

Soa With Rest Principles Patterns Constraints For Building Enterprise Solutions With Rest Prentice Hall Service Oriented Computing Series From Thomas

Endorsed by all major vendors (Microsoft, Oracle, IBM, and SAP), SOA has quickly become the industry standard for building next-generation software; this practical guide shows readers how to achieve the many benefits of SOA Begins with a look at the architectural principles needed to create successful applications and then goes on to examine the process for designing services and SOA implementations Each stage of the design process has an accompanying chapter that walks readers through the details and provides helpful tips, techniques, and examples The author team of SOA practitioners also provides two unique, comprehensive, end-to-end case studies illustrating the architectural and design techniques presented in the book

Methods for managing complex software construction following the practices, principles and patterns of Domain-Driven Design with code examples in C# This book presents the philosophy of Domain-Driven Design (DDD) in a down-to-earth and practical manner for experienced developers building applications for complex domains. A focus is placed on the principles and practices of decomposing a complex problem space as well as the implementation patterns and best practices for shaping a maintainable solution space. You will learn how to build effective domain models through the use of tactical patterns and how to retain their integrity by applying the strategic patterns of DDD. Full end-to-end coding examples demonstrate techniques for integrating a decomposed and distributed solution space while coding best practices and patterns advise you on how to architect applications for maintenance and scale. Offers a thorough introduction to the philosophy of DDD for professional developers Includes masses of code and examples of concept in action that other books have only covered theoretically Covers the patterns of CQRS, Messaging, REST, Event Sourcing and Event-Driven Architectures Also ideal for Java developers who want to better understand the implementation of DDD A sneak peek at up-and-coming trends in IT, a multidimensional vision for achieving business agility through agile architectures The Agile Architecture Revolution places IT trends into the context of Enterprise Architecture, reinventing Enterprise Architecture to support continuous business transformation. It focuses on the challenges of large organizations, while placing such organizations into the broader business ecosystem that includes small and midsize organizations as well as startups. Organizes the important trends that are facing technology in businesses and public sector organizations today and over the next several years Presents the five broad organizing principles called Supertrends: location independence, global cubicle, democratization of technology, deep interoperability, and complex systems engineering Provides a new perspective on service-oriented architecture in conjunction with architectural approaches to cloud computing and mobile technologies that explain how organizations can achieve better business visibility through IT and enterprise architecture Laying out a multidimensional vision for achieving agile architectures, this book discusses the crisis points that promise sudden, transformative change, unraveling how organizations' spending on IT will continue to undergo radical change over the next ten years.

"This book illuminates the connection of the two domains--SOA and REST--in a manner that is concrete and practical, providing concise application to everyday architectural challenges. Fantastic!" --Ryan Frazier, Technology Strategist, Microsoft "...a tour de force that elegantly applies REST principles to the industry-standard SOA framework described in prior titles in this series.... This book is a must-read for anyone developing REST services." --Dave Slotnick, Enterprise Architect, Rackspace Hosting "This book undoubtedly will help SOA to reap the benefits from the main value propositions of Web architecture...." --Dr. Erik Wilde, Architect, EMC Corporation "REST is so much more than just another type of interface implementation--SOA with REST shows how the ecosystem of service compositions changes as new opportunities arise for service composition architecture designs. A comprehensive guide and a must-read for any serious IT architect considering REST-style services for application architectures." --Roger Stoffers, Solution Architect, Hewlett Packard "Service-orientation and REST both are architectural styles that are cornerstones of modern applications and cloud computing. Both aim to deliver scalable, interoperable solutions, but their different roots don't always make them a natural fit. SOA with REST explains how the two styles can work together in enterprise environments. It discusses a design process for a services portfolio that meets the goals of SOA and at the same time designs services that comply with the established REST constraints. It also shows pragmatic approaches to meet enterprise-grade requirements with the REST programming style but relaxes constraints where necessary." --Christoph Schittko, Director of Cloud Strategy, Microsoft "An excellent repertoire of service-oriented patterns that will prove handy when solving problems in the real world. The REST perspectives and principles will provide complete coverage of modern-day Web 2.0 style approaches. Highly recommended." --Sid Sanyal, IT Architect, Zurich Financial Services "An inspirational book that provides deep insight into the design and development of next-generation service-oriented systems based on the use of REST. This book clarifies the convergence of SOA and REST with no-nonsense content that addresses common questions and issues head-on. An essential "instrument of modern service implementation" and a powerful body of knowledge for software designers, architects, and consultants." --Pethuru Raj, Ph.D., Enterprise Architecture (EA) Consultant, Wipro Consulting Services "REST and SOA are two of the most misunderstood terms in the software industry over the past decade. Yet the REST architectural style coupled with modern RESTful framework implementations provides a scalable and reliable approach to SOA. This book covers all you need to know about how to take the principles of REST and apply them in small and large SOA developments. If you are familiar with REST and thinking about SOA, then you need this book. If you have not considered REST in your SOA work, then this book is for you, too. Covering concepts of both REST and SOA, as well as design patterns and when to use them, the book is a wonderful companion and a good tool for architects and engineers." --Dr. Mark Little, CTO JBoss, Red Hat "Unlike many other texts on the subject, SOA with REST is a well-rounded, easy-to-read narrative, including real-world case studies that appeal to both developers and

