# Beginning Wso2 Esb

Electronics in Advanced Research Industries A one-of-a-kind examination of the latest developments in machine control In Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances, accomplished electronics researcher and engineer Alessandro Massaro delivers a comprehensive exploration of the latest ways in which people have achieved machine control, including automated vision technologies, advanced electronic and micro-nano sensors, advanced robotics, and more. The book is composed of nine chapters, each containing examples and diagrams designed to assist the reader in applying the concepts discussed within to common issues and problems in the real-world. Combining electronics and mechatronics to show how they can each be implemented in production line systems, the book presents insightful new ways to use artificial intelligence in production line machines. The author explains how facilities can upgrade their systems to an Industry 5.0 environment. Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances also provides: A thorough introduction to the state-of-the-art in a variety of technological areas, including flexible technologies, scientific approaches, and intelligent automatic systems Comprehensive explorations of information technology infrastructures that support Industry 5.0 facilities, including production process simulation Practical discussions of human-machine interfaces, including mechatronic machine interface architectures integrating sensor systems and machine-to-machine (M2M) interfaces In-depth examinations of Internet of Things (IoT) solutions in industry, including cloud computing IoT Perfect for professionals working in electrical industry sectors in manufacturing, production line manufacturers, engineers, and members of R&D industry teams, Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances will also earn a place in libraries of technicians working in the process industry.

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine

some of the tools and technologies you'll need for building cloud native systems
Learn how to build scalable cloud native applications with the new-generation Ballerina language using expert tips and best practices Key Features Work with code samples based on the Ballerina Swan Lake Beta1 version Explore the in-built networking protocol support in Ballerina to develop secure distributed apps Build a Ballerina app with an automated CI/CD pipeline with observability to simplify maintenance and deployment Book Description The Ballerina programming language was created by WSO2 for the modern needs of developers where cloud native development techniques have become ubiquitous. Ballerina simplifies how programmers develop and deploy cloud native distributed apps and microservices. Cloud Native Applications with Ballerina will guide you through Ballerina essentials, including variables, types, functions, flow control, security, and more. You'll explore networking as an in-built feature in Ballerina, which makes it a first-class language for distributed computing. With this app development book, you'll learn about different networking protocols as well as different architectural patterns that you can use to implement services on the cloud. As you advance, you'll explore multiple design patterns used in microservice architecture and use serverless in Amazon Web Services (AWS) and Microsoft Azure platforms. You will also get to grips with Docker, Kubernetes, and serverless platforms to simplify maintenance and the deployment process. Later, you'll focus on the Ballerina testing framework along with deployment tools and monitoring tools to build fully automated observable cloud applications. By the end of this book, you will have learned how to apply the Ballerina language for building scalable, resilient, secured, and easy-to-maintain cloud native Ballerina projects and applications. What you will learn Understand the concepts and models in cloud native architecture Get to grips with the high-level concepts of building applications with the Ballerina language Use cloud native architectural design patterns to develop cloud native Ballerina applications Discover how to automate, maintain, and observe cloud native Ballerina applications Use a container to deploy and maintain a Ballerina application with Docker and Kubernetes Explore serverless architecture and use Microsoft Azure and the AWS platform to build serverless applications Who this book is for This Ballerina Swan Lake book is for cloud developers, integration developers, and microservices developers who are facing challenges with legacy tooling and are looking for the latest tools and technologies to solve them. Beginner-level programming knowledge is required before getting started with this Ballerina book.
This book argues that personal identity is changing profoundly and that money is changing equally profoundly. Cash will be replaced by a proliferation of new digital currencies.
Learning RabbitMQ
Exploring Enterprise Service Bus in the Service-Oriented Architecture Paradigm
Building Digital Experience Platforms

