

Berichte aus der Telematik

Tadeus Uhl

Performance Analysis of Queuing Systems

Shaker Verlag
Aachen 2015

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

Copyright Shaker Verlag 2015

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

Printed in Germany.

ISBN 978-3-8440-3450-9

ISSN 0948-700X

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen

Phone: 0049/2407/9596-0 • Telefax: 0049/2407/9596-9

Internet: www.shaker.de • e-mail: info@shaker.de

Abstract

When packet-switching technology was implemented in networks towards the end of the 1960s the importance of queuing theory increased enormously. The underlying principle is simple: storage, processing and forwarding. That is how queuing systems work, not only in network technology but in transport and shipping as well. Queuing theory is a powerful and highly efficient tool that can be used to model, analyse and optimise all manner of processes in such systems. So it is well worth taking a closer look at this theory and putting it to good, practical use. This book will prove to be an important source of help, providing as it does reliable procedures for solving practical problems. It begins with a succinct presentation of the necessary basic principles of queuing theory. Liberal use of practical examples is used in favour of too much theory. The book focuses on the description of precise, numerical and simulative methods for observing queuing systems. Each chapter concludes with a series of questions and exercises that underline the practical use of the subject matter covered. The book concludes with special questions dealing with network technology and transportation and shipping; solutions are included. The book has been designed so that every student of telecommunications, applied informatics or comparable subjects can understand and learn the subject matter at hand.