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Nota di contenuto	The process of Modeling -- Systems with homogeneous workloads -- Systems with heterogeneous workloads -- Impact of variability of interarrival and service times -- Parallel computing -- Reference models.
Sommario/riassunto	This open access book improves the users' skills needed to implement models for performance evaluation of digital infrastructures. Building a model is usually a relatively easy task, but making it an accurate representation of the phenomenon to be reproduced is a completely different matter. It is well-known that to increase the ability to build reliable models it is necessary to accumulate experience. The book addresses this need by presenting a collection of case studies of increasing complexity. Readers are introduced to the modeling process gradually, learning the basic concepts step-by-step as they go through the case studies. Queueing Networks are used to design the models solved with simulation and analytical techniques from the open source Java Modelling Tools (JMT). Among the models analyzed there are systems for optimizing performance, identifying bottlenecks, evaluating the impact of the variability of traffic and service demands, analyzing the effects of synchronization policies in parallel computing. Four case studies derived from real-life scenarios are also presented: a surveillance system, autoscaling load fluctuations, web app workflow simulation, and crowd computing platform. This book serves as a reference tool for graduate and senior-level computer science students

in courses of performance evaluation and modeling, as well as for researchers and practitioners. .