Web Service Location Allocation Model Formulation C:single

Introduction sec:modelintro

Model Formulation sec:fitness To model service location-allocation problem, we need to make use of a set of matrices, to present input information and output solutions.

For service location-allocation problem, we need information of service invocation frequency, network latency, and service fixed cost to decide service location-allocation so that the overall network latency can be minimized with minimal fixed cost and within constraints. Assume a set of $S = \{s_1, s_2, \ldots, s_s, s_x\}$ services are requested from a set of locations $I = \{i_1, i_2, \ldots, i_i, i_y\}$. The service providers allocate services to a set of candidate locations $J = \{j_1, j_2, \ldots, j_j, j_z\}$.

In this paper, we will use the following matrices. center tabularl*2lr Matrices L server network latency matrix $L = \{l_{ij}\}$ A service location matrix $A = \{a_{sj}\}$ F service invocation frequency matrix $F = \{f_{is}\}$ C cost matrix $C = \{c_{sj}\}$ R user response time matrix $R = \{r_{is}\}$