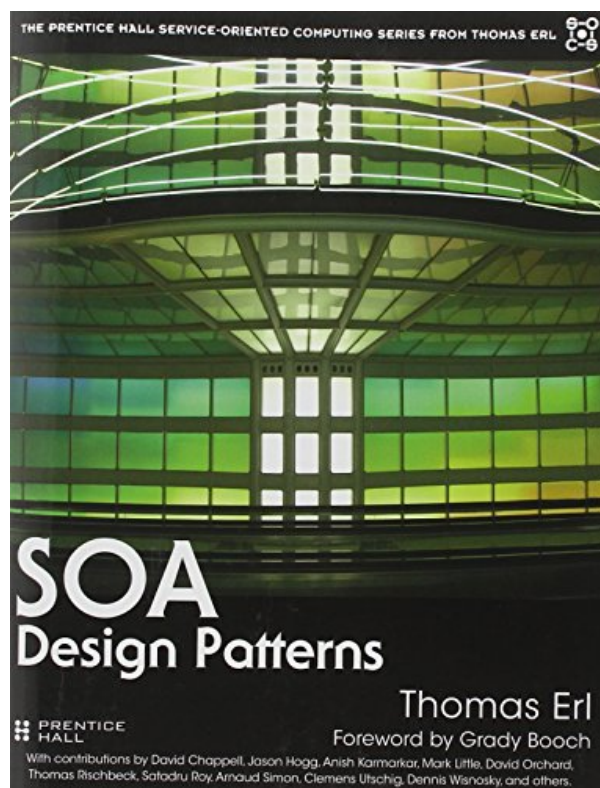


# SOA DESIGN PATTERNS (THE PRENTICE HALL SERVICE-ORIENTED COMPUTING SERIES FROM THOMAS ERL) BY THOMAS RISCHBECK, THOMAS ERL



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Also we discuss the books **SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl**; you might not discover the printed publications here. Numerous collections are supplied in soft data. It will specifically give you a lot more perks. Why? The very first is that you could not have to lug guide anywhere by fulfilling the bag with this SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl It is for guide is in soft documents, so you could wait in gadget. After that, you could open the device all over and read guide properly. Those are some few perks that can be obtained. So, take all advantages of getting this soft data book SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl in this internet site by downloading in web link given.

From the Back Cover

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- Grady Booch, IBM Fellow

“With the continued explosion of services and the increased rate of adoption of SOA through the market, there is a critical need for comprehensive, actionable guidance that provides the fastest possible time to results. Microsoft is honored to contribute to the SOA Design Patterns book, and to continue working with the community to realize the value of Real World SOA.

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“Red Hat is pleased to be involved in the SOA Design Patterns book and contribute important SOA design patterns to the community that we and our customers have used within our own SOA platforms. I am sure this will be a great resource for future SOA practitioners.

- Pierre Fricke Director, Product Line Management, JBoss SOA Platform, Red Hat

“A wealth of proven, reusable SOA design patterns, clearly explained and illustrated with examples. An invaluable resource for all those involved in the design of service-oriented solutions.

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“As always, Thomas delivers again. In a well-structured and easy-to-understand way, this book provides a wonderful collection of patterns each addressing a typical set of SOA design problems with well articulated solutions. The plain language and hundreds of diagrams included in the book help make the complicated subjects of SOA design comprehensible even to those who are new to the SOA design world. It's a must-have reference book for all SOA practitioners, especially for enterprise architects, solution architects, developers, managers, and business process experts.

- Canyon Kevin Liu, Solution Architecture Manager, SAP

“The concept of service oriented architecture has long promised visions of agile organizations being able to swap out interfaces and applications as business needs change. SOA also promises incredible developer and IT productivity, with the idea that key services would be candidates for cross-enterprise sharing or reuse. But many organizations' efforts to move to SOA have been mired-by organizational issues, by conflicting vendor messages, and by architectures that may amount to little more than Just a Bunch of Web Services. There's been a lot of confusion in the SOA marketplace about exactly what SOA is, what it's supposed to accomplish, and how an enterprise goes about in making it work.

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While no two SOA implementations are alike, Thomas Erl and his team of contributors have effectively identified the similarities in composition services need to have at a sub-atomic level in order to interact with each other as we hope they will. The book identifies 85 SOA design patterns which have been developed and thoroughly vetted to ensure that a service-oriented architecture does achieve the flexibility and loose coupling promised. The book is also compelling in that it is a living document, if you will, inviting participation in an open process to identify and formulate new patterns to this growing body of knowledge.

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“These SOA patterns define, encompass, and comprise a complete repertoire of best practices for developing a world-class IT SOA portfolio for the enterprise and its organizational units through to service and schema analysis and design. After many years as an architect on many SOA projects, I strongly recommend this book be on the shelf of every analyst and technical member of any SOA effort, right next to the SOA standards and guidelines it outlines and elucidates the need for. Our SOA governance standards draw heavily from this work and others from this series.

- Robert John Hathaway III, Enterprise Software Architect, SOA Object Systems

“A wise man once told me that wisdom isn't all about knowledge and intelligence, it is just as much about asking questions. Asking questions is the true mark of wisdom and during the writing of theSOA Design

Patternsbook Thomas Erl has shown his real qualities. The community effort behind this book is huge meaning that Thomas has had access to the knowledge and experience of a large group of accomplished practitioners. The result speaks for itself. This book is packed with proven solutions to recurring problems, and the documented pros and cons of each solution have been verified by persons with true experience. This book could give SOA initiatives of any scale a real boost.

- Herbjörn Wilhelmsen, Architect and Senior Consultant, Objectware

“This book is an absolute milestone in SOA literature. For the first time we are provided with a practical guide on how the principle centric description of service orientation from a vendor-agnostic viewpoint is actually made to work in a language based on patterns. This book makes you talk SOA! There are very few who understand SOA like Thomas Erl does, he actually put's it all together!

- Brian Lokhorst, Solution Architect, Dutch Tax Office

“Service oriented architecture is all about best practices we have learned since IT's existence. This book takes all those best practices and bundles them into a nice pattern catalogue. [It provides] a really excellent approach as patterns are not just documented but are provided with application scenarios through case studies [which] fills the gap between theory and practice.

- Shakti Sharma, Senior Enterprise Architect, Sysco Corp

“An excellent and important book on solving problems in SOA [with a] solid structure. Has the potential of being among the major influential books.

- Peter Chang, Lawrence Technical University

“SOA Design Patterns presents a vast amount of knowledge about how to successfully implement SOA within an organization. The information is clear, concise, and most importantly, legitimate.

