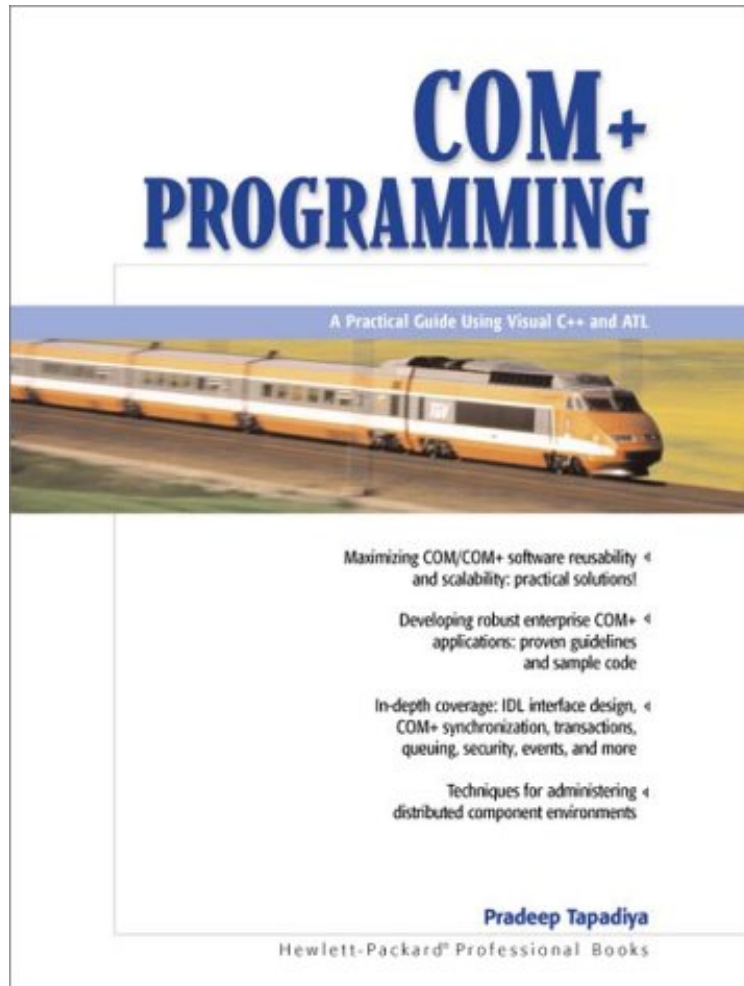


# COM+ Programming: A Practical Guide Using Visual C++ and ATL

Pradeep Tapadiya

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**Pradeep Tapadiya : COM+ Programming: A Practical Guide Using Visual C++ and ATL** before purchasing it in order to gage whether or not it would be worth my time, and all praised COM+ Programming: A Practical Guide Using Visual C++ and ATL:

21 of 21 people found the following review helpful. Develop the ever elusive "understanding"By C. DuvallBeginning with the very first chapter, this book blew me away with the attention to detail. I not only learned the semantics of COM and associated technologies, but I understood the background and progression of the language, which to me is asset that is important to any serious developer interested in this area. Using real world analogies, Pradeep gives the ability to relate the paradigm to things that anyone can relate to.Do not hesitate to purchase this book if you are not familiar with COM and want to be able to start from the beginning. This book would also be excellent for a COM

programmer migrating to COM+ because of the structure of the presentation. Excellent read! It was worth more than the price! Background Needed: C++ (preferably Visual C++), Windows 2000.0 of 0 people found the following review helpful. I'm VERY happy with my purchase and bought another set! By Grover Carlyle thank you so much for getting it to me With The Quickness This is a great little gadget that exceeded our expectation. The second time to buy his is a pretty cool product for a good price. I'm very pleased with this purchase. the only brand to buy I would come to this store if I need more. 1 of 1 people found the following review helpful. Well worth the reading By MEI found this book to be an excellent reference from the minute I opened it. I began by paging through the chapters but almost immediately found areas that helped with the project I was currently working on. Unlike most books that spend the first several chapters covering basic topics that are covered by every other book, this one actually presented a more concise and in depth look at those topics. The chapter on IDL was well worth the reading. This is definitely not a book for the beginner or for those looking to use languages other than C++. I did find some pieces questionable. The authors implementation of a resource sharing mechanism seems unnecessary. Why is it that authors know how to write better code than anyone else?

/Several books teach COM and COM+, but this is one of the first to focus on COM/COM+ issues from a developer's perspective.

