

Czumaj, Artur; Krysta, Piotr; Vöcking, Berthold

Selfish traffic allocation for server farms. (English) Zbl 1208.60089
SIAM J. Comput. 39, No. 5, 1957-1987 (2010).

Server farms in the paper are either sequential queues or parallel queues, where different streams of Poissonian request streams have to be served. The authors investigate the network behavior in case that all customers select their routing under individual optimization goals, which leads to problems described by non-cooperative games theory. Several optimization criteria are investigated and it is shown that operating the network without the possibility to reject requests can lead to bad performance. This is compared with the case where rejection can be part of the service policy. Another point is to use the results obtained for enhanced (optimized) capacity allocation.

Reviewer: [Hans Daduna \(Hamburg\)](#)

MSC:

[60K25](#) Queueing theory (aspects of probability theory)
[90B15](#) Stochastic network models in operations research
[91A10](#) Noncooperative games
[91A80](#) Applications of game theory

Cited in **5** Documents

Keywords:

[traffic allocation](#); [selfish routing](#); [price of anarchy](#); [game theory](#); [server farms](#); [rejection of customers](#); [non-cooperative games](#)

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