

Solution Architecture Document Sample

The Oregon Experiment Software Architecture arc42 by Example IT Architecture For Dummies Software Systems Architecture Continuous Architecture Service-oriented Architecture Analysis Patterns Agile Data Warehousing for the Enterprise Software Architecture in Practice A Complete Guide to Portals and User Experience Platforms The TOGAF ® Standard, Version 9.2 Proceedings Designing Data-Intensive Applications The Enterprise Cloud Microsoft SharePoint 2013 Java Application Architecture Solutions Architect's Handbook Pattern-Oriented Software Architecture, A System of Patterns A Pattern Language Managing Data in Motion Introduction to Solution Architecture Aligning Enterprise, System, and Software Architectures Executing SOA Enterprise Integration Patterns Software Architecture with Python Fowler Open Enterprise Security Architecture O-ESA Enterprise Application Architecture with .NET Core Essential Software Architecture MCSD Analyzing Requirements and Defining .NET Solution Architectures Study Guide SAP Hardware Solutions IBM i2 Integrated Law Enforcement: Technical Architecture and Deployment Guide Enterprise Integration Patterns Architecture Principles Customizing and Extending IBM Content Navigator The Software Architect Elevator Microservice Architecture Documenting Software Architectures Modeling Enterprise Architecture with TOGAF

The Oregon Experiment

Software Architecture

Introduction. Architectural styles. Case studies. Shared information systems. Architectural design guidance. Formal models and specifications. Linguistics issues. Tools for architectural design. Education of software architects.

arc42 by Example

Enterprise Integration Patterns provides an invaluable catalog of sixty-five patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book.

IT Architecture For Dummies

Pattern-oriented software architecture is a new approach to software development. This book represents the progression and evolution of the pattern approach into a system of patterns capable of describing and documenting large-scale applications. A pattern system provides, on one level, a pool of proven solutions to many recurring design problems. On another it shows how to combine individual patterns into heterogeneous structures and as such it can be used to facilitate a constructive development of software systems. Uniquely, the patterns that are presented in this book span several levels of abstraction, from high-level architectural patterns and medium-level design patterns to low-level idioms. The intention of, and motivation for, this book is to support both novices and experts in software development. Novices will gain from the experience inherent in pattern descriptions and experts will hopefully make use of, add to, extend and modify patterns to tailor them to their own needs. None of the pattern descriptions are cast in stone and, just as they are borne from experience, it is expected that further use will feed in and refine individual patterns and produce an evolving system of patterns. Visit our Web Page <http://www.wiley.com/compbooks/>

Software Systems Architecture

Enterprises, from small to large, evolve continuously. As a result, their structures are transformed and extended continuously. Without some means of control, such changes are bound to lead to an overly complex, uncoordinated and heterogeneous environment that is hard to manage and hard to adapt to future changes. Enterprise architecture principles provide a means to direct transformations of enterprises. As a consequence, architecture principles should be seen as the cornerstones of any architecture. In this book, Greefhorst and Proper focus on the role of architecture principles. They provide both a theoretical and a practical perspective on architecture principles. The theoretical perspective involves a brief survey of the general concept of principle as well as an analysis of different flavors of principles. Architecture principles are regarded as a specific class of normative principles that direct the design of an enterprise, from the definition of its business to its supporting IT. The practical perspective on architecture principles is concerned with an approach to the formulation of architecture principles, as well as their actual use in organizations. To illustrate their use in practice, several real-life cases are discussed, an application of architecture principles in TOGAF is included, and a catalogue of example architecture principles is provided. With this broad coverage, the authors target students and researchers specializing in enterprise architecture or business information systems, as well as practitioners who want to understand the foundations underlying their practical daily work.

Continuous Architecture

IBM® Content Navigator provides a unified user interface for your Enterprise Content Management (ECM) solutions. It also provides a robust development platform so you can build customized user interface and applications to deliver value and an intelligent, business-centric experience. This IBM Redbooks®

publication guides you through the Content Navigator platform, its architecture, and the available programming interfaces. It describes how you can configure and customize the user interface with the administration tools provided, and how you can customize and extend Content Navigator using available development options with sample code. Specifically, the book shows how to set up a development environment, and develop plug-ins that add an action, service, and feature to the user interface. Customization topics include implementing request and response filters, external data services (EDS), creating custom step processors, and using Content Navigator widgets in other applications. This book also covers mobile development, viewer customization, component deployment, and debugging and troubleshooting. This book is intended for IT architects, application designers and developers working with IBM Content Navigator and IBM ECM products. It offers a high-level description of how to extend and customize IBM Content Navigator and also more technical details of how to do implementations with sample code.