- Peter B. Woodhull, President and Principal Architect, Modus21

“SOA Design Patterns offers real insights into everyday problems that one will encounter when investing in services oriented architecture. [It] provides a number of problem descriptions and offers strategies for dealing with these problems. SOA design patterns highlights more than just the technical problems and solutions. Common organizational issues that can hinder progress towards achieving SOA migration are explained along with potential approaches for dealing with these real world challenges. Once again Thomas Erl provides in-depth coverage of SOA terminology and helps the reader better understand and appreciate the complexities of migrating to an SOA environment.

- David Michalowicz, Air and Space Operations Center Modernization Team Lead, MITRE Corporation

“This is a long overdue, serious, comprehensive, and well-presented catalog of SOA design patterns. This will be required reading and reference for all our SOA engineers and architects. The best of the series so far!

[The book] works in two ways: as a primer in SOA design and architecture it can easily be read front-to-back to get an overview of most of the key design issues you will encounter, and as a reference catalog of design techniques that can be referred to again and again...

- Wendell Ocasio, Architecture Consultant, DoD Military Health Systems, Agilex Technologies

“Thomas has once again provided the SOA practitioner with a phenomenal collection of knowledge. This is a reference that I will come back to time and time again as I move forward in SOA design efforts.

What I liked most about this book is its vendor agnostic approach to SOA design patterns. This approach really presents the reader with an understanding of why or why not to implement a pattern, group patterns, or use compound patterns rather than giving them a marketing spiel on why one implementation of a pattern is better than another (for example, why one ESB is better than another). I think as SOA adoption continues to advance, the ability for architects to understand when and why to apply specific patterns will be a driving factor in the overall success and evolution of SOA. Additionally, I believe that this book provides the consumer with the understanding required to chose which vendor's SOA products are right for their specific needs.

- Bryan Brew, SOA Consultant, Booz Allen Hamilton

“A must have for every SOA practitioner.

- Richard Van Schelven, Principal Engineer, Ericsson

“This book is a long-expected successor to the books on object-oriented design patterns and integration patterns. It is a great reference book that clearly and thoroughly describes design patterns for SOA. A great read for architects who are facing the challenge of transforming their enterprise into a service-oriented enterprise.

- Linda Terlouw, Solution Architect, Ordina

“The maturation of Service-Oriented Architecture has given the industry time to absorb the best practices of service development. Thomas Erl has amassed this collective wisdom in SOA Design Patterns, an absolutely indispensable addition to any Service Oriented bookshelf.

- Kevin P. Davis, Ph.D

“The problem with most texts on SOA is one of specificity. Architects responsible for SOA implementation in most organizations have little time for abstract theories on the subject, but are hungry for concrete details that they can relate to the real problems they face in their environment. SOA Design Patterns is critical reading for anyone with service design responsibilities. Not only does the text provide the normal pattern templates, but each pattern is applied in detail against a background case study to provide exceptionally meaningful context to the information. The graphic visualizations of the problems and pattern solutions are excellent supplementary companions to the explanatory text. This book will greatly stretch the knowledge of the reader as much for raising and addressing issues that may have never occurred to the reader as it does in treating those problems that are in more common occurrence. The real beauty of this book is in its plain English prose. Unlike so many technical reference books, one does not find themselves re-reading sections multiple times trying to discern the intent of the author. This is also not a reference that will sit gathering dust on a shelf after one or two perusings. Practitioners will find themselves returning over and over to utilize the knowledge in their projects. This is as close as you'll come to having a service design expert sitting over your shoulder.

- James Kinneavy, Principal Software Architect, University of California

“As the industry converges on SOA patterns, Erl provides an outstanding reference guide to composition and integration-and yet another distinctive contribution to the SOA practice.

- Steve Birkel, Chief IT Technical Architect, Intel Corp.

“With SOA Design Patterns, Thomas Erl adds an indispensable SOA reference volume to the technologist's library. Replete with to-the-point examples, it will be a helpful aid to any IT organization.

- Ed Dodds, Strategist, Systems Architect, Convergence

“Again, Thomas Erl has written an indispensable guide to SOA. Building on his prior successes, his patterns

go into even more detail. Therefore, this book is not only helpful to the SOA beginner, but also provides new insight and ideas to professionals.

- Philipp Offermann, Research Scientist, Technische Universität Berlin, Germany

“SOA Design Patterns is an extraordinary contribution to SOA best practices! Once again, Thomas has created an indispensable resource for any person or organization interested in or actively engaged in the practice of Service Oriented Architecture. Using case studies based on three very different business models, Thomas guides the reader through the process of selecting appropriate implementation patterns to ensure a flexible, well-performing, and secure SOA ecosystem.

- Victor Brown, Managing Partner and Principal Consultant,  
Cypress Management Group Corporation

In cooperation with experts and practitioners throughout the SOA community, best-selling author Thomas Erl brings together the de facto catalog of design patterns for SOA and service-orientation. More than three years in development and subjected to numerous industry reviews, the 85 patterns in this full-color book provide the most successful and proven design techniques to overcoming the most common and critical problems to achieving modern-day SOA. Through numerous examples, individually documented pattern profiles, and over 400 color illustrations, this book provides in-depth coverage of:

- Patterns for the design, implementation, and governance of service inventories-collections of services representing individual service portfolios that can be independently modeled, designed, and evolved.
- Patterns specific to service-level architecture which pertain to a wide range of design areas, including contract design, security, legacy encapsulation, reliability, scalability, and a variety of implementation and governance issues.
- Service composition patterns that address the many aspects associated with combining services into aggregate distributed solutions, including topics such as runtime messaging and message design, inter-service security controls, and transformation.
- Compound patterns (such as Enterprise Service Bus and Orchestration) and recommended pattern application sequences that establish foundational processes.

The book begins by establishing SOA types that are referenced throughout the patterns and then form the basis of a final chapter that discusses the architectural impact of service-oriented computing in general. These chapters bookend the pattern catalog to provide a clear link between SOA design patterns, the strategic goals of service-oriented computing, different SOA types, and the service-orientation design paradigm.

This book series is further supported by a series of resources sites, including [soabooks.com](http://soabooks.com), [soaspecs.com](http://soaspecs.com), [soapatterns.org](http://soapatterns.org), [soamag.com](http://soamag.com), and [soaposters.com](http://soaposters.com).

