

Advanced Message Queuing Protocol Amqp Websocket Binding

Developers often struggle when first encountering the cloud. Learning about distributed systems, becoming familiar with technologies such as containers and functions, and knowing how to put everything together can be daunting. With this practical guide, you'll get up to speed on patterns for building cloud native applications and best practices for common tasks such as messaging, eventing, and DevOps. Authors Boris Scholl, Trent Swanson, and Peter Jausovec describe the architectural building blocks for a modern cloud native application. You'll learn how to use microservices, containers, serverless computing, storage types, portability, and functions. You'll also explore the fundamentals of cloud native applications, including how to design, develop, and operate them. Explore the technologies you need to design a cloud native application Distinguish between containers and functions, and learn when to use them Architect applications for data-related requirements Learn DevOps fundamentals and practices for developing, testing, and operating your applications Use tips, techniques, and best practices for building and managing cloud native applications Understand the costs and trade-offs necessary to make an application portable

The Advanced Message Queuing Protocol (AMQP) is an open standard application layer protocol for message-oriented middleware. The defining features of AMQP are message orientation, queuing, routing (including point-to-point and publish-and-subscribe), reliability and security. AMQP mandates the behaviour of the messaging provider and client to the extent that implementations from different vendors are truly interoperable, in the same way as SMTP, HTTP, FTP, etc. have created interoperable systems. Previous attempts to standardize middleware have happened at the API level (e.g. JMS) and this did not create interoperability. Unlike JMS, which merely defines an API, AMQP is a wire-level protocol. A wire-level protocol is a description of the format of the data that is sent across the network as a stream of octets. Consequently any tool that can create and interpret messages that conform to this data format can interoperate with any other compliant tool irrespective of implementation language. This book is your ultimate resource for Advanced Message Queuing Protocol (AMQP). Here you will find the most up-to-date information, analysis, background and everything you need to know. In easy to read chapters, with extensive references and links to get you to know all there is to know about Advanced Message Queuing Protocol (AMQP) right away, covering: Advanced Message Queuing Protocol, Message queue, Message queuing service, Streaming Text Oriented Messaging Protocol, Extensible Messaging and Presence Protocol, Amazon Simple Queue Service, IBM WebSphere Message Broker, IBM WebSphere MQ, Java Message Service, Message-oriented middleware, Microsoft Message Queuing, Azure Services Platform, AppFabric, OMQ, Comparison of instant messaging clients, Comparison of instant messaging protocols, Comparison of XMPP server software, Secure communication, SIMPLE This book explains in-depth the real drivers and workings of Advanced Message Queuing Protocol (AMQP). It reduces the risk of your technology, time and resources investment decisions by enabling you to compare your understanding of Advanced Message Queuing Protocol (AMQP) with the objectivity of experienced professionals.

Industry 4.1 Intelligent Manufacturing with Zero Defects Discover the future of manufacturing with this comprehensive introduction to Industry 4.0 technologies from a celebrated expert in the field Industry 4.1: Intelligent Manufacturing with Zero Defects delivers an in-depth exploration of the functions of intelligent manufacturing and its applications and implementations through the Intelligent Factory Automation (iFA) System Platform. The book's distinguished editor offers readers a broad range of resources that educate and enlighten on topics as diverse as the Internet of Things, edge computing, cloud computing, and cyber-physical systems. You'll learn about three different advanced prediction technologies: Automatic Virtual Metrology (AVM), Intelligent Yield Management (IYM), and Intelligent Predictive Maintenance (IPM). Different use cases in a variety of manufacturing industries are covered, including both high-tech and traditional areas. In addition to providing a broad view of intelligent manufacturing and covering fundamental technologies like sensors, communication standards, and container technologies, the book offers access to experimental data through the IEEE DataPort. Finally, it shows readers how to build an intelligent manufacturing platform called an Advanced Manufacturing Cloud of Things (AMCoT). Readers will also learn from: An introduction to the evolution of automation and development strategy of intelligent manufacturing A comprehensive discussion of foundational concepts in sensors, communication standards, and container technologies An exploration of the applications of the Internet of Things, edge computing, and cloud computing The Intelligent Factory Automation (iFA) System Platform and its applications and implementations A variety of use cases of intelligent manufacturing, from industries like flat-panel, semiconductor, solar cell, automotive, aerospace, chemical, and blow molding machine Perfect for researchers, engineers, scientists, professionals, and students who are interested in the ongoing evolution of Industry 4.0 and beyond, Industry 4.1: Intelligent Manufacturing with Zero Defects will also win a place in the library of laypersons interested in intelligent manufacturing applications and concepts. Completely unique, this book shows readers how Industry 4.0 technologies can be applied to achieve the goal of Zero Defects for all product

This volume presents the Proceedings of the Sixth International Conference on Green and Human Information Technology (ICGHIT), held in Chiang Mai, Thailand, Jan 31-Feb 2, 2018. ICGHIT is the unique global conference for researchers, industry professionals, and academics interested in the latest development of green and human information technology. Its broad scope ranges from electronics to communications, computers, multimedia and signal processing, control and intelligent systems, IC and convergence technologies, which are related to green and human issues such as energy saving and human welfare. Specially in this volume, ICGHIT covers state-of-the-art technologies for the 4th industrial revolution, for example, cyber security, big data and cloud service, smart medical system, machine learning and its applications.

