

A Fast Handoff Scheme with Load Balancing in Software Defined Wireless Networks

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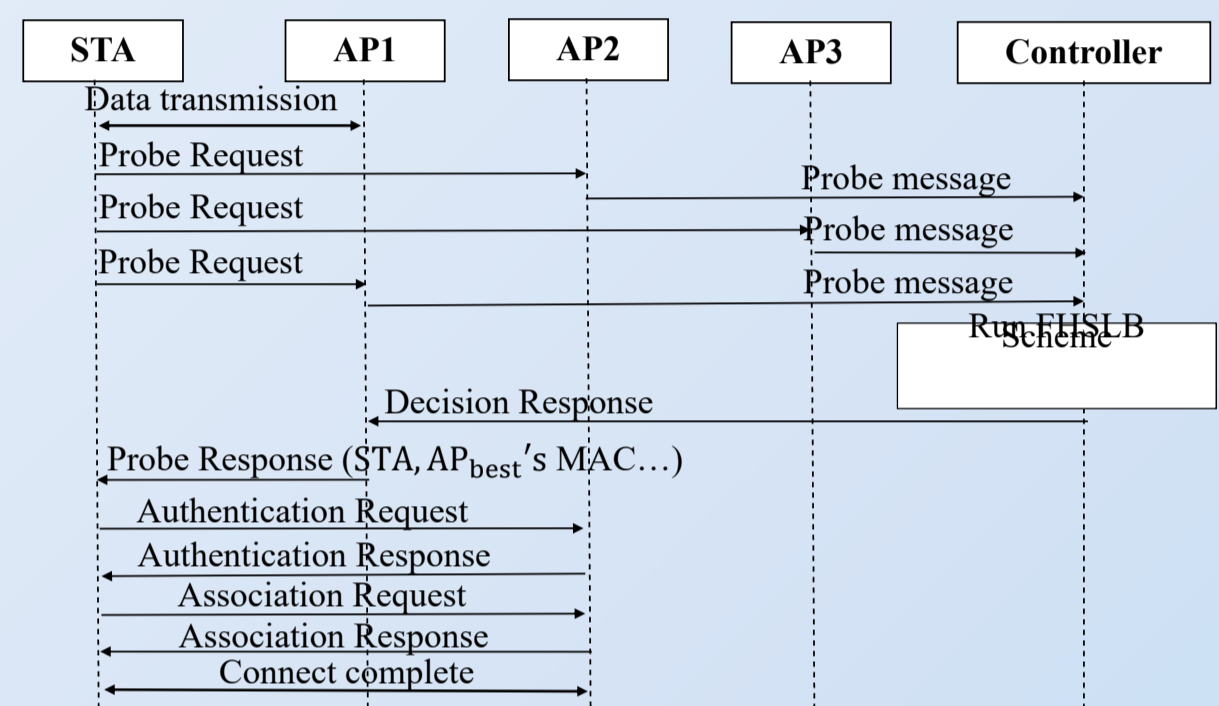
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Abstract

Wireless local area network (WLAN) is becoming increasingly important due to the explosive growth of mobile data traffic. Management of this amount of traffic is the biggest challenge. In traditional handoff scheme is managed by station (STA) itself without the help of network. STA not only have a long handoff latency but also cause load imbalance of access points and unfair bandwidth allocation. Software Defined Wireless Networks (SDWN) is an emerging technology that allow the network administrators to write programs for controlling the behavior of network devices. In this paper, we propose a fast handoff scheme with load balancing (FHSLB) in software defined wireless networks. The proposed scheme can reduce the handoff latency. SDN controller decision STA association AP based on consider both RSSI and the current AP load, improve the AP load imbalance problem. Our evaluation results show that our scheme can reduce SSF scheme 80% handoff latency and the Fairness Index of FHSLB is better than other two schemes and has better network performance.

Key words: Handoff scheme, Load balancing, SDN



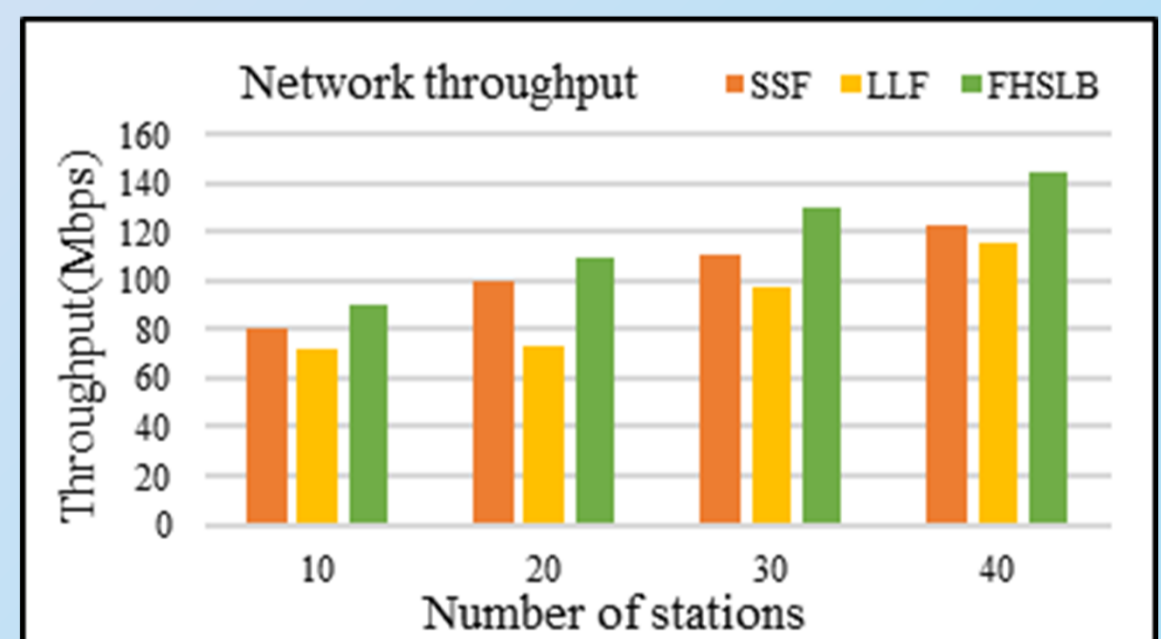
FHSLB Mechanism procedure

Fast Handoff Scheme with Load Balancing

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Input: a list of n APs <AP1, ..., APn>
Output: APbest r:RSSI of AP
1: Set X= [], loadlist = []
2: for each AP APi do
3:   if APi,r > rssith then
4:     Append(X, APi)
5: end for
6: if X is not null then
7:   for each Xj do
8:     Compute Xj load
9:     Append(loadlist, Xj load)
10:  end for
11:  Sort(loadlist)
12:  APbest = AP with loadlist.get(0)
13: end if
    
```

FHSLB Pseudocode



System Throughput

Conclusion

Under the environment that the change of the network is fast, this paper propose having Fast Handoff Scheme of Load balancing, to reduce the postponement of Handoff Delay and improve question of AP balancing effectively. FHSLB mechanism can prove that a thesis is being put forward to imitate the result, in the respect of Handoff Delay, FHSLB mechanism can reduce standard SSF mechanism 80% of the Handoff Delay. Balanced relation of load among AP, verify through Fairness Index number value FHSLB mechanism can reaching load balanced goal effective; Under reaching the balanced situation of load, the improvement whole network efficiency of FHSLB with effective too mechanism. It can consider how combine not expanding until different kinds of networking in it is at future research work as if: LTE, 5G.

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