Effective and Efficient Process Engine Evaluation

Building Cloud Native Applications with Go and Java for Docker and Kubernetes

Identity Is the New Money

*The current work provides CIOs, software architects, project managers, developers, and cloud strategy initiatives with a set of architectural patterns that offer nuggets of advice on how to achieve common cloud computing-related goals. The cloud computing patterns capture knowledge and experience in an abstract format that is independent of concrete vendor products. Readers are provided with a toolbox to structure cloud computing strategies and design cloud application architectures. By using this book cloud-native applications can be implemented and best suited cloud vendors and tooling for individual usage scenarios can be selected. The cloud computing patterns offer a unique blend of academic knowledge and practical experience due to the mix of authors. Academic knowledge is brought in by Christoph Fehling and Professor Dr. Frank Leymann who work on cloud research at the University of Stuttgart. Practical experience in building cloud applications, selecting cloud vendors, and designing enterprise architecture as a cloud customer is brought in by Dr. Ralph Retter who works as an IT architect at T-Systems, Walter Schupeck, who works as a Technology Manager in the field of Enterprise Architecture at Daimler AG,and Peter Arbitter, the former head of T Systems' cloud architecture and IT portfolio team and now working for Microsoft. Voices on Cloud Computing Patterns Cloud computing is especially beneficial for large companies such as Daimler AG. Prerequisite is a thorough analysis of its impact on the existing applications and the IT architectures. During our collaborative research with the University of Stuttgart, we identified a vendor-neutral and structured approach to describe properties of cloud offerings and requirements on cloud environments. The resulting Cloud Computing Patterns have profoundly impacted our corporate IT strategy regarding the adoption of cloud computing. They help our architects, project managers and developers in the refinement of architectural guidelines and communicate requirements to our integration partners and software suppliers. Dr. Michael Gorriz – CIO Daimler AG Ever since 2005 T-Systems has provided a flexible and reliable cloud platform with its "Dynamic Services". Today these cloud services cover a huge variety of corporate applications, especially enterprise resource planning, business intelligence, video, voice communication, collaboration, messaging and mobility services. The book was written by senior cloud pioneers sharing their technology foresight combining essential information and practical experiences. This valuable compilation helps both practitioners and clients to really understand which new types of services are readily available, how they really work and importantly how to benefit from the cloud. Dr. Marcus Hacke – Senior Vice President, T-Systems International GmbH This book provides a conceptual framework and very timely guidance for people and organizations building applications for the cloud. Patterns are a proven approach to building robust and sustainable applications and systems. The authors adapt and extend it to cloud computing, drawing on their own experience and deep contributions to the field. Each pattern includes an extensive discussion of the state of the art, with implementation considerations and practical examples that the reader can apply to their own projects. By capturing our collective knowledge about building good cloud applications and by providing a format to integrate new insights, this book provides an important tool not just for individual practitioners and teams, but*

*for the cloud computing community at large. Kristof Kloeckner – General Manager,Rational Software, IBMSoftware Group Providing background on the "when and why" of the topic, then diving into practical, instruction-based examples called "recipes", where each recipe will explain how to address a given challenge in enterprise integration.If you are an architect or Java developer, keen on building solutions to solve enterprise integration problems, this is the book for you!You will need a good understanding of SOA design concepts, SOAP, REST, and related messaging systems. However, you are not expected to be an advanced user of WSO2 ESB*

*This book constitutes the refereed proceedings of the 11th IFIP WG 5.11 International Symposium on Environmental Software Systems, ISESS 2015, held in Melbourne, Australia, in March 2015. The 62 revised full papers presented were carefully reviewed and selected from 104 submissions. The papers are organized in the following topical sections: information systems, information modeling and semantics; decision support tools and systems; modelling and simulation systems; architectures, infrastructures, platforms and services; requirements, software engineering and software tools; analytics and visualization; and high-performance computing and big data.*

*Most modern business systems include independent applications that exchange information with each other-a technique usually called enterprise integration. An architectural approach called the Enterprise Service Bus (ESB) offers developers a way to handle the messages between those independent applications without creating a lot of custom code. While commercial ESB solutions can be quite expensive to implement and maintain, a set of high-quality open source ESB tools offer the same functionality at a substantially lower cost. Open Source ESBs in Action shows you how to implement and use two open source ESB implementations: Mule and ServiceMix. The authors introduce you to these freely-available ESB tools and present practical examples of how to use them in real-world scenarios. You will learn how the various features of an ESB such as transformation, routing, security, connectivity and more can be implemented using Mule and ServiceMix. You will also learn how to solve common enterprise integration problems using a structured approach. Beyond simply learning how Mule and Service Mix work, you'll learn the core techniques of ESB implementation such as Process Choreography, or the implementation of complex business processes through an ESB, and Service Orchestration, or exposing a set of services as a single service. The book shows you the fundamentals of ESB-based event processing and Quality of Service concerns like security, reliable delivery, and transaction management. Working in integration projects is exciting, with new technologies and paradigms arriving every day. Open Source technologies like Mule and ServiceMix both offer lower-cost solutions and a higher degree of innovation than commercial ESB implementations. Open Source ESBs in Action will help you master ESB-driven integration techniques quickly and will provide you with knowledge you need to work effectively with Mule and ServiceMix. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.*

*Fundamentals to Design, Build, and Manage Cloud Applications*
*A guide for programmers interested in developing cloud native applications using Ballerina Swan Lake*
*Designing Microservices Platforms with NATS*
*Pivotal Certified Spring Enterprise Integration Specialist Exam*