Service-oriented Architecture

Software Systems Architecture is a practitioner-oriented guide to designing and implementing effective architectures for information systems. It is both a readily accessible introduction to software architecture and an invaluable handbook of well-established best practices. It shows why the role of the architect is central to any successful information-systems development project, and, by presenting a set of architectural viewpoints and perspectives, provides specific direction for improving your own and your organization's approach to software systems architecture. With this book you will learn how to Design an architecture that reflects and balances the different needs of its stakeholders Communicate the architecture to stakeholders and demonstrate that it has met their requirements Focus on architecturally significant aspects of design, including frequently overlooked areas such as performance, resilience, and location Use scenarios and patterns to drive the creation and validation of your architecture Document your architecture as a set of related views Use perspectives to ensure that your architecture exhibits important qualities such as performance, scalability, and security The architectural viewpoints and perspectives presented in the book also provide a valuable long-term reference source for new and experienced architects alike. Whether you are an aspiring or practicing software architect, you will find yourself referring repeatedly to the practical advice in this book throughout the lifecycle of your projects. A supporting Web site containing further information can be found at www.viewpoints-and-perspectives.info

Analysis Patterns

Solution architecture is concerned with the design and definition of (information technology) solutions so they can be subsequently implemented, used, operated and supported securely and efficiently. The solution exists to operate business processes in order to achieve business objectives, meet a business need and deliver business value. Solution architecture is concerned with engaging with the originating business function looking for the solution to create a solution vision and design a solution that meet their needs, subject to a range of constraints such as cost and affordability, time to deliver and organisational standards. The solution must exist as a coherent whole. Solutions must be designed consistently across the

solution landscape and make optimum use of appropriate technologies. Solution architecture must focus on creating usable and useful solutions. Solution architecture must have a standard reliable approach to business engagements and the design of solution that emerge from them. Solution architecture must work collaboratively with other information technology functions - other architecture roles, business analysis and service management - to ensure continuity along the solution delivery journey. Effective solution architecture involves: -Have a depth and breadth of solution delivery and technical experience to be able to identify solution design options quickly-Being able to understand the detail of the solution while maintaining a view of the wider (and higher) context of the business need for the solution and being able to explain both these views of sets of information-Being able to communicate effectively with all parties - technical and business - involved in the solution design and delivery journey, assist with decision-making, be realistic and make appropriate compromises and design choices in order to create the best solution design-Being able to apply technology appropriately and with selective innovation (and the desire to constantly acquire new knowledge and ways of applying technology)-Being involved in the solution delivery journey along its entire length-Being able to be the solution advocate and subject matter expert This book is aimed at a variety of potential readers: -Existing solution architects who want to have a more theoretical and a broader understanding of their role-Existing or new managers of solution architecture functions who want to create a high-performing practice within their organisations and who want to articulate the benefits and value solution architect can contribute to the information technology function and the wider business and the potential it can offer to the business organisation-Managers of information technology functions who want to understand what solution architecture is, where it fits into the wider architecture context and disciplines and solution delivery and operation and the value it can contribute to both the information technology function and the wider business-Other information technology architects who want to understand how the architecture disciplines can work together to deliver value-Business analysts and managers of business analysis functions who want to understand how they can work more closely with the solution architecture function in order to provide the business with a better overall service-Other information technology personnel who want to move into solution architecture and who want to understand what it is-Consulting organisations and individuals who want to develop and offer value-adding solution architecture services

