

## <<分布式系统原理与范型>>

### 图书基本信息

书名：<<分布式系统原理与范型>>

13位ISBN编号：9787302172772

10位ISBN编号：7302172773

出版时间：2008-5

出版时间：清华大学出版社

作者：（美）特尼博姆 等著

页数：686

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>

## <<分布式系统原理与范型>>

### 内容概要

本书是著名作者Tanenbaum关于分布式系统的最新力作，是分布式系统的权威教材。

本书分成了两大部分。

第2~9章讨论的是分布式系统的原理、概念和技术，包括通信、进程、命名、同步化、一致性和复制、容错性以及安全性等，而分布式应用的开发方法（即范型）在第10~13章中进行了讨论。

但是，与前一版不同的是，本书没有在讨论范型的章节中完整地介绍每个案例研究，而是通过一个有代表性的案例来解释原理。

这种介绍方法不仅精简了素材，而且可以使得读者在阅读和学习时更愉快些。

全书结构清晰，内容全面经典，系统性与先进性并茂。

本书适用对象广泛，不仅可以作为学习分布式计算机的本科生和研究生的教材，对于从事分布式计算研究和工程应用的科技人员和工程技术人员来说，本书也是一本优秀的读物。

<<分布式系统原理与范型>>

书籍目录

1 INTRODUCTION 1.1 DEFINITION OF A DISTRIBUTED SYSTEM 1.2 GOALS 1.2.1 Making Resources Accessible 1.2.2 Distribution Transparency 1.2.3 Openness 1.2.4 Scalability 1.2.5 Pitfalls 1.3 TYPES OF DISTRIBUTED SYSTEMS 1.3.1 Distributed Computing Systems 1.3.2 Distributed information Systems 1.3.3 Distributed Pervasive Systems 1.4 SUMMARY 2 ARCHITECTURES 2.1 ARCHITECTURAL STYLES 2.2 SYSTEM ARCHITECTURES 2.2.1 Centralized Architectures 2.2.2 Decentralized Architectures 2.2.3 Hybrid Architectures 2.3 ARCHITECTURES VERSUS MIDDLEWARE 2.3.1 Interceptors 2.3.2 General Approaches to Adaptive Software 2.3.3 Discussion 2.4 SELF-MANAGEMENT IN DISTRIBUTED SYSTEMS 2.4.1 The Feedback Control Model 2.4.2 Example Systems Monitoring with Astrolabe 2.4.3 Example Differentiating Replication Strategies in Globule 2.4.4 Example Autonomous Component Repair Management in Jade 2.5 SUMMARY 3 PROCESSES 3.1 THREADS 3.1.1 Introduction to Threads 3.1.2 Threads in Distributed Systems 3.2 VIRTUALIZATION 3.2.1 The Role of Virtualization in Distributed Systems 3.2.2 Architectures of Virtual Machines 3.3 CLIENTS 3.3.1 Networked User Interfaces 3.3.2 Client-Side Software for Distributed Transparency 3.4 SERVERS 3.4.1 General Design Issues 3.4.2 Server Clusters 3.4.3 Managing Server Clusters 3.5 COORDINATION 3.5.1 Approaches to Code Migration 3.5.2 Migration and Local Resources 3.5.3 Migration in Heterogeneous Systems 3.6 SUMMARY 4 COMMUNICATION 4.1 FUNDAMENTALS 4.1.1 Layered Protocols 4.1.2 Types of Communication 4.2 REMOTE PROCEDURE CALL 4.2.1 Basic RPC operation 4.2.2 Parameter Passing 4.2.3 Asynchronous 4.2.4 Example of DCE RPC 4.3 MESSAGE ORIENTED COMMUNICATION 4.3.1 Message Oriented Transient Communication 4.3.2 Message Oriented Persistent Communication 4.3.3 Example: IBM's WebSphere Message-Queuing System 4.4 STREAM-ORIENTED COMMUNICATION 4.4.1 Support for Continuous Media 4.4.2 Streams and Quality of Service 4.4.3 Synchronization 4.5 MULTICAST COMMUNICATION 4.5.1 Application-Level Multicasting 4.5.2 Gossip Based Data Dissemination 4.6 SUMMARY 5 NAMING 5.1 NAMES, IDENTIFIERS, AND ADDRESSES 5.2 FLAT NAMING 5.2.1 Simple Solutions 5.2.2 Home Based Approaches 5.2.3 Distributed Hash Tables 5.2.4 Hierarchical Approaches 5.3 STRUCTURED NAMING 5.3.1 Name Spaces 5.3.2 Name Resolution 5.3.3 The Implementation of a Name Space 5.3.4 Example: The Domain Name System 5.4 ATTRIBUTE-BASED NAMING 5.4.1 Directory Services 5.4.2 Hierarchical Implementations: LDAP 5.4.3 Decentralized Implementations 5.5 SUMMARY 6 SYNCHRONIZATION 6.1 CLOCK SYNCHRONIZATION 6.1.1 Physical Clocks 6.1.2 Global Positioning System 6.1.3 Clock Synchronization Algorithms 6.2 LOGICAL CLOCKS 6.2.1 Lamport's Logical Clocks 6.2.2 Vector Clocks 6.3 MUTUAL EXCLUSION 6.3.1 Overview 6.3.2 A Centralized Algorithm 6.3.3 A Decentralized Algorithm 6.3.4 A Distributed Algorithm 6.3.5 A Token Based Algorithm 6.3.6 A Comparison of the Four Algorithms 6.4 GLOBAL POSITIONING OF NODES 6.5 ELECTION ALGORITHMS 6.5.1 Traditional Election Algorithms 6.5.2 Elections in Wireless Environments 6.5.3 Elections in Large-Scale Systems 6.6 SUMMARY 7 CONSISTENCY AND REPLICATION 7.1 INTRODUCTION 7.1.1 Reasons for Replication 7.1.2 Replication as Scaling technique 7.2 DATA-CENTRIC CONSISTENCY MODELS 7.2.1 Continuous Consistency 7.2.2 Consistent Ordering of Operations 7.3 CLIENT-CENTRIC CONSISTENCY MODELS 7.3.1 Eventual Consistency 7.3.2 Monotonic Reads 7.3.3 Monotonic Writes 7.3.4 Read Your Writes 7.3.5 Writes Follow Reads 7.4 REPLICATION MANAGEMENT 7.4.1 Replica-Server Placement 7.4.2 Content Replication and Placement 7.4.3 Content Distribution 7.5 CONSISTENCY PROTOCOLS 7.5.1 Continuous Consistency 7.5.2 Primary Based Protocols 7.5.3 Replicated Write Protocols 7.5.4 Cache Coherence Protocols 7.5.5 Implementing Client Centric Consistency 7.6 SUMMARY 8 FAULT TOLERANCE 8.1 INTRODUCTION TO FAULT TOLERANCE

