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Web Application Architecture-Leon Shklar 2009-04-27 In-depth examination of concepts and principles of Web application development Completely revised and updated, this popular book returns with coverage on a range of new technologies. Authored by a highly respected duo, this edition provides an in-depth examination of the core concepts and general principles of Web application development. Packed with examples featuring specific technologies, this book is divided into three sections: HTTP protocol as a foundation for Web applications, markup languages (HTML, XML, and CSS), and survey of emerging technologies. After a detailed introduction to the history of Web applications, coverage segues to core Internet protocols, Web browsers, Web application development, trends and directions, and more. Includes new coverage on technologies such as application primers, Ruby on Rails, SOAP, XPath, P3P, and more Explores the fundamentals of HTTP and its evolution Looks at HTML and its roots as well as XML languages and applications Reviews the basic operation of Web Servers, their functionality, configuration, and security Discusses how to process flow in Web browsers and looks at active browser pages Addresses the trends and various directions that the future of Web application frameworks may be headed This book is essential reading for anyone who needs to design or debug complex systems, and it makes it easier to learn the new application programming interfaces that arise in a rapidly changing Internet environment.

REST in Practice-Jim Webber 2010-09-17 REST continues to gain momentum as the best method for building Web services, and this down-to-earth book delivers techniques and examples that show how to design and implement integration solutions using the REST architectural style.

Web Database Applications with PHP and MySQL-Hugh E. Williams 2002 Combines language tutorials with application design advice to cover the PHP server-side scripting language and the MySQL database engine.


Programming Web Services with SOAP-James Snell 2001-12-20 The web services architecture provides a new way to think about and implement application-to-application integration and interoperability that makes the development platform irrelevant. Two applications, regardless of operating system, programming language, or any other technical implementation detail, communicate using XML messages over open Internet protocols such as HTTP or SMTP. The Simple Open Access Protocol (SOAP) is a specification that details how to encode that information and has become the messaging protocol of choice for Web services.

Programming Web Services with SOAP is a detailed guide to using SOAP and other leading web services standards—WSDL (Web Service Description Language), and UDDI (Universal Description, Discovery, and Integration protocol). You'll learn the
Internet of Things—Simone Cirani 2018-11-12 This book addresses researchers and graduate students at the forefront of study/research on the Internet of Things (IoT) by presenting state-of-the-art research together with the current and future challenges in building new smart applications (e.g., Smart Cities, Smart Buildings, and Industrial IoT) in an efficient, scalable, and sustainable way. It covers the main pillars of the IoT world (Connectivity, Interoperability, Discoverability, and Security/Privacy), providing a comprehensive look at the current technologies, procedures, and architectures.

Computer Networking—Olivier Bonaventure 2016-06-10 Original textbook (c) October 31, 2011 by Olivier Bonaventure, is licensed under a Creative Commons Attribution (CC BY) license made possible by funding from The Saylor Foundation's Open Textbook Challenge in order to be incorporated into Saylor's collection of open courses available at: http: //www.saylor.org. Free PDF 282 pages at https://www.textbookequity.org/bonaventure-computer-networking-principles-protocols-and-practice/ This open textbook aims to fill the gap between the open-source implementations and the open-source network specifications by providing a detailed but pedagogical description of the key principles that guide the operation of the Internet. 1 Preface 2 Introduction 3 The application Layer 4 The transport layer 5 The network layer 6 The datalink layer and the Local Area Networks 7 Glossary 8 Bibliography

Microservice Architecture—Irakli Nadareishvili 2016-07-18 Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don’t approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique, modular style of system building. You’ll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You’ll explore a design-based approach to microservice architecture with guidance for implementing various elements. And you’ll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption. Learn how microservices can help you drive business objectives. Examine the principles, practices, and culture that define microservice architectures. Explore a model for creating complex systems and a design process for building a microservice architecture. Learn the fundamental design concepts for individual microservices. Delve into the operational elements of a microservices architecture, including containers and service discovery. Discover how to handle the challenges of introducing microservice architecture in your organization.