If you're a JavaScript developer interested in a deeper understanding of how to create and design Node.js applications, this is the book for you.

The book aims to provide a broad overview of various topics of the Internet of Things (IoT) from the research and development priorities to enabling technologies, architecture, security, privacy, interoperability and industrial applications. It is intended to be a stand-alone book in a series that covers the Internet of Things activities of the IERC - Internet of Things European Research Cluster - from technology to international cooperation and the global "state of play." The book builds on the ideas put forward by the European Research Cluster on the Internet of Things Strategic Research and Innovation Agenda and presents views and state of the art results on the challenges facing the research, development and deployment of IoT at the global level. Today we see the integration of Industrial, Business and Consumer Internet which is bringing together the Internet of People, Internet of Things, Internet of Energy, Internet of Vehicles, Internet of Media, Services and Enterprises in forming the backbone of the digital economy, the digital society and the foundation for the future knowledge and innovation based economy. These developments are

supporting solutions for the emerging challenges of public health, aging population, environmental protection and climate change, the conservation of energy and scarce materials, enhancements to safety and security and the continuation and growth of economic prosperity. Penetration of smartphones and advances in nanoelectronics, cyber-physical systems, wireless communication, software, and Cloud computing technology will be the main drivers for IoT development. The IoT contribution is seen in the increased value of information created by the number of interconnections among things and the transformation of the processed information into knowledge shared into the Internet of Everything. The connected devices are part of ecosystems connecting people, processes, data, and things which are communicating in the Cloud using the increased storage and computing power while attempting to standardize communication and metadata. In this context, the next generation of Cloud computing technologies will need to be flexible enough to scale autonomously, adaptive enough to handle constantly changing connections and resilient enough to stand up to the huge flows of data that will occur. In 2025, analysts forecast that there will be six devices per human on the planet, which means around 50 billion more connected devices over the next 12 years. The Internet of Things market is connected to this anticipated device growth from industrial Machine to Machine (M2M) systems, smart meters and wireless sensors. Internet of Things technology will generate new services and new interfaces by creating smart environments and smart spaces with applications ranging from Smart Cities, Smart Transport, Buildings, Energy, Grid, to Smart Health and Life. Microservices architecture (MSA) is increasingly popular with software architects and engineers as it accelerates software solution design, development, and deployment in a risk-free manner. Placing a software system into a production environment is elegantly simplified and sped up with the use of MSA development platforms, runtime environments, acceleration engines, design patterns, integrated frameworks, and related tools. The MSA ecosystem is expanding with third-party products that automate as many tasks as possible. MSA is being positioned as the enterprise-grade and agile-application design method. This book covers in-depth the features and facilities that make up the MSA ecosystem. Beginning with an overview of Service-Oriented Architecture (SOA) that covers the Common Object Request Broker Architecture (CORBA), Distributed Component Object Model (DCOM), and Remote Method Invocation (RMI), the book explains the basic essentials of MSA and the continuous delivery of applications to customers. The book gives software developers insight into: Current and emerging communication models Key architectural elements of MSA-based applications Designing efficient APIs for microservices MSA middleware platforms such as REST, SOAP, Apache Thrift, and gRPC Microservice discovery and the API gateway Service orchestration and choreography for composing individual services to achieve a useful business process Database transactions in MSA-centric applications Design, composition, security, and deployment patterns MSA security Modernizing legacy applications The book concludes with a chapter on composing and building powerful microservices. With the exponential growth of IoT devices, microservices are being developed and deployed on resource-constrained but resource-intensive devices in order to provide people-centric applications. The book discusses the challenges of these applications. Finally, the book looks at the role of microservices in smart environments and upcoming trends including ubiquitous yet disappearing microservices.

This volume includes 74 papers presented at ICTIS 2017: Second International Conference on Information and Communication Technology for Intelligent Systems. The conference was held on 25th and 26th March 2017, in Ahmedabad, India and organized jointly by the Associated Chambers of Commerce and Industry of India (ASSOCHAM) Gujarat Chapter, the G R Foundation, the Association of Computer Machinery, Ahmedabad Chapter and supported by the Computer Society of India Division IV – Communication and Division V – Education and Research. The papers featured mainly focus on information and communications technology (ICT) for computation, algorithms and data analytics. The fundamentals of various data analytics and algorithms discussed are useful to researchers in the field.

This first volume of the three-volume set (CCIS 1193, CCIS 1194, and CCIS 1195) constitutes the refereed proceedings of the First International Conference on Applied Technologies, ICAT 2019, held in Quito, Ecuador, in December 2019. The 124 full papers were carefully reviewed and selected from 328 submissions. The papers are organized according to the following topics: technology trends; computing; intelligent systems; machine vision; security; communication; electronics; e-learning; e-government; e-participation.

