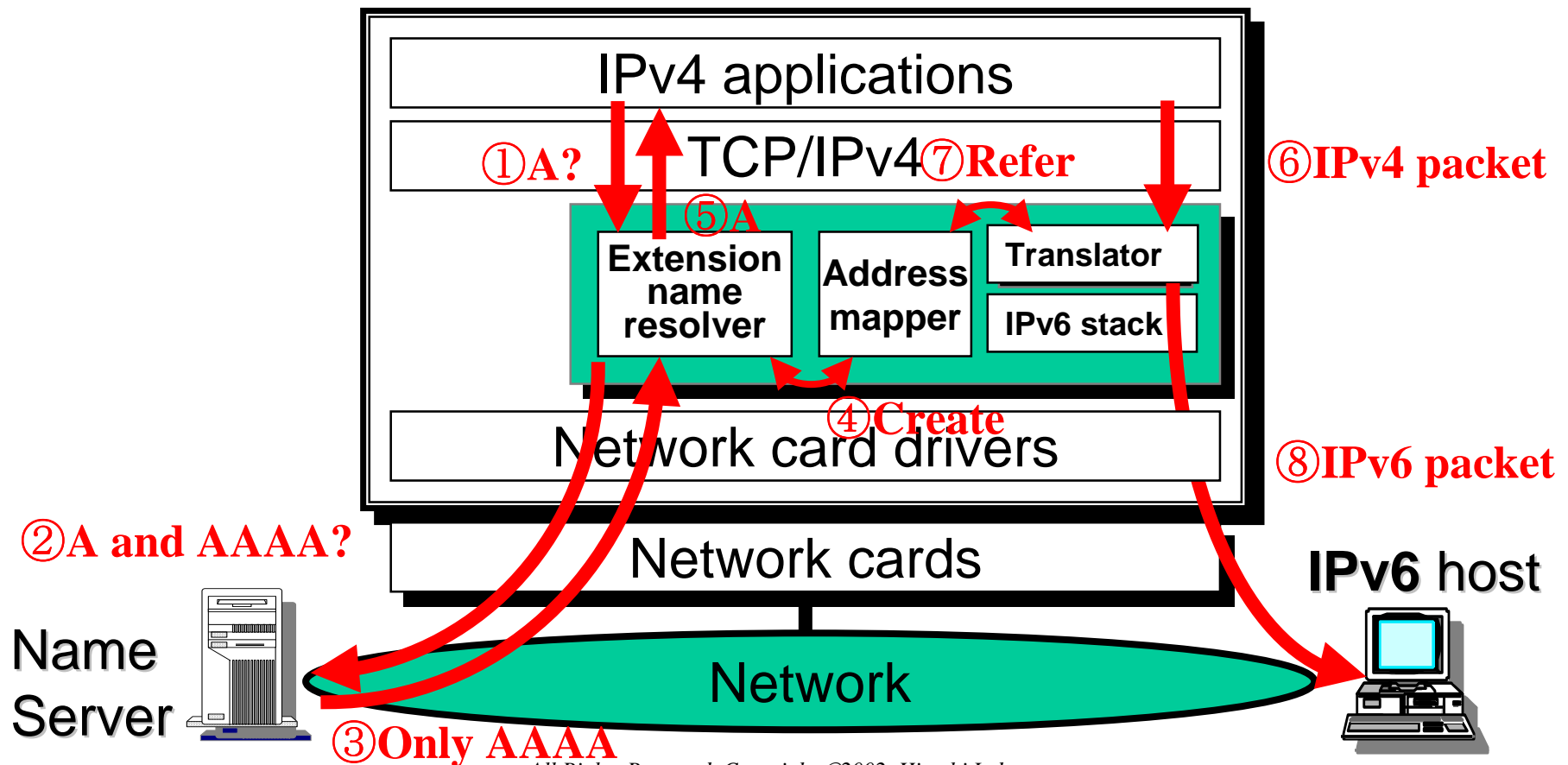
## ■ IPv6 stack

- NDP, etc



# Mechanism

The modules assign IPv4 addresses to IPv6 target hosts' addresses using DNS.



