

Chapter 14

Classification of Handoff Schemes in a Wi-Fi-Based Network

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ABSTRACT

Handoff management of the users is one of the major issues wi-fi-based wireless LAN. The total handoff process can be divided into three phases, namely scanning, authentication, and re-association. If mobile client frequently changes its position while accessing internet, number of handoffs also increases proportionally. Frequent handoffs affect the quality of service of different wireless applications because of large handoff latency. Many schemes have been developed for reducing handoff delay. In this chapter, handoff management schemes have been classified based on the phase in which the scheme works. Thus, the techniques have been classified as scanning-based schemes, authentication-based schemes, and re-association-based schemes. This chapter also classifies the handoff schemes into two categories based on the number of radios used: single-radio-based handoff schemes and multi-radio-based handoff schemes. The schemes under each of the class have been discussed in detail. A comprehensive comparison of all the schemes has also been presented in this chapter.

INTRODUCTION

Now-a-days IEEE 802.11 standards have become popular for providing wireless communication. Its application is increasing day by day. Wireless Local Area Network (Crow, Widjaja, Kim, & Sakai, 1997) has been widely used for mobile internet services. Based IEEE 802.11 wireless network, LAN systems are becoming popular in different areas like airports, cities, shopping malls etc (Akyildiz, Altunbasak, Fekri, & Sivakumar, 2004). Handoff is one of the critical issues in IEEE 802.11 based wireless network. For ensuring Quality of Service (QoS) of different wireless applications seamless handoff (Zeng,

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