*8th International Conference, GPC 2013, and Colocated Workshops, Seoul, Korea, May 9-11, 2013, Proceedings*
*Artificial Intelligence and Data Mining for Mergers and Acquisitions*
Get a comprehensive understanding of gRPC fundamentals through real-world examples. With this practical guide, you'll learn how this high-performance interprocess communication protocol is capable of connecting polyglot services in microservices architecture, while providing a rich framework for defining service contracts and data types. Complete with hands-on examples written in Go, Java, Node, and Python, this book also covers the essential techniques and best practices to use gRPC in production systems. Authors Kasun Indrasiri and Danesh Kuruppu discuss the importance of gRPC in the context of microservices development.
With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will gain experience building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Sriskandarajah Suhothayan and Kasun Indrasiri highlight use cases that effectively demonstrate the challenges you could encounter at each step. Explore the issues you're likely to deal with when building highly scalable cloud native applications Learn design patterns for addressing these issues--and best practices to help you apply them Examine the tools and technologies essential for building cloud native systems Implement scalable cloud native applications that are manageable and maintainable Use patterns for building applications that are appropriate for specific use cases
Kaum eine Industrie wird durch die Digitalisierung so stark geprägt wie der Bankensektor. Neue Technologien verändern die Wertschöpfungskette im Privatkundengeschäft ebenso wie im Firmenkunden- und Kapitalmarktgeschäft. Auch zentrale Funktionen wie Risikomanagement, Finance, Controlling sowie Compliance und Kommunikation müssen sich den Herausforderungen des digitalen Zeitalters stellen. Neben jungen Finanztechnologieunternehmen („FinTechs") stellen auch Technologie- bzw. Internetkonzerne mit innovativen Lösungen traditionelle Geschäftsmodelle der Finanzdienstleister in Frage. Die erfolgreiche Gestaltung der digitalen Transformation wird somit zum entscheidenden Faktor für eine nachhaltig erfolgreiche Unternehmensentwicklung. Das vorliegende Werk beleuchtet die unterschiedlichen Facetten der Digitalisierung und deren Auswirkungen auf das Bankgeschäft. Dazu gehören die unter dem Stichwort Banking 4.0 dargestellten strategischen Herausforderungen an die Bank der Zukunft angesichts neuer Technologien, veränderter Kundenerwartungen und eines dynamischen Wettbewerbsumfelds. Das Handbuch wurde von führenden Experten und erfahrenen Praktikern verfasst und richtet sich an Fach- und Führungskräfte, die sich mit der Digitalisierung im Bankensektor beschäftigen.

**The book emphasizes a contemporary view on the role of higher level fusion in designing crisis management systems, and provide the formal foundations, architecture and implementation strategies required for building dynamic current and future situational pictures, challenges of, and the state of the art computational approaches to designing such processes. This book integrates recent advances in decision theory with those in fusion methodology to define an end-to-end framework for decision support in crisis management. The text discusses modern fusion and decision support methods for dealing with heterogeneous and often unreliable, low fidelity, contradictory, and redundant data and information, as well as rare, unknown, unconventional or even unimaginable critical situations. Also the book examines the role of context in situation management, cognitive aspects of decision making and situation management, approaches to domain representation, visualization, as well as the role and exploitation of the social media. The editors include examples and case studies from the field of disaster management. Opportunities and Challenges in Cloud, Fog and Edge Computing**

**16th International Conference, BPM 2018, Sydney, NSW, Australia, September 9–14, 2018, Proceedings Model-Driven Engineering and Software Development Praxishandbuch Digital Banking Microservices for the Enterprise**
Build and optimize efficient messaging applications with ease About This Book Learn to administer, configure, and manage RabbitMQ instances Discover ways to secure and troubleshoot RabbitMQ instances This book is fully up-to-date with all the latest changes to version 3.5 Who This Book Is For If you are a developer or system administrator with a basic knowledge of messaging who wants to learn RabbitMQ, or if you want to further enhance your knowledge in working with the message broker, then this book is ideal for you. To fully understand some examples in the book, a basic knowledge of the Java programming language is required. What You Will Learn Apply messaging patterns using the message broker Administer RabbitMQ using the command line, management Web console, or management REST services Create a cluster of scalable, and highly-available, RabbitMQ instances Use RabbitMQ with the Spring Framework, MuleESB, WSO2, and Oracle databases Deploy RabbitMQ using Puppet, Vagrant, or Docker Fine-tune the performance of RabbitMQ Monitor RabbitMQ using Nagios, Munin, or Monit Secure, troubleshoot, and extend RabbitMQ In Detail RabbitMQ is Open Source Message Queuing software based on the Advanced Message Queue Protocol Standard written in the Erlang Language. RabbitMQ is an ideal candidate for large-scale projects ranging from e-commerce and finance to Big Data and social networking because of its ease of use and high performance. Managing RabbitMQ in such a dynamic environment can be a challenging task that requires a good understanding not only of how to work properly with the message broker but also of its best practices and pitfalls. Learning RabbitMQ starts with a concise description of messaging solutions and

patterns, then moves on to concrete practical scenarios for publishing and subscribing to the broker along with basic administration. This knowledge is further expanded by exploring how to establish clustering and high availability at the level of the message broker and how to integrate RabbitMQ with a number of technologies such as Spring, and enterprise service bus solutions such as MuleESB and WSO2. We will look at advanced topics such as performance tuning, secure messaging, and the internals of RabbitMQ. Finally we will work through case-studies so that we can see RabbitMQ in action and, if something goes wrong, we'll learn to resolve it in the Troubleshooting section. Style and approach Each chapter of the book is an easy-to-follow guide that expands and builds on the knowledge already gained in previous chapters. Throughout the course of the book, a sample system called the CSN (Corporate Social Network) is used to illustrate the core principles described. At the end of each chapter, there is a Q&A session that covers practical questions that may arise in practice when working with RabbitMQ. Large IT organizations increasingly face the challenge of integrating various web services, applications, and other technologies into a single network. The solution to finding a meaningful large-scale architecture that is capable of spanning a global enterprise appears to have been met in ESB, or Enterprise Service Bus. Rather than conform to the hub-and-spoke architecture of traditional enterprise application integration products, ESB provides a highly distributed approach to integration, with unique capabilities that allow individual departments or business units to build out their integration projects in incremental, digestible chunks, maintaining their own local control and autonomy, while still being able to connect together each integration project into a larger, more global integration fabric, or grid. Enterprise Service Bus offers a thorough introduction and overview for systems architects, system integrators, technical project leads, and CTO/CIO level managers who need to understand, assess, and evaluate this new approach. Written by Dave Chappell, one of the best known and authoritative voices in the field of enterprise middleware and standards-based integration, the book drills down into the technical details of the major components of ESB, showing how it can utilize an event-driven SOA to bring a variety of enterprise applications and services built on J2EE, .NET, C/C++, and other legacy environments into the reach of the everyday IT professional. With Enterprise Service Bus, readers become well versed in the problems faced by IT organizations today, gaining an understanding of how current technology deficiencies impact business issues. Through the study of real-world use cases and integration patterns drawn from several industries using ESB--including Telcos, financial services, retail, B2B exchanges, energy, manufacturing, and more--the book clearly and coherently outlines the benefits of moving toward this integration strategy. The book also compares ESB to other integration architectures, contrasting their inherent strengths and limitations. If you are charged with understanding, assessing, or implementing an integration architecture, Enterprise Service Bus will provide the straightforward information you need to draw your conclusions about this important