#### About the Author

Thomas Erl is a best-selling IT author and founder of [CloudSchool.com](http://CloudSchool.com)<sup>TM</sup> and [SOASchool.com](http://SOASchool.com)®. Thomas has been the world's top-selling service technology author for over five years and is the series editor of the Prentice Hall Service Technology Series from Thomas Erl ([www.servicetechbooks.com](http://www.servicetechbooks.com)), as well as the editor of the Service Technology Magazine ([www.servicetechmag.com](http://www.servicetechmag.com)). With over 175,000 copies in print world-wide, his eight published books have become international bestsellers and have been formally endorsed by senior members of major IT organizations, such as IBM, Microsoft, Oracle, Intel, Accenture, IEEE, HL7, MITRE, SAP, CISCO, HP, and others.

Four of his books, *Cloud Computing: Concepts, Technology & Architecture*, *SOA Design Patterns*, *SOA Principles of Service Design*, and *SOA Governance*, were authored in collaboration with the IT community and have contributed to the definition of cloud computing technology mechanisms, the service-oriented architectural model and service-orientation as a distinct paradigm. Thomas is currently working with over 20 authors on several new books dedicated to specialized topic areas such as cloud computing, Big Data, modern service technologies, and service-orientation.

As CEO of Arcitura Education Inc. and in cooperation with CloudSchool.com™ and SOASchool.com®, Thomas has led the development of curricula for the internationally recognized SOA Certified Professional (SOACP) and Cloud Certified Professional (CCP) accreditation programs, which have established a series of formal, vendor-neutral industry certifications.

Thomas is the founding member of the SOA Manifesto Working Group and author of the Annotated SOA Manifesto ([www.soa-manifesto.com](http://www.soa-manifesto.com)). He is a member of the Cloud Education & Credential Committee, SOA Education Committee, and he further oversees the SOAPatterns.org and CloudPatterns.org initiatives, which are dedicated to the on-going development of master pattern catalogs for service-oriented computing and cloud computing.

Thomas has toured over 20 countries as a speaker and instructor for public and private events, and regularly participates in international conferences, including SOA, Cloud + Service Technology Symposium and Gartner events. Over 100 articles and interviews by Thomas have been published in numerous publications, including the Wall Street Journal and CIO Magazine.

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Foreword Foreword

The entire history of software engineering can be characterized as one of rising levels of abstraction. We see this in our languages, our tools, our platforms, and our methods. Indeed, abstraction is the primary way that we as humans attend to complexity—and software-intensive systems are among the most complex artifacts ever created.

I would also observe that one of the most important advances in software engineering over the past two decades has been the practice of patterns. Patterns are yet another example of this rise in abstraction: A pattern specifies a common solution to a common problem in the form of a society of components that collaborate with one another. Influenced by the writings of Christopher Alexander, Kent Beck and Ward Cunningham began to codify various design patterns from their experience with Smalltalk. Growing slowly but steadily, these concepts began to gain traction among other developers. The publication of the seminal book *Design Patterns* by Erich Gamma, John Vlissides, Ralph Johnson, and Richard Helm marked the introduction of these ideas to the mainstream. The subsequent activities of the Hillside Group provided a forum for this growing community, yielding a very vibrant literature and practice. Now the practice of patterns is very much mainstream: Every well-structured software-intensive system tends to be full of patterns (whether their architects name them intentionally or not).

The emerging dominant architectural style for many enterprise systems is that of a service-oriented architecture, a style that at its core is essentially a message passing architecture. However, therein are many patterns that work (and anti-patterns that should be avoided).

Thomas' work is therefore the right book at the right time. He really groks the nature of SOA systems: There are many hard design decisions to be made, ranging from data-orientation to the problems of legacy integration and even security. Thomas offers wise counsel on each of these issues and many more, all in the language of design patterns. There are many things I like about this work. It's comprehensive. It's written in a very accessible pattern language. It offers patterns that play well with one another. Finally, Thomas covers not just the technical details, but also sets these patterns in the context of economic and other considerations.

SOA Design Patterns is an important contribution to the literature and practice of building and delivering quality software-intensive systems.

—Grady Booch, IBM Fellow  
September, 2008

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"A wise man once told me that wisdom isn't all about knowledge and intelligence, it is just as much about asking questions. Asking questions is the true mark of wisdom and during the writing of the SOA Design Patterns book Thomas Erl has shown his real qualities. The community effort behind this book is huge meaning that Thomas has had access to the knowledge and experience of a large group of accomplished practitioners. The result speaks for itself. This book is packed with proven solutions to recurring problems, and the documented pros and cons of each solution have been verified by persons with true experience. This book could give SOA initiatives of any scale a real boost."

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This book series is further supported by a series of resources sites, including [soabooks.com](http://soabooks.com), [soaspecs.com](http://soaspecs.com), [soapatterns.org](http://soapatterns.org), [soamag.com](http://soamag.com), and [soaposters.com](http://soaposters.com).

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- Binding: Hardcover
- 800 pages

From the Back Cover

“SOA Design Patterns is an important contribution to the literature and practice of building and delivering quality software-intensive systems.

- Grady Booch, IBM Fellow

“With the continued explosion of services and the increased rate of adoption of SOA through the market, there is a critical need for comprehensive, actionable guidance that provides the fastest possible time to results. Microsoft is honored to contribute to the SOA Design Patterns book, and to continue working with the community to realize the value of Real World SOA.

- Steven Martin, Senior Director, Developer Platform Product Management, Microsoft

“SOA Design Patterns provides the proper guidance with the right level of abstraction to be adapted to each organization's needs, and Oracle is pleased to have contributed to the patterns contained in this book.

- Dr. Mohamad Afshar, Director of Product Management, Oracle Fusion Middleware, Oracle

“Red Hat is pleased to be involved in the SOA Design Patterns book and contribute important SOA design patterns to the community that we and our customers have used within our own SOA platforms. I am sure this will be a great resource for future SOA practitioners.

- Pierre Fricke, Director, Product Line Management, JBoss SOA Platform, Red Hat

“A wealth of proven, reusable SOA design patterns, clearly explained and illustrated with examples. An invaluable resource for all those involved in the design of service-oriented solutions.

- Phil Thomas, Consulting IT Specialist, IBM Software Group

“This obligatory almanac of SOA design patterns will become the foundation on which many organizations will build their successful SOA solutions. It will allow organizations to build their own focused SOA design patterns catalog in an expedited fashion knowing that it contains the wealth and expertise of proven SOA best practices.

- Stephen Bennett, Director, Technology Business Unit, Oracle Corporation

“The technical differences between service orientation and object orientation are subtle enough to confuse even the most advanced developers. Thomas Erl's book provides a great service by clearly articulating SOA design patterns and differentiating them from similar OO design patterns.

- Anne Thomas Manes, VP & Research Director, Burton Group

“SOA Design Patterns does an excellent job of laying out and discussing the areas of SOA design that a competent SOA practitioner should understand and employ.

