

Deployment Fundamentals Vol 5 Building A Real World Infrastructure With Windows Server 2012 R2 Mdt 2013 And Powershell

If your job is deploying Windows 10, this book is for you. In this book, you will find practical guidance based on our many years of real-world experience deploying Windows around the world. Deployment Fundamentals, Volume 6, provides you with detailed step-by-step instructions, as well as decision-making guidance and explanations that provide answers on the Whys and Hows around Windows 10 OS deployment using Microsoft Deployment Toolkit (MDT) 2013 Update 2. The book also include many real-word notes and troubleshooting tips and tricks. To get you going as quickly possible, the book sample scripts contains a fully automated build of the entire environment, the hydration kit. That includes a fully configured Active Directory environment, including DNS, DHCP, WSUS, PXE, DFS-R Replication, SQL Express, and more. With this book, you will learn how to: Install and configure MDT 2013 Update 2 for production deployments - Build the supporting infrastructure - Use the script repository included with this book in your own environment - Create production-ready reference images for Windows 10 - Build a real-world deployment solution for Windows 10 - Add and deploy applications - Perform real-world driver management - Apply advanced configurations for CustomSettings.ini and deployment automation - Extend MDT using application wrappers, userexit scripts, and PowerShell - Prestage deployment settings using the MDT databases - Perform advanced configuration using web services - Deploy Office 2016, including the Click-to-Run Office 365 version

No way! Automating the deployment of the entire infrastructure? That can't be done! These are words we have heard many times, but the answer is: Yes, you can, with the step-by-step guides, sample scripts, and other resources found in this book. In the modern datacenter, everything is about automation, repeatable processes, and well-designed and documented infrastructure. This can be accomplished with PowerShell and MDT 2013. In this book, you learn how to install and configure the core infrastructure components in Windows Server 2012 R2. You start from absolutely nothing, and using the book and its sample scripts, build a complete real-world, production-ready infrastructure. A comprehensive guide with basic to advanced SRE practices and hands-on examples. KEY FEATURES ? Demonstrates how to execute site reliability engineering along with fundamental concepts. ? Illustrates real-world examples and successful techniques to put SRE into production. ? Introduces you to DevOps, advanced techniques of SRE, and popular tools in use. DESCRIPTION Hands-on Site Reliability Engineering (SRE) brings you a tailor-made guide to learn and practice the essential activities for the smooth functioning of enterprise systems, right from designing to the deployment of enterprise software programs and extending to scalable use with complete efficiency and reliability. The book explores the fundamentals around SRE and related terms, concepts, and techniques that are used by SRE teams and experts. It discusses the essential elements of an IT system, including microservices, application architectures, types of software deployment, and concepts like load balancing. It explains the best techniques in delivering timely software releases using containerization and CI/CD pipeline. This book covers how to track and monitor application performance using Grafana, Prometheus, and Kibana along with how to extend monitoring more effectively by building full-stack observability into the system. The book also talks about chaos engineering, types of system failures, design for high-availability, DevSecOps and AIOps. WHAT YOU WILL LEARN ? Learn the best techniques and practices for building and running reliable software. ? Explore observability and popular methods for effective monitoring of applications. ? Workaround SLIs, SLOs, Error Budgets, and Error Budget Policies to manage failures. ? Learn to practice continuous software delivery using blue/green

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and canary deployments. ? Explore chaos engineering, SRE best practices, DevSecOps and AIOps. WHO THIS BOOK IS FOR This book caters to experienced IT professionals, application developers, software engineers, and all those who are looking to develop SRE capabilities at the individual or team level. TABLE OF CONTENTS 1. Understand the World of IT 2. Introduction to DevOps 3. Introduction to SRE 4. Identify and Eliminate Toil 5. Release Engineering 6. Incident Management 7. IT Monitoring 8. Observability 9. Key SRE KPIs: SLAs, SLOs, SLIs, and Error Budgets 10. Chaos Engineering 11. DevSecOps and AIOps 12. Culture of Site Reliability Engineering

Many books and courses tackle natural language processing (NLP) problems with toy use cases and well-defined datasets. But if you want to build, iterate, and scale NLP systems in a business setting and tailor them for particular industry verticals, this is your guide. Software engineers and data scientists will learn how to navigate the maze of options available at each step of the journey. Through the course of the book, authors Sowmya Vajjala, Bodhisattwa Majumder, Anuj Gupta, and Harshit Surana will guide you through the process of building real-world NLP solutions embedded in larger product setups. You'll learn how to adapt your solutions for different industry verticals such as healthcare, social media, and retail. With this book, you'll: Understand the wide spectrum of problem statements, tasks, and solution approaches within NLP Implement and evaluate different NLP applications using machine learning and deep learning methods Fine-tune your NLP solution based on your business problem and industry vertical Evaluate various algorithms and approaches for NLP product tasks, datasets, and stages Produce software solutions following best practices around release, deployment, and DevOps for NLP systems Understand best practices, opportunities, and the roadmap for NLP from a business and product leader's perspective