<<分布式系统原理与范型>>

8.1.1 Basic Concepts    8.1.2 failure Models    8.1.3 Failure Masking by Redundancy    8.2 PROCESS RESILIENCE    8.2.1 Design issues    8.2.2 Failure Masking and Replication    8.2.3 Agreement in Faulty Systems    8.2.4 Failure Detection    8.3 RELIABLE CLIENT-SERVER COMMUNICATION    8.3.1 Point-to-Point Communication    8.3.2 RPC Semantics in the Presence of Failures    8.4 RELIABLE GROUP COMMUNICATION 343    8.4.1 Basic Reliable Multicasting Scenarios    8.4.2 Scalability in Reliable Multicasting    8.4.3 Atomic Multicast    8.5 DISTRIBUTED COMMIT    8.5.1 Two-Phase commit    8.5.2 Three-Phase commit    8.6 RECOVERY    8.6.1 Introduction    8.6.2 Checkpointing    8.6.3 message Logging    8.6.4 Recovery-Oriented Computing    8.7 SUMMARY 9 SECURITY    9.1 INTRODUCTION TO SECURITY    9.1.1 Security Threats, Policies, and Mechanisms    9.1.2 Design Issues    9.1.3 Cryptography    9.2 SECURE CHANNELS    9.2.1 Authentication    9.2.2 Message Integrity and Confidentiality    9.2.3 Secure Group Communication    9.2.4 Example: Kerberos    9.3 ACCESS CONTROL    9.3.1 General Issues in Access Control    9.3.2 Firewalls    9.3.3 Secure Mobile Code    9.3.4 Denial of Service    9.4 SECURITY MANAGEMENT    9.4.1 Key Management    9.4.2 Secure Group Management    9.4.3 Authorization Management    9.5 SUMMARY 10 DISTRIBUTED OBJECT-BASED SYSTEMS    10.1 ARCHITECTURE    10.1.1 Distributed Objects    10.1.2 Example: Enterprise Java Beans    10.1.3 Example: Global Distributed Shared Objects    10.2 PROCESSES    10.2.1 Object Servers    10.2.2 Example The Ice downtime System    10.3 COMMUNICATION    10.3.1 Binding a Client to an Object    10.3.2 Static versus Dynamic Remote Method Invocations    10.3.3 Parameter Passing    10.3.4 Example Java RMI    10.3.5 Object-Based Messaging    10.4 NAMING    10.4.1 CORBA Object References    10.4.2 Global Object References    10.5 SYNCHRONIZATION    10.6 CONSISTENCY AND REPLICATION    10.6.1 Entry Consistency    10.6.2 Replicated invocations    10.7 FAULT TOLERANCE    10.7.1 Example: Fault-Tolerant CORBA    10.7.2 Example: Fault-Tolerant Java    10.8 SECURITY    10.8.1 Example: Globe    10.8.2 Security for Remote Objects    10.9 SUMMARY 11 DISTRIBUTED FILE SYSTEMS    11.1 ARCHITECTURE    11.1.1 Client-Server Architectures    11.1.2 Cluster-Based Distributed File Systems    11.1.3 Symmetric Architectures    11.2 PROCESSES    11.3 COMMUNICATION    11.3.1 Rads in NFS    11.3.2 The RPCZ Subsystem    11.3.3 File-Oriented Communication in Ganglia    11.4 NAMING    11.4.1 Naming in NFS    11.4.2 Constructing a Global Name Space    11.5 SYNCHRONIZATION    11.5.1 Semantics of