- Robert Laird, SOA Architect, IBM

“As always, Thomas delivers again. In a well-structured and easy-to-understand way, this book provides a wonderful collection of patterns each addressing a typical set of SOA design problems with well articulated solutions. The plain language and hundreds of diagrams included in the book help make the complicated subjects of SOA design comprehensible even to those who are new to the SOA design world. It's a must-have reference book for all SOA practitioners, especially for enterprise architects, solution architects, developers, managers, and business process experts.

- Canyon Kevin Liu, Solution Architecture Manager, SAP

“The concept of service oriented architecture has long promised visions of agile organizations being able to swap out interfaces and applications as business needs change. SOA also promises incredible developer and IT productivity, with the idea that key services would be candidates for cross-enterprise sharing or reuse. But many organizations' efforts to move to SOA have been mired-by organizational issues, by conflicting vendor messages, and by architectures that may amount to little more than Just a Bunch of Web Services. There's been a lot of confusion in the SOA marketplace about exactly what SOA is, what it's supposed to accomplish, and how an enterprise goes about in making it work.

SOA Design Patterns is a definitive work that offers clarity on the purpose and functioning of service oriented architecture. SOA Design Patterns not only helps the IT practitioner lay the groundwork for a well-functioning SOA effort across the enterprise, but also connects the dots between SOA and the business requirements in a very concrete way. Plus, this book is completely technology agnostic—SOA Design Patterns rightly focuses on infrastructure and architecture, and it doesn't matter whether you're using components of one kind or another, or Java, or .NET, or Web services, or REST-style interfaces.

While no two SOA implementations are alike, Thomas Erl and his team of contributors have effectively identified the similarities in composition services need to have at a sub-atomic level in order to interact with each other as we hope they will. The book identifies 85 SOA design patterns which have been developed and thoroughly vetted to ensure that a service-oriented architecture does achieve the flexibility and loose coupling promised. The book is also compelling in that it is a living document, if you will, inviting participation in an open process to identify and formulate new patterns to this growing body of knowledge.

- Joe McKendrick, Independent Analyst, Author of ZDNet's SOA Blog

“If you want to truly educate yourself on SOA, read this book.

- Sona Srinivasan, Global Client Services & Operations, CISCO

“An impressive decomposition of the process and architectural elements that support service-oriented analysis, design, and delivery. Right-sized and terminologically consistent.

Overall, the book represents a patient separation of concerns in respect of the process and architectural parts that underpin any serious SOA undertaking. Two things stand out. First, the pattern relationship diagrams provide rich views into the systemic relationships that structure a service-oriented architecture: these patterns are not discrete, isolated templates to be applied mechanically to the problem space; rather, they form a network of forces and constraints that guide the practitioner to consider the task at hand in the context of its inter-dependencies. Second, the pattern sequence diagrams and accompanying notes provide a useful framework for planning and executing the many activities that comprise an SOA engagement.

- Ian Robinson, Principal Technology Consultant, ThoughtWorks

“Successful implementation of SOA principles requires a shift in focus from software system means, or the way capabilities are developed, to the desired end results, or real-world effects required to satisfy organizational business processes. In SOA Design Patterns, Thomas Erl provides service architects with a broad palette of reusable service patterns that describe service capabilities that can cut across many SOA applications. Service architects taking advantage of these patterns will save a great deal of time describing and assembling services to deliver the real world effects they need to meet their organization's specific business objectives.

- Chuck Georgo, Public Safety and National Security Architect

“In IT, we have increasingly come to see the value of having catalogs of good solution patterns in programming and systems design. With this book, Thomas Erl brings a comprehensive set of patterns to bear on the world of SOA. These patterns enable easily communicated, reusable, and effective solutions, allowing us to more rapidly design and build out the large, complicated and interoperable enterprise SOAs into which our IT environments are evolving.

- Al Gough, Business Systems Solutions CTO, CACI International Inc.

“This book provides a comprehensive and pragmatic review of design issues in service-centric design, development, and evolution. The Web site related to this book [SOAPatterns.org] is a wonderful platform and gives the opportunity for the software community to maintain this catalogue....

- Veronica Gacitua Decar, Dublin City University

“Erl's SOA Design Patterns is for the IT decision maker determined to make smart architecture design choices, smart investments, and long term enterprise impact. For those IT professionals committed to service-orientation as a value-added design and implementation option, Patterns offers a credible, repeatable approach to engineering an adaptable business enterprise. This is a must read for all IT architect professionals.

- Larry Gloss, VP and General Manager, Information Manufacturing, LLC

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#### About the Author

Thomas Erl is a best-selling IT author and founder of [CloudSchool.com](http://CloudSchool.com)<sup>TM</sup> and [SOASchool.com](http://SOASchool.com)®. Thomas has been the world's top-selling service technology author for over five years and is the series editor of the Prentice Hall Service Technology Series from Thomas Erl ([www.servicetechbooks.com](http://www.servicetechbooks.com)), as well as the editor of the Service Technology Magazine ([www.servicetechmag.com](http://www.servicetechmag.com)). With over 175,000 copies in print world-wide, his eight published books have become international bestsellers and have been formally endorsed by senior members of major IT organizations, such as IBM, Microsoft, Oracle, Intel, Accenture, IEEE, HL7, MITRE, SAP, CISCO, HP, and others.

Four of his books, *Cloud Computing: Concepts, Technology & Architecture*, *SOA Design Patterns*, *SOA Principles of Service Design*, and *SOA Governance*, were authored in collaboration with the IT community and have contributed to the definition of cloud computing technology mechanisms, the service-oriented

architectural model and service-orientation as a distinct paradigm. Thomas is currently working with over 20 authors on several new books dedicated to specialized topic areas such as cloud computing, Big Data, modern service technologies, and service-orientation.

As CEO of Arcitura Education Inc. and in cooperation with CloudSchool.com™ and SOASchool.com®, Thomas has led the development of curricula for the internationally recognized SOA Certified Professional (SOACP) and Cloud Certified Professional (CCP) accreditation programs, which have established a series of formal, vendor-neutral industry certifications.

Thomas is the founding member of the SOA Manifesto Working Group and author of the Annotated SOA Manifesto ([www.soa-manifesto.com](http://www.soa-manifesto.com)). He is a member of the Cloud Education & Credential Committee, SOA Education Committee, and he further oversees the SOAPatterns.org and CloudPatterns.org initiatives, which are dedicated to the on-going development of master pattern catalogs for service-oriented computing and cloud computing.

Thomas has toured over 20 countries as a speaker and instructor for public and private events, and regularly participates in international conferences, including SOA, Cloud + Service Technology Symposium and Gartner events. Over 100 articles and interviews by Thomas have been published in numerous publications, including the Wall Street Journal and CIO Magazine.