disruptive technology.

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

From basic concepts to research grade material, Mobile Web 2.0: Developing and Delivering Services to Mobile Devices provides complete and up-to-date coverage of the range of technical topics related to Mobile Web 2.0. It brings together the work of 51 pioneering experts from around the world who identify the major challenges in Mobile Web 2.0 applications and provide authoritative insight into many of their own innovations and advances in the field. To help you address contemporary challenges, the text details a conceptual framework that provides modeling facilities for context-aware, multi-channel Web applications. It compares various platforms for developing mobile services—from the developer and user perspectives—and explains how to use high-level modeling constructs to drive the application development process through automatic code generation. Proposes an expanded model of mobile application context Explores mobile social software as an Information and Communications Technology (ICT) Discusses the effect of context on mobile usability Through empirical study, the book tests a number of hypotheses on the use of software implementation technology and location context in mobile applications. It introduces Reusable End-User Customization (REUC)—a technique that allows users to adapt the layout of Web pages and automatically reapplies those preferences on subsequent visits. It also investigates the need for non-visual feedback with long system response times, particularly when downloading Web pages to mobile devices.

A Guide to Developing Next-Generation Enterprise Applications
Cloud Native Applications with Ballerina
Cloud Computing Patterns

11th IFIP WG 5.11 International Symposium, ISESS 2015, Melbourne, VIC, Australia, March 25-27, 2015, Proceedings
Example Implementations in Mule and ServiceMix
Enterprise Integration with Wso2 Esb

*This book constitutes thoroughly revised and selected papers from the Third International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2015, held in Angers, France, in February 2015. The 25 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from 94 submissions. They are organized in topical sections named: invited papers; modeling languages, tools and architectures; methodologies, processes and platforms; applications and software development.*
*If you are an Enterprise C# developer who wishes to extend your knowledge of NServiceBus and Enterprise Service Bus in C#, this is the book for you. This book is designed to enhance the education of ESBs and their messaging, whether you are a beginner or a seasoned expert in Enterprise C#, Apex, and Visualforce pages.*
*Would you like to use a consistent visual notation for drawing integration solutions? "Look inside the front cover." Do you want to harness the power of asynchronous systems without getting caught in the pitfalls? "See "Thinking Asynchronously" in the Introduction." Do you want to know which style of application integration is best for your purposes? "See Chapter 2, Integration Styles." Do you want to learn techniques for processing messages concurrently? "See Chapter 10, Competing Consumers and Message Dispatcher." Do you want to learn how you can track asynchronous messages as they flow across distributed systems? "See Chapter 11, Message History and Message Store." Do you want to understand how a system designed using integration patterns can be implemented using Java Web services, .NET message queuing, and a TIBCO-based publish-subscribe architecture? "See Chapter 9, Interlude: Composed Messaging." Utilizing years of practical experience, seasoned experts Gregor Hohpe and Bobby Woolf show how asynchronous messaging has proven to be the best strategy for enterprise integration success. However, building and deploying messaging solutions presents a number of problems for developers. " Enterprise Integration Patterns " provides an invaluable catalog of sixty-five patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book. 0321200683B09122003*
*The Internet of Things offers massive societal and economic opportunities while at the same time significant challenges, not least the delivery and management of the technical infrastructure underpinning it, the deluge of data generated from it, ensuring privacy and security, and capturing value from it. This Open Access Pivot explores these challenges, presenting the state of the art and future directions for research but also frameworks for making sense of this complex area. This book provides a variety of perspectives on how technology innovations such as fog, edge and dew computing, 5G networks, and distributed intelligence are making us rethink conventional cloud computing to support the Internet of Things. Much of this book focuses on technical aspects of the Internet of Things, however, clear methodologies for mapping the business value of the Internet of Things are still missing. We provide a value mapping framework for the Internet of Things to address this gap. While there is much hype about the Internet of Things, we have yet to reach the tipping point. As such, this book provides a timely*

