

---

# Contents

---

## *Volume 1*

---

	<b>Contents</b> .....	<b>vii</b>
	<b>Preface</b> .....	<b>xxv</b>
	<b>Detailed Licensing Terms</b> .....	<b>xxxix</b>
<b>Part 1</b>	<b>Introduction to TAO</b>	<b>1</b>
<b>Chapter 1</b>	<b>Introduction</b> .....	<b>3</b>
	Design Goals .....	3
	Development History .....	6
	Architecture .....	7
	CORBA Compliance .....	11
	High Performance and Real-Time Support .....	13
	Relationship Between ACE and TAO .....	15



<b>Chapter 2</b>	<b>Building ACE and TAO</b> .....	17
	Where to Get ACE and TAO .....	17
	System Requirements .....	18
	Build Options .....	19
	Installing the Source Code .....	28
	Building ACE and TAO .....	29
<b>Part 2</b>	<b>Programming with TAO</b> .....	<b>31</b>
<b>Chapter 3</b>	<b>Building Applications with TAO: Overview</b> .....	33
	Getting Started on UNIX and UNIX-like Platforms .....	33
	Getting Started Using Visual C++ .....	33
	Getting Started Using Borland C++ .....	34
	Compiling/Linking Applications on UNIX and UNIX-like Platforms .....	34
<b>Chapter 4</b>	<b>Getting Started on UNIX and UNIX-like Platforms</b> .....	35
	Introduction .....	35
	Setting Up Your Environment .....	36
	A Simple Example .....	36
	Summary .....	45
<b>Chapter 5</b>	<b>Getting Started Using Visual C++</b> .....	47
	Introduction .....	47
	Setting Up Your Environment .....	48
	A Simple Example .....	53
	Legacy Windows .....	57
	Summary .....	57
<b>Chapter 6</b>	<b>Getting Started Using Borland C++</b> .....	59
	Introduction .....	59
	Setting Up Your Environment .....	60
	A Simple Example .....	61
	Summary .....	65



<b>Chapter 10</b>	<b>CORBA Messaging</b> .....	137
	Introduction .....	137
	AMI Callback Model .....	138
	Bi-Directional GIOP .....	165
	Quality of Service Policies .....	167
<b>Chapter 11</b>	<b>Real-Time CORBA</b> .....	177
	Introduction .....	177
	Real-Time CORBA Overview .....	177
	Real-Time CORBA Architecture .....	180
	TAO Implementation Details .....	197
	Client-Propagated Priority Model .....	205
	Server-Declared Priority Model .....	208
	Other Real-Time CORBA Features .....	212
	Example .....	212
<b>Chapter 12</b>	<b>Implementation Repository</b> .....	217
	Introduction .....	217
	Using the Implementation Repository .....	219
	The IMRified MessengerServer .....	226
	Using tao_imr .....	232
	ImplRepo_Service Command Line Options .....	235
<b>Chapter 13</b>	<b>Portable Interceptors</b> .....	237
	Introduction .....	237
	Using TAO Request Interceptors .....	238
	Marshaling and the Service Context .....	256
	IOR Interceptors .....	263
	The PortableInterceptor::Current .....	268
	Chapter Summary .....	274
<b>Chapter 14</b>	<b>Smart Proxies</b> .....	275
	Introduction .....	275
	Smart Proxy Use Cases .....	276

---

Creating Smart Proxies in TAO	278
Writing and Using Smart Proxy Classes	284
The Messenger Example	289
<b>Chapter 15 Local Interfaces</b>	<b>299</b>
Introduction	299
C++ Mapping to LocalObject	300
Changing Existing Interfaces to Local Interfaces	301
Example: ServantLocator	302
<b>Chapter 16 Using Pluggable Protocols</b>	<b>311</b>
Introduction	311
Protocol Introduction	312
Protocols Provided With TAO	314
Building The Protocol Libraries	315
Loading Pluggable Protocols	315
IIOP	316
IIOP_Lite	318
UIOP	319
SHMIOP	322
DIOP	324
SSLIOP	327
Combining Protocols	328
<b>Chapter 17 Developing Pluggable Protocols</b>	<b>329</b>
Introduction	329
Pluggable Protocol Requirements	330
Overview of Pluggable Protocols in TAO	331
Details of the Pluggable Protocol Framework	342
Pluggable Protocol Summary	451
<b>Part 4 Run-Time Configuration of TAO</b>	<b>453</b>

---

<b>Chapter 18 Configuring TAO Clients and Servers</b>	<b>455</b>
---	------------