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Foreword Foreword

The entire history of software engineering can be characterized as one of rising levels of abstraction. We see this in our languages, our tools, our platforms, and our methods. Indeed, abstraction is the primary way that we as humans attend to complexity—and software-intensive systems are among the most complex artifacts ever created.

I would also observe that one of the most important advances in software engineering over the past two decades has been the practice of patterns. Patterns are yet another example of this rise in abstraction: A pattern specifies a common solution to a common problem in the form of a society of components that collaborate with one another. Influenced by the writings of Christopher Alexander, Kent Beck and Ward Cunningham began to codify various design patterns from their experience with Smalltalk. Growing slowly but steadily, these concepts began to gain traction among other developers. The publication of the seminal book *Design Patterns* by Erich Gamma, John Vlissides, Ralph Johnson, and Richard Helm marked the introduction of these ideas to the mainstream. The subsequent activities of the Hillside Group provided a forum for this growing community, yielding a very vibrant literature and practice. Now the practice of patterns is very much mainstream: Every well-structured software-intensive system tends to be full of patterns (whether their architects name them intentionally or not).

The emerging dominant architectural style for many enterprise systems is that of a service-oriented architecture, a style that at its core is essentially a message passing architecture. However, therein are many patterns that work (and anti-patterns that should be avoided).

Thomas' work is therefore the right book at the right time. He really groks the nature of SOA systems: There are many hard design decisions to be made, ranging from data-orientation to the problems of legacy integration and even security. Thomas offers wise counsel on each of these issues and many more, all in the language of design patterns. There are many things I like about this work. It's comprehensive. It's written in a very accessible pattern language. It offers patterns that play well with one another. Finally, Thomas covers not just the technical details, but also sets these patterns in the context of economic and other considerations.

SOA Design Patterns is an important contribution to the literature and practice of building and delivering quality software-intensive systems.

—Grady Booch, IBM Fellow  
September, 2008

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Most helpful customer reviews

61 of 65 people found the following review helpful.

Wonderful Overkill

By J. Brutto

This text provides a wonderful and thorough explanation of base SOA principles. The core definitions are concrete, base references well chosen and contains many useful points for consideration. The key topics are covered in a logical structure and approached in logical order. This makes the text much more useful for building a foundation on SOA than its competitors.

However, the text clearly overstates the issues. The use of non-illuminating case studies coupled with needlessly complex re-definition of key terminology makes this reference sheer overkill. This book provides a key example of taking simple concepts and turning them in on themselves to make them appear much more complex than they really are. I am unsure whether this is because of the author's desire to become the biblical reference that Distributed Systems: Principles and Paradigms is or if it is simply because the author wants to make the topic seem more intellectually difficult to grasp than it really is.

I do not want to take away from the value of the content covered, but there are much more succinct and light-hearted publications that will lead you to the same base understanding. It is VERY wordy and overstated, but it is worth having in your stack of SOA, Web Services, etc. etc. etc. reference stack. If for nothing else, than key citations and consideration points.

Possibly the most value thing I got from this book was the ability to ask additional questions and put key things to consideration that would have otherwise been missed. Sometimes the most obvious things are taken for granted and hence overlooked -- this book touches on that wonderfully.

To summarize: a wonderful book with a thorough examination of core SOA principles, but it breaks the primary principle of "I'm sorry this letter is so long, I didn't have time to make it shorter."

I enjoyed the author's/publisher's other books on the topic, but this one was a bit of a disappointment - perhaps it should have been first on my list instead of close to last. I highly recommend ignoring the fruitless illustrations/diagrams and sticking to the text, as well.

34 of 36 people found the following review helpful.

Lots of colorful, high-level models, but few details

By Silverstein

I think this book shares the same defect as the rest of the books in the SOA/Erl series: it's essentially an over-modeled collection of diagrams and abstractions with little real information, wrapped in advertising for the Erl/SOA brand. The modeling reaches the point of absurdity when models are given to depict where you are

in the process or pattern, and when diagrams are used in place of concise text. (I kid you not; there's one "pattern" where the text makes the vapidly obvious claim that large problems can be broken into smaller ones, and large solutions can be broken into smaller ones, then proceeds to model that claim with two large diagrams of large problems and large solutions being broken into smaller problems and smaller solutions, respectively.)

Each pattern has lots of abstract claims and diagrams, and then is usually followed by a snippet of an XML configuration file with the one line that characterizes the "pattern" in bold. IOW, the whole pattern could have been reduced to one paragraph with an XML snippet. I don't have the book in front of me, but to give you an example of what I'm talking about, imagine a whole chapter on the "Services Security Pattern" with fifty pages of text and block diagrams talking at a high level about how security is important (including large diagrams that model concepts like [User] -> [Login] -> [Authentication]), followed by an XML web service configuration file snippet that enables the use of WS-Basic.

I get the impression that these books are just promotional material for the class that Erl & Co. are trying to get readers to pay for. The few books in this series that I've read or perused seem to plug Erl's SOA brand, plug his web site, plug his courses, and then spend 800 pages describing a few technical concepts at level appropriate for the sales team or the CIO. The technical content of this book could probably be distilled down to a chapter or two.

If you're an architect or developer, I'd recommend skipping this book and the rest of the series.

14 of 15 people found the following review helpful.

Wordy, Repetitive, Vacuous with Some Nuggets of Insight

By Carlos E. Perez

In summary, the SOA Design Patterns book isn't structured with the same rigor and coherence as other Design Patterns books. The content is unusually wordy and repetitive. There are a lot of diagrams but a majority of them provide little insight. The book takes well known concepts in computer science and regurgitates them as design patterns essentially taking what is obvious and making them obscure. Despite the poor quality of most of the book, its saving grace is that there are but a few patterns that have been submitted by contributors that are of a high quality.

However considering the pervasively poor quality of SOA books in general, I'm going to say it is one of the more valuable SOA books. Even if this bar is extremely low, this is of the few SOA books where you can indeed find some true nuggets of wisdom. (The book's website has a lot more interesting patterns that weren't published with the book) However, you have to dig very hard and long to find them because the map that is provided can be deliberately obscuring and more of a hindrance than an aid. Read it only if you know what to look for.

More details here: [...].

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# **SOA DESIGN PATTERNS (THE PRENTICE HALL SERVICE-ORIENTED COMPUTING SERIES FROM THOMAS ERL) BY THOMAS RISCHBECK, THOMAS ERL PDF**

Be the very first to download this e-book now as well as get all reasons you need to read this SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl The publication SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl is not simply for your duties or necessity in your life. E-books will certainly constantly be a buddy in every time you read. Now, let the others learn about this web page. You could take the advantages and also share it likewise for your close friends and individuals around you. By by doing this, you can really get the meaning of this book **SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl** profitably. Just what do you think of our suggestion here?