File Sharing    11.5.2 File Locking    11.5.3 Sharing Files in Coda    11.6 CONSISTENCY AND REPLICATION    11.6.1 Client Side Caching    11.6.2 Server-Side Replication    11.6.3 Replication in Peer-to-Peer File Systems    11.6.4 File Replication in Grid Systems    11.7 FAULT TOLERANCE    11.7.1 Handling Byzantine Failures    11.7.2 High Availability in Peer-to-Peer Systems    11.8 SECURITY    11.8.1 Security in NFS    11.8.2 Decentralized Authentication    11.8.3 Secure Peer-to-Peer File-Sharing Systems    11.9 SUMMARY 12 DISTRIBUTED WEB-BASED SYSTEMS    12.1 ARCHITECTURE    12.1.1 Traditional Web Based Systems    12.1.2 Web System    12.2 PROCESSES    12.2.1 Clients    12.2.2 The Apache Web Server    12.2.3 Web Server Clusters    12.3 COMMUNICATION    12.3.1 Hypertext Transfer Protocol    12.3.2 Simple Object Access Protocol    12.4 NAMING    12.5 SYNCHRONIZATION    12.6 CONSISTENCY AND REPLICATION    12.6.1 Web Proxy Caching    12.6.2 Replication for Web Hosting Systems    12.6.3 Replication of Web Applications    12.7 FAULT TOLERANCE    12.8 SECURITY    12.9 SUMMARY 13 DISTRIBUTED COORDINATION-BASED SYSTEMS    13.1 INTRODUCTION TO COORDINATION MODELS    13.2 ARCHITECTURES    13.2.1 Overall Approach    13.2.2 Traditional Architectures    13.2.3 Peer-to-Peer Architectures    13.2.4 Mobility and Coordination    13.3 PROCESSES    13.4 COMMUNICATION    13.4.1 Content-Based Routing    13.4.2 Supporting Composite Subscriptions    13.5 NAMING    13.5.1 Describing Composite Events    13.5.2 Matching Events and Subscriptions    13.6 SYNCHRONIZATION    13.7 CONSISTENCY AND REPLICATION    13.7.1 Static Approaches    13.7.2 Dynamic Replication    13.8 FAULT TOLERANCE    13.8.1 Reliable Publish-Subscribe Communication    13.8.2 Fault Tolerance in Shared Dataspaces    13.9 SECURITY    13.9.1 Confidentiality    13.9.2 Secure Shared Dataspaces    13.10 SUMMARY 14

<<分布式系统原理与范型>>

SUGGESTIONS FOR FURTHER READING AND BIBLIOGRAPHY 14.1 SUGGESTIONS FOR FURTHER  
READING 14.1.1 introduction and General Works 14.1.2 Architectures 14.1.3 Processes  
14.1.4 Communication 14.1.5 Naming 14.1.6 Synchronization 14.1.7 Consistency and  
Replication 14.1.8 Fault Tolerance 14.1.9 Security 14.1.10 Distributed Object-Based Systems  
14.1.11 Distributed File Systems 14.1.12 Distributed Web-Based Systems 14.1.13 Distributed  
Coordination Based Systems 14.2 ALPHABETICAL BIBLIOGRAPHY INDEX

## <<分布式系统原理与范型>>

### 编辑推荐

《大学计算机教育国外著名教材系列：分布式系统原理与范型（第2版）（影印版）》适用对象广泛，不仅可以作为学习分布式计算机的本科生和研究生的教材，对于从事分布式计算研究和工程应用的科技人员和工程技术人员来说，《大学计算机教育国外著名教材系列：分布式系统原理与范型（第2版）（影印版）》也是一本优秀的读物。

<<分布式系统原理与范型>>

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>