Mobility Support in IPv6

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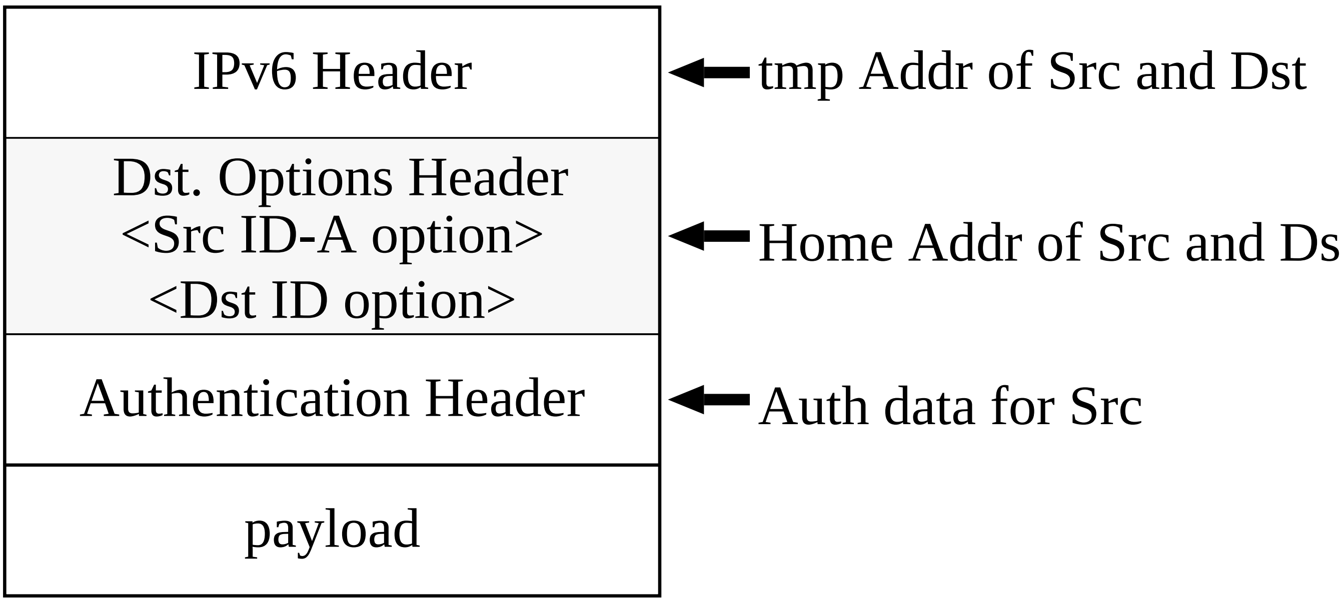
Problems of draft-ietf-mobileip-ipv6-01

- IPv6 base header contains home addr as src addr.
  - MN cannot directly send multicast packets.
  - Firewall discards packets from MN.
  - ICMP packet is not directly forwarded to MN.
- Abuse of Routing Header
  - cannot distinguish src routing packet and packet to MN.
  - New mechanism should be introduced.
- Src/Dst ID options should be introduced in Dst Opt Header.
  - IPv6 base header contains actual addresses (care-of addr) for routing. (unicast & multicast)
  - Src/Dst ID options contain home addr for identifying src/dst nodes.