analysts. This makes it an indispensable source for any SOA practitioner or any professional who is planning to initiate an SOA project." --Theodore T. Morrison, Certified SOA Analyst, CSM, Geocent, LLC "SOA and REST are two very important architectural styles for distributed computing. SOA is successfully adopted by most enterprises, and the REST style is getting more attention from both researcher and industry users. The book SOA with REST introduces a new architectural style that is ingeniously combining both SOA and REST styles and clearly reveals how SOA and REST can work together to generate successful enterprise SOA strategies with REST, along with guidance for making architecture design decisions. This book is a bible of best practices for designing and implementing SOA architecture with REST. It is a must-have reference book for both IT practitioners and researchers." --Longji Tang, FedEx IT Senior Technical Advisor, Ph.D. in CSSE The Definitive Guide to Building Web-Centric SOA with REST The World Wide Web is based on the most successful technology architecture in history. It has changed how we view, access, and exchange information and, with the advent of REST, it has also provided us with compelling ways to build and improve automation solutions. REST provides a great deal of guidance to ensure that an architecture and its automation logic are technically sound, though it is still your responsibility to build services that actually add value to your business. SOA with REST is the first comprehensive tutorial and reference for designing and building RESTful services as part of service-oriented solutions and in conjunction with service-oriented architecture (SOA). This book demonstrates that REST is not only a suitable medium for building truly service-oriented solutions, but also that the service-oriented architectural model is a necessary foundation for REST technology architectures to realize their full business potential. The authors provide thorough mapping of REST constraints and architectural goals with service-orientation principles and SOA characteristics. Using real-world examples, they show how to leverage REST's simplicity, flexibility, and low overhead without compromising the power or manageability of service-oriented solutions and architectures. This book will be valuable to IT architects, developers, and any practitioner seeking to use SOA and REST together. Topic Areas Distributed solution design with HTTP and REST REST-based service composition architectures REST service modeling and a service-oriented analysis process for REST service candidates Technical service contract notation for REST services based on a uniform contract Designing REST service contracts with service-orientation Understanding REST constraints in relation to service-orientation principles Using hypermedia and dynamic binding within SOA and service compositions Creating complex HTTP-based methods for enterprise solutions Advanced design techniques, including composition deepening, runtime logic deferral, and dynamic binding with common properties Cross-service transactions and event-driven messaging with REST Addressing enterprise solution concerns in relation to REST-based state management Applying SOA design patterns to REST-based solutions Distinguishing REST and SOA service concepts and terminology Designing REST architectures with SOA Versioning REST services and uniform contracts Fundamental REST, SOA, and service-orientation concepts and terminology REST constraints, REST architectural goals, and properties Seven new REST-inspired design patterns Defining common goals of REST and SOA

USE THE ACTOR MODEL TO BUILD SIMPLER SYSTEMS WITH BETTER PERFORMANCE AND SCALABILITY Enterprise software development has been much more difficult and failure-prone than it needs to be. Now, veteran software engineer and author Vaughn Vernon offers an easier and more rewarding method to succeeding with Actor model. Reactive Messaging Patterns with the Actor Model shows how the reactive enterprise approach, Actor model, Scala, and Akka can help you overcome previous limits of performance and scalability, and skillfully address even the most challenging non-functional requirements. Reflecting his own cutting-edge work, Vernon shows architects and developers how to translate the longtime promises of Actor model into practical reality. First, he introduces the tenets of reactive software, and shows how the message-driven Actor model addresses all of them—making it possible to build systems that are more responsive, resilient, and elastic. Next, he presents a practical Scala bootstrap tutorial, a thorough introduction to Akka and Akka Cluster, and a full chapter on maximizing performance and scalability with Scala and Akka. Building on this foundation, you'll learn to apply enterprise application and integration patterns to establish message channels and endpoints; efficiently construct, route, and transform messages; and build robust systems that are simpler and far more successful. Coverage Includes How reactive architecture replaces complexity with simplicity throughout the core, middle, and edges The characteristics of actors and actor systems, and how Akka makes them more powerful Building systems that perform at scale on one or many computing nodes Establishing channel mechanisms, and choosing appropriate channels for each application and integration challenge Constructing messages to clearly convey a sender's intent in communicating with a receiver Implementing a Process Manager for your Domain-Driven Designs Decoupling a message's source and destination, and integrating appropriate business logic into its router Understanding the transformations a message may experience in applications and integrations Implementing persistent actors using Event Sourcing and reactive views using CQRS Find unique online training on Domain-Driven Design, Scala, Akka, and other software craftsmanship topics using the [for{comprehension} website at forcomprehension.com](http://forcomprehension.com).