Agile Data Warehousing for the Enterprise

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

Software Architecture in Practice

Continuous Architecture provides a broad architectural perspective for continuous delivery, and describes a new architectural approach that supports and enables it. As the pace of innovation and software releases increases, IT departments are tasked to deliver value quickly and inexpensively to their business partners. With a focus on getting software into end-users hands faster, the ultimate goal of daily software updates is in sight to allow teams to ensure that they can release every change to the system simply and efficiently. This book presents an architectural approach to support modern application delivery methods and provide a broader architectural perspective, taking architectural concerns into account when deploying agile or continuous delivery approaches. The authors explain how to solve the challenges of implementing continuous delivery at the project and enterprise level, and the impact on IT processes including application testing, software deployment and software architecture. Covering the application of enterprise and software architecture concepts to the Agile and Continuous Delivery models Explains how to create an architecture that can evolve with applications Incorporates techniques including refactoring, architectural analysis, testing, and feedback-driven development Provides insight into incorporating modern software development when structuring teams and organizations

A Complete Guide to Portals and User Experience Platforms

IBM® i2® Integrated Law Enforcement is an IBM Smarter Cities® solution that addresses the needs of modern-day law enforcement agencies. It is a solution framework that provides the individual capabilities of the products that comprise the solution and extended capabilities developed through the synergistic integration of those product components. As a framework, IBM i2 Integrated Law Enforcement allows for the continuous expansion of capabilities by putting together building blocks within the system and integrating with new, external systems. In doing so, an organization can respond and adapt to its changing needs. Simply stated, the configuration, integration, and implementation of IBM i2 Integrated Law Enforcement and its components provide the tools for more effective law enforcement. This IBM Redpaper™ publication explains the technology and the architecture on which the solution is built. Most importantly, this paper enables technical teams to install, configure, and deploy an instance of the i2 Integrated Law Enforcement solution using the product i2 Intelligent Law Enforcement V1.0.1. This paper is targeted to solution architects, system and deployment engineers, security specialists, data management experts, system analysts, software developers and test engineers, and system administrators. Readers of this paper will benefit from the IBM Redguide™ publication "Integrated Law Enforcement: A Holistic Approach to Solving Crime", REDP-5116.

The TOGAF ® Standard, Version 9.2

“I’m dancing! By god I’m dancing on the walls. I’m dancing on the ceiling. I’m ecstatic. I’m overjoyed. I’m really, really pleased.” –From the Foreword by Robert C. Martin (a.k.a. Uncle Bob) This isn’t the first book on Java application architecture. No doubt it won’t be the last. But rest assured, this title is different. The way we develop Java applications is about to change, and this title explores the new way of Java application architecture. Over the past several years, module frameworks have been gaining traction on the Java platform, and upcoming versions of Java will include a module system that allows you to leverage the power of modularity to build more resilient and flexible software systems. Modularity isn’t a new concept. But modularity will change the way we develop Java applications, and you’ll only be able to realize the benefits if you understand how to design more modular software systems. Java Application Architecture will help you Design modular software that is extensible, reusable, maintainable, and adaptable Design modular software today, in anticipation of future platform support for modularity Break large software systems into a flexible composite of collaborating modules Understand where to place your architectural focus Migrate large-scale monolithic applications to applications with a modular architecture Articulate the advantages of modular software to your team Java Application Architecture lays the foundation you’ll need to incorporate modular design thinking into your development initiatives. Before it walks you through eighteen patterns that will help you architect modular software, it lays a solid foundation that shows you why modularity is a critical weapon in your arsenal of design tools. Throughout, you’ll find examples that illustrate the concepts. By designing modular applications today, you are positioning yourself for the platform and architecture of tomorrow. That’s why Uncle Bob is dancing.

Proceedings

This innovative book recognizes the need within the object-oriented community for a book that goes beyond the tools and techniques of the typical methodology book. In *Analysis Patterns: Reusable Object Models*, Martin Fowler focuses on the end result of object-oriented analysis and design—the models themselves. He shares with you his wealth of object modeling experience and his keen eye for identifying repeating problems and transforming them into reusable models. *Analysis Patterns* provides a catalogue of patterns that have emerged in a wide range of domains including trading, measurement, accounting and organizational relationships. Recognizing that conceptual patterns cannot exist in isolation, the author also presents a series of "support patterns" that discuss how to turn conceptual models into software that in turn fits into an architecture for a large information system. Included in each pattern is the reasoning behind their design, rules for when they should and should not be used, and tips for implementation. The examples presented in this book comprise a cookbook of useful models and insight into the skill of reuse that will improve analysis, modeling and implementation.

