Contents

Int	roduction	1	
Overview of MOSIX			
2.1	The Characteristics of MOSIX	5	
2.2	The Architecture of the MOSIX Kernel	9	
2.3	The History of the MOSIX Project	12	
2.4	Summary	17	
The	e UNIX File System	19	
3.1	The Namespace	20	
3.2	The Traditional File System	21	
3.3	UNIX Buffer Caching	26	
3.4	UNIX File System Calls	32	
3.5	Summary	36	
Dis	tributed UNIX File Systems	37	
4.1	Extending the Traditional Namespace	37	
4.2	Classifying Distributed File Systems	42	
4.3	MOSIX File System Implementation	43	
4.4	MOSIX File System Calls	49	
4.5	Summary	76	
The	UNIX Process	77	
5.1	Organization of the System Memory	78	
5.2	The state of the s	81	
5.3	Process Context	84	
5.4	Process States	87	
5.5	Scheduling Processes	88	
5.6		91	
	1 TOCCOS DYSUCIII Calls		
	Ove 2.1 2.2 2.3 2.4 The 3.1 3.2 3.3 3.4 3.5 Dis 4.1 4.2 4.3 4.4 4.5 The 5.1 5.2 5.3 5.4 5.5	2.1 The Characteristics of MOSIX 2.2 The Architecture of the MOSIX Kernel 2.3 The History of the MOSIX Project 2.4 Summary The UNIX File System 3.1 The Namespace 3.2 The Traditional File System 3.3 UNIX Buffer Caching 3.4 UNIX File System Calls 3.5 Summary Distributed UNIX File Systems 4.1 Extending the Traditional Namespace 4.2 Classifying Distributed File Systems 4.3 MOSIX File System Implementation 4.4 MOSIX File System Calls 4.5 Summary The UNIX Process 5.1 Organization of the System Memory 5.2 Organization of the Process 5.3 Process Context 5.4 Process States 5.5 Scheduling Processes	

X CONTENTS

6	The	MOSIX Process	99
	6.1	Remote Paging	99
	6.2	MOSIX Process Structure	100
	6.3	MOSIX Process System Calls	103
	6.4	Process Migration	109
	6.5	Interprocess Communication	113
	6.6	Summary	114
_			
7			115
	7.1	The Interface Layer	117
	7.2	The Transport Layer	124
	7.3	The Network Layer	132
	7.4	Summary	134
8	Load	d Balancing	135
	8.1	Foundations of Load Balancing	136
	8.2	Static Load Balancing	139
	8.3	Dynamic Load Balancing	140
	8.4	Pre-emptive Load Balancing	142
	8.5	The MOSIX Load Balancing Policy	143
	8.6	The Load Calculation Algorithms	147
	8.7	The Information Dissemination Algorithms	152
	8.8	The Migration Consideration Algorithms.	160
	8.9	Summary	167
_			
9			169
	9.1	Principles of Scaling	169
	9.2	Scaling Considerations in MOSIX	172
	9.3	Probabilistic Algorithms	175
	9.4	Summary	178
10	Syst	tem Performance	179
		Scall Performance	180
	10.2	Funnel & Process Migration Performance	182
	10.2	Load Balancing Performance	183
	10.4	DAEMON Toolkit Performance	
	10.1	Summary	185
	10.0	Summary	187
11	Dist	ributed Applications	189
	11.1	Writing Distributed Applications	189
	11.2	Examples of Distributed Applications	196
	11.3	Monitoring Distributed Applications	207
	11.4		210
p:		1	
		raphy	213
Inc	dex		917