Enterprise Application Architecture with .NET Core—Ganesan Senthivel 2017-04-25 Architect and design highly scalable, robust, clean and highly performant applications in .NET Core! About This Book This book is for experienced .NET developers who are aspiring to become architects of enterprise-grade applications, as well as software architects who would like to leverage .NET to create effective blueprints of applications. What You Will Learn Grasp the important aspects and best practices of application lifecycle management...
Leverage the popular ALM tools, application insights, and their usage to monitor performance, testability, and optimization tools in an enterprise. Explore various authentication models such as social media-based authentication, 2FA and OpenID Connect, learn authorization techniques. Explore Azure with various solution approaches for Microservices and Serverless architecture along with Docker containers. Gain knowledge about the recent market trends and practices and how they can be achieved with .NET Core and Microsoft tools and technologies. In Detail If you want to design and develop enterprise applications using .NET Core as the development framework and learn about industry-wide best practices and guidelines, then this book is for you. The book starts with a brief introduction to enterprise architecture, which will help you to understand what enterprise architecture is and what the key components are. It will then teach you about the types of patterns and the principles of software development, and explain the various aspects of distributed computing to keep your applications effective and scalable. These chapters act as a catalyst to start the practical implementation, and design and develop applications using different architectural approaches, such as layered architecture, service oriented architecture, microservices and cloud-specific solutions. Gradually, you will learn about the different approaches and models of the Security framework and explore various authentication models and authorization techniques, such as social media-based authentication and safe storage using app secrets. By the end of the book, you will get to know the concepts and usage of the emerging fields, such as DevOps, BigData, architectural practices, and Artificial Intelligence. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to show you the best tools and techniques required to become a successful software architect.


Fowler-Martin Fowler 2012-03-09 The practice of enterprise application development has benefited from the emergence of many new enabling technologies. Multi-tiered object-oriented platforms, such as Java and .NET, have become commonplace. These new tools and technologies are capable of building powerful applications, but they are not easily implemented. Common failures in enterprise applications often occur because their developers do not understand the architectural lessons that experienced object developers have learned. Patterns of Enterprise Application Architecture is written in direct response to the stiff challenges that face enterprise application developers. The author, noted object-oriented designer Martin Fowler, noticed that despite changes in technology—from Smalltalk to CORBA to Java to .NET—the same basic design ideas can be adapted and applied to solve common problems. With the help of an expert group of contributors, Martin distills over forty recurring solutions into patterns. The result is an indispensable handbook of solutions that are applicable to any enterprise application platform. This book is actually two books in one. The first section is a short tutorial on developing enterprise applications, which you can read from start to finish to understand the scope of the book's lessons. The next section, the bulk of the book, is a detailed reference to the patterns themselves. Each pattern provides usage and implementation information, as well as detailed code examples in Java or C#. The entire book is also richly illustrated with UML diagrams to further explain the concepts. Armed with this book, you will have the knowledge necessary to make important architectural decisions about building an enterprise application and the proven patterns for use when building them. The topics covered include: Dividing an enterprise application into layers · The major approaches to organizing business logic · An in-depth treatment of mapping between objects and relational databases · Using Model-View-Controller to organize a Web presentation · Handling concurrency for data that spans multiple transactions · Designing distributed object interfaces.

Content Networking-Markus Hofmann 2005 As the Internet has grown, so have the challenges associated with delivering static, streaming, and dynamic content to end-users. This book is unique in that it addresses the topic of content networking exclusively and comprehensively, tracing the evolution from traditional web caching to today's open and vastly more flexible architecture. With this evolutionary approach, the authors emphasize the field's most persistent concepts, principles, and mechanisms—the core information that will help you understand why and how content delivery works today, and apply that knowledge in the future. + Focuses on the principles that will give you a deep and timely understanding of content networking. + Offers dozens of protocol-specific examples showing how real-life Content Networks are currently designed and implemented. + Provides extensive consideration of Content Services, including both the
Web Protocols and Practice: HTTP/1.1, Networking Protocols, Caching, and Traffic Measurement is an all-in-one reference to the core technologies underlying the World Wide Web. The book provides an authoritative and in-depth look at the systems and protocols responsible for the transfer of content across the Web. The HyperText Transfer Protocol (HTTP) is responsible for nearly three-quarters of the traffic on today's Internet. This book's extensive treatment of HTTP/1.1 and its interaction with other network protocols makes it an indispensable resource for both practitioners and students. Providing both the evolution and complete details of the basic building blocks of the Web, Web Protocols and Practice begins with an overview of Web software components and follows up with a description of the suite of protocols that form the semantic core of how content is delivered on the Web. The book later examines Web measurement and workload characterization and presents a cutting-edge report on Web caching and multimedia streaming. It concludes with a discussion on research perspectives that highlight topics that may affect the future evolution of the Web. Numerous examples and case studies throughout the book illustrate the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book.