From the Inside Flap Introduction Ever since software development became an engineering discipline, software development teams everywhere in the world have faced similar development and deployment problems. Among other things, developers today are concerned about: Reusing code that has been tested and used in other applications Developing flexible applications that can be customized to the users needs, but not at the expense of overburdening the development team Addressing anomalies and add features after the application has been shipped, while avoiding a complete rewrite of the application Improving application development time by leveraging against software code developed by third party software vendors Developing distributed and non-distributed applications in a similar manner All of these challenges and many more are addressed by a single technology: the Microsoft Component Object Model, better known as COM. COM is a framework for developing software components, small binary executables, that provide services to applications and other components. The incredible explosion of the Internet has caused a revolution in the way information has to be made available to the users. In developing enterprise systems, the traditional client/server model has been replaced with a three-tier programming model, enhanced for Internet applications. Developing such enterprise systems is a time- and resource-consuming affair, as the system has to meet extra enterprise-level requirements such as scalability, robustness, security, transaction support, etc. COM+ is an advanced run-time environment that provides services to meet many of the above-mentioned enterprise-level requirements. It is an integral part of the Windows 2000 Operating System. Developers can leverage the services provided by COM+, instead of building the services themselves. This book focuses on understanding the COM+ architecture from a developer's perspective and building COM+ applications using Microsoft Visual C++ and the Active Template Library (ATL). COM+ is not a radical departure from COM--it is just the next stage in the evolution of the COM programming model. As a matter of fact, it is very difficult to determine where COM ends and where COM+ begins. In order to understand the COM+ architecture and the services provided by COM+, it is necessary to understand the fundamental component model at the heart of COM+. To this end, the book is divided in two parts. The first part builds the foundation that is COM and the second part explains the services provided by COM+ version 1.0. About This Book The purpose of writing this book is twofold. To help you: Understand the COM/COM+ architecture, and Explore the services provided by COM+ 1.0. In order to achieve the stated goals, I have presented the material from a developer's perspective. I have illustrated the key concepts by writing some simple applications using Microsoft Visual C++ 6.0, Platform SDK (January 2000), and ATL 3.0. This book provides enough C++ code and tools to enable the readers to be more productive and to carry out further research. As we progress through unfolding the COM+ architecture and services, I first present one or more software-engineering problems at hand, and then discuss the solution that COM+ has to offer. Whenever applicable, code snippets are provided to illustrate and explain the concepts. In an attempt to focus on COM+ 1.0 architecture and services, I have refrained from including material that is not of any practical importance. Consequently, I do not discuss the origin and history of COM, or even Microsoft Transaction Server (MTS), a precursor to COM+ 1.0. However, whenever possible, I have touched upon the new services that are being planned for the future release of COM+ (COM+ 1.x). Choice of Language COM+ is a specification. As such, it is language independent. However, most COM-based components are currently written in C++. This book uses C++ for almost all the server-side code. Client-side usage is shown in C++, VB, or in any other language that is appropriate for the given situation. Prerequisites The most important prerequisite for this book is your willingness to learn. The book is written for intermediate to advanced developers. It is assumed that the readers have a working knowledge of the following: Windows 2000 Operating System C++ programming language VB programming language C++ templates. In particular, familiarity with C++ Standard Template Library (STL) is helpful. Developing programs using Win32 API Windows 2000 security model Strictly speaking, many of these assumptions can be relaxed.

For example, knowledge of Win32 API or C++ templates is helpful but not mandatory. As we go through developing sample code, I am confident readers will automatically pick up the missing information. Sample Code All the examples provided in the book are concise and complete. For brevity, I sometimes show only the relevant code snippet in the book. However, complete source code is available on the companion CD. All the examples and tools have been compiled under Visual C++ 6.0 SP3 and Platform SDK (January 2000), and have been tested with the release version of Windows 2000 OS.

References This book frequently refers to other books, Microsoft's Knowledge Base articles, articles from various journals and from Microsoft's Developers Network (MSDN) Library. All the references for a particular chapter are listed at the end of the chapter. Each reference is indexed by a keyword that uses a combination of author's last name and year the reference was published. For example, Don Box's book *Essential COM*, which was published in 1998, is indexed as Box-98. In the book, each time I have to refer to an article, I use the keyword index of the reference.

Chapter Organization The book is divided into two parts. The first part, *The Foundation*, consists of three chapters. It explains the fundamentals of Component Object Model and shows how to design and develop COM-based applications. Each chapter builds on the knowledge from the previous chapter. The second part, *The Extension*, focuses on COM+ architecture and services provided by COM+ 1.0. Each chapter focuses on a specific aspect of COM+. These chapters are largely independent of each other. Chapter five, however, explains the COM+ programming model, and should be read before looking into any other COM+ chapter.

Companion CD The companion CD contains the following:

- The source code for the C++ utility classes and tools developed in the book.
- The entire source code for all the examples arranged by chapters.
- More information about the contents of the CD can be found in the read-me file on the CD.

From the Back Cover

Maximizing COM/COM+ software reusability and scalability: practical solutions!  
Developing robust enterprise COM+ applications: Proven guidelines and sample code  
In-depth coverage: IDL interface design, COM+ synchronization, transactions, queuing, security, events, and more  
Techniques for administering distributed component environments  
Maximizing COM/COM+ reuse and scalability: practical, enterprise-class solutions!  
If you're ready to develop COM/COM+ enterprise applications, start with this practical, solutions-focused guide!  
Using case studies and real-world code examples, Hewlett-Packard COM/COM+ expert Pradeep Tapadiya presents COM and COM+ in detail, from a developer's perspective. You'll master powerful techniques for improving reusability, scalability, and robustness-and discover how to avoid the traps and pitfalls that await the unwary. Tapadiya demonstrates today's best approaches to designing interfaces, building COM servers, dealing with transactions, and more, including:

- In-depth coverage of interface design with IDL
- A full chapter on maximizing the scalability of COM/COM+ applications
- Maximizing security in distributed, component-based environments
- COM+ synchronization, apartments, activities, and event notification
- Working with queued components
- Administering distributed component environments

Whether you're new to component development, migrating to COM+ and Windows 2000, or an experienced developer seeking powerful new techniques, you'll find the answers in *COM+ Programming: A Practical Guide Using Visual C++ and ATL*.

About the Author PRADEEP TAPADIYA is a Program Manager and Lead Software Engineer for the OpenView ManageX Group of Hewlett-Packard in Roseville, CA. He started developing COM-based applications in 1996 and is currently involved with developing a suite of systems management applications for Windows NT and 2000 using DCOM. Tapadiya holds a doctoral degree in computer science from Texas AM University.