Internet of Things: Principles and Paradigms captures the state-of-the-art research in Internet of Things, its applications, architectures, and technologies. The book identifies potential future directions and technologies that facilitate insight into numerous scientific, business, and consumer applications. The Internet of Things (IoT) paradigm promises to make any electronic devices part of the Internet environment. This new paradigm opens the doors to new innovations and interactions between people and things that will enhance the quality of life and utilization of scarce resources. To help realize the full potential of IoT, the book addresses its numerous challenges and develops the conceptual and technological solutions for tackling them. These challenges include the development of scalable architecture, moving from closed systems to open systems, designing interaction protocols, autonomic management, and the privacy and ethical issues around data sensing, storage, and processing. Addresses the main concepts and features of the IoT paradigm Describes different architectures for managing IoT platforms Provides insight on trust, security, and privacy in IoT environments Describes data management techniques applied to the IoT environment Examines the key enablers and solutions to enable practical IoT systems Looks at the key developments that support next generation IoT platforms Includes input from expert contributors from both academia and industry on building and deploying IoT platforms and applications

As more and more devices become interconnected through the Internet of Things (IoT), there is an even greater need for this book, which explains the technology, the internetworking, and applications that are making IoT an everyday reality. The book begins with a discussion of IoT "ecosystems" and the technology that enables them, which includes: Wireless Infrastructure and Service Discovery Protocols Integration Technologies and Tools Application and Analytics Enablement Platforms A chapter on next-generation cloud infrastructure explains hosting IoT platforms and applications. A chapter on data analytics throws light on IoT data collection, storage, translation, real-time processing, mining, and analysis, all of which can yield actionable insights from the data collected by IoT applications. There is also a chapter on edge/fog computing. The second half of the book presents various IoT ecosystem use cases. One chapter discusses smart airports and highlights the role of IoT integration. It explains how mobile devices, mobile technology, wearables, RFID sensors, and beacons work together as the core technologies of a smart airport. Integrating these components into the airport ecosystem is examined in detail, and use cases and real-life examples illustrate this IoT ecosystem in operation. Another in-depth look is on envisioning smart healthcare systems in a connected world. This chapter focuses on the requirements, promising applications, and roles of cloud computing and data analytics. The book also examines smart homes, smart cities, and smart governments. The book concludes with a chapter on IoT security and privacy. This chapter examines the emerging security and privacy requirements of IoT environments. The security issues and an assortment of surmounting techniques and best practices are also discussed in this chapter.

This book is a quick and concise introduction to RabbitMQ. Follow the unique case study of Clever Coney Media as they progressively discover how to fully utilize RabbitMQ, containing clever examples and detailed explanations. Whether you are someone who develops

enterprise messaging products professionally or a hobbyist who is already familiar with open source Message Queuing software and you are looking for a new challenge, then this is the book for you. Although you should be familiar with Java, Ruby, and Python to get the most out of the examples, RabbitMQ Essentials will give you the push you need to get started that no other RabbitMQ tutorial can provide you with. This book offers an unified treatment of the problems solved by publish/subscribe, how to design and implement the solutions. In this book, the author provides an insight into the publish/subscribe technology including the design, implementation, and evaluation of new systems based on the technology. The book also addresses the basic design patterns and solutions, and discusses their application in practical application scenarios. Furthermore, the author examines current standards and industry best practices as well as recent research proposals in the area. Finally, necessary content matching, filtering, and aggregation algorithms and data structures are extensively covered as well as the mechanisms needed for realizing distributed publish/subscribe across the Internet. Key Features: Addresses the basic design patterns and solutions Covers applications and example cases including; combining Publish/Subscribe with cloud, Twitter, Facebook, mobile push (appstore), Service Oriented Architecture (SOA), Internet of Things and multiplayer games Examines current standards and industry best practices as well as recent research proposals in the area Covers content matching, filtering, and aggregation algorithms and data structures as well as the mechanisms needed for realizing distributed publish/subscribe across the Internet Publish/Subscribe Systems will be an invaluable guide for graduate/postgraduate students and specialists in the IT industry, distributed systems and enterprise computing, software engineers and programmers working in social computing and mobile computing, researchers. Undergraduate students will also find this book of interest.

The experts at CloudAMQP, managers of the largest fleet of RabbitMQ clusters in the world, have written this comprehensive guide on message queue architecture. From the basics to production, this book provides a deep understanding of RabbitMQ through the experience of Complete Car, a taxi company building its app from the ground up.

This book presents the proceedings of the Conference on Computer Science, Electronics and Industrial Engineering (CSEI 2019), held in Ambato in October 2019, with participants from 13 countries and guest speakers from Chile, Colombia, France, Japan, Spain, Portugal, and United States. Featuring 23 peer-reviewed papers, it discusses topics such as the use of metaheuristic for non-deterministic problem solutions, software architectures for supporting e-government initiatives, and the use of electronics in e-learning and industrial environments. It also includes contributions illustrating how new approaches on these converging research areas are impacting the development of human societies around the world into Society 5.0. As such, it is a valuable resource for scholars and practitioners alike.

Defining, designing, creating, and implementing a process to solve a business challenge or meet a business objective is the most valuable role... In EVERY company, organization and department. Unless you are talking a one-time, single-use project within a business, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, 'What are we really trying to accomplish here? And is there a different way to look at it?' For more than twenty years, The Art of Service's Self-Assessments empower people who can do just that - whether their title is marketer, entrepreneur, manager, salesperson, consultant, business process manager, executive assistant, IT Manager, CxO etc... - they are the people who rule the future. They are people who watch the process as it happens, and ask the right questions to make the process work better. This book is for managers, advisors, consultants, specialists, professionals and anyone interested in Advanced Message Queuing Protocol AMQP assessment. All the tools you need to an in-depth Advanced Message Queuing Protocol AMQP Self-Assessment. Featuring 619 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Advanced Message Queuing Protocol AMQP improvements can be made. In using the questions you will be better able to: - diagnose Advanced Message Queuing Protocol AMQP projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Advanced Message Queuing Protocol AMQP and process design strategies into practice according to best practice guidelines Using a Self-Assessment tool known as the Advanced Message Queuing Protocol AMQP Scorecard, you will develop a clear picture of which Advanced Message Queuing Protocol AMQP areas need attention. Included with your purchase of the book is the Advanced Message Queuing Protocol AMQP Self-Assessment downloadable resource, which contains all questions and Self-Assessment areas of this book in a ready to use Excel dashboard, including the self-assessment, graphic insights, and project planning automation - all with examples to get you started with the assessment right away. Access instructions can be found in the book. You are free to use the Self-Assessment contents in your presentations and materials for customers without asking us - we are here to help.

