PROBABILISTIC MODELING OF THE MESSAGE PASSING PROCESS IN DISTRIBUTED SYSTEMS

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ABSTRACT

The article discusses an issue of the probabilistic modeling of the message passing process in distributed systems. It has been assumed that the probabilistic models of bitrates in network links are non-stationary due to the expected value of stochastic processes. Statistical analysis is carried out on the basis of data generated by the stochastic simulator of the data flow process in computer networks. The data generated by the simulator have been interpreted as realizations of stochastic processes. The paper includes an example of the application of the presented approach to research the message passing process in a simple distributed system.

Keywords: probabilistic modeling, distributed systems, statistical analysis non-stationary time series