Designing Data-Intensive Applications

From fundamentals and design patterns to the different strategies for creating secure and reliable architectures in AWS cloud, learn everything you need to become a successful solutions architect. Key Features: Create solutions and transform business requirements into technical architecture with this practical guide. Understand various challenges that you might come across while refactoring or modernizing legacy applications. Delve into security automation, DevOps, and validation of solution architecture. Book Description: Becoming a solutions architect gives you the flexibility to work with cutting-edge technologies and define product strategies. This handbook takes you through the essential concepts, design principles and patterns, architectural considerations, and all the latest technology that you need to know to become a successful solutions architect. This book starts with a quick introduction to the fundamentals of solution architecture design principles and attributes that will assist you in understanding how solution architecture benefits software projects across enterprises. You'll learn what a cloud migration and application modernization framework looks like, and will use microservices, event-driven, cache-based, and serverless patterns to design robust architectures. You'll then explore the main pillars of architecture design, including performance, scalability, cost optimization, security, operational excellence, and DevOps. Additionally, you'll also learn advanced concepts relating to big data, machine learning, and the Internet of Things (IoT). Finally, you'll get to grips with the documentation of architecture design and the soft skills that are necessary to become a better solutions architect. By the end of this book, you'll have learned techniques to create an efficient architecture design that meets your business requirements. What you will learn: Explore the various roles of a solutions architect and their involvement in the enterprise landscape. Approach big data processing, machine learning, and IoT from an architect's perspective and understand how they fit into modern architecture. Discover different solution architecture patterns such as event-driven and microservice patterns. Find ways to keep yourself updated with new technologies and enhance your skills. Modernize legacy applications with the help of cloud integration. Get to grips with choosing an appropriate strategy to reduce cost. Who this book is for: This book is for software developers, system engineers, DevOps engineers, architects, and team leaders working in the information technology industry who aspire to become solutions architect professionals. A good understanding of the software development process and general programming experience with any language will be useful.

The Enterprise Cloud

The goal of this text is to describe the technical design aspects of the IT infrastructure; it does not give the details of installing and customizing SAP software, nor business process reengineering. Using primarily HP products for the solution examples, the chapters guide the reader through the foundation of the systems from an IT perspective, reviews its business application and architecture and introduces the server systems, then describes data storage, high availability and recovery solutions, client PCs with front-end user interfaces, output management and printing solutions, network infrastructure and requirements, cabling designs, LANs and WANs, and connecting mySAP.com to the Internet. Both authors are members of the HP-SAP International Competence Center. Annotation copyrighted by Book News, Inc., Portland, OR

Microsoft SharePoint 2013

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

Java Application Architecture

Building upon his earlier book that detailed agile data warehousing programming techniques for the Scrum master, Ralph's latest work illustrates the agile interpretations of the remaining software engineering disciplines: Requirements management benefits from streamlined templates that not only define projects quickly, but ensure nothing essential is overlooked. Data engineering receives two new "hyper modeling" techniques, yielding data warehouses that can be easily adapted when requirements change without having to invest in ruinously expensive data-conversion programs. Quality assurance advances with not only a stereoscopic top-down and bottom-up planning method, but also the incorporation of the latest in automated test engines. Use this step-by-step guide to deepen your own application development skills through self-study, show your teammates the world's fastest and most reliable techniques for creating business intelligence systems, or ensure that the IT department working for you is building your next decision support system the right way. Learn how to quickly define scope and architecture before programming starts Includes techniques of process and data engineering that enable iterative and incremental delivery Demonstrates how to plan and execute quality assurance plans and includes a guide to continuous

integration and automated regression testing Presents program management strategies for coordinating multiple agile data mart projects so that over time an enterprise data warehouse emerges Use the provided 120-day road map to establish a robust, agile data warehousing program

Solutions Architect's Handbook

Successfully implement your own enterprise integration architecture using the Trivadis Integration Architecture Blueprint with this book and eBook.