Transforming our energy supplies to be more sustainable is seen by many to be the biggest challenge of our times. In this comprehensive textbook, L. D. Danny Harvey sets out in unprecedented detail the path we must take to minimize the effects that the way we harness energy will have on future climate change. The book opens by highlighting the importance of moving to low carbon technologies for generation, then moves on to explain the functioning, potential and social/environmental issues around: solar energy wind energy biomass energy geothermal energy hydroelectric power ocean energy nuclear energy. It also covers the options for carbon capture and storage and the contexts in which low carbon energy can best be utilized (potential for community integrated systems, and the hydrogen economy). The book closes with scenarios that combine the findings from its companion volume (concerning the potential for limiting future energy demand) with the findings from this volume (concerning the cost and potential of C-free energy systems) to generate scenarios that succeed in limiting future atmospheric CO2 concentration to no more than 450 ppmv. Detailed yet accessible, meticulously researched and reviewed, this work constitutes an indispensable textbook and reference for students and practitioners in sustainable energy and engineering. Online material includes: Excel-based computational exercises, teaching slides for each chapter and links to free software tools.

Explore the core functionality of containerizing your applications and making them production-ready Key Features Grasp basic to advanced Docker concepts with this comprehensive guide Get acquainted with Docker containers, Docker images, orchestrators, cloud integration, and networking Learn to simplify dependencies and deploy and test containers in production Book Description Containers enable you to package an application with all the components it needs, such as libraries and other dependencies, and ship it as one package. Docker containers have revolutionized the software supply chain in both small and large enterprises. Starting with an introduction to Docker fundamentals and setting up an environment to work with it, you'll delve into concepts such as Docker containers, Docker images, and Docker Compose. As you progress, the book will help you explore deployment, orchestration, networking, and security. Finally, you'll get to grips with Docker functionalities on public clouds such as Amazon Web Services (AWS), Azure, and Google Cloud Platform (GCP), and learn about Docker

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Enterprise Edition features. Additionally, you'll also discover the benefits of increased security with the use of containers. By the end of this Docker book, you'll be able to build, ship, and run a containerized, highly distributed application on Docker Swarm or Kubernetes, running on-premises or in the cloud. What you will learn Containerize your traditional or microservice-based applications Develop, modify, debug, and test an application running inside a container Share or ship your application as an immutable container image Build a Docker Swarm and a Kubernetes cluster in the cloud Run a highly distributed application using Docker Swarm or Kubernetes Update or rollback a distributed application with zero downtime Secure your applications with encapsulation, networks, and secrets Troubleshoot a containerized, highly distributed application in the cloud Who this book is for This book is for Linux professionals, system administrators, operations engineers, DevOps engineers, and developers or stakeholders who are interested in getting started with Docker from scratch. No prior experience with Docker containers is required. Users with a Linux system would be able to take full advantage of this book.

The essential reference for security pros and CCIE Security candidates: policies, standards, infrastructure/perimeter and content security, and threat protection Integrated Security Technologies and Solutions – Volume I offers one-stop expert-level instruction in security design, deployment, integration, and support methodologies to help security professionals manage complex solutions and prepare for their CCIE exams. It will help security pros succeed in their day-to-day jobs and also get ready for their CCIE Security written and lab exams. Part of the Cisco CCIE Professional Development Series from Cisco Press, it is authored by a team of CCIEs who are world-class experts in their Cisco security disciplines, including co-creators of the CCIE Security v5 blueprint. Each chapter starts with relevant theory, presents configuration examples and applications, and concludes with practical troubleshooting. Volume 1 focuses on security policies and standards; infrastructure security; perimeter security (Next-Generation Firewall, Next-Generation Intrusion Prevention Systems, and Adaptive Security Appliance [ASA]), and the advanced threat protection and content security sections of the CCIE Security v5 blueprint. With a strong focus on interproduct integration, it also shows how to combine formerly disparate systems into a seamless, coherent next-generation security solution. Review security standards, create security policies, and organize security with Cisco SAFE architecture Understand and mitigate threats to network infrastructure, and protect the three planes of a network device Safeguard wireless networks, and mitigate risk on Cisco WLC and access points Secure the network perimeter with Cisco Adaptive Security Appliance (ASA) Configure Cisco Next-Generation Firewall Firepower Threat Defense (FTD) and operate security via Firepower Management Center (FMC) Detect and prevent intrusions with Cisco Next-Gen IPS, FTD, and FMC Configure and verify Cisco IOS firewall features such as ZBFW and address translation Deploy and configure the Cisco web and email security appliances to protect content and defend against advanced threats Implement Cisco Umbrella Secure Internet Gateway in the cloud as your first line of defense against internet threats Protect against new malware with Cisco Advanced Malware Protection and Cisco ThreatGrid

Kubernetes is one of the most popular, sophisticated, and fast-evolving container orchestrators. In this book, you'll learn the essentials and find out about the advanced administration in Kubernetes. We'll take you through a step-by-step hands-on approach, which will familiarize you with the Kubernetes ecosystem.

Technology professionals seeking higher-paying security jobs need to know security fundamentals to land the job-and this book will help Divided into two parts: how to get the job and a security crash course to prepare for the job interview Security is one of today's fastest growing IT specialties, and this book will appeal to technology professionals looking to segue to a security-focused

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position Discusses creating a resume, dealing with headhunters, interviewing, making a data stream flow, classifying security threats, building a lab, building a hacker's toolkit, and documenting work The number of information security jobs is growing at an estimated rate of 14 percent a year, and is expected to reach 2.1 million jobs by 2008

Build a solid foundation of knowledge based on the fundamentals and employ step-by-step instruction from Spine Surgery. Edited by Edward C. Benzel, this best-selling medical reference explores the full spectrum of surgical techniques used in spine surgery and delivers the comprehensive, cutting-edge guidance you need to achieve successful outcomes. Online access, thorough updates, contributions by leading international authorities, an abundance of detailed illustrations, and procedural video clips provide everything you need to avoid and manage complex problems. Glean essential, up-to-date, need-to-know information in one comprehensive reference that explores the full spectrum of surgical techniques used in spine surgery. Hone your surgical skills and technique with intraoperative videos and more than 800 outstanding illustrations demonstrating each technique step by step. Grasp and apply the latest knowledge from more than 25 brand-new chapters, as well as extensive revisions or total rewrites to the majority of existing chapters to present all of the most up-to-date information available on every aspect of spine surgery including motion preservation technologies, endovascular management, back pain and psychosocial interactions, biomechanics, and more. Consult with the best. Renowned neurosurgery authority Edward C. Benzel leads an international team of accomplished neurosurgeons and orthopedic surgeons - many new to this edition - who provide dependable guidance and share innovative approaches to surgical techniques and complications management. Equip yourself to address increasing occurrences of pain among aging and physically active patients. Access the information you need, where you need it on your laptop or mobile device via expertconsult.com, with fully searchable text, a wealth of procedural videos, online updates from the experts, downloadable image gallery and links to PubMed.

This timely new resource explores the available energy sources within commercial and residential buildings and the available technologies for energy harvesting. Energy harvesting within built environments is presented using strong research and commercial examples. This book includes clear and concise case studies on solar cell powered sensor nodes for emotion monitoring systems in ambient assistive living environments and inductive/RF power transfers. Thermoelectric energy harvesting and power management circuit design, airflow and vibration energy harvesting is also explored. The book concludes with a look at the future of energy harvesting in buildings.

Learn in-demand cloud computing skills from industry experts Deploying and Managing a Cloud Infrastructure is an excellent resource for IT professionals seeking to tap into the demand for cloud administrators. This book helps prepare candidates for the CompTIA Cloud+ Certification (CV0-001) cloud computing certification exam. Designed for IT professionals with 2-3 years of networking experience, this certification provides validation of your cloud infrastructure knowledge. With over 30 years of combined experience in cloud computing, the author team provides the latest expert perspectives on enterprise-level mobile computing, and covers the most essential topics for building and maintaining cloud-based systems, including: Understanding basic

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cloud-related computing concepts, terminology, and characteristics Identifying cloud delivery solutions and deploying new infrastructure Managing cloud technologies, services, and networks Monitoring hardware and software performance Featuring real-world examples and interactive exercises, Deploying and Managing Cloud Infrastructure delivers practical knowledge you can apply immediately. And, in addition, you also get access to a full set of electronic study tools including: Interactive Test Environment Electronic Flashcards Glossary of Key Terms Now is the time to learn the cloud computing skills you need to take that next step in your IT career.

A detailed guide for deploying PPTP, L2TPv2, L2TPv3, MPLS Layer-3, AToM, VPLS and IPSec virtual private networks.

Understand the fundamentals of algorithmic trading to apply algorithms to real market data and analyze the results of real-world trading strategies Key Features Understand the power of algorithmic trading in financial markets with real-world examples Get up and running with the algorithms used to carry out algorithmic trading Learn to build your own algorithmic trading robots which require no human intervention Book Description It's now harder than ever to get a significant edge over competitors in terms of speed and efficiency when it comes to algorithmic trading. Relying on sophisticated trading signals, predictive models and strategies can make all the difference. This book will guide you through these aspects, giving you insights into how modern electronic trading markets and participants operate. You'll start with an introduction to algorithmic trading, along with setting up the environment required to perform the tasks in the book. You'll explore the key components of an algorithmic trading business and aspects you'll need to take into account before starting an automated trading project. Next, you'll focus on designing, building and operating the components required for developing a practical and profitable algorithmic trading business. Later, you'll learn how quantitative trading signals and strategies are developed, and also implement and analyze sophisticated trading strategies such as volatility strategies, economic release strategies, and statistical arbitrage. Finally, you'll create a trading bot from scratch using the algorithms built in the previous sections. By the end of this book, you'll be well-versed with electronic trading markets and have learned to implement, evaluate and safely operate algorithmic trading strategies in live markets. What you will learn Understand the components of modern algorithmic trading systems and strategies Apply machine learning in algorithmic trading signals and strategies using Python Build, visualize and analyze trading strategies based on mean reversion, trend, economic releases and more Quantify and build a risk management system for Python trading strategies Build a backtester to run simulated trading strategies for improving the performance of your trading bot Deploy and incorporate trading strategies in the live market to maintain and improve profitability Who this book is for This book is for software engineers, financial traders, data analysts, and entrepreneurs. Anyone who wants to get started with algorithmic trading and understand how it works; and learn the components of a trading system, protocols and algorithms required for black box and gray box trading, and techniques for building a completely automated and profitable trading business will also find this book useful.

Explore different aspects of building modular microservices such as development, testing, maintenance, and deployment using the Micronaut framework Key Features Learn how to build scalable, fast, and resilient microservices with this concise guide Explore

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the many advantages of using reflection-free, compile-time dependency injections and aspect-oriented programming Build cloud-native applications easily with the Micronaut framework Book Description The open source Micronaut® framework is a JVM-based toolkit designed to create microservices quickly and easily. This book will help full-stack and Java developers build modular, high-performing, and reactive microservice-based apps using the Micronaut framework. You'll start by building microservices and learning about the core components, such as ahead-of-time compilation, reflection-less dependency injection, and reactive baked-in HTTP clients and servers. Next, you will work on a real-time microservice application and learn how to integrate Micronaut projects with different kinds of relational and non-relational databases. You'll also learn how to employ different security mechanisms to safeguard your microservices and integrate microservices using event-driven architecture in the Apache Kafka ecosystem. As you advance, you'll get to grips with automated testing and popular testing tools. The book will help you understand how you can easily handle microservice concerns in Micronaut projects, such as service discovery, API documentation, distributed configuration management, fallbacks, and circuit breakers. Finally, you'll explore the deployment and maintenance aspects of microservices and get up to speed with the Internet of Things (IoT) using the Framework. By the end of this book, you'll be able to build, test, deploy, and maintain your own microservice apps using the framework. What you will learn Understand why the Micronaut framework is best suited for building microservices Build web endpoints and services in the Micronaut framework Safeguard microservices using Session, JWT, and OAuth in Micronaut projects Get to grips with event-driven architecture in Micronaut applications Discover how to automate testing at various levels using built-in tools and testing frameworks Deploy your microservices to containers and cloud platforms Become well-versed with distributed logging, tracing, and monitoring in Micronaut projects Get hands-on with the IoT using Alexa and the Micronaut framework Who this book is for This book is for developers who have been building microservices on traditional frameworks such as Spring Boot and are looking for a faster alternative.

Intermediate-level knowledge of Java programming and implementing web services development in Java is required.

Practical Rails 5 teaches the fundamentals of developing a complete web application with Ruby on Rails 5 in a practical manner. Through the course of the book, the process of specifying, designing, building and testing each feature is discussed and demonstrated, giving the reader the confidence and tools to develop their own applications. While the book doesn't expect any previous Ruby or Rails experience, basic programming knowledge and understanding of web applications is assumed. You'll learn how to create an entire Ruby on Rails web application from conception to deployment, taking advantage of the latest Rails 5 features, as well as use JavaScript frameworks like Angular.js. You'll also use JSON APIs and HTML5. You will learn Rails best practices and how to approach building news features along the way. Rails continues to be one of the most popular web application development frameworks in the world and is the number one choice for Ruby and even Java developers building websites and even enterprise applications today.

Scale and maintain outstanding performance in your AWS-based infrastructure using DevOps principles Key Features Implement continuous integration and continuous deployment pipelines on AWS Gain insight from an expert who has worked with Silicon

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Valley's most high-profile companies implement DevOps principles to take full advantage of the AWS stack and services. Book Description The DevOps movement has transformed the way modern tech companies work. Amazon Web Services (AWS), which has been at the forefront of the cloud computing revolution, has also been a key contributor to the DevOps movement, creating a huge range of managed services that help you implement DevOps principles. *Effective DevOps with AWS, Second Edition* will help you to understand how the most successful tech start-ups launch and scale their services on AWS, and will teach you how you can do the same. This book explains how to treat infrastructure as code, meaning you can bring resources online and offline as easily as you control your software. You will also build a continuous integration and continuous deployment pipeline to keep your app up to date. Once you have gotten to grips with all this, we'll move on to how to scale your applications to offer maximum performance to users even when traffic spikes, by using the latest technologies, such as containers. In addition to this, you'll get insights into monitoring and alerting, so you can make sure your users have the best experience when using your service. In the concluding chapters, we'll cover inbuilt AWS tools such as CodeDeploy and CloudFormation, which are used by many AWS administrators to perform DevOps. By the end of this book, you'll have learned how to ensure the security of your platform and data, using the latest and most prominent AWS tools. What you will learn

- Implement automatic AWS instance provisioning using CloudFormation
- Deploy your application on a provisioned infrastructure with Ansible
- Manage infrastructure using Terraform
- Build and deploy a CI/CD pipeline with Automated Testing on AWS
- Understand the container journey for a CI/CD pipeline using AWS ECS
- Monitor and secure your AWS environment

Who this book is for *Effective DevOps with AWS* is for you if you are a developer, DevOps engineer, or you work in a team which wants to build and use AWS for software infrastructure. Basic computer science knowledge is required to get the most out of this book.

Deployment Fundamentals, Vol. 5 Building a Real-World Infrastructure with Windows Server 2012 R2, MDT 2013, and PowerShell System developers have used modeling languages for decades to specify, visualize, construct, and document systems. The Unified Modeling Language (UML) is one of those languages. UML makes it possible for team members to collaborate by providing a common language that applies to a multitude of different systems. Essentially, it enables you to communicate solutions in a consistent, tool-supported language. Today, UML has become the standard method for modeling software systems, which means you're probably confronting this rich and expressive language more than ever before. And even though you may not write UML diagrams yourself, you'll still need to interpret diagrams written by others. *UML 2.0 in a Nutshell* from O'Reilly feels your pain. It's been crafted for professionals like you who must read, create, and understand system artifacts expressed using UML. Furthermore, it's been fully revised to cover version 2.0 of the language. This comprehensive new edition not only provides a quick-reference to all UML 2.0 diagram types, it also explains key concepts in a way that appeals to readers already familiar with UML or object-oriented programming concepts. Topics include:

- The role and value of UML in projects
- The object-oriented paradigm and its relation to the UML
- An integrated approach to UML diagrams
- Class and Object, Use Case, Sequence, Collaboration, Statechart, Activity, Component, and Deployment Diagrams
- Extension Mechanisms
- The Object Constraint Language (OCL)

If you're new to

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UML, a tutorial with realistic examples has even been included to help you quickly familiarize yourself with the system.

Develop and deploy efficient server-side applications and microservice architectures. KEY FEATURES ? Extensive examples of the Go programming language and REST concepts. ? Includes graphical illustrations and visual explanation of the microservice architecture. ? Graphs and visual explanation for Docker and Kubernetes commands. DESCRIPTION 'Building Server-side and Microservices with Go' teaches you the fundamentals of Go programming languages, REST server applications, and microservices. You can develop efficient server-side applications and use modern development concepts such as microservices after reading this book. We will create simple server-side applications and add new features as and when a new topic is covered. We will begin with the fundamentals of Go programming languages, which will create simple server-side applications. During development, a layered design will be introduced, with each application layer serving a specific purpose. We will introduce you to the microservice concept, and it is further divided into a couple of smaller microservices. Finally, we'll look at how to use Docker and Kubernetes to deploy and scale microservices. After reading this book, we will be able to successfully develop monolithic and microservice applications and identify when one approach is more appropriate than another. This book can also help improve existing applications. It is a perfect handy guide to build proficiency with Docker and Kubernetes. WHAT YOU WILL LEARN ? Basics of Go programming language (data types, structures, loops, functions, concurrency, etc). ? REST concept development and implementation. ? Introduction to layered server-side application designs and key roles. ? PostgreSQL database design, CRUD operations, and queries. ? Introduction to microservices, common practices, and advantages and disadvantages of microservices. ? Microservices development with Go and how to break monolithic applications into microservices. ? Understanding protocol buffers and message queuing protocols for microservice communications. WHO THIS BOOK IS FOR This book is intended for backend developers, software architects, and students interested in learning about the Go programming language, REST Server Applications, and Microservices. Knowing fundamental programming concepts would be an advantage but not essential. TABLE OF CONTENTS 1. Fundamentals of Go Programming Language 2. REST Server Applications 3. HTTP Layer and Handler 4. Core Layer 5. Data Layer and Database 6. Microservices 7. Microservices in Go 8. Microservice Communication 9. Deployment and Scaling

A guide to building enterprise, cloud-ready full-stack web applications using TypeScript, Vue.js 3, and ASP.NET Core 5 for busy developers Key Features: Learn how to implement clean architecture in the latest ASP.NET Core 5 Web API Develop Vue.js 3 single-page applications (SPAs) using TypeScript or JavaScript programming and Vuex state management Secure, test, and deploy your full-stack web application to Azure Cloud Book Description: Vue.js 3 is faster and smaller than the previous version, and TypeScript's full support out of the box makes it a more maintainable and easier-to-use version of Vue.js. Then, there's ASP.NET Core 5, which is the fastest .NET web framework today. Together, Vue.js for the frontend and ASP.NET Core 5 for the backend make a powerful combination. This book follows a hands-on approach to implementing practical methodologies for building robust applications using ASP.NET Core 5 and Vue.js 3. The topics here are not deep dive and the book is intended for

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busy .NET developers who have limited time and want a quick implementation of a clean architecture with popular libraries. You'll start by setting up your web app's backend, guided by clean architecture, command query responsibility segregation (CQRS), mediator pattern, and Entity Framework Core 5. The book then shows you how to build the frontend application using best practices, state management with Vuex, Vuetify UI component libraries, Vuelidate for input validations, lazy loading with Vue Router, and JWT authentication. Later, you'll focus on testing and deployment. All the tutorials in this book support Windows 10, macOS, and Linux users. By the end of this book, you'll be able to build an enterprise full-stack web app, use the most common npm packages for Vue.js and NuGet packages for ASP.NET Core, and deploy Vue.js and ASP.NET Core to Azure App Service using GitHub Actions. What You Will Learn: Discover CQRS and mediator pattern in the ASP.NET Core 5 Web API Use Serilog, MediatR, FluentValidation, and Redis in ASP.NET Explore common Vue.js packages such as Vuelidate, Vuetify, and Vuex Manage complex app states using the Vuex state management library Write integration tests in ASP.NET Core using xUnit and FluentAssertions Deploy your app to Microsoft Azure using the new GitHub Actions for continuous integration and continuous deployment (CI/CD) Who this book is for: This app development book is for .NET developers who want to get started with Vue.js and build full-stack real-world enterprise web applications. Developers looking to build a proof-of-concept application quickly and pragmatically using their existing knowledge of ASP.NET Core as well as developers who want to write readable and maintainable code using TypeScript and the C# programming language will also find this book useful. The book assumes intermediate-level .NET knowledge along with an understanding of C# programming, JavaScript, and ECMAScript.

Design, build, and justify an optimal Microsoft IoT footprint to meet your project needs. This book describes common Internet of Things components and architecture and then focuses on Microsoft's Azure components relevant in deploying these solutions. Microsoft-specific topics addressed include: deploying edge devices and pushing intelligence to the edge; connecting IoT devices to Azure and landing data there, applying Azure Machine Learning, analytics, and Cognitive Services; roles for Microsoft solution accelerators and managed solutions; and integration of the Azure footprint with legacy infrastructure. The book concludes with a discussion of best practices in defining and developing solutions and creating a plan for success. What You Will Learn Design the right IoT architecture to deliver solutions for a variety of project needs Connect IoT devices to Azure for data collection and delivery of services Use Azure Machine Learning and Cognitive Services to deliver intelligence in cloud-based solutions and at the edge Understand the benefits and tradeoffs of Microsoft's solution accelerators and managed solutions Investigate new use cases that are described and apply best practices in deployment strategies Integrate cutting-edge Azure deployments with existing legacy data sources Who This Book Is For Developers and architects new to IoT projects or new to Microsoft Azure IoT components as well as readers interested in best practices used in architecting IoT solutions that utilize the Azure platform Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the

entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

In the latter half of the 20th century, forces have conspired to make the human community, at last, global. The easing of tensions between major nations, the expansion of trade to worldwide markets, widespread travel and cultural exchange, pervasive high-speed communications and automation, the explosion of knowledge, the streamlining of business, and the adoption of flexible methods have changed the face of manufacturing itself, and of research and education in manufacturing. The acceptance of the continuous improvement process as a means for organizations to respond quickly and effectively to swings in the global market has led to the demand for individuals educated in a broad range of cultural, organizational, and technical fields and capable of absorbing and adapting required knowledge and training throughout their careers. No longer will manufacturing research and education focus on an industrial sector or follow a national trend, but rather will aim at enabling international teams of companies to cooperate in rapidly designing, prototyping, and manufacturing products. The successful enterprise of the 21st century will be characterized by an organizational structure that efficiently responds to customer demands and changing global circumstances, a corporate culture that empowers employees at all levels and encourages constant communication among related groups, and a technological infrastructure that fully supports process improvement and integration. In changing itself to keep abreast of the broader transformation in manufacturing, the enterprise must look first at its organization and culture, and thereafter at supporting technologies.

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, IBM Software Group

Know how Smart TVs, Smart Cars, Smart Homes, and Smart Cities are changing the World! DESCRIPTION The Internet of Things (IoT) not only connect people but will connect ‘smart’ homes, appliances, cars, offices, factories, cities,

basically the world. This book discusses how smart cities strive to deploy and interconnect infrastructures and services to guarantee that the authorities and citizens have access to reliable and global customized services. The book describes a wide range of topics present in the design, development, and running of smart cities, ranging from big data management, Internet of Things, and sustainable urban planning. The technical aspects of smart cities enabled primarily by the Internet of Things, the socio-economic motivations and impact of smart city development are covered in this book. KEY

FEATURES Learn to successfully create, launch and manage the Internet of Things services Know the process of specifying, implementing, and deploying IoT services Learn the fundamentals of IoT services, building blocks and the key factors Learn the fast track approach to IoT Learn a dual perspective on the Internet of Things and ubiquitous computing Know detailed coverage of the underlying architecture, framework and state of the art methodologies WHAT WILL YOU

LEARN The purpose of this book is to help you to work with cities and learn to develop them into smart cities. You will learn to develop a plan and learn what a smart city is, how to plan the smart city infrastructure and from where do you start while developing the smart city. You will learn what kind of planning is involved and about permitting, rent, acquisition, construction planning, with whom should you work? You can learn all this and more from case studies and deployment planning described in the book. WHOM THIS BOOK IS FOR Students studying IoT in universities and who want to know the fundamentals of the IoT business. For business executives and IoT startups. Table of Contents 1. Introduction 2. RFID and WSN: The Beginning 3. Interoperability of IoT Devices and Sensor (Semantic) Web 4. Cloud's Internet of Things (IoT) 5. IoT and Edge Computing 6. IoT - Big Data Convergence with IoT Data 7. Introduction to (Big Data) Internet of Things Analytics and Streams 8. Operability Among IoT Clouds and Semantics 9. Edge and Analytics 10. To Conclude 11. Abbreviation 12. Bibliography

To comply with legal and other standards, businesses and regulators are increasingly required to make decisions based on risk assessments of the potential effects of their activities on the environment. Atmospheric dispersion modelling is a cost-effective

This book is a collection of 45 accepted papers originally submitted for the 12th International Conference of the Catalan Association for Artificial Intelligence (ACIA). It also includes a brief summary of two papers from invited speakers. The Catalan Association for Artificial Intelligence was founded in 1994 with the aim of fostering cooperation among researchers from the Catalan-speaking AI research community. Collaboration between ACIA members and the wider international AI community has also been well-established now for many years. The papers in these proceedings reflect this collaboration and include contributions not only from the Catalan-speaking regions of Spain, but also from France and Italy, and from as far afield as Mexico and Australia. Of all the fields in computer science, AI is the one most

intertwined with all sorts of disciplines dealt with in the human experience, often employing lessons learnt in one discipline to implement a task in another. The papers in this volume reflect the rich diversity in AI, covering areas such as logics, natural language, machine learning, computer vision, robotics and multi-agent systems.

Industrial electronics systems govern so many different functions that vary in complexity-from the operation of relatively simple applications, such as electric motors, to that of more complicated machines and systems, including robots and entire fabrication processes. The Industrial Electronics Handbook, Second Edition combines traditional and new

* Offers a unique blend of theory and examples. * The first book covering service orientation with smart clients. * Only book brave enough to tackle the challenges surrounding testing agility in smart clients. * Gives practical case studies to re-enforce theory. * Introduces the concept of smart agents.

Proven author provides expert analysis on key new features Visual Studio 2005 release provides an ample catalyst for sales of this book Our .NET 2.0 series has proven to be a very successful book line; this is a member of such Develop mobile enterprise applications in a language you already know! With employees, rather than the IT department, now driving the decision of which devices to use on the job, many companies are scrambling to integrate enterprise applications. Fortunately, enterprise developers can now create apps for all major mobile devices using C#/.NET and Mono, languages most already know. A team of authors draws on their vast experiences to teach you how to create cross-platform mobile applications, while delivering the same functionality to PC's, laptops and the web from a single technology platform and code-base. Rather than reinventing the wheel with each app, this book provides you with the tools you need for cross-platform development--no new languages needed! Presents an overview of the sea change occurring with the use of enterprise mobile applications and what it means for developers Shares the criteria for evaluating and selecting the best option for application architecture Reviews tools and techniques for setting up a cross-platform development environment Offers an introduction to the MonoCross open-source project and pattern for cross-platform development Packed with specific software design patterns, development best practices, code examples and sample applications, this must-have book gets you started developing cross-platform mobile apps today.