*entrée for higher education educators, researchers and students, industry and policy makers on the technologies that promise to reshape how society interacts and operates. Theo Lynn is Full Professor of Digital Business at DCU Business School, Ireland and Director of the Irish Institute of Digital Business. John G. Mooney is Associate Professor of Information Systems and Technology Management at the Pepperdine Graziadio Business School, United States. Brian Lee is Director of the Software Research Institute at Athlone Institute of Technology. Patricia Takako Endo is a Postdoctoral Research Fellow at the Irish Institute of Digital Business, Dublin City University, Ireland, and a Professor at Universidade de Pernambuco, Brazil.*

*Microservices Security in Action*

*Patterns in Practice Using APIs, Data, Events, and Streams*

*Higher Level Fusion and Decision Making*

*Learning NServiceBus Sagas*

*Enterprise Integration Patterns*

*Instant Mapreduce Patterns - Hadoop Essentials How-To*

This book constitutes the thoroughly refereed post-conference proceedings of the 4th International ICST Conference on e-Infrastructure and e-Services for Developing Countries, AFRICOMM 2012, held in Yaounde, Cameroon, in November 2012. The 24 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics in the field of information and communication infrastructures and are grouped in topical sections on: e-Infrastructure, e-Services, e-Society, e-Health, and e-Security.

This book constitutes the proceedings of the 16th International Conference on Business Process Management, BPM 2018, held in Sydney, Australia, in September 2018. The 27 papers presented in this volume were carefully reviewed and selected from 140 submissions. They were organized in topical sections named: reflections on BPM; concepts and methods in business process modeling and analysis; foundations of process discovery; alignments and conformance checking; process model analysis and machine learning; digital process innovation; and method analysis and selection.

Web browsing would not be what it is today without the use of Service-Oriented Architecture (SOA). Although much has been written about SOA methodology, this emerging platform is continuously under development. Exploring Enterprise Service Bus in the Service-Oriented Architecture Paradigm is a detailed reference source that examines current aspects and research methodologies that enable enterprise service bus to unify and connect services efficiently on a common platform. Featuring relevant topics such as SOA reference architecture, grid computing applications, complex event computing, and java business integration, this is an ideal resource for all practitioners, academicians, graduate students, and researchers interested in the

discoveries on the relationship that Service-Oriented architecture and enterprise service bus share.

Understand the key challenges and solutions around building microservices in the enterprise application environment. This book provides a comprehensive understanding of microservices architectural principles and how to use microservices in real-world scenarios. Architectural challenges using microservices with service integration and API management are presented and you learn how to eliminate the use of centralized integration products such as the enterprise service bus (ESB) through the use of composite/integration microservices. Concepts in the book are supported with use cases, and emphasis is put on the reality that most of you are implementing in a "brownfield" environment in which you must implement microservices alongside legacy applications with minimal disruption to your business. Microservices for the Enterprise covers state-of-the-art techniques around microservices messaging, service development and description, service discovery, governance, and data management technologies and guides you through the microservices design process. Also included is the importance of organizing services as core versus atomic, composite versus integration, and API versus edge, and how such organization helps to eliminate the use of a central ESB and expose services through an API gateway. What You'll Learn Design and develop microservices architectures with confidence Put into practice the most modern techniques around messaging technologies Apply the Service Mesh pattern to overcome inter-service communication challenges Apply battle-tested microservices security patterns to address real-world scenarios Handle API management, decentralized data management, and observability Who This Book Is For Developers and DevOps engineers responsible for implementing applications around a microservices architecture, and architects and analysts who are designing such systems

Mobile Web 2.0

Grid and Pervasive Computing

SOA and data services with WSO2 Enterprise Integrator

Developing and Delivering Services to Mobile Devices

Open Source SOA

Wso2 Developer's Guide

**Gain a strong foundation of core WSO2 ESB concepts and acquire a proven set of guidelines designed to get you started with WSO2 ESB quickly and efficiently. This book focuses on the various enterprises**

**integration capabilities of WSO2 ESB along with a broad range of examples that you can try out. From beginning to the end, Beginning WSO2 ESB effectively guides you in gradually building expertise in enterprise integration with WSO2 ESB for your SOA infrastructure. Nowadays successful enterprises rely heavily on how well the underlying software applications and services work together to produce a unified business functionality. This enterprise integration is facilitated by an Enterprise Service Bus (ESB). This book provides comprehensive coverage of the fundamentals of the WSO2 ESB and its capabilities, through real-world enterprise integration use cases. What You'll Learn Get started with WSO2 ESB Discover message processing techniques with WSO2 ESB Integrate REST and SOAP services Use enterprise messaging techniques: JMS, AMQP, MQTT Manage file-based integration and integrate with proprietary systems such as SAP Extend and administrate WSO2 ESB Who This Book Is For: All levels of IT professionals from developers to integration architects who are interested in using WSO2 ESB for their SOA infrastructure.**