Pattern-Oriented Software Architecture, A System of Patterns

Architect and design highly scalable, robust, clean and highly performant applications in .NET Core About This Book Incorporate architectural soft-skills such as DevOps and Agile methodologies to enhance program-level objectives Gain knowledge of architectural approaches on the likes of SOA architecture and microservices to provide traceability and rationale for architectural decisions Explore a variety of practical use cases and code examples to implement the tools and techniques described in the book Who This Book Is For 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.

A Pattern Language

Modeling Enterprise Architecture with TOGAF explains everything you need to know to effectively model enterprise architecture with The Open Group Architecture Framework (TOGAF), the leading EA standard. This solution-focused reference presents key techniques and illustrative examples to help you model enterprise architecture. This book describes the TOGAF standard and its structure, from the architecture transformation method to governance, and presents enterprise architecture modeling practices with plenty of examples of TOGAF deliverables in the context of a case study. Although widespread and growing quickly, enterprise architecture is delicate to manage across all its dimensions. Focusing on the architecture transformation method, TOGAF provides a wide framework, which covers the repository, governance, and a set of recognized best practices. The examples featured in this book were realized using the open source Modelio tool, which includes extensions for TOGAF. Includes intuitive summaries of the complex TOGAF standard to let you effectively model enterprise architecture Uses practical examples to illustrate ways to adapt TOGAF to the needs of your enterprise Provides model examples with Modelio, a free modeling tool, letting you exercise TOGAF modeling immediately using a dedicated tool Combines existing modeling standards with TOGAF

Managing Data in Motion

The TOGAF® Standard, a standard of The Open Group, is a proven Enterprise Architecture methodology and framework used by the world's leading organizations to improve business efficiency. It is the most prominent and reliable Enterprise Architecture standard, ensuring consistent standards, methods, and communication among Enterprise Architecture professionals. Those professionals fluent in the TOGAF approach enjoy greater industry credibility, job effectiveness, and career opportunities. The TOGAF approach helps practitioners avoid being locked into proprietary methods, utilize resources more efficiently and effectively, and realize a greater return on investment.

Introduction to Solution Architecture

Software architecture—the conceptual glue that holds every phase of a project together for its many stakeholders—is widely recognized as a critical element in modern software development. Practitioners have increasingly discovered that close attention to a software system's architecture pays valuable dividends. Without an architecture that is appropriate for the problem being solved, a project will stumble along or, most likely, fail. Even with a superb architecture, if that architecture is not well understood or well communicated the project is unlikely to succeed. Documenting Software Architectures, Second Edition, provides the most complete and current guidance, independent of language or notation, on how to capture an architecture in a commonly understandable form. Drawing on their extensive experience, the authors first help you decide what information to document, and then, with guidelines and examples (in various notations, including UML), show you how to express an architecture so that others can successfully build, use, and maintain a system from it. The book features rules for sound

documentation, the goals and strategies of documentation, architectural views and styles, documentation for software interfaces and software behavior, and templates for capturing and organizing information to generate a coherent package. New and improved in this second edition: Coverage of architectural styles such as service-oriented architectures, multi-tier architectures, and data models Guidance for documentation in an Agile development environment Deeper treatment of documentation of rationale, reflecting best industrial practices Improved templates, reflecting years of use and feedback, and more documentation layout options A new, comprehensive example (available online), featuring documentation of a Web-based service-oriented system Reference guides for three important architecture documentation languages: UML, AADL, and SySML

Aligning Enterprise, System, and Software Architectures

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

Executing SOA

Document the architecture of your software easily with this highly practical, open-source template. Key Features Get to grips with leveraging the features of arc42 to create insightful documents Learn the concepts of software architecture documentation through real-world examples Discover techniques to create compact, helpful, and easy-to-read documentation Book Description When developers document the architecture of their systems, they often invent their own specific ways of articulating structures, designs, concepts, and decisions. What they need is a template that enables simple and efficient software architecture documentation. arc42 by Example shows how it's done through several real-world examples. Each example in the book, whether it is a chess engine, a huge CRM system, or a cool web system, starts with a brief description of the problem domain and the quality requirements. Then, you'll discover the system context with all the external interfaces. You'll dive into an overview of the solution strategy to implement the building blocks and runtime scenarios. The later chapters also explain various cross-cutting concerns and how they affect other aspects of a

