The topic of my thesis was modification of those MS Windows parts which are related to the dynamical threads priority changes and the strategy of rationing quantum. There are implemented new experimental strategies which set different size of quantum for each thread and then they are compared in several measurements. Next issue was to find out, analyze, made a documentation and eventually to modify NTOS source code parts which deal with threads priority changes. Finally, all changes which were made were included to the changed core communicating application in the way where it is able to change the core features dynamically and where it is no need to compile new core for each change testing.