Modern Web Development: Dino Esposito 2016-02-22 Master powerful new approaches to web architecture, design, and user experience. This book presents a pragmatic, problem-driven, user-focused approach to planning, designing, and building dynamic web solutions. You'll learn how to gain maximum value from Domain-Driven Design (DDD), define optimal support for architecture, and succeed with modern UX-first design approaches. The author guides you through choosing and implementing specific technologies and addresses key user-experience topics, including mobile-friendly and responsive design. You'll learn how to gain maximum value from existing Microsoft technologies such as ASP.NET MVC and SignalR by using them alongside other technologies such as Bootstrap, AJAX, JSON, and JQuery. By using these techniques and understanding the new ASP.NET Core 1.0, you can quickly build advanced web solutions that solve today's problems and deliver an outstanding user experience.
Architecture of Network Systems—Dimitrios Serpanos 2011-01-12
Architecture of Network Systems explains the practice and methodologies that will allow you to solve a broad range of problems in system design, including problems related to security, quality of service, performance, manageability, and more. Leading researchers Dimitrios Serpanos and Tilman Wolf develop architectures for all network sub-systems, bridging the gap between operation and VLSI. This book provides comprehensive coverage of the technical aspects of network systems, including system-on-chip technologies, embedded protocol processing and high-performance, and low-power design. It develops a functional approach to network system architecture based on the OSI reference model, which is useful for practitioners at every level. It also covers both fundamentals and the latest developments in network systems architecture, including network-on-chip, network processors, algorithms for lookup and classification, and network systems for the next-generation Internet. The book is recommended for practicing engineers designing the architecture of network systems and graduate students in computer engineering and computer science studying network system design. This is the first book to provide comprehensive coverage of the technical aspects of network systems, including processing systems, hardware technologies, memory managers, software routers, and more. Develops a systematic approach to network architectures, based on the OSI reference model, that is useful for practitioners at every level. Covers both the important basics and cutting-edge topics in network systems architecture, including Quality of Service and Security for mobile, real-time P2P services, Low-Power Requirements for Mobile Systems, and next generation Internet systems.