From the Back Cover

“SOA Design Patterns is an important contribution to the literature and practice of building and delivering quality software-intensive systems.

- Grady Booch, IBM Fellow

“With the continued explosion of services and the increased rate of adoption of SOA through the market, there is a critical need for comprehensive, actionable guidance that provides the fastest possible time to results. Microsoft is honored to contribute to the SOA Design Patterns book, and to continue working with the community to realize the value of Real World SOA.

- Steven Martin, Senior Director, Developer Platform Product Management, Microsoft

“SOA Design Patterns provides the proper guidance with the right level of abstraction to be adapted to each organization's needs, and Oracle is pleased to have contributed to the patterns contained in this book.

- Dr. Mohamad Afshar, Director of Product Management, Oracle Fusion Middleware, Oracle

“Red Hat is pleased to be involved in the SOA Design Patterns book and contribute important SOA design patterns to the community that we and our customers have used within our own SOA platforms. I am sure this will be a great resource for future SOA practitioners.

- Pierre Fricke Director, Product Line Management, JBoss SOA Platform, Red Hat

“A wealth of proven, reusable SOA design patterns, clearly explained and illustrated with examples. An invaluable resource for all those involved in the design of service-oriented solutions.

- Phil Thomas, Consulting IT Specialist, IBM Software Group

“This obligatory almanac of SOA design patterns will become the foundation on which many organizations will build their successful SOA solutions. It will allow organizations to build their own focused SOA design patterns catalog in an expedited fashion knowing that it contains the wealth and expertise of proven SOA best practices.

- Stephen Bennett, Director, Technology Business Unit, Oracle Corporation

“The technical differences between service orientation and object orientation are subtle

enough to confuse even the most advanced developers. Thomas Erl's book provides a great service by clearly articulating SOA design patterns and differentiating them from similar OO design patterns.

- Anne Thomas Manes, VP & Research Director, Burton Group

“SOA Design Patterns does an excellent job of laying out and discussing the areas of SOA design that a competent SOA practitioner should understand and employ.

- Robert Laird, SOA Architect, IBM

“As always, Thomas delivers again. In a well-structured and easy-to-understand way, this book provides a wonderful collection of patterns each addressing a typical set of SOA design problems with well articulated solutions. The plain language and hundreds of diagrams included in the book help make the complicated subjects of SOA design comprehensible even to those who are new to the SOA design world. It's a must-have reference book for all SOA practitioners, especially for enterprise architects, solution architects, developers, managers, and business process experts.

- Canyon Kevin Liu, Solution Architecture Manager, SAP

“The concept of service oriented architecture has long promised visions of agile organizations being able to swap out interfaces and applications as business needs change. SOA also promises incredible developer and IT productivity, with the idea that key services would be candidates for cross-enterprise sharing or reuse. But many organizations' efforts to move to SOA have been mired-by organizational issues, by conflicting vendor messages, and by architectures that may amount to little more than Just a Bunch of Web Services. There's been a lot of confusion in the SOA marketplace about exactly what SOA is, what it's supposed to accomplish, and how an enterprise goes about in making it work.

SOA Design Patterns is a definitive work that offers clarity on the purpose and functioning of service oriented architecture. SOA Design Patterns not only helps the IT practitioner lay the groundwork for a well-functioning SOA effort across the enterprise, but also connects the dots between SOA and the business requirements in a very concrete way. Plus, this book is completely technology agnostic—SOA Design Patterns rightly focuses on infrastructure and architecture, and it doesn't matter whether you're using components of one kind or another, or Java, or .NET, or Web services, or REST-style interfaces.

While no two SOA implementations are alike, Thomas Erl and his team of contributors have effectively identified the similarities in composition services need to have at a sub-atomic level in order to interact with each other as we hope they will. The book identifies 85 SOA design patterns which have been developed and thoroughly vetted to ensure that a service-oriented architecture does achieve the flexibility and loose coupling promised. The book is also compelling in that it is a living document, if you will, inviting participation in an open process to identify and formulate new patterns to this growing body of knowledge.

- Joe McKendrick, Independent Analyst, Author of ZDNet's SOA Blog

“If you want to truly educate yourself on SOA, read this book.

- Sona Srinivasan, Global Client Services & Operations, CISCO

“An impressive decomposition of the process and architectural elements that support service-oriented analysis, design, and delivery. Right-sized and terminologically consistent.

Overall, the book represents a patient separation of concerns in respect of the process and architectural parts that underpin any serious SOA undertaking. Two things stand out. First, the pattern relationship diagrams provide rich views into the systemic relationships that structure a service-oriented architecture: these patterns are not discrete, isolated templates to be applied mechanically to the problem space; rather, they form a

network of forces and constraints that guide the practitioner to consider the task at hand in the context of its inter-dependencies. Second, the pattern sequence diagrams and accompanying notes provide a useful framework for planning and executing the many activities that comprise an SOA engagement.

- Ian Robinson, Principal Technology Consultant, ThoughtWorks

“Successful implementation of SOA principles requires a shift in focus from software system means, or the way capabilities are developed, to the desired end results, or real-world effects required to satisfy organizational business processes. InSOA Design Patterns, Thomas Erl provides service architects with a broad palette of reusable service patterns that describe service capabilities that can cut across many SOA applications. Service architects taking advantage of these patterns will save a great deal of time describing and assembling services to deliver the real world effects they need to meet their organization's specific business objectives.

- Chuck Georgo, Public Safety and National Security Architect

“In IT, we have increasingly come to see the value of having catalogs of good solution patterns in programming and systems design. With this book, Thomas Erl brings a comprehensive set of patterns to bear on the world of SOA. These patterns enable easily communicated, reusable, and effective solutions, allowing us to more rapidly design and build out the large, complicated and interoperable enterprise SOAs into which our IT environments are evolving.

- Al Gough, Business Systems Solutions CTO, CACI International Inc.

“This book provides a comprehensive and pragmatic review of design issues in service-centric design, development, and evolution. The Web site related to this book [SOAPatterns.org] is a wonderful platform and gives the opportunity for the software community to maintain this catalogue....

- Veronica Gacitua Decar, Dublin City University

“Erl'sSOA Design Patterns is for the IT decision maker determined to make smart architecture design choices, smart investments, and long term enterprise impact. For those IT professionals committed to service-orientation as a value-added design and implementation option, Patterns offers a credible, repeatable approach to engineering an adaptable business enterprise. This is a must read for all IT architect professionals.