**Exam topics covered include tasks and scheduling, remoting, the Spring Web Services framework, RESTful services with Spring MVC, the Spring JMS module, JMS and JTA transactions with Spring, batch processing with Spring Batch and the Spring Integration framework. Prepare with confidence for the Pivotal Enterprise Integration with Spring Exam. One of the important aspects of this book is a focus on new and modern abstractions provided by Spring. Therefore most of the features are shown with Java annotations alongside established XML configurations. Most of the examples in the book are also based on the Spring Boot framework. Spring Boot adoption is exponential because of its capability to significantly simplify Spring configuration using sensible opinionated defaults. But Spring Boot is not the target of the exam, therefore all the features are also covered with plain Spring configuration examples. How to use Spring to create concurrent applications and schedule tasks How to do remoting to implement client-server applications How to work with Spring Web services to create loosely coupled Web services and clients How to use Spring MVC to create RESTful web services and clients How to integrate JMS for asynchronous messaging-based communication How to use local JMS transactions with Spring How to configure global JTA transactions with Spring How to use Spring Integration to create event-driven pipes-and-filters architectures and integrate with external applications How to use Spring Batch for managed, scalable batch processing that is based on both custom and built-in processing components**

**The goal of this book is to present a modeling framework for the Virtual Organization that is focused on process composition. This framework uses Predicate Calculus Knowledge Bases. Petri Net-based**

modeling is also discussed. In this context, a Data Mining model is proposed, using a fuzzy mathematical approach, aiming to discover knowledge. A Knowledge-Based framework has been proposed in order to present an all-inclusive knowledge store for static and dynamic properties. Toward this direction, a Knowledge Base is created, and inferences are arrived at. This book features an advisory tool for Mergers and Acquisitions of Organizations using the Fuzzy Data Mining Framework and highlights the novelty of a Knowledge-Based Service-Oriented Architecture approach and development of an Enterprise Architectural model using AI that serves a wide audience. Students of Strategic Management in business schools and postgraduate programs in technology institutes seeking application areas of AI and Data Mining, as well as business/technology professionals in organizations aiming to create value through Mergers and Acquisitions and elsewhere, will benefit from the reading of this book.

WSO2 Made Simple - dive deep into the core concepts of WSO2 to overcome the challenges faced while using the Enterprise IntegratorAbout This Book* Design, create, and publish services in the WSO2 technology* Integrate the WSO2 Enterprise Integrator with other components and servers* Log and test deployed services Who This Book Is ForIf you are a Java solutions architect or developer and are keen to understand how to build enterprise applications with WSO2, this book is for you. No prior knowledge of WSO2 is expected.What You Will Learn* Configure WSO2 Enterprise Integrator server in a production environment* Create SOAP Proxies and REST APIs* Interact with WSO2 Message Broker* Write services using the new language: Ballerina* Schedule automatic tasks for the services you create* Manage log messages depending on the log level of the system* Integrate with social networks such as Twitter, Facebook, Instagram, and Yammer* Test SOAP Services using the Tryit feature and SoapUI tool* Work with Quality of ServicesIn DetailWSO2 Enterprise Integrator brings together the most powerful servers provided by the WSO2 company for your SOA infrastructure. As an Enterprise Service Bus (ESB), WSO2 Enterprise Integrator provides greater flexibility and agility to meet growing enterprise demands, whereas, as a Data Services Server (DSS), it provides an easy-to-use platform for integrating data stores, creating composite views across different data sources, and hosting data services.Using real-world scenarios, this book helps you build a solid foundation in developing enterprise applications with powerful data integration capabilities using the WSO2 servers.The book gets you started by brushing up your knowledge about SOA architecture and how it can be implemented through WSO2. It will help build your expertise with the core concepts of ESB such as building proxies, sequences, endpoints, and how to work with these in WSO2.Going further,

**you will also get well-acquainted with DSS data service concepts such as configuring data services, tasks, events, testing, and much more.The book will also cover API management techniques. Along with ESB and DSS, you will also learn about business process servers, the rules server and other components that together provide the control and robustness your enterprise applications will need.With practical use cases, the book covers typical daily scenarios you will come across while using these servers to give you hands-on experience.Style and approachThe book is a complete guide and helps you get the right start-from understanding SOA architectures to getting valuable experience with two important integration servers such as ESB and DSS. It will include some real-world practical scenarios to help you master the best practices followed right across the industry and overcome the challenges you're likely to face on a daily basis.**

**Business Process Management**

**A Study Guide**

**Industry 4.0 to Industry 5.0 Advances**

**The Cloud-to-Thing Continuum**

**9th International Conference, CRiSIS 2014, Trento, Italy, August 27-29, 2014, Revised Selected Papers**

**Risks and Security of Internet and Systems**

This book constitutes the thoroughly refereed post- conference proceedings of the Ninth International Conference on Risks and Security of Internet Systems, CRiSIS 2014, held in Trento, Italy, in August 2014. The 13 full papers and 6 short papers presented were selected from 48 submissions. They explore risks and security issues in Internet applications, networks and systems covering topics such as trust, security risks and threats, intrusion detection and prevention, access control and security modeling.

Filled with practical, step-by-step instructions and clear explanations for the most important and useful tasks. This is a Packt Instant How-to guide, which provides concise and clear recipes for getting started with Hadoop.This book is for big data enthusiasts and would-be Hadoop programmers. It is also meant for Java programmers who either have not worked with Hadoop at all, or who know Hadoop and MapReduce but are not sure how to deepen their understanding.