The book focuses on both theory and applications in the broad areas of communication technology, computer science and information security. This two volume book contains the Proceedings of International Conference on Advanced Computing and Intelligent Engineering. These volumes bring together academic scientists, professors, research scholars and students to share and disseminate information on knowledge and scientific research works related to computing, networking, and informatics to discuss the practical challenges encountered and the solutions adopted. The book also promotes translation of basic research into applied investigation and convert applied investigation into practice.

Artificial Intelligence to Solve Pervasive Internet of Things Issues discusses standards and technologies and wide-ranging technology areas and their applications and challenges, including discussions on architectures, frameworks, applications, best practices, methods and techniques required for integrating AI to resolve IoT issues. Chapters also provide step-by-step measures, practices and solutions to tackle vital decision-making and practical issues affecting IoT technology, including autonomous devices and computerized systems. Such issues range from adopting, mitigating, maintaining, modernizing and protecting AI and IoT infrastructure components such as scalability, sustainability, latency, system decentralization and maintainability. The book enables readers to explore, discover and implement new solutions for integrating AI to solve IoT issues. Resolving these issues will help readers address many real-world applications in areas such as scientific research, healthcare, defense, aeronautics, engineering, social media, and many others. Discusses intelligent techniques for the implementation of Artificial Intelligence in Internet of Things Prepared for researchers and specialists who are interested in the use and integration of IoT and Artificial Intelligence technologies

There has never been a AMQP Guide like this. It contains 37 answers, much more than you can imagine; comprehensive answers and extensive details and references, with insights that have never before been offered in print. Get the information you need--fast! This all-embracing guide offers a thorough view of key knowledge and detailed insight. This Guide introduces what you want to know about AMQP. A quick look inside of some of the subjects covered: MQ Telemetry Transport, Message-oriented middleware - Standards, Advanced Message Queuing Protocol - AMQP performatives and the link protocol, OpenStack - Compute (Nova), Advanced Message Queuing Protocol - Overview, Enterprise messaging system - Comparisons, GoPivotal - Open source software, StormMQ, Advanced Message Queuing Protocol - Client Implementations, Application layer Other protocol examples, Message queue - Overview, Message queuing service - Vendors, SOAP - Transport methods, Erlang (programming language) -

Projects using Erlang, Simple Authentication and Security Layer - SASL-aware application protocols, Advanced Message Queuing Protocol - Comparable specifications, INETCO Systems Limited - AMQP Advocacy, Message queue - Standards and protocols, Message-oriented middleware - Trends, Advanced Message Queuing Protocol - Message format, Advanced Message Queuing Protocol - Messaging capabilities, Advanced Message Queuing Protocol - Type system, Message queuing service - Accessibility, Application layer - Other protocol examples, RabbitMQ, Advanced Message Queuing Protocol - Not yet AMQP 1.0 broker Implementations, Advanced Message Queuing Protocol - History, OASIS (organization) - Standards under development, JORAM, INETCO Systems Limited - INETCO Insight, Java Message Service - Provider implementations, and much more...

This holistic book is an invaluable reference for addressing various practical challenges in architecting and engineering Intelligent IoT and eHealth solutions for industry practitioners, academic and researchers, as well as for engineers involved in product development. The first part provides a comprehensive guide to fundamentals, applications, challenges, technical and economic benefits, and promises of the Internet of Things using examples of real-world applications. It also addresses all important aspects of designing and engineering cutting-edge IoT solutions using a cross-layer approach from device to fog, and cloud covering standards, protocols, design principles, reference architectures, as well as all the underlying technologies, pillars, and components such as embedded systems, network, cloud computing, data storage, data processing, big data analytics, machine learning, distributed ledger technologies, and security. In addition, it discusses the effects of Intelligent IoT, which are reflected in new business models and digital transformation. The second part provides an insightful guide to the design and deployment of IoT solutions for smart healthcare as one of the most important applications of IoT. Therefore, the second part targets smart healthcare-wearable sensors, body area sensors, advanced pervasive healthcare systems, and big data analytics that are aimed at providing connected health interventions to individuals for healthier lifestyles.