Because they provide practical machine-to-machine communication at a very low cost, the popularity of wireless sensor networks is expected to skyrocket in the next few years, duplicating the recent explosion of wireless LANs. Wireless Sensor Networks: Architectures and Protocols describes how to build these networks, from the layers of the Software Architecture with Python—Anand Balachandran Pillai 2017-04-28
Architect and design highly scalable, robust, clean, and highly performant applications in Python About This Book Identify design issues and make the necessary adjustments to achieve improved performance Understand practical architectural quality attributes from the perspective of a practicing engineer and architect using Python Gain knowledge of architectural principles and how they can be used to provide accountability and rationale for architectural decisions Who This Book Is For This book is for experienced Python developers who are aspiring to become the architects of enterprise-grade applications or software architects who would like to leverage Python to create effective blueprints of applications. What You Will Learn Build programs with the right architectural attributes Use Enterprise Architectural Patterns to solve scalable problems on the Web Understand design patterns from a Python perspective Optimize the performance testing tools in Python Deploy code in remote environments or on the Cloud using Python Secure architecture applications in Python In Detail This book starts off by explaining how Python fits into an application architecture. As you move along, you will understand the architecturally significant demands and how to determine them. Later, you’ll get a complete understanding of the different architectural quality requirements that help an architect to build a product that satisfies business needs, such as maintainability/reusability, testability, scalability, performance, usability, and security. You will use various techniques such as incorporating DevOps, Continuous Integration, and more to make your application robust. You will understand when and when not to use object orientation in your applications. You will be able to think of the future and design applications that can scale proportionally to the growing business. The focus is on building the business logic based on the business process documentation and which frameworks are to be used when. We also cover some important patterns that are to be taken into account while solving design problems as well as those in relatively new domains such as the Cloud. This book will help you understand the ins and outs of Python so that you can make those
SPA Design and Architecture teaches you the design and development skills you need to create SPAs. Includes an overview of MV* frameworks, unit testing, routing, layout management, data access, pub/sub, and client-side task automation. This book is full of easy-to-follow examples you can apply to the library or framework of your choice. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the Technology
The next step in the development of web-based software, single-page web applications deliver the sleekness and fluidity of a native desktop application in a browser. If you're ready to make the leap from traditional web applications to SPAs, but don't know where to begin, this book will get you going. About the Book
SPA Design and Architecture teaches you the design and development skills you need to create SPAs. You'll start with an introduction to the SPA model and see how it builds on the standard approach using linked pages. The author guides you through the practical issues of building an SPA, including an overview of MV* frameworks, unit testing, routing, layout management, data access, pub/sub, and client-side task automation. This book is full of easy-to-follow examples you can apply to the library or framework of your choice. What's Inside
Working with modular JavaScript Understanding MV* frameworks Layout management Client-side task automation Testing SPAs About the Reader
This book assumes you are a web developer and know JavaScript basics. About the Author
Emmit Scott is a senior software engineer and architect with experience building large-scale, web-based applications. Table of Contents
PART 1 THE BASICS What is a single-page application? The role of MV* frameworks
PART 2 CORE CONCEPTS Navigating the XMLHttpRequest API Chapter 7 server-side setup and summary Installing Node.js and Gulp.js
Principles of Transaction Processing
Philip A. Bernstein 2009-07-24
Principles of Transaction Processing is a comprehensive guide to developing applications, designing systems, and evaluating engineering products. The book provides detailed discussions of the internal workings of transaction processing systems, and it discusses how these systems work and how best to utilize them. It covers the architecture of Web Application Servers and transactional communication paradigms. The book is divided into 11 chapters, which cover the following: Overview of transaction processing...
application and system structure Software abstractions found in transaction processing systems. Architecture of multilayer applications and the functions of transactional middleware and database servers. Queued transaction processing and its internals, with IBM's Websphere MQ and Oracle's Stream AQ as examples. Business process management and its mechanisms.

Description of the two-phase locking function, B-tree locking and multigranularity locking used in SQL database systems and nested transaction locking. System recovery and its failures. Two-phase commit protocol comparison between the tradeoffs of replicating servers versus replication resources.

Transactional middleware products and standards. Future trends, such as cloud computing platforms, composing scalable systems using distributed computing components, the use of flash storage to replace disks and data streams from sensor devices as a source of transaction requests. The text meets the needs of systems professionals, such as IT application programmers who construct TP applications, application analysts, and product developers. The book will also be invaluable to students and novices in application programming. Complete revision of the classic "non mathematical" transaction processing reference for systems professionals. Updated to focus on the needs of transaction processing via the Internet—the main focus of business data processing investments, via web application servers, SOA, and important new TP standards. Retains the practical, non-mathematical, but thorough conceptual basis of the first edition.

Microsoft .NET - Architecting Applications for the Enterprise-Dino Esposito 2014-08-28 A software architect’s digest of core practices, pragmatically applied. Designing effective architecture is your best strategy for managing project complexity—and improving your results. But the principles and practices of software architecting—what the authors call the “science of hard decisions”—have been evolving for cloud, mobile, and other shifts. Now fully revised and updated, this book shares the knowledge and real-world perspectives that enable you to design for success—and deliver more successful solutions. In this fully updated Second Edition, you will: Learn how only a deep understanding of domain can lead to appropriate architecture. Examine domain-driven design in both theory and implementation. Shift your approach to code first, model later—including multilayer architecture. Capture the benefits of prioritizing software maintainability. See how readability, testability, and extensibility lead to code quality. Take a user experience (UX) first approach, rather than designing for data. Review patterns for organizing business logic. Use event sourcing and CQRS together to model complex business domains more effectively. Delve inside the persistence layer, including patterns and implementation.