- Larry Gloss, VP and General Manager, Information Manufacturing, LLC

“These SOA patterns define, encompass, and comprise a complete repertoire of best practices for developing a world-class IT SOA portfolio for the enterprise and its organizational units through to service and schema analysis and design. After many years as an architect on many SOA projects, I strongly recommend this book be on the shelf of every analyst and technical member of any SOA effort, right next to the SOA standards and guidelines it outlines and elucidates the need for. Our SOA governance standards draw heavily from this work and others from this series.

- Robert John Hathaway III, Enterprise Software Architect, SOA Object Systems

“A wise man once told me that wisdom isn't all about knowledge and intelligence, it is just as much about asking questions. Asking questions is the true mark of wisdom and during the writing of theSOA Design Patternsbook Thomas Erl has shown his real qualities. The community effort behind this book is huge meaning that Thomas has had access to the knowledge and experience of a large group of accomplished practitioners. The result speaks for itself. This book is packed with proven solutions to recurring problems, and the documented pros and cons of each solution have been verified by persons with true experience. This book could give SOA initiatives of any scale a real boost.

- Herbjörn Wilhelmsen, Architect and Senior Consultant, Objectware

“This book is an absolute milestone in SOA literature. For the first time we are provided with a practical guide on how the principle centric description of service orientation from a vendor-agnostic viewpoint is actually made to work in a language based on patterns. This book makes you talk SOA! There are very few who understand SOA like Thomas Erl does, he actually put's it all together!

- Brian Lokhorst, Solution Architect, Dutch Tax Office

“Service oriented architecture is all about best practices we have learned since IT's existence. This book takes all those best practices and bundles them into a nice pattern catalogue. [It provides] a really excellent approach as patterns are not just documented but are provided with application scenarios through case studies [which] fills the gap between theory and practice.

- Shakti Sharma, Senior Enterprise Architect, Sysco Corp

“An excellent and important book on solving problems in SOA [with a] solid structure. Has the potential of being among the major influential books.

- Peter Chang, Lawrence Technical University

“SOA Design Patterns presents a vast amount of knowledge about how to successfully implement SOA within an organization. The information is clear, concise, and most importantly, legitimate.

- Peter B. Woodhull, President and Principal Architect, Modus21

“SOA Design Patterns offers real insights into everyday problems that one will encounter when investing in services oriented architecture. [It] provides a number of problem descriptions and offers strategies for dealing with these problems. SOA design patterns highlights more than just the technical problems and solutions. Common organizational issues that can hinder progress towards achieving SOA migration are explained along with potential approaches for dealing with these real world challenges. Once again Thomas Erl provides in-depth coverage of SOA terminology and helps the reader better understand and appreciate the complexities of migrating to an SOA environment.

- David Michalowicz, Air and Space Operations Center Modernization Team Lead, MITRE Corporation

“This is a long overdue, serious, comprehensive, and well-presented catalog of SOA design patterns. This will be required reading and reference for all our SOA engineers and architects. The best of the series so far!

[The book] works in two ways: as a primer in SOA design and architecture it can easily be read front-to-back to get an overview of most of the key design issues you will encounter, and as a reference catalog of design techniques that can be referred to again and again...

- Wendell Ocasio, Architecture Consultant, DoD Military Health Systems, Agilex Technologies

“Thomas has once again provided the SOA practitioner with a phenomenal collection of knowledge. This is a reference that I will come back to time and time again as I move forward in SOA design efforts.

What I liked most about this book is its vendor agnostic approach to SOA design patterns. This approach really presents the reader with an understanding of why or why not to implement a pattern, group patterns, or use compound patterns rather than giving them a marketing spiel on why one implementation of a pattern is better than another (for example, why one ESB is better than another). I think as SOA adoption continues to advance, the ability for architects to understand when and why to apply specific patterns will be a driving factor in the overall success and evolution of SOA. Additionally, I believe that this book provides the

consumer with the understanding required to choose which vendor's SOA products are right for their specific needs.

- Bryan Brew, SOA Consultant, Booz Allen Hamilton

“A must have for every SOA practitioner.

- Richard Van Schelven, Principal Engineer, Ericsson

“This book is a long-awaited successor to the books on object-oriented design patterns and integration patterns. It is a great reference book that clearly and thoroughly describes design patterns for SOA. A great read for architects who are facing the challenge of transforming their enterprise into a service-oriented enterprise.

- Linda Terlouw, Solution Architect, Ordina

“The maturation of Service-Oriented Architecture has given the industry time to absorb the best practices of service development. Thomas Erl has amassed this collective wisdom in *SOA Design Patterns*, an absolutely indispensable addition to any Service Oriented bookshelf.

- Kevin P. Davis, Ph.D

“The problem with most texts on SOA is one of specificity. Architects responsible for SOA implementation in most organizations have little time for abstract theories on the subject, but are hungry for concrete details that they can relate to the real problems they face in their environment. *SOA Design Patterns* is critical reading for anyone with service design responsibilities. Not only does the text provide the normal pattern templates, but each pattern is applied in detail against a background case study to provide exceptionally meaningful context to the information. The graphic visualizations of the problems and pattern solutions are excellent supplementary companions to the explanatory text. This book will greatly stretch the knowledge of the reader as much for raising and addressing issues that may have never occurred to the reader as it does in treating those problems that are in more common occurrence. The real beauty of this book is in its plain English prose. Unlike so many technical reference books, one does not find themselves re-reading sections multiple times trying to discern the intent of the author. This is also not a reference that will sit gathering dust on a shelf after one or two perusings. Practitioners will find themselves returning over and over to utilize the knowledge in their projects. This is as close as you'll come to having a service design expert sitting over your shoulder.

- James Kinneavy, Principal Software Architect, University of California

“As the industry converges on SOA patterns, Erl provides an outstanding reference guide to composition and integration-and yet another distinctive contribution to the SOA practice.

- Steve Birkel, Chief IT Technical Architect, Intel Corp.

“With *SOA Design Patterns*, Thomas Erl adds an indispensable SOA reference volume to the technologist's library. Replete with to-the-point examples, it will be a helpful aid to any IT organization.

- Ed Dodds, Strategist, Systems Architect, Convergence

“Again, Thomas Erl has written an indispensable guide to SOA. Building on his prior successes, his patterns go into even more detail. Therefore, this book is not only helpful to the SOA beginner, but also provides new insight and ideas to professionals.

- Philipp Offermann, Research Scientist, Technische Universität Berlin, Germany

“*SOA Design Patterns* is an extraordinary contribution to SOA best practices! Once again, Thomas has created an indispensable resource for any person or organization interested in or actively engaged in the

practice of Service Oriented Architecture. Using case studies based on three very different business models, Thomas guides the reader through the process of selecting appropriate implementation patterns to ensure a flexible, well-performing, and secure SOA ecosystem.

