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| Nota di contenuto | TOOLS AND ENVIRONMENTS FOR PARALLEL AND DISTRIBUTED COMPUTING; CONTENTS; CONTRIBUTORS; Preface; 1. Parallel and Distributed Computing; 1.1 Introduction: Basic Concepts; 1.2 Promises and Challenges of Parallel and Distributed Systems; 1.2.1 Processing Technology; 1.2.2 Networking Technology; 1.2.3 Software Tools and Environments; 1.3 Distributed System Design Framework; References and Further Reading; 2. Message-Passing Tools; 2.1 Introduction; 2.2 Message-Passing Tools versus Distributed Shared Memory; 2.2.1 Distributed Shared Memory Model; 2.2.2 Message-Passing Model 2.3 Message-Passing System: Desirable Features2.4 Classification of Message-Passing Tools; 2.4.1 Classification by Implementation; 2.5 Overview of Message-Passing Tools; 2.5.1 Socket-Based Message Passing; 2.5.2 p4; 2.5.3 Parallel Virtual Machine; 2.5.4 Message-Passing Interface; 2.5.5 Nexus; 2.5.6 Madeleine I and II; 2.5.7 Active Messages; 2.6 ACS; 2.6.1 Multithread Communications Services; 2.6.2 Separation of Data and Control Functions; 2.6.3 Programmable Communication, Control, and Management Service; 2.6.4 Multiple Communication Interfaces; 2.6.5 Adaptive Group Communication |

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2.7 Experimental Results and Analysis2.7.1 Experimental Environment; 2.7.2 Performance of Primitives; 2.7.3 Application Performance Benchmarking; 2.7.4 Performance Results of Adaptive Schemes; 2.8 Conclusions; References; 3. Distributed Shared Memory Tools; 3.1 Introduction; 3.2 Cache Coherence; 3.2.1 Directory-Based Cache Coherence; 3.3 Shared Memory Consistency Models; 3.4 Distributed Memory Architectures; 3.5 Classification of Distributed Shared Memory Systems; 3.5.1 Hardware-Based DSM Systems; 3.5.2 Mostly Software Page-Based DSM Systems; 3.5.3 All-Software Object-Based DSM Systems
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5.6.1 Astrophysics Simulation Collaboratory

Sommario/riassunto

An invaluable reference for anyone designing new parallel or distributed systems.Includes detailed case studies of specific systems from Stanford, MIT, and other leading research universities.The authors emphasize performance, surveying all available techniques.