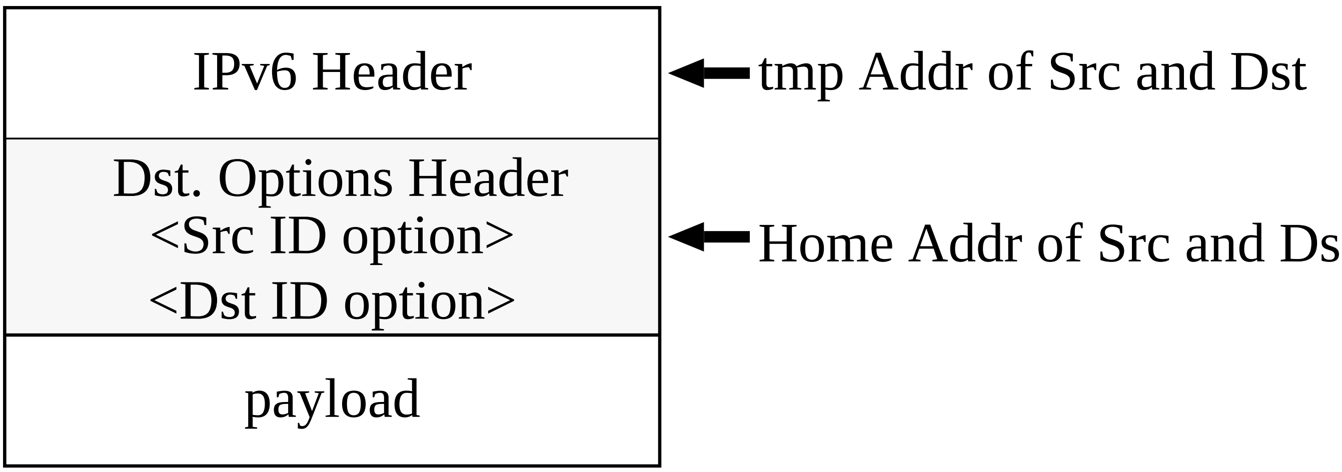
Basic Design

- home address (or ID) and tmp address
  - home address never changes.
  - MN obtains a tmp addr when moved.
- node may have a cache for route optim.
- IPv6 header contains src/dst tmp addresses.
  - used for routing (unicast and multicast)
- src/dst home addr options in Dst Opt Hdr
  - used for identification of src/dst
  - src node authentication
- advantages
  - routing optimization
  - authentic firewall traverse
  - multicast based on DVMRP

Packet Type (1/2)