Master the art of developing message-based applications with RabbitMQ About This Book Learn how to administer, manage, and extend your own message broker, RabbitMQ Develop clients to make a message bridge between your software systems using RabbitMQ Discover how to achieve proficiency with RabbitMQ with the well-defined descriptions of the topics Who This Book Is For If you are an intermediate-level RabbitMQ developer, who wants to achieve professional-level expertise in the subject, this book is for you. You'll also need to have a decent understanding of message queuing. What You Will Learn Administer RabbitMQ using different tools Understand the roots and details of messaging, message brokers, and AMQP protocol Scale the RabbitMQ server using the clusters and high availability techniques Extend RabbitMQ by developing the Erlang OTP-based applications that use the RabbitMQ API Manage the RabbitMQ server using its powerful tools Monitor the RabbitMQ Server using different open source tools such as Nagios, Munin, and Zabbix Ensure your RabbitMQ's security using SSL, SASL, and access control Develop RabbitMQ clients using Java, Python, and C# with an industry example In Detail RabbitMQ is one of the most powerful Open Source message broker software, which is widely used in tech companies such as Mozilla, VMware, Google, AT&T, and so on. RabbitMQ gives you lots of fantastic and easy-to-manage functionalities to control and manage the messaging facility with lots of community support. As scalability is one of our major modern problems, messaging with RabbitMQ is the main part of the solution to this problem. This book explains and demonstrates the RabbitMQ server in a detailed way. It provides you with lots of real-world examples and advanced solutions to tackle the scalability issues. You'll begin your journey with the installation and configuration of the RabbitMQ server, while also being given specific details pertaining to the subject. Next, you'll study the major problems that our server faces, including scalability and high availability, and try to get the solutions for both of these issues by using the RabbitMQ mechanisms. Following on from this, you'll get to design and develop your own plugins using the Erlang language and RabbitMQ's internal API. This knowledge will help you to start with the management and monitoring of the messages, tools, and applications. You'll also gain an understanding of the security and integrity of the messaging facilities that RabbitMQ provides. In the last few chapters, you will build and keep track of your clients (senders and receivers) using Java, Python, and C#. Style and approach An easy-to-follow guide, full of hands-on examples based around managing, monitoring, extending, and securing RabbitMQ and its internal tools. You will learn how to develop your own clients using Java, Python, and C#.

In this book readers will find technological discussions on the existing and emerging technologies across the different stages of the big data value chain. They will learn about legal aspects of big data, the social impact, and about education needs and requirements. And they will discover the business perspective and how big data technology can be exploited to deliver value within different sectors of the economy. The book is structured in four parts: Part I "The Big Data Opportunity" explores the value potential of big data with a particular focus on the European context. It also describes the legal, business and social dimensions that need to be addressed, and briefly introduces the European Commission's BIG project. Part II "The Big Data Value Chain" details the complete big data lifecycle from a technical point of view, ranging from data acquisition, analysis, curation and storage, to data usage and exploitation. Next, Part III "Usage and Exploitation of Big Data" illustrates the value creation possibilities of big data applications in various sectors, including industry, healthcare, finance, energy, media and public services. Finally, Part IV "A Roadmap for Big Data Research" identifies and prioritizes the cross-sectorial requirements for big data research, and outlines the most urgent and challenging technological, economic, political and societal issues for big data in Europe. This compendium summarizes more than two years of work performed by a leading group of major European research centers and industries in the context of the BIG project. It brings together research findings, forecasts and estimates related to this challenging technological context that is becoming the major axis of the new digitally transformed business environment.

Developing countries are persistently looking for efficient and cost-effective methods for transforming their communities into smart cities. Unfortunately, energy crises have increased in these regions due to a lack of awareness and proper utilization of technological methods. These communities must explore and implement innovative solutions in order to enhance citizen enrollment, quality of government, and city intelligence. IoT Architectures, Models, and Platforms for Smart City Applications provides emerging research exploring the theoretical and practical aspects of transforming cities into intelligent systems using IoT-based design models and sustainable development projects. This publication looks at how cities can be built as smart cities within limited resources and existing advanced technologies. Featuring coverage on a broad range of topics such as cloud computing, human machine interface, and ad hoc networks, this book is ideally designed for urban planners, engineers, IT specialists, computer engineering students, research scientists, academicians, technology developers, policymakers, researchers, and designers seeking current research on smart applications within urban development.

Prepare for Microsoft Exam 70-532—and help demonstrate your real-world mastery of the skills needed to develop Microsoft Azure solutions. Designed for experienced IT professionals ready to advance their status, Exam Ref focuses on the critical thinking and

decision-making acumen needed for job success. Focus on the expertise measured by these objectives: Create and manage Azure Resource Manager Virtual Machines Design and implement a storage and data strategy Manage identity, application, and network services Design and implement Azure PaaS compute, web, and mobile services This Microsoft Exam Ref: Organizes its coverage by exam objectives Features strategic, what-if scenarios to challenge you Assumes you have experience designing, programming, implementing, automating, and monitoring Microsoft Azure solutions, and are proficient with tools, techniques, and approaches for building scalable, resilient solutions About the Exam Exam 70-532 focuses on skills and knowledge for building highly available solutions in the Microsoft Azure cloud. About Microsoft Certification This exam is for candidates who are experienced in designing, programming, implementing, automating, and monitoring Microsoft Azure solutions. Candidates are also proficient with development tools, techniques, and approaches used to build scalable and resilient solutions. See full details at: microsoft.com/learning