Learn how to design and develop distributed web services in Java using RESTful architectural principals and the JAX-RS specification in Java EE 6. With this hands-on reference, you'll focus on implementation rather than theory, and discover why the RESTful method is far better than technologies like CORBA and SOAP. It's easy to get started with services based on the REST architecture. RESTful Java with JAX-RS includes a technical guide that explains REST and JAX-RS, how they work, and when to use them. With the RESTEasy workbook that follows, you get step-by-step instructions for installing, configuring, and running several working JAX-RS examples using the JBoss RESTEasy implementation of JAX-RS. Work on the design of a distributed RESTful interface, and develop it in Java as a JAX-RS service Dispatch HTTP requests in JAX-RS, and learn how to extract information from them Deploy your web services within Java Enterprise Edition using the Application class, Default Component Model, EJB Integration, Spring Integration, and JPA Discover several options for securing your web services Learn how to implement RESTful design patterns using JAX-RS Write

RESTful clients in Java using libraries and frameworks such as `java.net.URL`, Apache HTTP Client, and RESTEasy Proxy

Understand the principles of software architecture with coverage on SOA, distributed and messaging systems, and database modeling Key Features Gain knowledge of architectural approaches on SOA and microservices for architectural decisions Explore different architectural patterns for building distributed applications Migrate applications written in Java or Python to the Go language Book Description Building software requires careful planning and architectural considerations; Golang was developed with a fresh perspective on building next-generation applications on the cloud with distributed and concurrent computing concerns. Hands-On Software Architecture with Golang starts with a brief introduction to architectural elements, Go, and a case study to demonstrate architectural principles. You'll then move on to look at code-level aspects such as modularity, class design, and constructs specific to Golang and implementation of design patterns. As you make your way through the chapters, you'll explore the core objectives of architecture such as effectively managing complexity, scalability, and reliability of software systems. You'll also work through creating distributed systems and their communication before moving on to modeling and scaling of data. In the concluding chapters, you'll learn to deploy architectures and plan the migration of applications from other languages. By the end of this book, you will have gained insight into various design and architectural patterns, which will enable you to create robust, scalable architecture using Golang. What you will learn Understand architectural paradigms and deep dive into Microservices Design parallelism/concurrency patterns and learn object-oriented design patterns in Go Explore API-driven systems architecture with introduction to REST and GraphQL standards Build event-driven architectures and make your architectures anti-fragile Engineer scalability and learn how to migrate to Go from other languages Get to grips with deployment considerations with CI/CD pipeline, cloud deployments, and so on Build an end-to-end e-commerce (travel) application backend in Go Who this book is for Hands-On Software Architecture with Golang is for software developers, architects, and CTOs looking to use Go in their software architecture to build enterprise-grade applications. Programming knowledge of Golang is assumed.

Improving Business Agility with EDA Going beyond SOA, enterprises can gain even greater agility by implementing event-driven architectures (EDAs) that automatically detect and react to significant business events. However, EDA planning and deployment is complex, and even experienced SOA architects and developers need expert guidance. In Event-Driven Architecture, four leading IT innovators present both the theory of EDA and practical, step-by-step guidance to implementing it successfully. The authors first establish a thorough and workable definition of EDA and explore how EDA can help solve many of today's most difficult business and IT challenges. You'll learn how EDAs work, what they can do today, and what they might be able to do as they mature. You'll learn how to determine whether an EDA approach makes sense in your environment and how to overcome the difficult interoperability and integration issues associated with successful deployment. Finally, the authors present chapter-length case studies demonstrating how both full and partial EDA implementations can deliver exceptional business value. Coverage includes How SOA and Web services can power event-driven architectures The role of SOA infrastructure, governance, and security in EDA environments EDA core components: event consumers and producers, message backbones, Web service transport, and more EDA patterns, including simple event processing, event stream processing, and complex event processing Designing flexible stateless events that can respond to unpredictable customers, suppliers, and business partners Addressing technical and business challenges such as project management and communication EDA at work: real-world applications across multiple verticals Hugh Taylor is a social software evangelist for IBM Lotus Software. He coauthored Understanding Enterprise SOA and has written extensively on Web services and SOA. He holds an MBA from Harvard Business School. Angela Yochem is an executive in a multinational technology company and is a recognized thought leader in architecture and large-scale technology management. Les Phillips, VP, enterprise architecture, at SunTrust Banks Inc., is responsible for defining the strategic and business IT foundation for many areas of the enterprise. Frank Martinez, EVP, product strategy, at SOA Software, is a recognized expert on distributed, enterprise application, and infrastructure platforms. He has served as senior operating executive for several venture-backed firms and helped build Intershop Communications into a multibillion-dollar public company.