program. What you will learn Utilize arc42 to document a system's physical infrastructure Learn how to identify a system's scope and boundaries Break a system down into building blocks and illustrate the relationships between them Discover how to describe the runtime behavior of a system Know how to document design decisions and their reasons Explore the risks and technical debt of your system Who this book is for This book is for software developers and solutions architects who are looking for an easy, open-source tool to document their systems. It is a useful reference for those who are already using arc42. If you are new to arc42, this book is a great learning resource. For those of you who want to write better technical documentation will benefit from the general concepts covered in this book.

Enterprise Integration Patterns

Managing Data in Motion describes techniques that have been developed for significantly reducing the complexity of managing system interfaces and enabling scalable architectures. Author April Reeve brings over two decades of experience to present a vendor-neutral approach to moving data between computing environments and systems. Readers will learn the techniques, technologies, and best practices for managing the passage of data between computer systems and integrating disparate data together in an enterprise environment. The average enterprise's computing environment is comprised of hundreds to thousands computer systems that have been built, purchased, and acquired over time. The data from these various systems needs to be integrated for reporting and analysis, shared for business transaction processing, and converted from one format to another when old systems are replaced and new systems are acquired. The management of the "data in motion" in organizations is rapidly becoming one of the biggest concerns for business and IT management. Data warehousing and conversion, real-time data integration, and cloud and "big data" applications are just a few of the challenges facing organizations and businesses today. Managing Data in Motion tackles these and other topics in a style easily understood by business and IT managers as well as programmers and architects. Presents a vendor-neutral overview of the different technologies and techniques for moving data between computer systems including the emerging solutions for unstructured as well as structured data types Explains, in non-technical terms, the architecture and components required to perform data integration Describes how to reduce the complexity of managing system interfaces and enable a scalable data architecture that can handle the dimensions of "Big Data"

Software Architecture with Python

Build a Next-Generation Enterprise Digital Platform with Portals and UXP A Complete Guide to Portals and User Experience Platforms provides in-depth coverage of portal technologies and user experience platforms (UXPs), which form the key pillars of a modern digital platform. Drawing on his experience in various roles in numerous portal engagements, the author gives you different perspectives of the same technology platform. The first section introduces portal through multiple viewpoints to cater to a wide audience, including business, operations, development, integration, performance, and architecture views. The book details many novel and practically proven models and frameworks, such as portal value

realization framework, portal assessment framework, portal evaluation model, portal infrastructure planning techniques, and portal integration techniques. You also learn about effective digital program strategies, including portal roadmap strategy, collaboration strategy, portal security planning, portal testing strategy, SEO, and analytics planning concepts. The second section dives into UXP and advanced topics. It elaborates on UXP design concepts, including UXP reference architecture, customer touch point analysis, user experience mapping, and responsive web design. It also looks at advanced topics, such as next-generation portals, portal trends, portal user experience strategy, omni-channel strategy, portal KPI, portal pitfalls and best practices, portal security, portal governance, digital program management, and portal performance engineering. In the third section, the book presents four case studies related to intranet portals, retail portals, customer service portals, and portal content management. It discusses business drivers, challenges, portal solutions, and solution benefits for each of the case studies. Written by a seasoned practitioner, this book balances the core topics of modern portals along with emerging technologies in the digital space. Suitable for the entire digital technology community, including IT managers, digital architects, developers, and testers, it provides you with a practical guide for successfully building best practices-based digital platforms with forward-looking features.

Fowler

Information Security professionals today have to be able to demonstrate their security strategies within clearly demonstrable frameworks, and show how these are driven by their organization's business priorities, derived from sound risk management assessments. This Open Enterprise Security Architecture (O-ESA) Guide provides a valuable reference resource for practising security architects and designers explaining the key security issues, terms, principles, components, and concepts underlying security-related decisions that security architects and designers have to make. In doing so it helps in explaining their security architectures and related decision-making processes to their enterprise architecture colleagues. The description avoids excessively technical presentation of the issues and concepts, so making it also an eminently digestible reference for business managers - enabling them to appreciate, validate, and balance the security architecture viewpoints along with all the other viewpoints involved in creating a comprehensive enterprise IT architecture.

