

Mobile agent based system for listing fundamental wi-fi peer-to-peer network details

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Abstract:

On our everyday operations there is need to engage agents to perform some duties on our behalf, hence they are gaining acceptance as a technology and are being used. Most of the networked offices, networked homes, cyber cafe's, learning institutions and other arenas where computers are interconnected on a Wi-Fi network, have peer-to-peer networks. In Wi-Fi peer-to-peer networks, it is difficult to identify the network details of all the network devices connected such as the IP addresses, mac addresses and computer names of all computers connected on the Wi-Fi peer to peer network at one go; which we hereby refer to as fundamental network details. This is mainly possible in a client-server based architecture where the server monitors all the computers on the network. From the above gap, we developed a mobile agent that could be run in any computer on the Wi-Fi peer-to-peer network and it lists these fundamental details of all the computers connected to the Wi-Fi peer-to-peer network. In developing this mobile agent, we used the MaSE agent methodology. The mobile agent was coded, implemented and tested. The agent was then subjected to various controls which it overcame and managed to return the desired fundamental details with over 80% accuracy. The agent also had the capacity to classify every computer on the network as either intruder or non intruder based on the list of authorised computers supplied by the user. The agent suffered major limitation which included: - the agent took longer time to learn and return the results, as well as it could not communicate to the intruders or shut them down. In future, the agent could therefore be improved to reduce its processing time, communicate with the intruding computers, and shut down the intruding computers or deny them network access.