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Routing scheme for macro mobility handover in hierarchical mobile IPv6 network   (Conference Paper)

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Abstract   ⌄ View references (9)

Significant problems in basic mobile IPv6 occur due to its inability to support micro-mobility because of long delay and high packet loss during handover. Hierarchical mobile IPv6 (HMIPv6) as an extension of basic Mobile IPv6 solves the problem by separating the handover management to macro-mobility and micro-mobility. HMIPv6 introduced a new protocol element called Mobility Anchor Point (MAP) to manage the mobility. HMIPv6 can reduce the delay and the amount of signaling during handover. However the protocol still cannot meet the requirement for traffic that is delay sensitive such as voice especially in macro mobility management. Duplicate address detection and the transmission time for the handover operation could cause high handover delay. This paper considers handover operation in macro mobility handover. Our proposal re-establishes the communication session traffic flow quickly and to minimize the service disruption delay that occurs during handover. We proposed simultaneous processing for new addresses registration in the new network and forwarding the in-flight packet from new access router to the mobile node (MN). This can be achieved by adopting the multicast scheme to the MAP. MAP multicasts the packet to new access router and forward the packet to the MN during handover. We simulated the performance using network simulator (NS-2) and we presents and analyses the performance testing for our proposal by comparing it with the basic hierarchical mobile IPv6. In conclusion, the results show that our scheme can reduce the handover delay to about 68% of that of the basic HMIPv6. © 2003 IEEE.

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