You can build a world-class SOA infrastructure entirely using popular, andmature, open-source applications. Unfortunately, the technical documentationfor most open-source projects focuses on a specific product, the big SOA picture.You're left to your own devices to figure out how to cobble together a fullsolution from the various bits. In other words, unless you already know howMule and Tuscany work with jBPM, you're stuck. Open Source SOA shows readers how to build an entire SOA application usingopen-source technologies. It shows readers how to apply key ideas like EnterpriseService Bus (ESB) design and Business Process

Management (BPM) and learnthe tools and techniques to implement them effectively. To pull everything together, the author describes real-life case studies from hisown work to tie together all the principles and practices. These hard-to-find casestudies are pure gold for the reader, as most developers keep these trade secretsto themselves. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

This book constitutes the refereed proceedings of the 8th International Conference on Grid and Pervasive Computing, GPC 2013, held in Seoul, Korea, in May 2013 and the following colocated workshops: International Workshop on Ubiquitous and Multimedia Application Systems, UMAS 2013; International Workshop DATICS-GPC 2013: Design, Analysis and Tools for Integrated Circuits and Systems; and International Workshop on Future Science Technologies and Applications, FSTA 2013. The 111 revised papers were carefully reviewed and selected from numerous submissions. They have been organized in the following topical sections: cloud, cluster and grid; middleware resource management; mobile peer-to-peer and pervasive computing; multi-core and high-performance computing; parallel and distributed systems; security and privacy; ubiquitous communications, sensor networking, and RFID; ubiquitous and multimedia application systems; design, analysis and tools for integrated circuits and systems; future science technologies and applications; and green and human information technology.

4th International ICST Conference, AFRICOMM 2012, Yaounde, Cameroon, November 12-14, 2012, Revised Selected Papers

Open-Source ESBs in Action

Third International Conference, MODELSWARD 2015, Angers, France, February 9-11, 2015, Revised Selected Papers

gRPC: Up and Running

e-Infrastructure and e-Services for Developing Countries

Leveraging Data Science for Global Health

*WSO2 Made Simple – dive deep into the core concepts of WSO2 to overcome the challenges faced while using the Enterprise Integrator About This Book Design, create, and publish services in the WSO2 technology Integrate the WSO2 Enterprise Integrator with other components and servers Log and test deployed services Who This Book Is For If you are a Java solutions architect or developer and are keen to understand how to build enterprise applications with WSO2, this book is for you. No prior knowledge of WSO2 is expected. What You Will Learn Configure WSO2 Enterprise Integrator server in a production environment Create SOAP Proxies and REST APIs Interact with WSO2 Message Broker Write services using the new language: Ballerina Schedule automatic tasks for the services you create Manage log messages depending on the log level of the system Integrate with social networks such as Twitter, Facebook, Instagram, and Yammer Test SOAP Services using the Tryit feature and SoapUI tool Work with Quality of Services In Detail WSO2 Enterprise Integrator brings together the most powerful servers provided by the*

*WSO2 company for your SOA infrastructure. As an Enterprise Service Bus (ESB), WSO2 Enterprise Integrator provides greater flexibility and agility to meet growing enterprise demands, whereas, as a Data Services Server (DSS), it provides an easy-to-use platform for integrating data stores, creating composite views across different data sources, and hosting data services. Using real-world scenarios, this book helps you build a solid foundation in developing enterprise applications with powerful data integration capabilities using the WSO2 servers. The book gets you started by brushing up your knowledge about SOA architecture and how it can be implemented through WSO2. It will help build your expertise with the core concepts of ESB such as building proxies, sequences, endpoints, and how to work with these in WSO2. Going further, you will also get well-acquainted with DSS data service concepts such as configuring data services, tasks, events, testing, and much more. The book will also cover API management techniques. Along with ESB and DSS, you will also learn about business process servers, the rules server and other components that together provide the control and robustness your enterprise applications will need. With practical use cases, the book covers typical daily scenarios you will come across while using these servers to give you hands-on experience. Style and approach The book is a complete guide and helps you get the right start—from understanding SOA architectures to getting valuable experience with two important integration servers such as ESB and DSS. It will include some real-world practical scenarios to help you master the best practices followed right across the industry and overcome the challenges you're likely to face on a daily basis.*

*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 learnhow 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 Piethein 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*

*This open access book explores ways to leverage information technology and machine learning to combat disease and promote health, especially in resource-constrained settings. It focuses on digital disease surveillance through the application of machine learning to non-traditional data sources. Developing countries are uniquely prone to large-scale emerging infectious disease outbreaks due to disruption of*

*ecosystems, civil unrest, and poor healthcare infrastructure — and without comprehensive surveillance, delays in outbreak identification, resource deployment, and case management can be catastrophic. In combination with context-informed analytics, students will learn how non-traditional digital disease data sources — including news media, social media, Google Trends, and Google Street View — can fill critical knowledge gaps and help inform on-the-ground decision-making when formal surveillance systems are insufficient.*