Satellite Networking-Zhili Sun 2014-03-06 This book provides up to date coverage of the basics of ATM and internet protocols, and characteristics of satellite networks and internetworking between satellite and terrestrial networks. Satellite Networking: Principles and Protocols, Second Edition provides up to date information of the original topics in satellite networking and protocols focusing on Internet Protocols (IP) over satellites, broadband over satellites, next generation IP (IPv6) over satellites, new generation of DVB-S/S2 and DVB-RCS next generations and new services and applications. It also includes some analytical techniques for evaluation of end to end IP performance and QoS over satellite, reflecting the recent convergence of telecommunication, Internet, broadcasting and mobile networks. Topics new to this edition: Internetworking with MANET, DVB-S/S2 and DVB-RCS/RCS2 (including TCP/IP over DVB-S/RCS), recent developments in broadband satellite systems, convergence of services and network technologies (including Internet, telecom, mobile, TV, etc.), radio resource management, PEP, I-PEP, SCPS, traffic modelling and engineering with analysis and examples, and future developments of satellite networking. Provides up to date coverage of the basics of ATM and internet protocols, and characteristics of satellite networks and internetworking between satellite and terrestrial networks (e.g. mobile ad hoc networks), including coverage of new services and applications (e.g. Internet, telecom, mobile and TV) Discusses the real-time protocols including RTP, RTCP and SIP for real-time applications including VoIP and MMC, and explains TCP/IP over satellite and evolution of IPv6 over satellite and beyond. Funding a Revolution-National Research Council 1999-02-11 The past 50 years have witnessed a revolution in computing and related communications technologies. The contributions of industry and university researchers to this revolution are manifest; less widely recognized is the major role the federal government played in launching the computing revolution and sustaining its momentum. Funding a Revolution examines the history of computing since World War II to elucidate the federal government's role in funding computing research, supporting the education of computer scientists and engineers, and equipping university research labs. It reviews the economic rationale for government support of research, characterizes...
federal support for computing research, and summarizes key historical advances in which government-sponsored research played an important role. Funding a Revolution contains a series of case studies in relational databases, the Internet, theoretical computer science, artificial intelligence, and virtual reality that demonstrate the complex interactions among government, universities, and industry that have driven the field. It offers a series of lessons that identify factors contributing to the success of the nation’s computing enterprise and the government’s role within it.


Building Hypermedia APIs with HTML5 and Node—Michael Amundsen 2011-11-30 With this concise book, you’ll learn the art of building hypermedia APIs that don’t simply run on the Web, but that actually exist in the Web. You’ll start with the general principles and technologies behind this architectural approach, and then dive hands-on into three fully-functional API examples. Too many APIs rely on concepts rooted in desktop and local area network patterns that don’t scale well—costly solutions that are difficult to maintain over time. This book shows system architects and web developers how to design and implement human- and machine-readable web services that remain stable and flexible as they scale. Learn the H-Factors for representing application metadata across all media types and formats Understand the four basic design elements for authoring hypermedia types Convert a simple read-only XML-based media type into a successful API design Examine the challenges and advantages of designing a hypermedia type with JSON Use HTML5’s rich set of hypermedia controls Understand the four basic design elements for authoring hypermedia types Convert a simple read-only XML-based media type into a successful API design Examine the challenges and advantages of designing a hypermedia type with JSON Use HTML5’s rich set of hypermedia controls

Building Evolutionary Architectures—Neal Ford 2017-09-18 The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical guide ties those parts together with a new way to think about architecture and time.

