

1063-60-26

Gerardo Rubino* (gerardo.rubino@inria.fr), INRIA, 35042 Rennes, France. *On modeling and analysing P2P networks.*

Peer-to-peer (P2P) networks are omnipresent today, for many different kind of applications. They are large distributed systems, and their performance evaluation made appear new problems and new tools to analyze them. In this presentation, we will describe some of these performance problems, for which classical Markov models have been used, and for which different approaches based on deterministic techniques have been also used, basically leading to differential equations. We will make the link between them, using Mean Field analysis, and we will then use these models to analyze some improvements we propose for these networks. The main idea is to explore the implementation of priorities to optimize the system's behavior by giving more resources to more "cooperative" peers, but only when resources become rare. (Received July 04, 2010)