*"A complete guide to the challenges and solutions in securing microservices architectures." —Massimo Siani, FinDynamic Key Features Secure microservices infrastructure and code Monitoring, access control, and microservice-to-microservice communications Deploy securely using Kubernetes, Docker, and the Istio service mesh. Hands-on examples and exercises using Java and Spring Boot Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Microservices Security in Action teaches you how to address microservices-specific security challenges throughout the system. This practical guide includes plentiful hands-on exercises using industry-leading open-source tools and examples using Java and Spring Boot. About The Book Design and implement security into your microservices from the start. Microservices Security in Action teaches you to assess and address security challenges at every level of a Microservices application, from APIs to infrastructure. You'll find effective solutions to common security problems, including throttling and monitoring, access control at the API gateway, and microservice-to-microservice communication. Detailed Java code samples, exercises, and real-world business use cases ensure you can put what you've learned into action immediately. What You Will Learn Microservice security concepts Edge services with an API gateway Deployments with Docker, Kubernetes, and Istio Security testing at the code level Communications with HTTP, gRPC, and Kafka This Book Is Written For For experienced microservices developers with intermediate Java skills. About The Author Prabath Siriwardena is the vice president of security architecture at WSO2. Nuwan Dias is the director of API architecture at WSO2. They have designed secure systems for many Fortune 500 companies. Table of Contents PART 1 OVERVIEW 1 Microservices security landscape 2 First steps in securing microservices PART 2 EDGE SECURITY 3 Securing north/south traffic with an API gateway 4 Accessing a secured microservice via a single-page application 5 Engaging throttling, monitoring, and access control PART 3 SERVICE-TO-SERVICE COMMUNICATIONS 6 Securing east/west traffic with certificates 7 Securing east/west traffic with JWT 8 Securing east/west traffic over gRPC 9 Securing reactive microservices PART 4 SECURE DEPLOYMENT 10 Conquering container security with Docker 11 Securing microservices on Kubernetes 12 Securing microservices with Istio service mesh PART 5 SECURE DEVELOPMENT 13 Secure coding practices and automation*
*WSO2 Developer's Guide*
*Data Management at Scale*

*Designing, Building, and Deploying Messaging Solutions*
*Environmental Software Systems. Infrastructures, Services and Applications*
*Fusion Methodologies in Crisis Management*
*Beginning WSO2 ESB*

Use digital experience platforms (DXP) to improve your development productivity and release timelines. Leverage the pre-integrated feature sets of DXPs in your organization's digital transformation journey to quickly develop a personalized, secure, and robust enterprise platform. In this book the authors examine various features of DXPs and provide rich insights into building each layer in a digital platform. Proven best practices are presented with examples for designing and building layers. A special focus is provided on security and quality attributes needed for business-critical enterprise applications. The authors cover modern and emerging digital trends such as Blockchain, IoT, containers, chatbots, artificial intelligence, and more. The book is divided into five parts related to requirements/design, development, security, infrastructure, and case study. The authors employ proven real-world methods, best practices, and security and integration techniques derived from their rich experience. An elaborate digital transformation case study for a banking application is included. What You'll Learn Develop a digital experience platform from end to end Understand best practices and proven methods for designing overall architecture, user interface and integration components, security, and infrastructure Study real-world cases, including an elaborate digital transformation building an enterprise platform for a banking application Know the open source tools and technology frameworks that can be used to build DXPs Who This Book Is For Web developers, full stack developers, digital enthusiasts, digital project managers, and architects
A complete reference for designing and building scalable microservices platforms with NATS messaging technology for inter-service communication with security and observability Key Features Understand the use of a messaging backbone for inter-service communication in microservices architecture Design and build a real-world microservices platform with NATS as the messaging backbone using the Go programming language Explore security, observability, and best practices for building a microservices platform with NATS Book Description Building a scalable microservices platform that caters to business demands is critical to the success of that platform. In a microservices architecture, inter-service communication becomes a

bottleneck when the platform scales. This book provides a reference architecture along with a practical example of how to implement it for building microservices-based platforms with NATS as the messaging backbone for inter-service communication. In Designing Microservices Platforms with NATS, you'll learn how to build a scalable and manageable microservices platform with NATS. The book starts by introducing concepts relating to microservices architecture, inter-service communication, messaging backbones, and the basics of NATS messaging. You'll be introduced to a reference architecture that uses these concepts to build a scalable microservices platform and guided through its implementation. Later, the book touches on important aspects of platform securing and monitoring with the help of the reference implementation. Finally, the book concludes with a chapter on best practices to follow when integrating with existing platforms and the future direction of microservices architecture and NATS messaging as a whole. By the end of this microservices book, you'll have developed the skills to design and implement microservices platforms with NATS. What you will learn Understand the concepts of microservices architecture Get to grips with NATS messaging technology Handle transactions and message delivery guarantees with microservices Implement a reference architecture for microservices using NATS Discover how to improve the platform's security and observability Explore how a NATS microservices platform integrates with an enterprise ecosystem Who this book is for This book is for enterprise software architects and developers who want to gain hands-on microservices experience for designing, implementing, and managing complex distributed systems with microservices architecture concepts. Intermediate-level experience in any programming language and software architecture is required to make the most of this book.
Enterprise Service Bus
A modern approach to designing and implementing scalable microservices platforms with NATS messaging
97 Things Every Cloud Engineer Should Know
Electronics in Advanced Research Industries
Design Patterns for Cloud Native Applications
Designing, Developing, and Deploying