"For software developers of all experience levels looking to improve their results, and design and implement domain-driven enterprise applications consistently with the best current state of professional practice, Implementing Domain-Driven Design will impart a treasure trove of knowledge hard won within the DDD and enterprise application architecture communities over the last couple decades." –Randy Stafford, Architect At-Large, Oracle Coherence Product Development "This book is a must-read for anybody looking to put DDD into practice." –Udi Dahan, Founder of NServiceBus Implementing Domain-Driven Design presents a top-down approach to understanding domain-driven design (DDD) in a way that fluently connects strategic patterns to fundamental tactical programming tools. Vaughn Vernon couples guided approaches to implementation with modern architectures, highlighting the importance and value of focusing on the business domain while balancing technical considerations. Building on Eric Evans' seminal book, Domain-Driven Design, the author presents practical DDD techniques through examples from familiar domains. Each principle is backed up by realistic Java examples—all applicable to C# developers—and all content is tied together by a single case study: the delivery of a large-scale Scrum-based SaaS system for a multitenant environment. The author takes you far beyond "DDD-lite" approaches that embrace DDD solely as a technical toolset, and shows you how to fully leverage DDD's "strategic design patterns" using Bounded Context, Context Maps, and the Ubiquitous Language. Using these techniques and examples, you can reduce time to market and improve quality, as you build software that is more flexible, more scalable, and more tightly aligned to business goals. Coverage includes Getting started the right way with DDD, so you can rapidly gain value from it Using DDD within diverse architectures, including Hexagonal, SOA, REST,

CQRS, Event-Driven, and Fabric/Grid-Based Appropriately designing and applying Entities—and learning when to use Value Objects instead Mastering DDD’s powerful new Domain Events technique Designing Repositories for ORM, NoSQL, and other databases

REST architecture (style) is a pivot of distributed systems, simplify data integration amongst modern and legacy applications leverages through the RESTful paradigm. This book is fully loaded with many RESTful API patterns, samples, hands-on implementations and also discuss the capabilities of many REST API frameworks for Java, Scala, Python and Go

Enterprise Architecture (EA) is typically an aggregate of the business, application, data, and infrastructure architectures of any forward-looking enterprise. Due to constant changes and rising complexities in the business and technology landscapes, producing sophisticated architectures is on the rise. Architectural patterns are gaining a lot ...

Practical Software Architecture Solutions from the Legendary Robert C. Martin (“Uncle Bob”) By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin (“Uncle Bob”) reveals those rules and helps you apply them. Martin’s Clean Architecture doesn’t merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you’ve come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you’ll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what’s critically important and what’s merely a “detail” Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else’s designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

SOA is the most important initiative facing IT today and is difficult to grasp; this book demystifies the complex topic of SOA and makes it accessible to all those people who hear the term but aren't really sure what it means This team of well-respected authors explains that SOA is a collection of applications that enables resources to be available to other participants in a network using any service-based technology Examines how SOA enables faster and cheaper application development and how it offers reusable code that can be used across various applications Covers what SOA is, why it matters, how it can impact businesses, and how to take steps to implement SOA in a corporate environment

Explores cloud computing, breaking down the concepts, models, mechanisms, and architectures of this technology while allowing for the financial assessment of resources and how they compare to traditional storage systems.

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, soaspecs.com, soapatterns.org, soamag.com, and soaposters.com.

The Ultimate Guide for Designing and Governing Web Service Contracts For Web services to succeed as part of SOA, they require balanced, effective technical contracts that enable services to be evolved and repeatedly reused for years to come. Now, a team of industry experts presents the first end-to-end guide to designing and governing Web service contracts. Writing for developers, architects, governance specialists, and other IT professionals, the authors cover the following areas: Understanding Web Service Contract Technologies Initial chapters and ongoing supplementary content help even the most inexperienced professional get up to speed on how all of the different technologies and design considerations relate to the creation of Web service contracts. For example, a visual anatomy of a Web service contract documented from logical and physical perspectives is provided, along with a chapter dedicated to describing namespaces in plain English. The book is further equipped with numerous case study examples and many illustrations. Fundamental and Advanced WSDL Tutorial coverage of WSDL 1.1 and 2.0 and detailed descriptions of their differences is followed by numerous advanced WSDL topics and design techniques, including extreme loose coupling,