Design and implement real-world web-based applications using the Spring Framework 4.x specification based on technical documentation About This Book Learn all the details of implementing Spring 4.x MVC applications from basic core platform construction to advanced integration implementations Gain a complete reference guide to implementing the controllers, models, views, view resolvers, and other service-related components to solve various real-world problems Discover the possible optimal solutions for developers and experts to build enterprise and personal web-based applications Create a Spring MVC application that has a validation process and exception handling with the HTTP status codes Who This Book Is For This book is for competent Spring developers who wish to understand how to develop complex yet flexible applications with Spring MVC. You must have a good knowledge of JAVA programming and be familiar with the basics of Spring. What You Will Learn Set up and configure the Spring 4.x MVC platform from ground level up using the basic Spring Framework 4.x APIs Study requirements and manage solutions on file uploading transactions in Spring 4.x applications Configure, , and test Spring integration to the Hibernate, MyBatis, and JPA frameworks for database transactions Properly implement exception handlers and audit trails in Spring MVC applications Generate reports using JFreeChart, Google Charts, JasperReports, DynamicReports, FreeMarker, Velocity, and Spring's API known as ContentNegotiatingViewResolver Configure security and flexibility by adding Captcha, Spring Security, Spring Flow, Spring Portlets, JTA to improve data management performance Implement web services using Spring's RESTful implementation and other service-oriented integration plugins Design and implement a Spring 4.x application using AngularJS, ExtJs, Twitter Bootstrap, and Spring Mobile for responsive web design In Detail Spring MVC is the ideal tool to build modern web applications on the server side. With the arrival of Spring Boot, developers can really focus on the code and deliver great value, leveraging the rich Spring ecosystem with minimal configuration. Spring makes it simple to create RESTful applications, interact with social services, communicate with modern databases, secure your system, and make your code modular and easy to test. It is also easy to deploy the result on different cloud providers. This book starts all the necessary topics in starting a Spring MVC-based application. Moving ahead it explains how to design model objects to handle file objects. save files into a data store and how Spring MVC behaves when an application deals with uploading and downloading files. Further it highlights form transactions and the user of Validation Framework as the tool in validating data input. It shows how to create a customer feedback system which does not require a username or password to log in. It will show you the soft side of Spring MVC where layout and presentation are given importance. Later it will discuss how to use Spring Web Flow on top of Spring MVC to create better web applications. Moving ahead, it will teach you how create an Invoice Module that receives and transport data using Web Services By the end of the book you will be able to create efficient and flexible real-time web applications using all the frameworks in Spring MVC. Style and approach This book is a compendium of technical specification documents that will guide you through building an application using Spring 4.x MVC. Each chapter starts with a high-level wireframe design of the software followed by how to set up and configure different libraries and tools.

Internet of Things (IoT) is a network comprising of machines, vehicles, home appliances, computers, micro controllers, sensors and actuators supported by application software and protocols. The study of IoT is the detailed understanding of these components. As per the estimates, by 2020 the connected things in IoT network will outnumber human beings in earth. Practical applications of IoT Technology is in every area like agriculture, construction management, health care, energy, transportation, education etc. The opportunity in business and job for IoT is increasing day by day.

A practical book filled with advanced recipes as well as plenty of code and real-life examples which will make your learning curve quick and easy. If you are a software developer who wants to develop distributed applications based on messaging [BISAC]; then this book is for you. It's assumed that you have some experience with multithreading applications and distributed applications. You are also expected to know the basic concepts of Web and cloud applications in order to follow the recipes effectively.

LEARN MORE ABOUT FOUNDATIONAL AND ADVANCED TOPICS IN INTERNET OF THINGS TECHNOLOGY WITH THIS ALL-IN-ONE GUIDE Enabling the Internet of Things: Fundamentals, Design, and Applications delivers a comprehensive starting point for anyone hoping to understand the fundamentals and design of Internet of Things (IoT) systems. The book's distinguished academics and authors offer readers an opportunity to understand IoT concepts via programming in an abstract way. Readers will learn about IoT fundamentals, hardware and software components, IoT protocol stacks, security, IoT applications and implementations, as well as the challenges, and potential solutions, that lie ahead. Readers will learn about the social aspects of IoT systems, as well as receive an introduction to the Blockly Programming Language, IoT Microcontrollers, IoT Microprocessors, systems on a chip and IoT Gateway Architecture. The book also provides implementation of simple code examples in Packet Tracer, increasing the usefulness and practicality of the book. Enabling the Internet of Things examines a wide variety of other essential topics, including: The fundamentals of IoT, including its evolution, distinctions, definitions, vision, enabling technologies, and building blocks An

elaboration of the sensing principles of IoT and the essentials of wireless sensor networks A detailed examination of the IoT protocol stack for communications An analysis of the security challenges and threats faced by users of IoT devices, as well as the countermeasures that can be used to fight them, from the perception layer to the application layer Perfect as a supplementary text for undergraduate students taking computer science or electrical engineering courses, Enabling the Internet of Things also belongs on the bookshelves of industry professionals and researchers who regularly work with and on the Internet of Things and who seek a better understanding of its foundational and advanced topics.

This timely volume provides a review of the state-of-the-art frameworks and methodologies for connecting diverse objects and devices according to the vision for an Internet of Things (IoT). A specific focus is placed on the communication, security, and privacy aspects of device connectivity in distributed environments. Insights and case studies are provided by an authoritative selection of contributors of international repute into the latest research advances and practical approaches with respect to the connectivity of heterogeneous smart and sensory devices. Topics and features: Examines aspects of device connectivity within the IoT Presents a resource-based architecture for IoT, and proposes a resource management framework for corporate device clouds Reviews integration approaches for the IoT environment, and discusses performance optimization of intelligent home networks Introduces a novel solution for interoperable data management in multi-clouds, and suggests an approach that addresses the debate over network neutrality in the IoT Describes issues of data security, privacy, access control, and authentication in the distributed IoT environment Reviews the evolution of VANETs in relation to the Internet of Vehicles, and provides a perspective on developing smart sustainable cities This invaluable text/reference will be of great benefit to a broad audience, from students and researchers interested in the IoT vision, to practicing communication engineers and network security specialists.