Cryptography Engineering—Niels Ferguson 2011-02-02 The ultimate guide to cryptography, updated from an author team of the world’s top cryptography experts. Cryptography is vital to keeping information safe, in an era when the formula to do so becomes more and more challenging. Written by a team of world-renowned cryptography experts, this essential guide is the definitive introduction to all major areas of cryptography: message security, key negotiation, and key management. You’ll learn how to think like a cryptographer. You’ll discover techniques for building cryptography into tutorial on configuring important network services -- including DNS, Apache, sendmail, Samba, PPP, and DHCP -- as well as expanded chapters on troubleshooting and security. TCP/IP Network Administration is also a command and syntax reference for important packages such as gated, pppd, named, dhcpd, and sendmail. With coverage that includes Linux, Solaris, BSD, and System V TCP/IP implementations, the third edition contains: Overview of TCP/IP Delivering the data Network services Getting startedM Basic configuration Configuring the interface Configuring routing Configuring DNS Configuring network servers Configuring sendmail Configuring Apache Network security Troubleshooting Appendices include dip, ppd, and chat reference, a gated reference, a dhcpd reference, and a sendmail reference This new edition includes ways of configuring Samba to provide file and print sharing on networks that integrate Unix and Windows, and a new chapter is dedicated to the important task of configuring the Apache web server. Coverage of network security now includes details on OpenSSH, stunnel, gpg, iptables, and the access control mechanism in xinetd. Plus, the book offers updated information about DNS, including details on BIND 8 and BIND 9, the role of classless IP addressing and network prefixes, and the changing role of registrars. Without a doubt, TCP/IP Network Administration, 3rd Edition is a must-have for all network administrators and anyone who deals with a network that transmits data over the Internet.
Building Applications with Scala—Diego Pacheco 2016-12-08 Write modern, scalable, and reactive applications with the power of Scala About This Book Delves into the intricacies of functional reactive programming with Scala Explores frameworks like Akka, Play and Slick used to develop efficient applications A step by step guide with plenty of examples showing practical implementation of essential concepts Who This Book Is For If you are a Java or JVM developer who wants to use Scala to build reactive functional applications for the JVM platform, then this book is for you. Prior knowledge of Java or functional programming would help. No Scala knowledge is required. What You Will Learn Use Akka to create a chat service for your app Equip yourself with the techniques and tools to build reports and build database persistence with Scala and Slick Develop a customer-facing Rest API that makes use of Scala and Spray Make use of the Scala web development principles and scale up the architecture of your application Get familiar with the core principles and concepts of Functional Programming Use the Play framework to create models, controllers, and views Develop reactive backing frameworks by writing code with RxScala Discover what proper testing entails with Scala using behavior-driven development In Detail Scala is known for incorporating both object-oriented and functional programming into a concise and extremely powerful package. However, creating an app in Scala can get a little tricky because of the complexity the language has. This book will help you dive straight into app development by creating a real, reactive, and functional application. We will provide you with practical examples and instructions using a hands-on approach that will give you a firm grounding in reactive functional principles. The book will take you through all the fundamentals of app development within Scala as you build an application piece by piece. We've made sure to incorporate everything you need from setting up to building reports and scaling architecture. This book also covers the most useful tools available in the Scala ecosystem, such as Slick, Play, and Akka, and a whole lot more. It will help you unlock the secrets of building your own up-to-date Scala application while maximizing performance and scalability. Style and approach This book takes a step-by-step approach to app development with Scala. It will place special emphasis on functional language. It will teach you the core benefits of Scala and the fundamentals of functional programming by developing a robust application.

Internet Architecture and Innovation—Barbara van Schewick 2012-08-24 A detailed examination of how the underlying technical structure of the Internet affects the economic environment for innovation and the implications for public policy. Today—following housing bubbles, bank collapses, and high unemployment—the Internet remains the most reliable mechanism for fostering innovation and creating new wealth. The Internet's remarkable growth has been fueled by innovation. In this pathbreaking book, Barbara van Schewick argues that this explosion of innovation is not an accident, but a consequence of the Internet's architecture—a consequence of technical choices regarding the Internet's inner structure that were made early in its history. The Internet's original architecture was based on four design principles: modularity, layering, and two versions of the celebrated but often misunderstood end-to-end arguments. But today, the Internet's architecture is changing in ways that deviate from the Internet's original design principles, removing the features that have fostered innovation and threatening the Internet's ability to spur economic growth, to improve democratic discourse, and to provide a decentralized environment for social and cultural interaction in which anyone can participate. If no one intervenes, network providers' interests will drive networks further away from the original design principles. If the Internet's value for society is to be preserved, van Schewick argues, policymakers will have to intervene and protect the features that were at the core of the Internet's success.