modularization options, use of extensibility elements, asynchrony, message dispatch, service instance identification, non-SOAP HTTP binding, and WS-BPEL extensions. Also explained is how WSDL definitions are shaped by key SOA design patterns. Fundamental and Advanced XML Schema XML Schema basics are covered within the context of Web services and SOA, after which advanced XML Schema chapters delve into a variety of specialized message design considerations and techniques, including the use of wildcards, reusability of schemas and schema fragments, type inheritance and composition, CRUD-style message design, and combining industry and custom schemas. Fundamental and Advanced WS-Policy Topics, such as Policy Expression Structure, Composite Policies, Operator Composition Rules, and Policy Attachment establish a foundation upon which more advanced topics, such as policy reusability and centralization, nested, parameterized, and ignorable assertions are covered, along with an exploration of creating concurrent policy-enabled contracts and designing custom policy assertions and vocabularies. Fundamental Message Design with SOAP A broad range of message design-related topics are covered, including SOAP message structures, SOAP nodes and roles, SOAP faults, designing custom SOAP headers and working with industry-standard SOAP headers. Advanced Message Design with WS-Addressing The art of message design is taken to a new level with in-depth descriptions of WS-Addressing endpoint references (EPRs) and MAP headers and an exploration of how they are applied via SOA design patterns. Also covered are WSDL binding considerations, related MEP rules, WS-Addressing policy assertions, and detailed coverage of how WS-Addressing relates to SOAP Action values. Advanced Message Design with MTOM, and SwA Developing SOAP messages capable of transporting large documents or binary content is explored with a documentation of the MTOM packaging and serialization framework (including MTOM-related policy assertions), together with the SOAP with Attachments (SwA) standard and the related WS-I Attachments Profile. Versioning Techniques and Strategies Fundamental versioning theory starts off a series of chapters that dive into a variety of versioning techniques based on proven SOA design patterns including backward and forward compatibility, version identification strategies, service termination, policy versioning, validation by projection, concurrency control, partial understanding, and versioning with and without wildcards. Web Service Contracts and SOA The constant focus of this book is on the design and versioning of Web service contracts in support of SOA and service-orientation. Relevant SOA design principles and design patterns are periodically discussed to demonstrate how specific Web service technologies can be applied and further optimized. Furthermore, several of the advanced chapters provide expert techniques for designing Web service contracts while taking SOA governance considerations into account. About the Web Sites www.soabooks.com supplements this book with a variety of resources, including a diagram symbol legend, glossary, supplementary articles, and source code available for download. www.soaspecs.com provides further support by establishing a descriptive portal to XML and Web services specifications referenced in all of Erl's Service-Oriented Architecture books. Foreword Preface Chapter 1: Introduction Chapter 2: Case Study Background Part I: Fundamental Service Contract Design Chapter 3: SOA Fundamentals and Web Service Contracts Chapter 4: Anatomy of a Web Service Contract Chapter 5: A Plain English Guide to Namespaces Chapter 6: Fundamental XML Schema: Types and Message Structure Basics Chapter 7: Fundamental WSDL Part I: Abstract Description Design Chapter 8: Fundamental WSDL Part II: Concrete Description Design Chapter 9: Fundamental WSDL 2.0: New Features, and Design Options Chapter 10: Fundamental WS-Policy: Expression, Assertion, and Attachment Chapter 11: Fundamental Message Design: SOAP Envelope Structure, and Header Block Processing Part II: Advanced Service Contract Design Chapter 12: Advanced XML Schema Part I: Message Flexibility, and Type Inheritance and Composition Chapter 13: Advanced XML Schema Part II: Reusability, Derived Types, and Relational Design Chapter 14: Advanced WSDL Part I: Modularization, Extensibility, MEPs, and Asynchrony Chapter 15: Advanced WSDL Part II: Message Dispatch, Service Instance Identification, and Non-SOAP HTTP Binding Chapter 16: Advanced WS-Policy Part I: Policy Centralization and Nested, Parameterized, and Ignorable Assertions Chapter 17: Advanced WS-Policy Part II: Custom Policy Assertion Design, Runtime Representation, and Compatibility Chapter 18: Advanced Message Design Part I: WS-Addressing Vocabularies Chapter 19: Advanced Message Design Part II: WS-Addressing Rules and Design Techniques Part III: Service Contract Versioning Chapter 20: Versioning Fundamentals Chapter 21: Versioning WSDL Definitions Chapter 22: Versioning Message Schemas Chapter 23: Advanced Versioning Part IV: Appendices Appendix A: Case Study Conclusion Appendix B: A Comparison of Web Services and REST Services Appendix C: How Technology Standards are Developed Appendix D: Alphabetical Pseudo Schema Reference Appendix E: SOA Design Patterns Related to This Book

Java SOA Cookbook offers practical solutions and advice to programmers charged with implementing a service-oriented architecture (SOA) in their organization. Instead of providing another conceptual, high-level view of SOA, this cookbook shows you how to make SOA work. It's full of Java and XML code you can insert directly into your applications and recipes you can apply right away. The book focuses primarily on the use of free and open source Java Web Services technologies -- including Java SE 6 and Java EE 5 tools -- but you'll find tips for using commercially available tools as well. Java SOA Cookbook will help you: Construct XML vocabularies and data models appropriate to SOA applications Build real-world web services using the latest Java standards, including JAX-WS 2.1 and JAX-RS 1.0 for RESTful web services Integrate applications from popular service providers using SOAP, POX, and Atom Create service orchestrations with complete coverage of the WS-BPEL (Business Process Execution Language) 2.0 standard Improve the reliability of SOAP-based services with specifications such as WS-Reliable Messaging Deal with governance, interoperability, and quality-of-service issues The recipes in Java SOA Cookbook will equip you with the knowledge you need to approach SOA as an integration challenge, not an obstacle.

Securing access to information is important to any business. Security becomes even more critical for implementations structured according to Service-Oriented Architecture (SOA) principles, due to loose coupling of services and applications, and their possible operations across trust boundaries. To enable a business so that its processes and applications are flexible, you must start by expecting changes -- both to process and application logic, as well as to the policies associated with them. Merely securing the perimeter is not sufficient for a flexible on demand business. In this IBM Redbooks publication, security is factored into the SOA

life cycle reflecting the fact that security is a business requirement, and not just a technology attribute. We discuss an SOA security model that captures the essence of security services and securing services. These approaches to SOA security are discussed in the context of some scenarios, and observed patterns. We also discuss a reference model to address the requirements, patterns of deployment, and usage, and an approach to an integrated security management for SOA. This book is a valuable resource to senior security officers, architects, and security administrators.