In this book, the authors focus on the concrete aspects of IoT (Internet of Things): the daily operation, on the ground, of this domain, including concrete and detailed discussion of the designs, applications and realizations of Secure Connected Things and IoT. As experts in the development of RFID and IoT technologies, the authors offer the reader a highly technical discussion of these topics, including the many approaches (technical, security, safety, ergonomic, economic, normative, regulations, etc.) involved in Secure Connected Objects projects. This book is written both for readers wishing to familiarize themselves with the complex issues surrounding networking objects and for those who design these connective "things".

"A stereotype of computer science textbooks is that they are dry, boring, and sometimes even intimidating. As a result, they turn students' interests off from the subject matter instead of enticing them into it. This textbook is the opposite of such a stereotype. The author presents the subject matter in a refreshing story-telling style and aims to bring the Internet-generation of students closer to her stories." --Yingcai Xiao, The University of Akron Introduction to Middleware: Web Services, Object Components, and Cloud Computing provides a comparison of different middleware technologies and the overarching middleware concepts they are based on. The various major paradigms of middleware are introduced and their pros and cons are discussed. This includes modern cloud interfaces, including the utility of Service Oriented Architectures. The text discusses pros and cons of RESTful vs. non-RESTful web services, and also compares these to older but still heavily used distributed object/component middleware. The text guides readers to select an appropriate middleware technology to use for any given task, and to learn new middleware technologies as they appear over time without being greatly overwhelmed by any new concept. The book begins with an introduction to different distributed computing paradigms, and a review of the different kinds of architectures, architectural styles/patterns, and properties that various researchers have used in the past to examine distributed applications and determine the quality of distributed applications. Then it includes appropriate background material in networking and the web, security, and encoding necessary to understand detailed discussion in this area. The major middleware paradigms are compared, and a comparison methodology is developed. Readers will learn how to select a paradigm and technology for a particular task, after reading this text. Detailed middleware technology review sections allow students or industry practitioners working to expand their knowledge to achieve practical skills based on real projects so as to become well-functional in that technology in industry. Major technologies examined include: RESTful web services (RESTful cloud interfaces such as OpenStack, AWS EC2 interface, CloudStack; AJAX, JAX-RS, ASP.NET MVC and ASP.NET Core), non-RESTful (SOAP and WSDL-based) web services (JAX-WS, Windows Communication Foundation), distributed objects/ components (Enterprise Java Beans, .NET Remoting, CORBA). The book presents two projects that can be used to illustrate the practical use of middleware, and provides implementations of these projects over different technologies. This versatile and class-tested textbook is suitable (depending on chapters selected) for undergraduate or first-year graduate courses on client server architectures, middleware, and cloud computing, web services, and web programming.

The book features research papers presented at the International Conference on Computer Networks and Inventive Communication Technologies (ICCNCT 2018), offering significant contributions from researchers and practitioners in academia and industry. The topics covered include computer networks, network protocols and wireless networks, data communication technologies, and network security. Covering the main core and specialized issues in the areas of next-generation wireless network design, control, and management, as well as in the areas of protection, assurance, and trust in information security practices, these proceedings are a valuable resource, for researchers, instructors, students, scientists, engineers, managers, and industry practitioners.

An essential guide to the modeling and design techniques for securing systems that utilize the Internet of Things Modeling and Design of Secure Internet of Things offers a guide to the underlying foundations of modeling secure Internet of Things' (IoT) techniques. The contributors—noted experts on the topic—also include information on practical design issues that are relevant for application in the commercial and military domains. They also present several attack surfaces in IoT and secure solutions that need to be developed to reach their full potential. The book offers material on security analysis to help with in understanding and

quantifying the impact of the new attack surfaces introduced by IoT deployments. The authors explore a wide range of themes including: modeling techniques to secure IoT, game theoretic models, cyber deception models, moving target defense models, adversarial machine learning models in military and commercial domains, and empirical validation of IoT platforms. This important book: Presents information on game-theory analysis of cyber deception Includes cutting-edge research finding such as IoT in the battlefield, advanced persistent threats, and intelligent and rapid honeynet generation Contains contributions from an international panel of experts Addresses design issues in developing secure IoT including secure SDN-based network orchestration, networked device identity management, multi-domain battlefield settings, and smart cities Written for researchers and experts in computer science and engineering, Modeling and Design of Secure Internet of Things contains expert contributions to provide the most recent modeling and design techniques for securing systems that utilize Internet of Things.

This book presents the know-how of the real-time IoT application development activity including a basic understanding of the IoT architecture, use cases, smart computing, and the associated challenges in design and development of the IoT system. All the technical details related to protocol stack, technologies, and platforms used for the implementation are explained. It further includes techniques and case studies that include smart computing on the IoT–Cloud models along with test beds for experimentation purposes. The book aims at setting up the groundwork for the creation of applications that can help make day-to-day tasks simpler by meeting the needs of varied sectors like education, health care, agriculture, and so forth. Features: • Covers IoT cloud convergence with a focus on complex industrial IoT case studies. • Discusses the broad background of IoT–Cloud convergence architectures and its fundamentals along with resource provisioning mechanisms. • Emphasizes the use of context in developing context-aware IoT solutions. • Presents a novel C-model that explains the IoT application development phases. • Discusses a simplified convergence model that depicts the role of Cloud in an IoT application. This book aims at graduate students, researchers, and professionals getting started in the IoT field.