Written by expert practitioners who have hands-on experience solving real-world problems for large corporations; Helps enterprise architects make sense of data, systems, software, services, product lines,
Linked Data-Tom Heath 2011 The World Wide Web has enabled the creation of a global information space comprising linked documents. As the Web becomes ever more enmeshed with our daily lives, there is a growing desire for direct access to raw data not currently available on the Web or bound up in hypertext documents. Linked Data provides a publishing paradigm in which not only documents, but also data, can be a first class citizen of the Web, thereby enabling the extension of the Web with a global data space based on open standards - the Web of Data. In this Synthesis lecture we provide readers with a detailed technical introduction to Linked Data. We begin by outlining the basic principles of Linked Data, including coverage of relevant aspects of Web architecture. The remainder of the text is based around two main themes - the publication and consumption of Linked Data. Drawing on a practical Linked Data scenario, we provide guidance and best practices on: architectural approaches to publishing Linked Data; choosing URIs and vocabularies to identify and describe resources; deciding what data to return in a description of a resource on the Web; methods and frameworks for automated linking of data sets; and testing and debugging approaches for Linked Data deployments. We give an overview of existing Linked Data applications and then examine the architectures that are used to consume Linked Data from the Web, alongside existing tools and frameworks that enable these. Readers can expect to gain a rich technical understanding of Linked Data fundamentals, as the basis for application development, research or further study. Table of Contents: List of Figures / Introduction / Principles of Linked Data / The Web of Data / Linked Data Design Considerations / Recipes for Publishing Linked Data / Consuming Linked Data / Summary and Outlook Packet Guide to Core Network Protocols-Bruce Hartpence 2011-06-03 Take an in-depth tour of core Internet protocols and learn how they work together to move data packets from one network to another. With this concise book, you'll delve into the aspects of each protocol, including operation basics and security risks, and learn the function of network hardware such as switches and routers. Ideal for beginning network engineers, each chapter in this book includes a set of review questions, as well as practical, hands-on lab exercises. Understand basic network architecture, and how protocols and functions fit togetherLearn the structure and operation of the Eth. Web Services-M. Papazoglou 2008 The first textbook to focus on Web Services - the wave of the future for Web-based distributed computing. Architecting for Scale-Lee Atchison 2016-07-11 Every day, companies struggle to scale critical applications. As traffic volume and data demands increase, these applications become more complicated and brittle, exposing risks and compromising availability. This practical guide shows IT, devops, and system reliability managers how to prevent an application from becoming slow, inconsistent, or downright unavailable as it grows. Scaling isn't just about handling more users; it's also about managing risk and ensuring availability. Author Lee Atchison provides basic techniques for building applications that can handle huge quantities of traffic, data, and demand without affecting the quality your customers expect. In five parts, this book explores: Availability: learn techniques for building highly available applications, and for tracking and improving availability going forward Risk management: identify, mitigate, and manage risks in your application, test your recovery/disaster plans, and build out systems that contain fewer risks Services and microservices: understand the value of containing fewer risks Services and microservices: understand the value of Mobile, Web, and API services: learn the architecture and best practices for building applications that work in mobile, web, and API environments Cloud services: understand the structure of cloud-based services, resource
Web Application Architecture Principles Protocols And Practices

GSM: Architecture, Protocols and Services - Jörg Eberspächer 2008-12-23
With around 3 billion subscribers, GSM is the world's most commonly used technology for wireless communication. Providing an overview of the innovations that have fuelled this phenomena, GSM: Architecture, Protocols and Services, Third Edition offers a clear introduction to the field of cellular systems. Special emphasis is placed on system architecture and protocol aspects, and topics range from addressing concepts through mobility management to network management. This third edition contains around 25% new and reworked material and has been thoroughly updated to encompass recent advances and future trends. It serves as both an introductory textbook for graduate students as well as a reference resource for telecommunications engineers and researchers. This edition: Presents capacity enhancement methods like sectorization, the application of adaptive antennas for Spatial Filtering for Interference Reduction (SFIR) and Space Division Multiple Access (SDMA) Provides a detailed introduction to GPRS, HSCSD, and EDGE for packet-switched services and higher data rates Features updated coverage on the vastly expanded range of GSM services, including an examination of Multimedia Messaging Service (MMS) Adopts a highly graphical approach with numerous illustrations

Microservices Patterns - Chris Richardson 2018-11-19
Summary
Microservices Patterns teaches enterprise developers and architects how to build applications with the microservice architecture. Rather than simply advocating for the use the microservice architecture, this clearly-written guide takes a balanced, pragmatic approach, exploring both the benefits and drawbacks. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Successfully developing microservices-based applications requires mastering a new set of architectural insights and practices. In this unique book, microservice architecture pioneer and Java Champion Chris Richardson collects, catalogues, and explains 44 patterns that solve problems such as service decomposition, transaction management, querying, and inter-service communication. About the Book Microservices Patterns teaches you how to develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for writing services and composing them into systems that scale and perform reliably under real-world conditions. More than just a patterns catalog, this practical guide offers experience-driven advice to help you design, implement, test, and deploy your microservices-based application. What's inside How (and why!) to use the microservice architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns including containers and serverlesses About the Reader Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About the Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

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