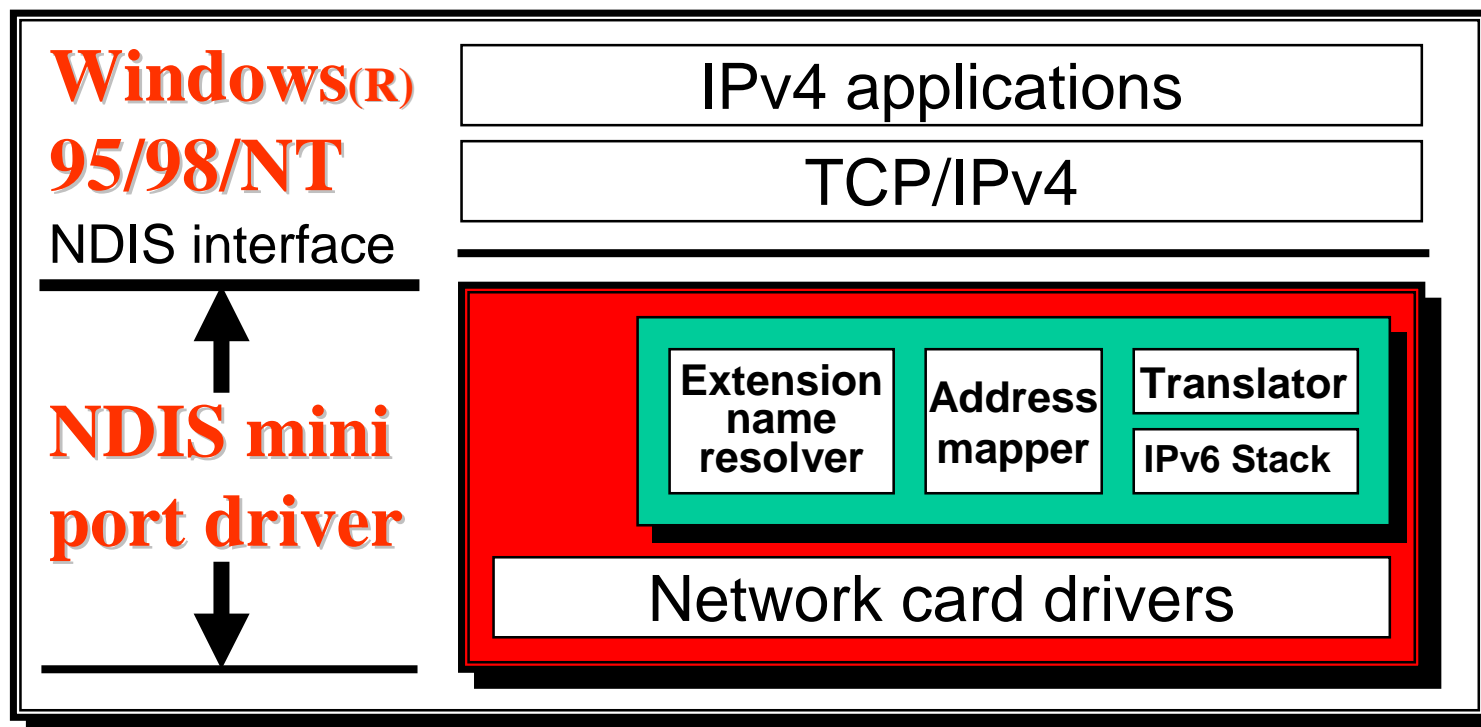
# Toolnet6

## ■ Implementation of BIS

- NDIS driver in Windows 95/98/NT

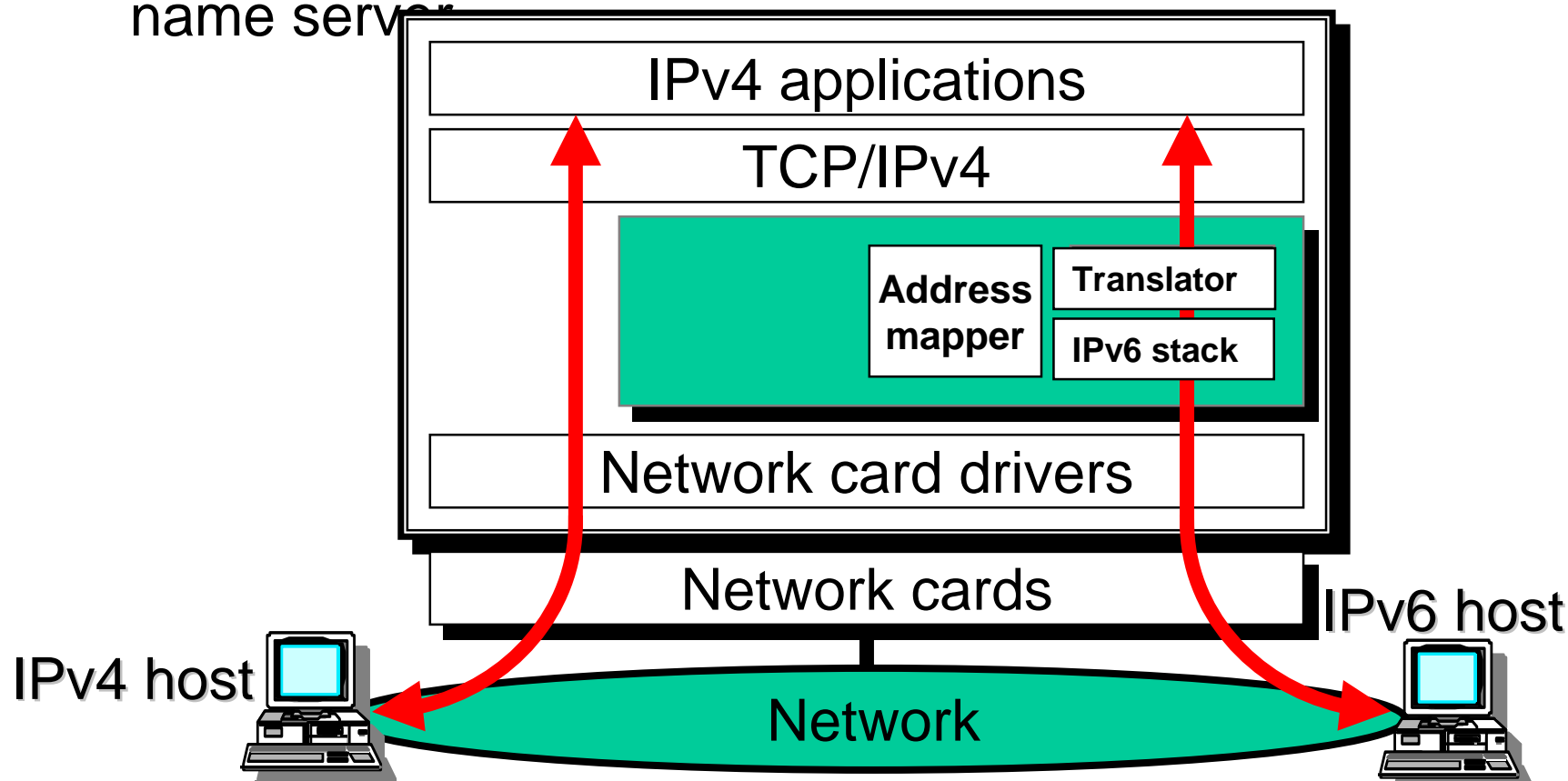