Skilfully navigate through the complex realm of implementing scalable, trustworthy industrial systems and architectures in a hyper-connected business world. Key Features Gain practical insight into security concepts in the Industrial Internet of Things (IIoT) architecture Demystify complex topics such as cryptography and blockchain Comprehensive references to industry standards and security frameworks when developing IIoT blueprints Book Description Securing connected industries and autonomous systems is a top concern for the Industrial Internet of Things (IIoT) community. Unlike cybersecurity, cyber-physical security is an intricate discipline that directly ties to system reliability as well as human and environmental safety. Practical Industrial Internet of Things Security enables you to develop a comprehensive understanding of the entire spectrum of securing connected industries, from the edge to the cloud. This book establishes the foundational concepts and tenets of IIoT security by presenting real-world case studies, threat models, and reference architectures. You'll work with practical tools to design risk-based security controls for industrial use cases and gain practical know-how on the multi-layered defense techniques including Identity and Access Management (IAM), endpoint security, and communication infrastructure. Stakeholders, including developers, architects, and business leaders, can gain practical insights in securing IIoT lifecycle processes, standardization, governance and assess the applicability of emerging technologies, such as blockchain, Artificial Intelligence, and Machine Learning, to design and implement resilient connected systems and harness significant industrial opportunities. What you will learn Understand the crucial concepts of a multi-layered IIoT security framework Gain insight on securing identity, access, and configuration management for large-scale IIoT deployments Secure your machine-to-machine (M2M) and machine-to-cloud (M2C) connectivity Build a concrete security program for your IIoT deployment Explore techniques from case studies on industrial IoT threat modeling and mitigation approaches Learn risk management and mitigation planning Who this book is for Practical Industrial Internet of Things Security is for the IIoT community, which includes IIoT researchers, security professionals, architects, developers, and business stakeholders. Anyone who needs to have a comprehensive understanding of the unique safety and security challenges of connected industries and practical methodologies to secure industrial assets will find this book immensely helpful. This book is uniquely designed to benefit professionals from both IT and industrial operations backgrounds.

This book covers challenges and solutions in establishing Industry 4.0 standards for Internet of Things. It proposes a clear view about the role of Internet of Things in establishing standards. The sensor design for industrial problem, challenges faced, and solutions are all addressed. The concept of digital twin and complexity in data analytics for predictive maintenance and fault prediction is also covered. The book is aimed at existing problems faced by the industry at present, with the goal of cost-efficiency and unmanned automation. It also concentrates on predictive maintenance and predictive failures. In addition, it includes design challenges and a survey of literature.

This book highlights research and survey articles dedicated to big data techniques for cyber-physical system (CPS), which addresses the close interactions and feedback controls between cyber components and physical components. The book first discusses some fundamental big data problems and solutions in large scale distributed CPSs. The book then addresses the design and control challenges in multiple CPS domains such as vehicular system, smart city, smart building, and digital microfluidic biochips. This book also presents the recent advances and trends in the maritime simulation system and the flood defence system.

Who is responsible for ensuring appropriate resources (time, people and money) are allocated to Advanced Message Queuing Protocol AMQP? How does the organization define, manage, and improve its Advanced Message Queuing Protocol AMQP processes? What would be the goal or target for a Advanced Message Queuing Protocol AMQP's improvement team? Why are Advanced Message Queuing Protocol AMQP skills important? What knowledge, skills and characteristics mark a good Advanced Message Queuing Protocol AMQP project manager? This instant Advanced Message Queuing Protocol AMQP self-assessment will make you the credible Advanced Message Queuing Protocol AMQP domain auditor by revealing just what you need to know to be fluent and ready for any Advanced Message Queuing Protocol AMQP challenge. How do I reduce the effort in the Advanced Message Queuing Protocol AMQP work to be done to get problems solved? How can I ensure that plans of action include every Advanced Message Queuing Protocol AMQP task and that every Advanced Message Queuing Protocol AMQP outcome is in place? How will I save time investigating strategic and tactical options and ensuring Advanced Message Queuing Protocol AMQP opportunity costs are low? How can I deliver tailored Advanced Message Queuing Protocol AMQP advice instantly with structured going-forward plans? There's no better guide through these mind-expanding questions than acclaimed best-selling author Gerard Blokdyk. Blokdyk ensures all Advanced Message Queuing Protocol AMQP essentials are covered, from every angle: the Advanced Message Queuing Protocol AMQP self-assessment shows succinctly and clearly that what needs to be clarified to

organize the business/project activities and processes so that Advanced Message Queuing Protocol AMQP outcomes are achieved. Contains extensive criteria grounded in past and current successful projects and activities by experienced Advanced Message Queuing Protocol AMQP practitioners. Their mastery, combined with the uncommon elegance of the self-assessment, provides its superior value to you in knowing how to ensure the outcome of any efforts in Advanced Message Queuing Protocol AMQP are maximized with professional results. Your purchase includes access details to the Advanced Message Queuing Protocol AMQP self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows your organization exactly what to do next. Your exclusive instant access details can be found in your book.

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