Open Enterprise Security Architecture O-ESA

Would you like to use a consistent visual notation for drawing integration solutions? "Look inside the front cover." Do you want to harness the power of asynchronous systems without getting caught in the pitfalls? "See "Thinking Asynchronously" in the Introduction." Do you want to know which style of application integration is best for your purposes? "See Chapter 2, Integration Styles." Do you want to learn techniques for processing messages concurrently? "See Chapter 10, Competing Consumers and Message Dispatcher." Do you want to learn how you can track asynchronous messages as they flow across distributed systems? "See Chapter 11, Message History and Message Store." Do you want to understand how a system designed using integration patterns can be implemented

using Java Web services, .NET message queuing, and a TIBCO-based publish-subscribe architecture? "See Chapter 9, Interlude: Composed Messaging." Utilizing years of practical experience, seasoned experts Gregor Hohpe and Bobby Woolf show how asynchronous messaging has proven to be the best strategy for enterprise integration success. However, building and deploying messaging solutions presents a number of problems for developers. "Enterprise Integration Patterns" provides an invaluable catalog of sixty-five patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book. 0321200683B09122003

Enterprise Application Architecture with .NET Core

You can use this book to design a house for yourself with your family; you can use it to work with your neighbors to improve your town and neighborhood; you can use it to design an office, or a workshop, or a public building. And you can use it to guide you in the actual process of construction. After a ten-year silence, Christopher Alexander and his colleagues at the Center for Environmental Structure are now publishing a major statement in the form of three books which will, in their words, "lay the basis for an entirely new approach to architecture, building and planning, which will we hope replace existing ideas and practices entirely." The three books are *The Timeless Way of Building*, *The Oregon Experiment*, and this book, *A Pattern Language*. At the core of these books is the idea that people should design for themselves their own houses, streets, and communities. This idea may be radical (it implies a radical transformation of the architectural profession) but it comes simply from the observation that most of the wonderful places of the world were not made by architects but by the people. At the core of the books, too, is the point that in designing their environments people always rely on certain "languages," which, like the languages we speak, allow them to articulate and communicate an infinite variety of designs within a forma system which gives them coherence. This book provides a language of this kind. It will enable a person to make a design for almost any kind of building, or any part of the built environment. "Patterns," the units of this language, are answers to design problems (How high should a window sill be? How many stories should a building have? How much space in a neighborhood should be devoted to grass and trees?). More than 250 of the patterns in this pattern language are given: each consists of a problem statement, a discussion of the problem with an illustration, and a solution. As the authors say in their introduction, many of the patterns are

archetypal, so deeply rooted in the nature of things that it seems likely that they will be a part of human nature, and human action, as much in five hundred years as they are today.

Essential Software Architecture

Details the master architectural design plan currently being implemented at the University of Oregon, illustrating the participation of all members of a small community in the designing of their own environment

MCSD Analyzing Requirements and Defining .NET Solution Architectures Study Guide

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 critical design decisions that not just live up to but also surpass the expectations of your clients. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to help you with everything it takes to become a successful software architect.

SAP Hardware Solutions

A solid introduction to the practices, plans, and skills required for developing a

smart system architecture Information architecture combines IT skills with business skills in order to align the IT structure of an organization with the mission, goals, and objectives of its business. This friendly introduction to IT architecture walks you through the myriad issues and complex decisions that many organizations face when setting up IT systems to work in sync with business procedures. Veteran IT professional and author Kirk Hausman explains the business value behind IT architecture and provides you with an action plan for implementing IT architecture procedures in an organization. You'll explore the many challenges that organizations face as they attempt to use technology to enhance their business's productivity so that you can gain a solid understanding of the elements that are required to plan and create an architecture that meets specific business goals. Defines IT architecture as a blend of IT skills and business skills that focuses on business optimization, business architecture, performance management, and organizational structure Uncovers and examines every topic within IT architecture including network, system, data, services, application, and more Addresses the challenges that organizations face when attempting to use information technology to enable profitability and business continuity While companies look to technology more than ever to enhance productivity, you should look to IT Architecture For Dummies for guidance in this field.

