THE OPTIMAL DISTRIBUTION IN THREE-LEVEL COMPUTER NETWORKS

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The response time of a date processing machine depends on the type of the user inquiry as well as on the quantity and characters of computers in the upper levels of the networks. The main problem of the networks design is to minimize the acquistion expenditure of date processing machines and computers if the estimates of the response time are fixed. We consider the three-level hierarchical networks lake tickets booking systems when the number of the date processing machines in the lower level is much more than the computers in the upper levels. The elements of the upper level are connected with the computers of the middle level which have the inputs from the date processing machines of the lower level. These ones receive the random flows of inquiries from clients. The main processing is carried out in the middle level. A part of information is passed to the centre. There are the restrictions of the expectation time in the queues of clients. The number of the processing date machines is limited too. Definitively a linear programming problem with integer variables is obtained. The application of the decomposition methods for this problem is analysed in detail.