- Victor Brown, Managing Partner and Principal Consultant,  
Cypress Management Group Corporation

In cooperation with experts and practitioners throughout the SOA community, best-selling author Thomas Erl brings together the de facto catalog of design patterns for SOA and service-orientation. More than three years in development and subjected to numerous industry reviews, the 85 patterns in this full-color book provide the most successful and proven design techniques to overcoming the most common and critical problems to achieving modern-day SOA. Through numerous examples, individually documented pattern profiles, and over 400 color illustrations, this book provides in-depth coverage of:

- Patterns for the design, implementation, and governance of service inventories-collections of services representing individual service portfolios that can be independently modeled, designed, and evolved.
- Patterns specific to service-level architecture which pertain to a wide range of design areas, including contract design, security, legacy encapsulation, reliability, scalability, and a variety of implementation and governance issues.
- Service composition patterns that address the many aspects associated with combining services into aggregate distributed solutions, including topics such as runtime messaging and message design, inter-service security controls, and transformation.
- Compound patterns (such as Enterprise Service Bus and Orchestration) and recommended pattern application sequences that establish foundational processes.

The book begins by establishing SOA types that are referenced throughout the patterns and then form the basis of a final chapter that discusses the architectural impact of service-oriented computing in general. These chapters bookend the pattern catalog to provide a clear link between SOA design patterns, the strategic goals of service-oriented computing, different SOA types, and the service-orientation design paradigm.

This book series is further supported by a series of resources sites, including [soabooks.com](http://soabooks.com), [soaspecs.com](http://soaspecs.com), [soapatterns.org](http://soapatterns.org), [soamag.com](http://soamag.com), and [soaposters.com](http://soaposters.com).

#### About the Author

Thomas Erl is a best-selling IT author and founder of [CloudSchool.com](http://CloudSchool.com)<sup>™</sup> and [SOASchool.com](http://SOASchool.com)®. Thomas has been the world's top-selling service technology author for over five years and is the series editor of the Prentice Hall Service Technology Series from Thomas Erl ([www.servicetechbooks.com](http://www.servicetechbooks.com)), as well as the editor of the Service Technology Magazine ([www.servicetechmag.com](http://www.servicetechmag.com)). With over 175,000 copies in print world-wide, his eight published books have become international bestsellers and have been formally endorsed by senior members of major IT organizations, such as IBM, Microsoft, Oracle, Intel, Accenture, IEEE, HL7, MITRE, SAP, CISCO, HP, and others.

Four of his books, *Cloud Computing: Concepts, Technology & Architecture*, *SOA Design Patterns*, *SOA Principles of Service Design*, and *SOA Governance*, were authored in collaboration with the IT community and have contributed to the definition of cloud computing technology mechanisms, the service-oriented architectural model and service-orientation as a distinct paradigm. Thomas is currently working with over 20 authors on several new books dedicated to specialized topic areas such as cloud computing, Big Data, modern service technologies, and service-orientation.

As CEO of Arcitura Education Inc. and in cooperation with [CloudSchool.com](http://CloudSchool.com)<sup>™</sup> and [SOASchool.com](http://SOASchool.com)®, Thomas has led the development of curricula for the internationally recognized SOA Certified Professional (SOACP) and Cloud Certified Professional (CCP) accreditation programs, which have established a series of formal, vendor-neutral industry certifications.

Thomas is the founding member of the SOA Manifesto Working Group and author of the Annotated SOA Manifesto ([www.soa-manifesto.com](http://www.soa-manifesto.com)). He is a member of the Cloud Education & Credential Committee, SOA Education Committee, and he further oversees theSOAPatterns.org and CloudPatterns.org initiatives, which are dedicated to the on-going development of master pattern catalogs for service-oriented computing and cloud computing.

Thomas has toured over 20 countries as a speaker and instructor for public and private events, and regularly participates in international conferences, including SOA, Cloud + Service Technology Symposium and Gartner events. Over 100 articles and interviews by Thomas have been published in numerous publications, including the Wall Street Journal and CIO Magazine.

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Foreword Foreword

The entire history of software engineering can be characterized as one of rising levels of abstraction. We see this in our languages, our tools, our platforms, and our methods. Indeed, abstraction is the primary way that we as humans attend to complexity—and software-intensive systems are among the most complex artifacts ever created.

I would also observe that one of the most important advances in software engineering over the past two decades has been the practice of patterns. Patterns are yet another example of this rise in abstraction: A pattern specifies a common solution to a common problem in the form of a society of components that collaborate with one another. Influenced by the writings of Christopher Alexander, Kent Beck and Ward Cunningham began to codify various design patterns from their experience with Smalltalk. Growing slowly but steadily, these concepts began to gain traction among other developers. The publication of the seminal book *Design Patterns* by Erich Gamma, John Vlissides, Ralph Johnson, and Richard Helm marked the introduction of these ideas to the mainstream. The subsequent activities of the Hillside Group provided a forum for this growing community, yielding a very vibrant literature and practice. Now the practice of patterns is very much mainstream: Every well-structured software-intensive system tends to be full of patterns (whether their architects name them intentionally or not).

The emerging dominant architectural style for many enterprise systems is that of a service-oriented architecture, a style that at its core is essentially a message passing architecture. However, therein are many patterns that work (and anti-patterns that should be avoided).

Thomas' work is therefore the right book at the right time. He really groks the nature of SOA systems: There are many hard design decisions to be made, ranging from data-orientation to the problems of legacy integration and even security. Thomas offers wise counsel on each of these issues and many more, all in the language of design patterns. There are many things I like about this work. It's comprehensive. It's written in a very accessible pattern language. It offers patterns that play well with one another. Finally, Thomas covers not just the technical details, but also sets these patterns in the context of economic and other considerations.

SOA Design Patterns is an important contribution to the literature and practice of building and delivering quality software-intensive systems.

—Grady Booch, IBM Fellow

September, 2008

Also we discuss the books **SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl**; you might not discover the printed publications here. Numerous collections are supplied in soft data. It will specifically give you a lot more perks. Why? The very first is that you could not have to lug guide anywhere by fulfilling the bag with this SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl It is for guide is in soft documents, so you could wait in gadget. After that, you could open the device all over and read guide properly. Those are some few perks that can be obtained. So, take all advantages of getting this soft data book SOA Design Patterns (The Prentice Hall Service-Oriented Computing Series From Thomas Erl) By Thomas Rischbeck, Thomas Erl in this internet site by downloading in web link given.