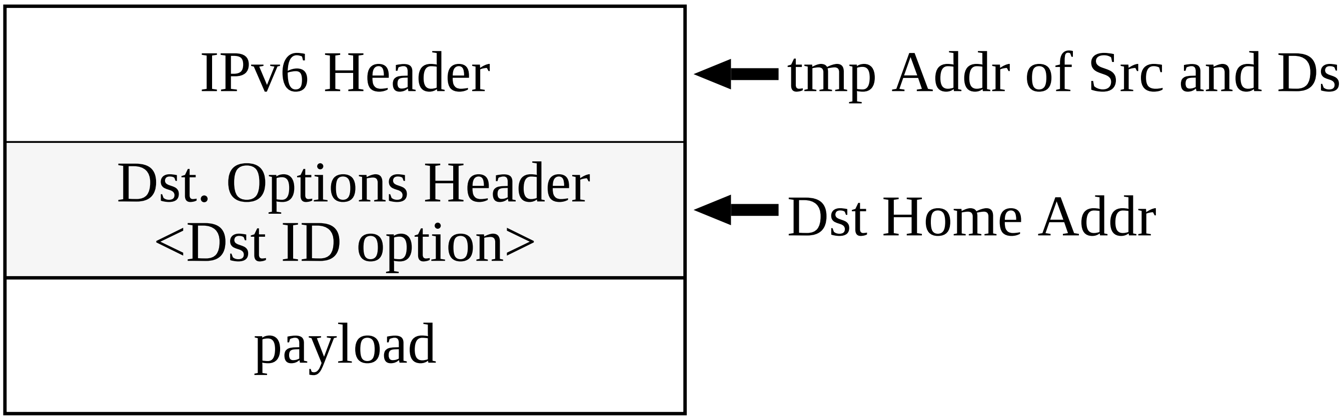
(a) src auth required



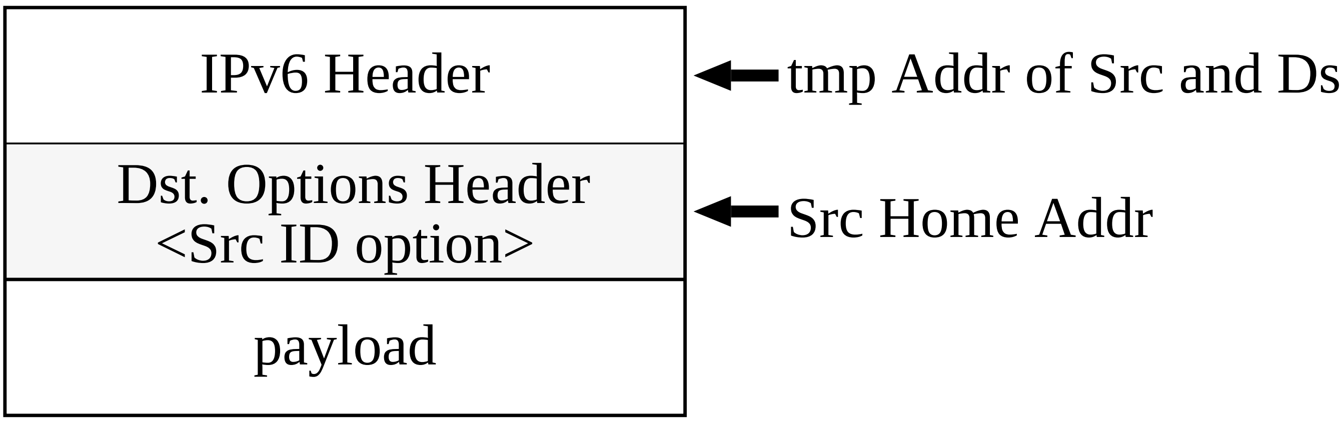
(b) src auth not required

- **type-a is used when src auth is required.**
  - **registration and firewall traverse**
- **type-b is used when src auth isn't required.**

Packet Type (2/2)



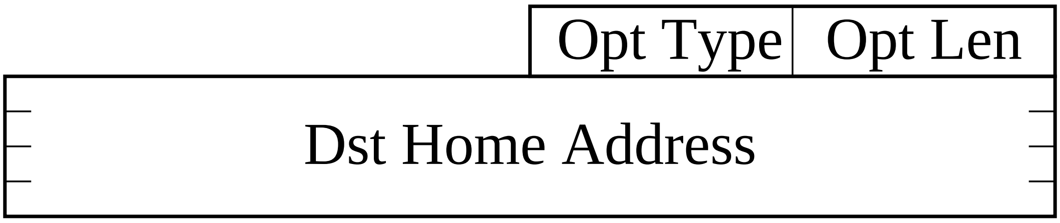
(c) SN to MN



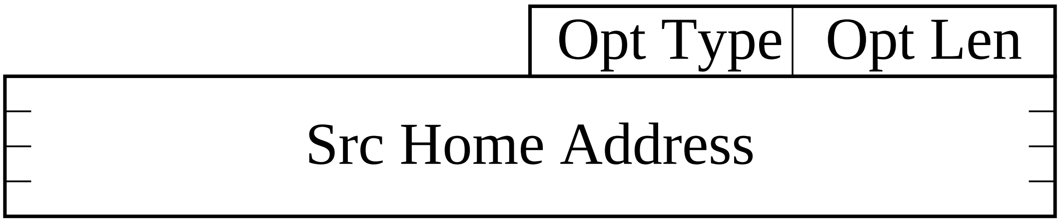
(d) MN to SN

- **type-c is used from SN to MN.**
  - **src home addr = src tmp addr**
- **type-d is used from MN to SN.**
  - **dst home addr = dst tmp addr**

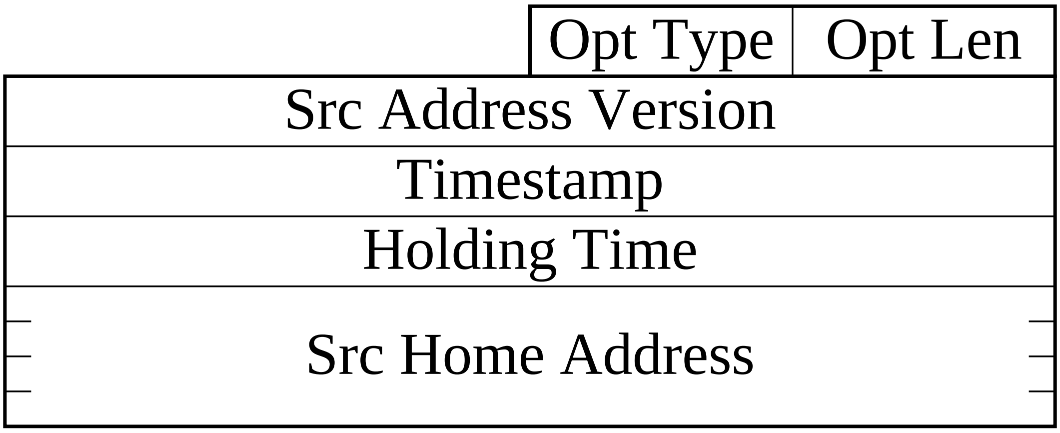
Options



Dst ID Option (in Dst Opt Hdr)



Src ID Option (in Dst Opt Hdr)



Src ID for auth Option (in Dst Opt Hdr)