Body:

Understanding current and new technologies is a key issue to future trends in packet switched networks such as the Internet. For a long time classic queueing theory delivered important insights in this field. However, since the mid 90's it is well known that the assumption of Poisson-processes in classical queueing theory does not model Internet data traffic accurately.

To overcome this problem new approaches such as effective bandwidths or deterministic network calculus had been developed. Nevertheless, these approaches still have some remarkable limitations. Hence, finding a general and accepted methodology for the performance analysis of packet switched networks is an open challenge.

Project Goals

In this project we aim to develop a probabilistic network calculus that effectively takes the statistical multiplexing gain of independent data streams into account. Thus, it can be used as a framework for an efficient end-to-end analysis of communication networks. We want to provide the basics of a comprehensive, powerful yet intuitive theory that allows for new applications in the field of packet switched networks beyond the state-of-the-art theories, for example the established worst-case analysis.

A software tool (in Java) that demonstrates the utility of the stochastic network calculus is available here: Network Analyzer

Logo: ProPer Bounds

Project abstract:

--

Project duration:
01.01.2007 - 30.06.2013

Bibsonomy show project publications:
0

Bibsonomy use tabs to list publications:
0

Members:
bozakov

Project manager:
Dr.-Ing. Amr Rizk

Project research areas:
Future Internet
Performance Analysis

Project type:
Next Generation Internet

URL:
http://www.ikt.uni-hannover.de/properbounds.html

Research Area:
Next Generation Internet

Status of the Project: