

<<实时系统>>

图书基本信息

书名：<<实时系统>>

13位ISBN编号：9787040114065

10位ISBN编号：7040114062

出版时间：2002-11

出版时间：高等教育出版社

作者：Liu

页数：610

字数：960000

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

## &lt;&lt;实时系统&gt;&gt;

## 内容概要

本书全面地涵盖实时操作系统和通信网络的近期进展内容，使用多种例子说明算法或者规则。

主要内容包括：硬件和软件实时系统和划分原则，实时系统的参考模型，特征化系统描述，设计时间调度和验证实时系统的算法和规则，时间调度方法综述，一般和循环执行中的时间驱动方法，单处理器时间调度和资源访问控制算法，多处理器和分布式系统上的任务间的控制和数据依附性，以及定时需求中的同时终止性质，以时间和资源需求赢取质量，通信网络中的实时问题，操作系统服务与机制的实现，还综述了一些商用实时系统和通用操作系统。

本书适用于计算机科学与工程系中的实时系统方面的本科高年级课程与研究生课程。

内容： 典型实时系统应用 硬件与软件实时系统 实时系统参考模型 硬件实时系统调度常用方法 时钟驱动调度 周期性任务的优先级驱动调度 优先级驱动系统中的非周期性与不规则性工作的调度 资源与资源访问控制 多处理器调度与资源访问控制 时间跨度限制条件下的柔性计算和任务调度 实时通信 操作系统

## <<实时系统>>

### 作者简介

作者Jane W. S. Liu现执教于美国伊利诺依大学，是ACM会员，IEEE成员，目前的研究兴趣集中在为实时应用提供开放环境的最佳途径。

## 书籍目录

PREFACE  
 1 TYPICAL REAL-TIME APPLICATIONS 1.1 Digital Control 1.2 High-Level Controls 1.3 Signal Processing 1.4 Other Real-Time Applications 1.5 Summary  
 2 HARD VERSUS SOFT REAL-TIME SYSTEMS 2.1 Jobs and Processors 2.2 Release Times, Deadlines, and Timing Constraints 2.3 Hard and Soft Timing Constraints 2.4 Hard Real-Time Systems 2.5 Soft Real-Time Systems 2.6 Summary  
 3 A REFERENCE MODEL OF REAL-TIME SYSTEMS 3.1 Processors and Resources 3.2 Temporal Parameters of Real-Time Workload 3.3 Periodic Task Model 3.4 Precedence Constraints and Data Dependency 3.5 Other Types of Dependencies 3.6 Functional Parameters 3.7 Resource Parameters of Jobs and Parameters of Resources 3.8 Scheduling Hierarchy 3.9 Summary  
 4 COMMONLY USED APPROACHES TO REAL-TIME SCHEDULING 4.1 Clock-Driven Approach 4.2 Weighted Round-Robin Approach 4.3 Priority-Driven Approach 4.4 Dynamic versus Static Systems 4.5 Effective Release Times and Deadlines 4.6 Optimality of the EDF and LST Algorithms 4.7 Nonoptimality of the EDF and the LST Algorithms 4.8 Challenges in Validating Timing Constraints in Priority-Driven Systems 4.9 Off-Line versus On-Line Scheduling 4.10 Summary 4.11 Exercises  
 5 CLOCK-DRIVEN SCHEDULING 5.1 Notations and Assumptions 5.2 Static, Timer-Driven Scheduler 5.3 General Structure of Cyclic Schedules 5.4 Cyclic Executives 5.5 Improving the Average Response Time of Aperiodic Jobs 5.6 Scheduling Sporadic Jobs 5.7 Practical Considerations and Generalizations 5.8 Algorithm for Constructing Static Schedules 5.9 Pros and Cons of Clock-Driven Scheduling 5.10 Summary  
 6 PRIORITY-DRIVEN SCHEDULING OF PERIODIC TASKS 6.1 Static Assumption 6.2 Fixed-Priority versus Dynamic-Priority Algorithms 6.3 Maximum Schedulable Utilization 6.4 Optimality of the RM and DM Algorithms 6.5 A Schedulability Test for Fixed-Priority Tasks with Short Response Times 6.6 Schedulability Test for Fixed-priority Tasks with Arbitrary Response Times 6.7 Sufficient Schedulability Conditions for the RM and DM Algorithms 6.8 Practical Factors 6.9 Summary  
 7 SCHEDULING APERIODIC AND SPORADIC JOBS IN PRIORITY-DRIVEN SYSTEMS 7.1 Assumptions and Approaches 7.2 Deferrable Servers 7.3 Sporadic Servers 7.4 Constant Utilization, Total Bandwidth, and Weighted Fair-Queueing Servers 7.5 Slack Stealing in Deadline-Driven Systems 7.6 Slack Stealing in Fixed-Priority Systems 7.7 Scheduling of Sporadic Jobs 7.8 Real-Time Performance for Jobs with Soft Timing Constraints 7.9 A Two-Level Scheme for Integrated Scheduling 7.10 Summary  
 8 RESOURCES AND RESOURCE ACCESS CONTROL  
 9 MULTIPROCESSOR SCHEDULING, RESOURCE ACCESS CONTROL, AND SYNCHRONIZATION  
 10 SCHEDULING FLEXIBLE COMPUTATIONS AND TASKS WITH TEMPORAL DISTANCE CONSTRAINTS  
 11 REAL-TIME COMMUNICATION  
 12 OPERATING SYSTEMS  
 APPENDIX A POSIX  
 B THREAD AND REAL-TIME EXTENSIONS  
 C BIBLIOGRAPHY  
 D INDEX

#### 版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>