

PERFORMANCE EVALUATION OF NETWORK USING QUEUEING NETWORKS

nan

Abstract: The thesis focuses on studying the network performance evaluation problem through queueing models. The theoretical part introduces the concept of network performance evaluation, mathematical methods, real-world measurements, and simulation, along with key parameters such as availability, response time, network usability, throughput, and bandwidth. Next, the topic presents the fundamentals of stochastic processes, Little's law, Markov chains, and Kendall notation in system modeling. Based on this foundation, the thesis applies queueing models such as M/M/1, M/M/m, and their variants to analyze and evaluate network performance.

Keywords: NETWORK PERFORMANCE USING QUEUEING NETWORKS

References

- [1] Tutsch Dietmar, "Performance Analysis of Network Architectures", Springer, 2006.
- [2] Wah Chun Chan, "Performance Analysis of Telecommunications and Local Area Network", Kluwer Academic Publishers, 1999.
- [3] Thomas G. G. Robertazzi, "Computer Networks and System: Queueing Theory and Performance Evaluation", Springer-Verlag New York, 2000.
- [4] Reinhard German, "Performance Analysis of Communication Systems: Modeling with Non-Markovian Stochastic Petri Nets", Wiley, John & Sons, 2000.
- [5] Kenneth S. Vastola, "Performance Modeling and Analysis of Computer Communication Networks", 1996.