Market_Desc: · Students, Software Engineers, Designers, Architects, Business Analysts and Consultants· Project/Program Managers and IT Consultants, CXOs Special Features: · First book that focuses on architecture, design and development of Enterprise applications based on Service Oriented Architecture· Caters to the needs of students who need to understand the concepts of SOA, architects, designers and developers who build SOA based enterprise applications and CXOs and Project managers who make decisions on undertaking SOA projects· Includes detailed description (and code) to enable architects, designers and developers to build SOA applications on Java and .NET platforms· SOA is one of key areas on which IT services; product and end-user companies will be building substantial capability atleast until 2011. This book enables project teams in these companies to use it as a text book for their training programs on SOA About The Book: Service-Oriented Architecture is a book that emphasizes on architecture, design and development of enterprise applications based on SOA. The book provides detailed information on many dimensions of SOA-reuse, agility and integration-that can be put to immediate use for creating transformational impact. It also offers a comprehensive and structured set of techniques for custom-built service-oriented enterprise applications that can be readily applied by system integration companies and end-user organizations to address customer needs. The book equips you with both concepts and technology detail in addressing the IT challenges faced by organizations on their business transformation journey with SOA. This is the most sought after book by students who need to have an understanding of the concepts of SOA; architects, designers and developers who build SOA based enterprise applications and CXOs and Project managers who make decisions on undertaking SOA projects.

In SOA and Web Services Interface Design, data architecture guru James Bean teaches you how to design web service interfaces that are capable of being extended to accommodate ever changing business needs and promote incorporation simplicity. The book first provides an overview of critical SOA principles, thereby offering a basic conceptual summary. It then provides explicit, tactical, and real-world techniques for ensuring compliance with these principles. Using a focused, tutorial-based approach the book provides working syntactical examples - described by Web services standards such as XML, XML Schemas, WSDL and SOAP - that can be used to directly implement interface design procedures, thus allowing you immediately generate value from your efforts. In summary, SOA and Web Services Interface Design provides the basic theory, but also design techniques and very specific implementable encoded interface examples that can be immediately employed in your work, making it an invaluable practical guide to any practitioner in today's exploding Web-based service market. Provides chapters on topics of introductory WSDL syntax and XML Schema syntax, taking the reader through fundamental concepts and into deeper techniques and allowing them to quickly climb the learning curve. Provides working syntactical examples - described by Web services standards such as XML, XML Schemas, WSDL and SOAP - that can be used to directly implement interface design procedures. Real-world examples generated using the Altova XML Spy tooling reinforce applicability, allowing you to immediately generate value from their efforts.

Provides information and examples on using Windows Communication Foundation to build service-oriented applications.

A complete practitioner's catalog of proven domain services design solutions that can help any organization leverage SOA's full benefits * *Provides a vocabulary of proven SOA design solutions, with concrete examples and code that is easy for architects to adapt and implement. *By Rob Daigneau, one of the industry's leading experts in complex systems integration. *Helps architects and IT leaders accurately set stakeholder expectations for major SOA initiatives. Service-oriented architectures are typically called upon to deliver two general categories of services: enterprise services and domain services. Enterprise services are essentially composite services that typically leverage technologies such as message-oriented middleware. Domain services are the building blocks these composites depend upon. Each service category is best served by a distinct set of design solutions. This is the first book to systematically identify and explain best practice patterns for domain services. Rob Daigneau expands upon the Service Layer concept (covered expertly by Fowler in Patterns of Enterprise Application Architecture) domain services can be used with Enterprise Integration Patterns (made famous by Hohpe and Woolf). Daigneau begins by reviewing SOA concepts, illuminating the distinctions between enterprise and domain services, and identifying key relationships between domain services and other pattern groups. Next, he introduces each essential pattern for creating and delivering domain services, providing a vocabulary of design solutions that architects and other IT professionals can implement by referencing and adapting the concrete examples he supplies. The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical guide ties those parts together with a new way to think about architecture and time. Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA. The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF™) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you'll learn how to migrate your enterprise from a complex and tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author Piethen Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data

marketplaces, and the importance of metadata

The Definitive Guide to Service Engineering The key to succeeding with service-oriented architecture (SOA) is in comprehending the meaning and significance of its most fundamental building block: the service. It is through an understanding of service design that truly "service-oriented" solution logic can be created in support of achieving the strategic goals associated with SOA and service-oriented computing. Bestselling SOA author Thomas Erl guides you through a comprehensive, insightful, and visually rich exploration of the service-orientation design paradigm, revealing exactly how services should and should not be designed for real-world SOA.

Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don't approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique, modular style of system building. You'll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You'll explore a design-based approach to microservice architecture with guidance for implementing various elements. And you'll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption.