Implement flexible, efficient LISP-based overlays for cloud, data center, and enterprise The LISP overlay network helps organizations provide seamless connectivity to devices and workloads wherever they move, enabling open and highly scalable networks with unprecedented flexibility and agility. LISP Network Deployment and Troubleshooting is the definitive resource for all network engineers who want to understand, configure, and troubleshoot LISP on Cisco IOS-XE, IOS-XR and NX-OS platforms. It brings together comprehensive coverage of how LISP works, how it integrates with leading Cisco platforms, how to configure it for maximum efficiency, and how to address key issues such as scalability and convergence. Focusing on design and deployment in real production environments, three leading Cisco LISP engineers present authoritative coverage of deploying LISP, verifying its operation, and optimizing its performance in widely diverse

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environments. Drawing on their unsurpassed experience supporting LISP deployments, they share detailed configuration examples, templates, and best practices designed to help you succeed with LISP no matter how you intend to use it. This book is the Cisco authoritative guide to LISP protocol and is intended for network architects, engineers, and consultants responsible for implementing and troubleshooting LISP network infrastructures. It includes extensive configuration examples with troubleshooting tips for network engineers who want to improve optimization, performance, reliability, and scalability. This book covers all applications of LISP across various environments including DC, Enterprise, and SP. Review the problems LISP solves, its current use cases, and powerful emerging applications Gain in-depth knowledge of LISP's core architecture and components, including xTRs, PxTRs, MR/MS, ALT, and control plane message exchange Understand LISP software architecture on Cisco platforms Master LISP IPv4 unicast routing, LISP IPv6 routing, and the fundamentals of LISP multicast routing Implement LISP mobility in traditional data center fabrics, and LISP IP mobility in modern data center fabrics Plan for and deliver LISP network virtualization and support multitenancy Explore LISP in the Enterprise multihome Internet/WAN edge solutions Systematically secure LISP environments Troubleshoot LISP performance, reliability, and scalability

A complete revision to a popular SharePoint developer's resource Fully updated for SharePoint 2013, this book is an ideal starting place for SharePoint development. Covering all the major topics that a new developer needs to know in order to get started, this resource contains 100 percent new content and addresses the major overhaul to the SharePoint 2013 platform. The team of authors, led by Microsoft's Steve Fox, presents you with a detailed overview that helps you establish a starting point for development. They then walk you through ways to advance your knowledge so that you leverage the new SharePoint 2013 features to build custom solutions. Addresses developing managed or unmanaged applications Provides an overview of Windows Azure for SharePoint Looks at common developer tasks in SharePoint 2013 Gets you started with building, packaging, and deploying SharePoint 2013 applications Highlights essential points of security in SharePoint 2013 Touching on everything from developing applications using Office services to development workflow applications, Beginning SharePoint 2013 Development covers everything you need to know to start confidently working with the platform today.

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 Deploying QoS for IP Next Generation Networks: The Definitive Guide provides network architects and planners with insight into the various aspects that drive QoS deployment for the various network types. It serves as a single source of reference for businesses that plan to deploy a QoS framework for voice, video, mobility and data applications creating a converged infrastructure. It further provides detailed design and implementation details for various service deployments across the various Cisco platforms such as the CRS-1, 12000, 7600 & 7200 series routers that are widely deployed in most Carrier Networks. The book covers architectural and implementation specific information plus

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recommendations for almost all the popular line cards across the various hardware platforms widely used in the market. It also addresses QoS architecture and deployment on the Cisco CRS-1 platform and is considered as a unique selling point of this book. In short the books serve as an "On the Job Manual" which can also be used as a study guide for Cisco specialist certification programs (CCNA, CCIP, CCIE) This book will includes detailed illustration and configurations. In addition, it provides detailed case studies along with platform specific tests and measurement results. A link to a detailed tutorial on QoS metrics and associated test results will be available at the book's companion website in order to ensure that the reader is able to understand QoS functionality from a deployment standpoint. Covers the requirements and solutions in deploying QoS for voice, video, IPTV, mobility and data traffic classes (Quad-play networks), saving the reader time in searching for hardware specific QoS information, given the abundance of Cisco platforms and line cards. Presents real-life deployments by means of detailed case studies, allowing the reader to apply the same solutions to situations in the work place. Provides QoS architecture and implementation details on Cisco CRS-1, 12000, 7600, and 7200 routing platforms using Cisco IOS/IOS-XR software, aiding the reader in using these devices and preparing for Cisco specialist certification.

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