Analisa performansi jaringan vertical handover mobile IPV6 menggunakan bidirectional tunneling dan route optimization untuk aplikasi HTTP = Analysis of network performance vertical mobile IPV6 handover using bidirectional tunneling and route optimization with TTP application

Bagus Wira Reza P, author

Abstrak

Mobile IPv6 memiliki dua metode dalam komunikasi antara mobile node dengan corresspondent node, yaitu Bidirectional Tunneling dan Route Optimization. Bidirectional Tunneling tidak membutuhkan bantuan correspondent node dan dapat tersedia walaupun mobile node tidak meregistrasi binding terbarunya terlebih dahulu. Route Optimization memerlukan dukungan mobile node untuk meregistrasi binding-nya pada correspodent node. Proses handover pada MIPv6 dibagi manjadi dua, yakni horizontal handover dan vertical handover.
Horizontal handover merupakan handover yang terjadi pada saat mobile node berpindah access point namun masih berada pada Home Network yang sama, sedangkan vertical handover merupakan handover yang terjadi pada saat mobile node berpindah dari Home Network ke Foreign Network. Akan dijelaskan mengenai perbandingan performansi throughput, packet loss, dan delay antara Bidirectional Tunneling dengan Route Optimization menggunakan aplikasi HTTP.
Hasil pengukuran pada home link, didapatkan throughput pada bidirectional dan route optimization memiliki perbandingan 15.7%, pada pengukuran packet loss memiliki perbandingan 0.007%, dan pada pengukuran delay memiliki perbandingan 1.77%. Hasil pengukuran pada foreign link, didapatkan throughput pada route optimization 36.77% lebih cepat dibandingkan bidirectional tunneling. Paclet loss pada route optimization 1.76% lebih sedikit dibandingkan bidirectional tunneling, dan pengukuran delay pada route optimization 41.45 lebih cepat dibandingkan bidirectional tunneling.
.....Mobile IPv6 has two methods in communication between mobile node with correspondent node, those are Bidirectional Tunneling and Route Optimization. Bidirectional Tunneling does not need help of correspondent node and no need registration of binding from mobile node. Route Optimization requires support of mobile node to register the binding on correspondent node. MIPv6 handover process is divided into two, those are horizontal handover and vertical handover.
Horizontal handover is a handover that occurs when the mobile node moves to the other access point but still in the same Home Network, while vertical handover is a handover that occurs when the mobile node moves from Home Network to Foreign Network. Will be explained about the comparative performance of throughput, packet loss, and delay between Bidirectional Tunneling with Route Optimization using HTTP applications. Measurement result on home link, shows the throughput on bidirectional tunneling and route optimization having comparison about 15.7%, packet loss about 0.007%, and delay about 1.77%.
Measurement result on foreign link, shows that throughput on route optimization is 36.77% faster than on bidirectional tunneling. Packet loss on route optimization is 1.76% lesser than bidirectional tunneling, and measurement of delay on route optimization is 41.45% faster than bidirectional tunneling.