Learn how microservices can help you drive business objectives Examine the principles, practices, and culture that define microservice architectures Explore a model for creating complex systems and a design process for building a microservice architecture Learn the fundamental design concepts for individual microservices Delve into the operational elements of a microservices architecture, including containers and service discovery Discover how to handle the challenges of introducing microservice architecture in your organization The Top-Selling, De Facto Guide to SOA--Now Updated with New Content and Coverage of Microservices! For more than a decade, Thomas Erl's best-selling Service-Oriented Architecture: Concepts, Technology, and Design has been the definitive end-to-end tutorial on SOA, service-orientation, and service technologies. Now, Erl has thoroughly updated the industry's de facto guide to SOA to reflect new practices, technologies, and strategies that have emerged through hard-won experience and creative innovation. This Second Edition officially introduces microservices and micro task abstraction as part of service-oriented architecture and its associated service layers. Updated case study examples and illustrations further explain and position the microservice model alongside and in relation to more traditional types of services. Coverage includes:

- Easy-to-understand, plain English explanations of SOA and service-orientation fundamentals (as compiled from series titles)
- Microservices, micro task abstraction, and containerization
- Service delivery lifecycle and associated phases
- Analysis and conceptualization of services and microservices
- Service API design with REST services, web services, and microservices
- Modern service API and contract versioning techniques for web services and REST services
- Up-to-date appendices with service-orientation principles, REST constraints, and SOA patterns (including three new patterns)

Service-Oriented Architecture: Analysis and Design for Services and Microservices, Second Edition, will be indispensable to application architects, enterprise architects, software developers, and any IT professionals interested in learning about or responsible for designing or implementing modern-day, service-oriented solutions.

Chapter 1: Introduction Chapter 2: Case Study Backgrounds Part I: Fundamentals Chapter 3: Understanding Service-Orientation Chapter 4: Understanding SOA Chapter 5: Understanding Layers with Services and Microservices Part II: Service-Oriented Analysis and Design Chapter 6: Analysis and Modeling with Web Services and Microservices Chapter 7: Analysis and Modeling with REST Services and Microservices Chapter 8: Service API and Contract Design with Web Services Chapter 9: Service API and Contract Design with REST Services and Microservices Chapter 10: Service API and Contract Versioning with Web Services and REST Services Part III: Appendices Appendix A: Service-Orientation Principles Reference Appendix B: REST Constraints Reference Appendix C: SOA Design Patterns Reference Appendix D: The Annotated SOA Manifesto

REST continues to gain momentum as the best method for building Web services, and this down-to-earth book delivers techniques and examples that show how to design and implement integration solutions using the REST architectural style.

Web services and Service-Oriented Computing (SOC) have become thriving areas of academic research, joint university/industry research projects, and novel IT products on the market. SOC is the computing paradigm that uses Web services as building blocks for the engineering of composite, distributed applications out of the reusable application logic encapsulated by Web services. Web services could be considered the best-known and most standardized technology in use today for distributed computing over the Internet. Web Services Foundations is the first installment of a two-book collection covering the state-of-the-art of both theoretical and practical aspects of Web services and SOC research. This book specifically focuses on the foundations of Web services and SOC and covers - among others - Web service composition, non-functional aspects of Web services, Web service selection and recommendation, and assisted Web service composition. The editors collect advanced topics in the second book of the collection, Advanced Web Services, (Springer, 2013). Both books together comprise approximately 1400 pages and are the result of an enormous community effort that involved more than 100 authors, comprising the world's leading experts in this field.

44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

"Every developer working with the Web needs to read this book." -- David Heinemeier Hansson, creator of the Rails framework "RESTful Web Services finally provides a practical roadmap for constructing services that embrace the Web, instead of trying to route around it." -- Adam Trachtenberg, PHP author and eBay Web Services Evangelist You've built web sites that can be used by humans. But can you also build web sites that are usable by machines? That's where the future lies, and that's what RESTful Web Services shows you how to do. The World Wide Web is the most popular distributed application in history, and Web services and mashups have turned it into a powerful distributed computing platform. But today's web service technologies have lost sight of the simplicity that made the Web successful. They don't work like the Web, and they're missing out on its advantages. This book puts the "Web" back into web services. It shows how you can connect to the programmable web with the technologies you already use every day. The key is REST, the architectural style that drives the Web. This book: Emphasizes the power of basic Web technologies -- the HTTP application protocol, the URI naming standard, and the XML

Read Book Soa With Rest Principles Patterns Constraints For Building Enterprise Solutions With Rest Prentice Hall Service Oriented Computing Series From Thomas

markup language Introduces the Resource-Oriented Architecture (ROA), a common-sense set of rules for designing RESTful web services Shows how a RESTful design is simpler, more versatile, and more scalable than a design based on Remote Procedure Calls (RPC) Includes real-world examples of RESTful web services, like Amazon's Simple Storage Service and the Atom Publishing Protocol Discusses web service clients for popular programming languages Shows how to implement RESTful services in three popular frameworks -- Ruby on Rails, Restlet (for Java), and Django (for Python) Focuses on practical issues: how to design and implement RESTful web services and clients This is the first book that applies the REST design philosophy to real web services. It sets down the best practices you need to make your design a success, and the techniques you need to turn your design into working code. You can harness the power of the Web for programmable applications: you just have to work with the Web instead of against it. This book shows you how.