## ■ Free Software

<http://www.hitachi.co.jp/Prod/comp/network/pexv6-e.htm>



# What is mBIS?

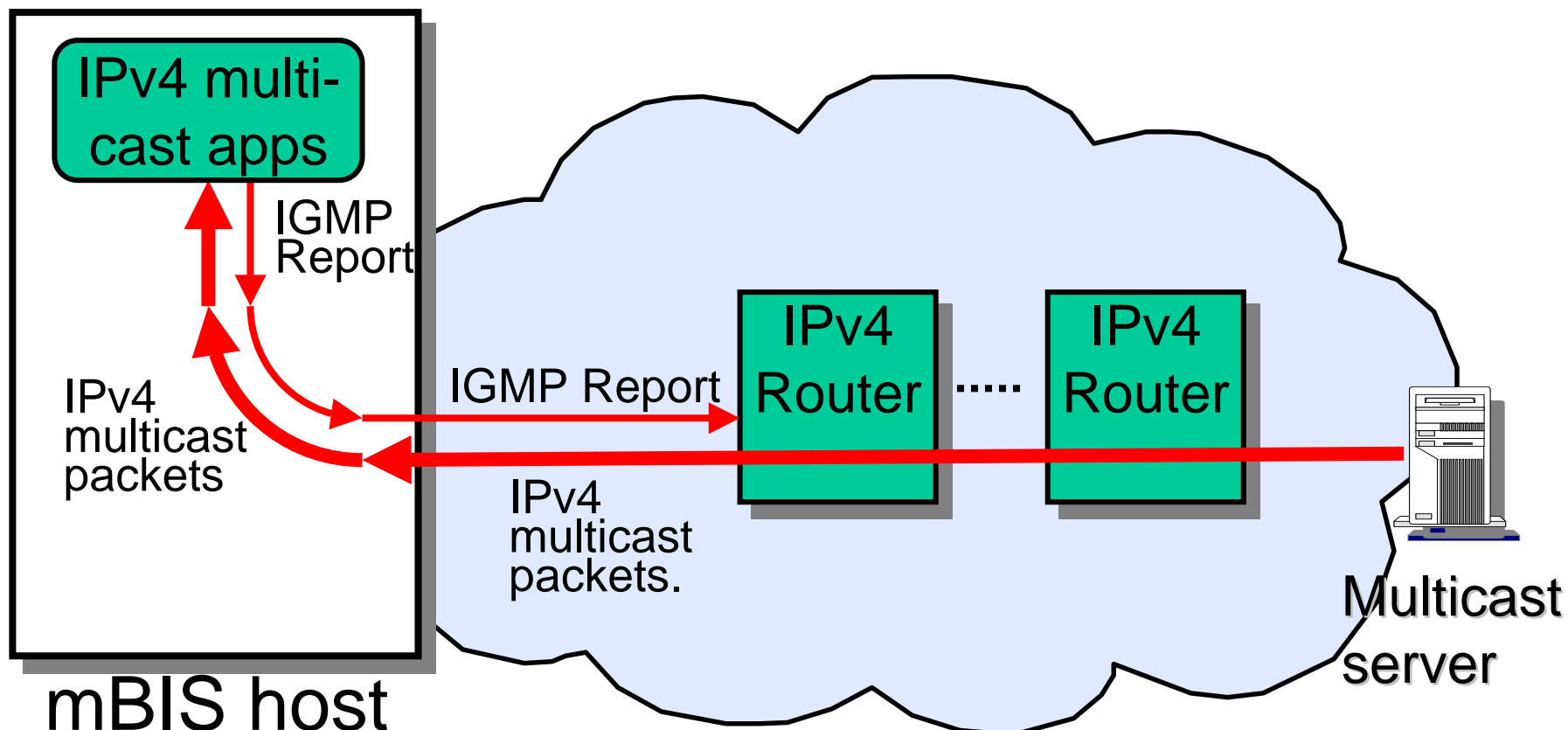
- mBIS = Multicast extensions to BIS
- Under discussion in IETF as Internet-draft
  - Similar components to BIS except for the extension name server