IBM i2 Integrated Law Enforcement: Technical Architecture and Deployment Guide

The Expert, Practical Guide to Succeeding with SOA in the Enterprise In Executing SOA, four experienced SOA implementers share realistic, proven, “from-the-trenches” guidance for successfully delivering on even the largest and most complex SOA initiative. This book follows up where the authors’ best-selling Service-Oriented Architecture Compass left off, showing how to overcome key obstacles to successful SOA implementation and identifying best practices for all facets of execution—technical, organizational, and human. Among the issues it addresses: introducing a services discipline that supports collaboration and information process sharing; integrating services with preexisting technology assets and strategies; choosing the right roles for new tools; shifting culture, governance, and architecture; and bringing greater agility to the entire organizational lifecycle, not just isolated projects. Executing SOA is an indispensable resource for every enterprise architect, technical manager, and IT leader tasked with driving value from SOA in complex environments. Coverage includes · Implementing SOA governance that reflects the organization’s strategic and business focus · Running SOA projects successfully: practical guidelines and proven methodologies around service modeling and design · Leveraging reusable assets: making the most of your SOA repository · Enabling the architect to choose the correct tools and products containing the features required to execute on the SOA method for service design and implementation · Defining information services to get the right information to the right people at the right time · Integrating SOA with Web 2.0 and other innovative products and solutions · Providing highly usable human interfaces in SOA environments

Enterprise Integration Patterns

"This book covers both theoretical approaches and practical solutions in the processes for aligning enterprise, systems, and software architectures"--Provided by publisher.

Architecture Principles

As the digital economy changes the rules of the game for enterprises, the role of software and IT architects is also transforming. Rather than focus on technical decisions alone, architects and senior technologists need to combine organizational and technical knowledge to effect change in their company's structure and processes. To accomplish that, they need to connect the IT engine room to the penthouse, where the business strategy is defined. In this guide, author Gregor Hohpe shares real-world advice and hard-learned lessons from actual IT transformations. His anecdotes help architects, senior developers, and other IT professionals prepare for a more complex but rewarding role in the enterprise. This book is ideal for: Software architects and senior developers looking to shape the company's technology direction or assist in an organizational transformation Enterprise architects and senior technologists searching for practical advice on how to navigate technical and organizational topics CTOs and senior technical architects who are devising an IT strategy that impacts the way the organization works IT managers who want to learn what's worked and what hasn't in large-scale transformation

Customizing and Extending IBM Content Navigator

This is the eagerly-anticipated revision to one of the seminal books in the field of software architecture which clearly defines and explains the topic.

The Software Architect Elevator

Looks at the architecture components of Microsoft SharePoint 2013, with information on such topics as Windows PowerShell, the service application model, platform security, and upgrading.

Microservice Architecture

Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and

less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

Documenting Software Architectures

Modeling Enterprise Architecture with TOGAF

Job titles like “Technical Architect” and “Chief Architect” nowadays abound in software industry, yet many people suspect that “architecture” is one of the most overused and least understood terms in professional software development. Gorton’s book tries to resolve this dilemma. It concisely describes the essential elements of knowledge and key skills required to be a software architect. The explanations encompass the essentials of architecture thinking, practices, and supporting technologies. They range from a general understanding of structure and quality attributes through technical issues like middleware components and service-oriented architectures to recent technologies like model-driven architecture, software product lines, aspect-oriented design, and the Semantic Web, which will presumably influence future software systems. This second edition contains new material covering enterprise architecture, agile development, enterprise service bus technologies, RESTful Web services, and a case study on how to use the MeDICi integration framework. All approaches are illustrated by an ongoing real-world example. So if you work as an architect or senior designer (or want to someday), or if you are a student in software engineering, here is a valuable and yet approachable knowledge source for you.

[ROMANCE](#) [ACTION & ADVENTURE](#) [MYSTERY & THRILLER](#) [BIOGRAPHIES & HISTORY](#) [CHILDREN'S](#) [YOUNG ADULT](#) [FANTASY](#) [HISTORICAL FICTION](#) [HORROR](#) [LITERARY FICTION](#) [NON-FICTION](#) [SCIENCE FICTION](#)