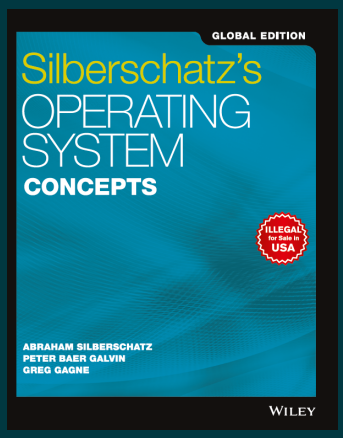
WILEY



Silberschatz's Operating System Concepts, Global ed

By Abraham Silberschatz, Peter B. Galvin, Greg Gagne

Paperback 9789357460569 ₹- Price

Pages: 888

Description

The fundamental concepts and algorithms covered in the book are often based on those used in both open-source and commercial operating systems. Our aim is to present these concepts and algorithms in a general setting that is not tied to one particular operating system. However, we present a large number of examples that pertain to the most popular and the most innovative operating systems, including Linux, Microsoft Windows, Apple macOS (the original name, OS X, was changed in 2016 to match the naming scheme of other Apple products), and Solaris.

About the Author

Abraham Silberschatz, Peter B. Galvin, Greg Gagne

Abraham Silberschatz

Yale University

Peter Baer Galvin

Pluribus Networks

Greg Gagne

Westminster College

Table of Contents

Part One Overview

Chapter 1 Introduction

1.1 What Operating Systems Do

1.2 Computer-System Organization

1.3 Computer-System Architecture

1.4 Operating-System Operations

1.5 Resource Management

1.6 Security and Protection

1.7 Virtualization

1.8 Distributed Systems

1.9 Kernel Data Structures

1.10 Computing Environments

1.11 Free and Open-Source Operating Systems

1.12 Summary
Chapter 2 Operating-System Structures
2.1 Operating-System Services
2.2 User and Operating-System Interface
2.3 System Calls
2.4 System Services
2.5 Linkers and Loaders
2.6 Why Applications Are Operating-System Specific
2.7 Operating-System Design and Implementation
2.8 Operating-System Structure
2.9 Building and Booting an Operating System
2.10 Operating-System Debugging
2.11 Summary
Part Two Process Management
Chapter 3 Processes
3.1 Process Concept
3.2 Process Scheduling
3.3 Operations on Processes
3.4 Interprocess Communication
3.5 IPC in Shared-Memory Systems
3.6 IPC in Message-Passing Systems
3.7 Examples of IPC Systems
3.8 Communication in Client–Server Systems
3.9 Summary
Chapter 4 Threads & Concurrency
4.1 Overview
4.2 Multicore Programming
4.3 Multithreading Models
4.4 Thread Libraries
4.5 Implicit Threading
4.6 Threading Issues
4.7 Operating-System Examples
4.8 Summary
Chapter 5 CPU Scheduling
5.1 Basic Concepts
5.2 Scheduling Criteria
5.3 Scheduling Algorithms
5.4 Thread Scheduling

5.5 Multi-Processor Scheduling
5.6 Real-Time CPU Scheduling
5.7 Operating-System Examples
5.8 Algorithm Evaluation
5.9 Summary
Part Three Process Synchronization
Chapter 6 Synchronization Tools
6.1 Background
6.2 The Critical-Section Problem
6.3 Peterson’s Solution
6.4 Hardware Support for Synchronization
6.5 Mutex Locks
6.6 Semaphores
6.7 Monitors
6.8 Liveness
6.9 Evaluation
6.10 Summary
Chapter 7 Synchronization Examples
7.1 Classic Problems of Synchronization
7.2 Synchronization within the Kernel
7.3 POSIX Synchronization
7.4 Synchronization in Java
7.5 Alternative Approaches
7.6 Summary
Chapter 8 Deadlocks
8.1 System Model
8.2 Deadlock in Multithreaded Applications
8.3 Deadlock Characterization
8.4 Methods for Handling Deadlocks
8.5 Deadlock Prevention
8.6 Deadlock Avoidance
8.7 Deadlock Detection
8.8 Recovery from Deadlock
8.9 Summary
Part Four Memory Management
Chapter 9 Main Memory
9.1 Background
9.2 Contiguous Memory Allocation

9.3 Paging
9.4 Structure of the Page Table
9.5 Swapping
9.6 Example: Intel 32- and 64-bit Architectures
9.7 Example: ARMv8 Architecture
9.8 Summary
Chapter 10 Virtual Memory
10.1 Background
10.2 Demand Paging
10.3 Copy-on-Write
10.4 Page Replacement
10.5 Allocation of Frames
10.6 Thrashing
10.7 Memory Compression
10.8 Allocating Kernel Memory
10.9 Other Considerations
10.10 Operating-System Examples
10.11 Summary
Part Five Storage Management
Chapter 11 Mass-Storage Structure
11.1 Overview of Mass-Storage Structure
11.2 HDD Scheduling
11.3 NVM Scheduling
11.4 Error Detection and Correction
11.5 Storage Device Management
11.6 Swap-Space Management
11.7 Storage Attachment
11.8 RAID Structure
11.9 Summary
Exercises
Further Reading

To purchase this product, please visit:
https://www.wileyindia.com/silberschatz-s-operating-system-concepts-global-ed.html

Scan to buy