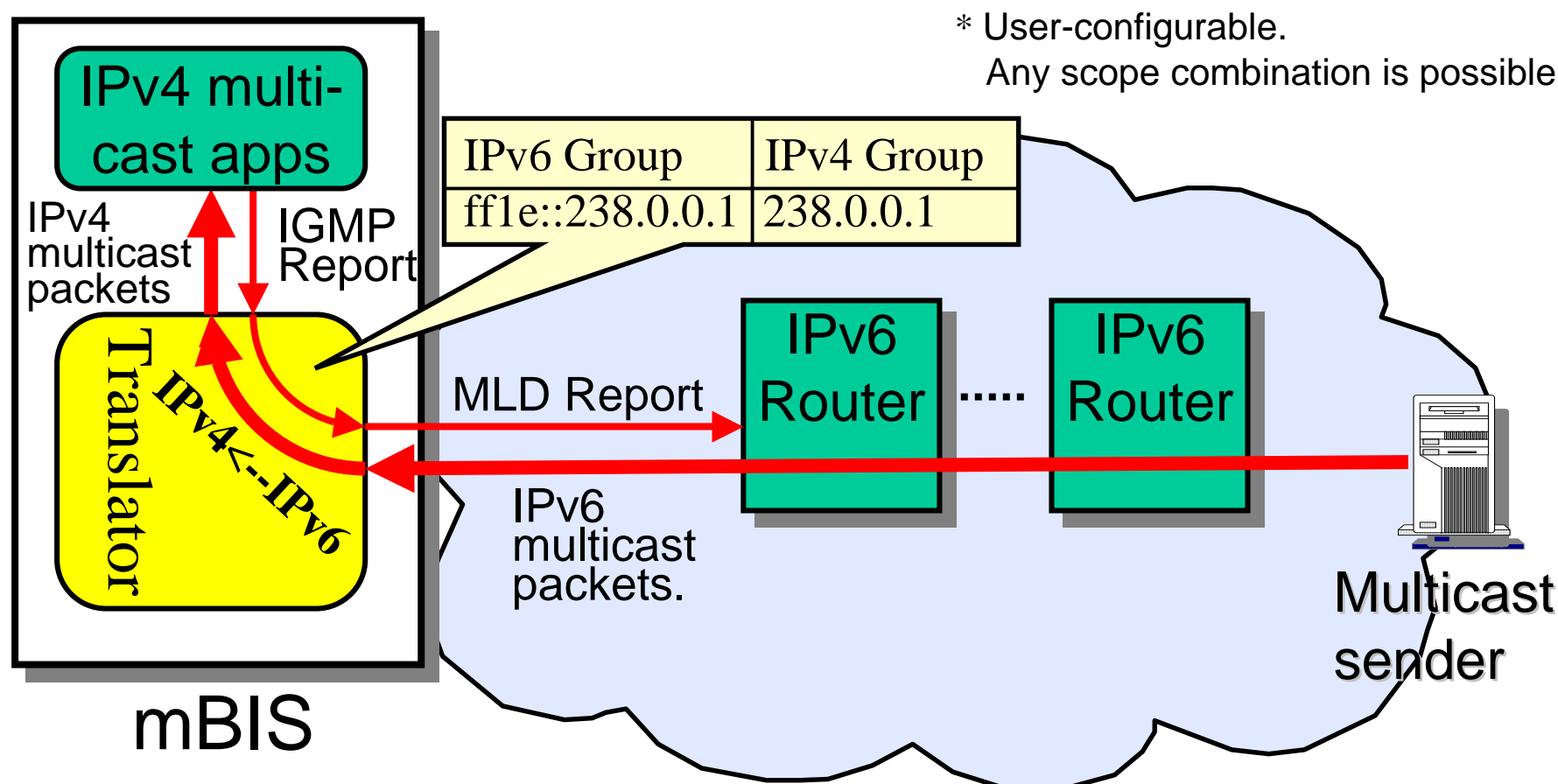
# IPv4 Multicast Inbound Communication

- Normal communication
  - IGMP report sent to IPv4 router
- Skip translator



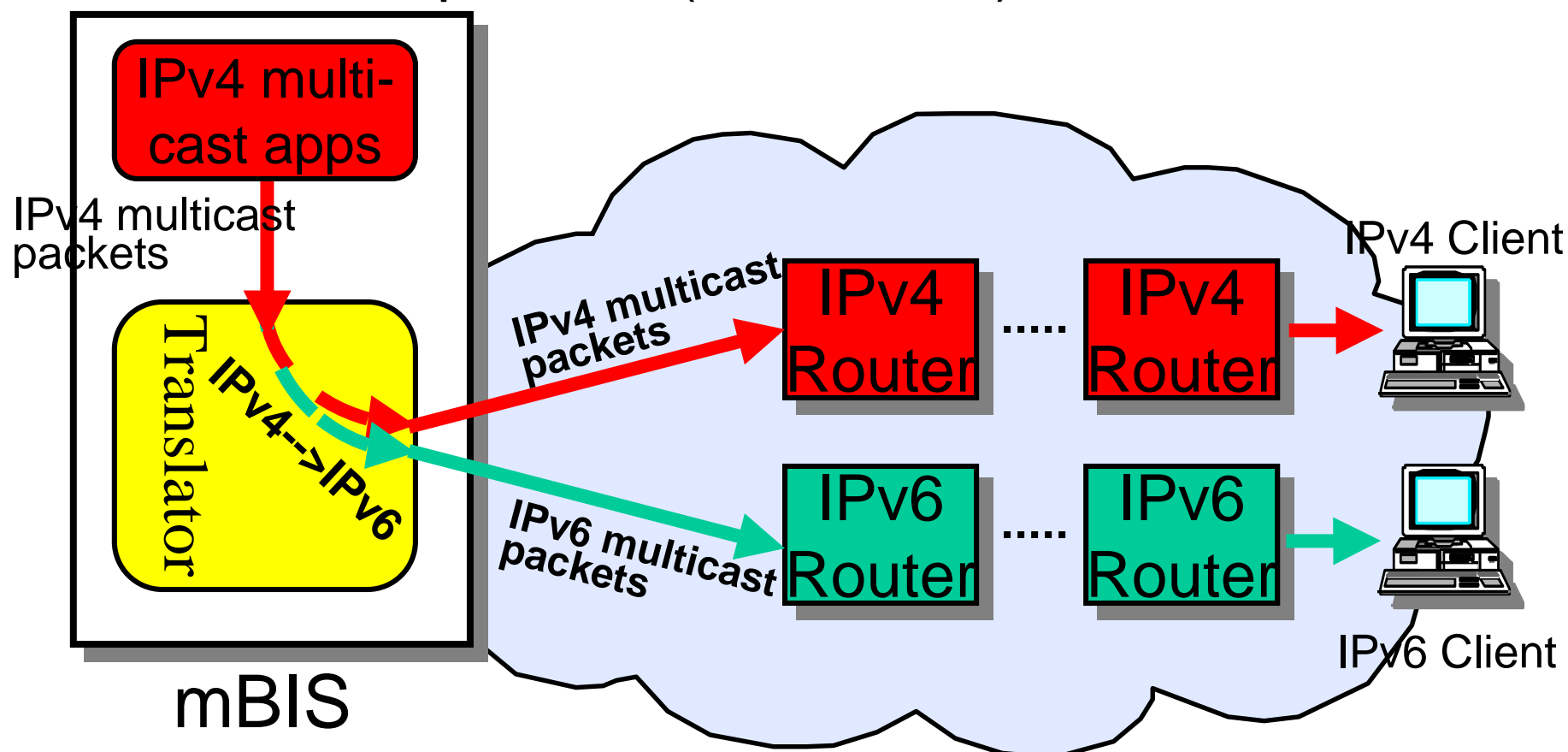
# IPv6 Multicast Inbound Communication

- A translator intercepts an IGMP report, and creates a proper MLD report



# IPv6/IPv4 Outbound Communication

- mBIS can be multicast sender
- mBIS can send IPv4 multicast packets or IPv6 multicast packets (Selectable)



Thank you!

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