Grid computing has recently migrated from traditional high performance and distributed computing to pervasive and utility computing based on the advanced capabilities of the wireless networks and the lightweight, thin devices. This has as result the emergence of a new computing paradigm which is the Mobile Grid. This paper presents the simulation results in order to choose the best routing protocol to give the highest performance when implement the routing protocols in the target mobile grid application. The simulations comparing three adhoc routing protocols named DSDV, DSR and AODV. The simulations have shown that the conventional routing protocols like DSR have a dramatic decrease in performance when mobility is high. However the AODV and DSDV are perform very well when mobility is high.

**Keyword:** Mobile grid; Routing protocol; NS2.