IPv6 MOBILITY
AT–A–GLANCE

RFC 3775/3776

The goals of IPv6 mobility are:

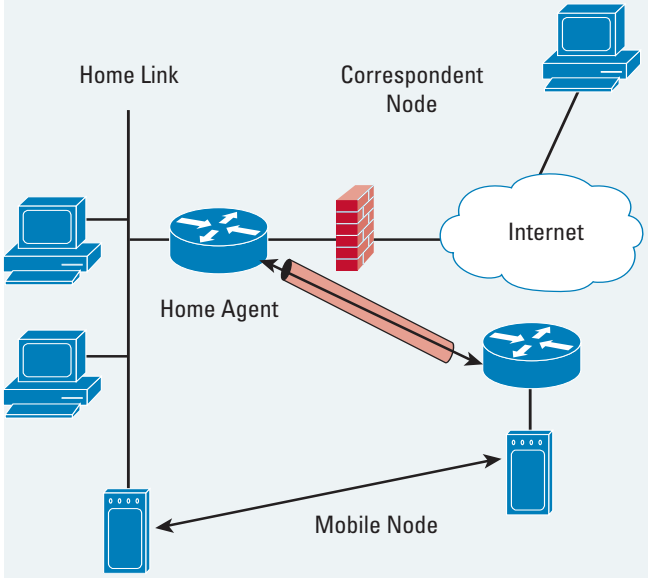
- Not constrained by location
- Always on IP connectivity
- Transport independent
- Robust roaming connections
- Application mobility
- Application continuity
- Mobile device can be a server

Mobile IPv6 (MIPv6) is defined in:

- RFC 3775: Mobility Support in IPv6
- RFC 3776: Using IPsec to Protect Mobile IPv6 Signalling between Mobile Nodes and Home Agents

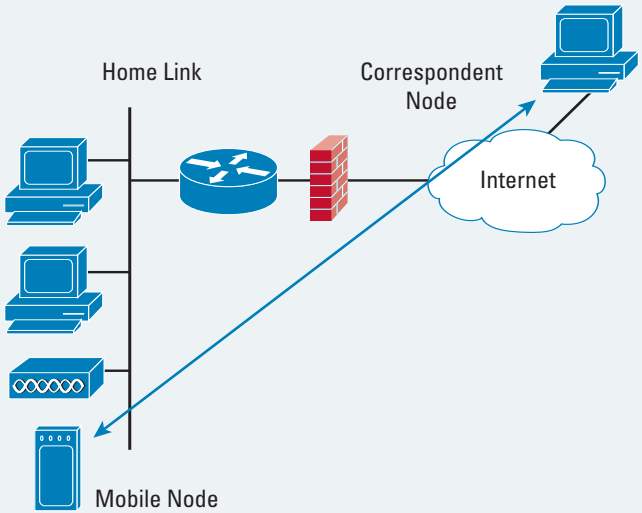
The same basic components exist in MIPv6 as in MIPv4, except there are no foreign agents in MIPv6.

Figure 1



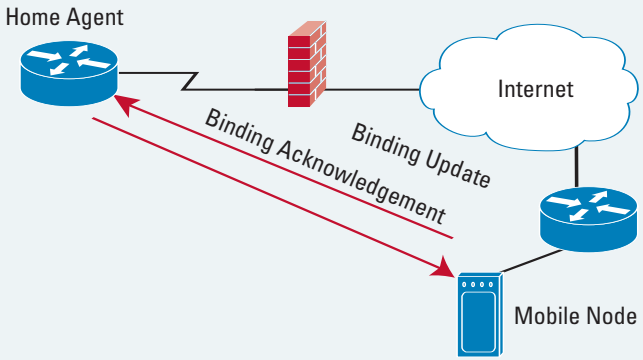
While a mobile node is at home, packets addressed to its home address are routed to the mobile node's home link, using conventional Internet routing mechanisms.

Figure 2



When an MN moves to a foreign link, the MN will receive a care-of-address (CoA) using stateless or stateful autoconfiguration. The MN will then send a binding update to the HA with the MN's new CoA for use while roaming.

Figure 3



There are two ways to handle packet forwarding between correspondent nodes (CNs) and MNs:

- Route optimization mode
- Bidirectional tunneling mode

Route optimization mode:

- Uses type 2 routing header
- Requires MIPv6 functionality on the CN
- Initial packets are routed from the CN to the MN via the HA
- MN replies to CN directly, and CN does a binding cache update for MN's new CoA
- Subsequent packets between CN and MN are routed directly with no interaction needed on the HA

Bidirectional tunneling mode:

- Does not require MIPv6 functionality on the CN
- All traffic between the CN and MN is routed via the HA
- Useful when requiring MNs to have traffic inspected at home network by IDS, virus scanning, and firewalls
- Allows for mobility without requiring MIPv6 code on all CNs that the MN may need to communicate with

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