Breakthrough approach, breakthrough techniques: the first comprehensive tutorial and reference for deploying RESTful services to support SOA • •SOA and REST have been viewed as radically different paradigms: this is the first book to show how they can be combined to solve crucial problems and deliver greater business value. •Presents comprehensive case studies of the highly successful integration of contemporary REST frameworks and SOA platforms. •Covers both the theory and practice of RESTful services in the SOA context. Every major development platform now supports the creation of SOA-based solutions. Increasingly, however, the traditional, SOAP-based method of building SOA services has been challenged by a simpler, lighter alternative: REST. The two paradigms have sometimes been viewed as competitive, and many developers are comfortable with one or the other, but not both. However, REST and SOA can be used together - and, as this start-to-finish tutorial demonstrates, organizations can achieve powerful benefits by combining them. Renowned SOA expert Thomas Erl and IBM Consulting IT Architect Raj Balasubramanian begin by explaining the theory and techniques underlying REST, and then introducing real-life implementations of RESTful services using multiple contemporary technologies. The authors compare REST and service-oriented principles, showing how traditional Web services and RESTful services differ, and dispelling common myths and misconceptions about REST and SOA. Next, they present a series of REST-inspired SOA design patterns, supported by case studies that demonstrate how REST and SOA can be converged using existing technologies and products, and what the benefits are of doing so. Thomas Erl (Richmond BC) founded SOA Systems Inc., a company specializing in vendor-agnostic SOA training, certification, and strategic consulting services. Erl speaks and instructs widely, and has delivered many workshops and keynote speeches. His work has been published in publications including The Wall Street Journal. Raj Balasubramanian (Cedar Creek TX), Consulting IT Architect for IBM Software Group, works on customer engagements delivering application and infrastructure-related projects. As co author of an upcoming SOA with Java book, he contributed chapters on portal technology and REST service design and development. He recently developed REST patterns for, SOA Design Patterns.

“An outstanding depth-and-breadth resource for IT architects and Java professionals to understand and apply the marriage of SOA and modern Java.” --Antonio Bruno, Enterprise Architecture and Strategy, digitalStrom “A great self-contained book on SOA using flexible Java implementations...” --Roger Stoffers, Hewlett Packard “Provides clarity on abstract concepts and is filled with concrete examples of implementing SOA principles in Java environments.” --Sanjay Singh, Certified SOA Architect “...provides a holistic, comprehensive view on leveraging SOA principles and architecture for building and deploying performant Java services.” --Suzanne D'Souza, KBACE Technologies “Thomas Erl's series of books on services technology have shaped, influenced, and strengthened a whole community of enterprise and solution architects' thinking and solution development, and the much awaited SOA with Java book is an excellent addition to the series. It is a must-read.” --Lalatendu Rath, Wipro Technologies The Definitive Guide to Building Service-Oriented Solutions with Lightweight and Mainstream Java Technologies Java has evolved into an exceptional platform for building Web-based enterprise services. In SOA with Java, Thomas Erl and several world-class experts guide you in mastering the principles, best practices, and Java technologies you need to design and deliver high-value services and service-oriented solutions. You'll learn how to implement SOA with lightweight frameworks, mainstream Java services technologies, and contemporary specifications and standards. To demonstrate real-world examples, the authors present multiple case study scenarios. They further demystify complex concepts with a plain-English writing style. This book will be valuable to all developers, analysts, architects, and other IT professionals who want to design and implement Web-based service-oriented architectures and enterprise solutions with Java technologies. Topic Areas Applying modern service-orientation principles to modern Java technology platforms Leveraging Java infrastructure extensions relevant to service-oriented solutions Exploring key concepts associated with SOA and service-orientation within the context of Java Reviewing relevant Java platforms, technologies, and APIs Understanding the standards and conventions that REST and SOAP services are built upon in relation to Java implementations Building Java Web-based services with JAX-WS and JAX-RS Applying the eight key principles of service-orientation design using Java tools and technologies Creating Java utility services: architectural, design, and implementation issues Constructing effective entity services: service contracts, messages, data access, and processing Constructing task services, including detailed guidance on service composition Using ESBs to support infrastructure requirements in complex services ecosystems

Summary SOA Patterns provides architectural guidance through patterns and antipatterns. It shows you how to build real SOA services that feature flexibility, availability, and scalability. Through an extensive set of patterns, this book identifies the major SOA pressure points and provides reusable techniques to address them. Each pattern pairs the classic problem/solution format with a unique technology map, showing where specific solutions fit into the general pattern. About the Technology The idea of service-oriented architecture is an easy one to grasp and yet developers and enterprise architects often struggle with implementation issues. Here are some of them: How to get high availability and high performance How to know a service has failed How to create reports when data is scattered within multiple services How to make loose coupling looser How to solve authentication and authorization for service consumers How to integrate SOA and the UI About the Book SOA Patterns provides detailed, technology-neutral solutions to these challenges, and