	Introduction	455
	Patterns and Components for Configuring TAO Clients and Servers	456
	The ACE Service Configurator	458
	Service Configurator Control Options	461
	The ACE Service Configurator Framework	461
	Service Objects	467
	Service Manager	475
	Summary	476
<b>Chapter 19</b>	<b>ORB Initialization Options</b>	<b>477</b>
	Introduction	477
	Interface Definition	478
	Controlling Service Configurator Behavior	481
	Controlling Debugging Information	481
	Optimizing Request Processing	482
	Connection Management and Protocol Selection	483
	Miscellaneous Options	484
	Option Descriptions	484
<b>Chapter 20</b>	<b>Resource Factory</b>	<b>531</b>
	Introduction	531
	Interface Definition	532
	Resource Factory for Qt GUI Toolkit	543
	Resource Factory for X Windowing Toolkit	545
	Advanced Resource Factory	546
	Resource Factory Options	549
	Advanced Resource Factory Options	559
<b>Chapter 21</b>	<b>Server Strategy Factory</b>	<b>565</b>
	Introduction	565
	Interface Definition	566
	Default Server Strategy Factory Options	574
<b>Chapter 22</b>	<b>Client Strategy Factory</b>	<b>589</b>

Introduction .....	589
Interface definition .....	590
Client Strategy Factory Options .....	593

## Volume 2

---

### Part 5      **TAO Services** **601**

---

<b>Chapter 23</b>	<b>TAO Services Overview</b> .....	603
	Introduction .....	603
	Customizing Access to the Services .....	605
	TAO's ORB Services Libraries .....	606
<b>Chapter 24</b>	<b>Naming Service</b> .....	609
	Introduction .....	609
	Resolving the Naming Service .....	610
	Example .....	612
	Object URLs .....	619
	Converting Between CosNames, Stringified Names, and URLs .....	624
	TAO-Specific Naming Service Classes .....	627
	Naming Service Utilities .....	631
	Naming Service Command Line Options .....	634
<b>Chapter 25</b>	<b>Event Service</b> .....	637
	Introduction .....	637
	Overview of the Event Service .....	638
	TAO's Event Channel Implementation .....	639
	How to Use the Event Service .....	639
	CosEvent_Service Command Line Options .....	650
	Event Channel Resource Factory .....	651

<b>Chapter 26</b>	<b>Real-Time Event Service</b>	675
	Introduction	675
	Overview of the TAO Real-Time Event Service	675
	Using the TAO Real-Time Event Service	678
	Event_Service Command Line Options	715
	Event Channel Resource Factory	716
<b>Chapter 27</b>	<b>Notification Service</b>	743
	Introduction	743
	Overview of the Notification Service	745
	Using the Notification Service	760
	Compatibility With the Event Service	797
	Notify_Service Command Line Options	798
	Notify Manager Resource Factory Options	799
<b>Chapter 28</b>	<b>Interface Repository</b>	811
	Introduction	811
	Using the Interface Repository	812
	TAO's Interface Repository Implementation	813
	Example IFR Program	816
<b>Chapter 29</b>	<b>TAO Security</b>	825
	Introduction	825
	Introduction to CORBA Security	827
	Secure Sockets Layer Protocol	842
	Working With Certificates	853
	Building ACE and TAO Security Libraries	861
	Security Unaware Application	864
	Security Policy Controlling Application	871
	Security Policy Enforcing Application	877
	SSLIOP Factory Options	893

---

**Part 6      Appendices      895**

---

<b>Appendix A</b>	<b>Choosing How To Build ACE and TAO</b> .....	897
<b>Appendix B</b>	<b>Building ACE and TAO on UNIX</b> .....	899
	Building ACE and TAO on a UNIX System .....	899
	Customizing ACE and TAO Builds .....	904
<b>Appendix C</b>	<b>Building ACE and TAO Using Visual C++</b> .....	909
	Why Build A Custom Version .....	909
	Building ACE and TAO .....	910
	What's New .....	912
	Build Notes .....	913
<b>Appendix D</b>	<b>Building ACE and TAO with Borland C++</b> .....	915
	Building ACE and TAO with Borland C++ .....	915
<b>Appendix E</b>	<b>Using ACE and TAO with Windows NT Embedded</b> .....	919
	Environment Setup .....	920
	Building Libraries and Executables .....	920
	Testing .....	920
	Resources .....	921
<b>Appendix F</b>	<b>Using ACE and TAO With VxWorks</b> .....	923
	Kernel and System Configuration .....	923
	Environment Setup .....	925
	Building Libraries and Executables .....	928
<b>Appendix G</b>	<b>Using ACE and TAO With LynxOS</b> .....	931
	Native Compilation .....	931
	Cross Compilation .....	934
<b>Appendix H</b>	<b>Using ACE and TAO With ChorusOS</b> .....	937
	Kernel and System Configuration .....	937

Environment Setup .....	939
Building Libraries and Executables .....	941
<b>Appendix I Testing ACE and TAO on VxWorks, LynxOS, and ChorusOS .....</b>	<b>943</b>
Building the Tests .....	943
Running the Tests .....	944
<b>Appendix J CORBA Compliance .....</b>	<b>949</b>
Introduction .....	949
CORBA/IIOP 2.5 .....	950
C++ Language Mapping .....	952
Interoperable Naming Service .....	952
CORBA Messaging .....	953
Real-Time CORBA .....	954
Notification Service .....	956
CORBA Security .....	957
Minimum CORBA .....	957
DII COE .....	959
<b>Appendix K TAO and ACE Contributors .....</b>	<b>963</b>
<b>Glossary .....</b>	<b>973</b>
<b>References .....</b>	<b>985</b>
<b>Index .....</b>	<b>989</b>