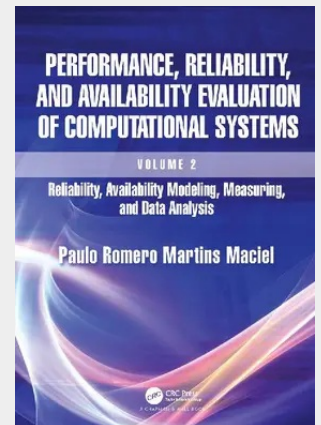


Performance, Reliability, and Availability Evaluation of Computational Systems, Volume 2

Reliability, Availability Modeling, Measuring, and Data Analysis

This textbook intends to be a comprehensive and substantially self-contained two-volume book covering performance, reliability, and availability evaluation subjects. The volumes focus on computing systems, although the methods may also be applied to other systems. The first volume covers Chapter 1 to Chapter 14, whose subtitle is "Performance Modeling and Background". The second volume encompasses Chapter 15 to Chapter 25 and has the subtitle "Reliability and Availability Modeling, Measuring and Workload, and Lifetime Data Analysis". This text is helpful for computer performance professionals for supporting planning, design, configuring, and tuning the performance, reliability, and availability of computing systems. Such professionals may use these volumes to get acquainted with specific subjects by looking at the particular chapters. Many examples in the textbook on computing systems will help them understand the concepts covered in each chapter. The text may also be helpful for the instructor who teaches performance, reliability, and availability evaluation subjects. Many possible threads could be configured according to the interest of the audience and the duration of the course. Chapter 1 presents a good number of possible courses programs that could be organized using this text. Volume II is composed of the last two parts. Part III examines reliability and availability modeling by covering a set of fundamental notions, definitions, redundancy procedures, and modeling methods such as Reliability Block Diagrams (RBD) and Fault Trees (FT) with the respective evaluation methods, adopts Markov chains, Stochastic Petri nets and even hierarchical and heterogeneous modeling to represent more complex systems. Part IV discusses performance measurements and reliability data analysis. It first depicts some basic measuring mechanisms applied in computer systems, then discusses workload generation. After, we examine failure monitoring and fault injection, and finally, we discuss a set of techniques for reliability and maintainability data analysis.



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