

1. Record Nr.	UNINA9910821455303321
Autore	Hariri Salim
Titolo	Tools and environments for parallel and distributed computing / / edited by Salim Hariri, Manish Parashar
Pubbl/distr/stampa	Hoboken, N.J., : J. Wiley, c2004
ISBN	9786610344703 9781280344701 1280344709 9780470251874 0470251875 9780471474845 0471474843 9780471474838 0471474835
Edizione	[1st ed.]
Descrizione fisica	1 online resource (228 p.)
Collana	Wiley series on parallel and distributed computing
Altri autori (Persone)	ParasharManish <1967->
Disciplina	004/.35
Soggetti	Parallel processing (Electronic computers) Electronic data processing - Distributed processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
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 Services
2.7 Experimental Results and Analysis 2.7.1 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
References
4. Distributed-Object Computing Tools; 4.1 Introduction; 4.2 Basic Model; 4.2.1 RMI; 4.2.2 CORBA; 4.2.3 DCOM; 4.3 Examples; 4.3.1 Experimental Setup; 4.3.2 Developing Applications under RMI, CORBA, and DCOM; 4.3.3 Experiment 1: Ping; 4.3.4 Experiment 2: Producer-Consumer Problem; 4.3.5 Experiment 3: Numerical Computation; 4.4 Comparison of the Three Paradigms; 4.4.1 Dependency Issues; 4.4.2 Implementation Details; 4.4.3 Architecture Details; 4.4.4 Support for Additional Features; 4.4.5 Performance Comparison; 4.5 Conclusions; References; 5. Gestalt of the Grid; 5.1 Introduction
5.1.1 Motivation
5.1.2 Enabling Factors; 5.2 Definitions; 5.3 Multifaceted Grid Architecture; 5.3.1 N-Tiered Grid Architecture; 5.3.2 Role-Based Grid Architecture; 5.3.3 Service-Based Grid Architecture; 5.3.4 Grid Challenges; 5.4 Grid Management Aspects; 5.4.1 Managing Grid Security; 5.4.2 Managing Grid Information; 5.4.3 Managing Grid Data; 5.4.4 Managing Grid Execution and Resources; 5.4.5 Managing Grid Software; 5.4.6 Managing Grid Hardware; 5.5 Grid Activities; 5.5.1 Community Activities; 5.5.2 Grid Middleware; 5.5.3 High-Throughput Computing; 5.6 Grid Applications
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.
