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# Solution Architecture Principles

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*Building Evolutionary Architectures* CRC Press

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.

Designing API-First Enterprise Architectures on Azure Van Haren  
Learn about the responsibilities of a .NET solution architect and explore solution architecture principles, DevOps solutions, and design techniques and standards with hands-on examples of design patterns  
Key Features  
Find out what are the essential personality traits and responsibilities of a solution architect  
Become well-versed with architecture principles and modern design patterns with hands-on examples  
Design modern web solutions and make the most of Azure DevOps to automate your development life cycle  
Book Description

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Understanding solution architecture is a must to build and integrate robust systems to meet your client's needs. This makes it crucial for a professional .NET software engineer to learn the key skills of a .NET solution architect to create a unique digital journey and build solutions for a wide range of industries, from strategy and design to implementation. With this handbook, developers working with the .NET technology will be able to put their knowledge to work. The book takes a hands-on approach to help you become an effective solution architect. You'll start by learning the principles of the software development life cycle (SDLC), the roles and responsibilities of a .NET solution architect, and what makes a great .NET solution architect. As you make progress through the chapters, you'll understand the principles of solution architecture and how to design a solution, and explore designing layers and microservices. You'll complete your learning journey by uncovering modern design patterns and techniques for designing and building digital solutions. By the end of this book, you'll have learned how to architect your modern web solutions with ASP.NET Core and Microsoft Azure and be ready to automate your development life cycle with Azure DevOps. What you will learn

Understand the role and core responsibilities of a .NET solution architect

Study popular UML (Unified Modeling Language) diagrams for solution architecture

Work with modern design patterns with the help of hands-on examples

Become familiar with microservices and designing layers

Discover how to design modern web solutions

Automate your development life cycle with Azure DevOps

Who this book is for

This book is for intermediate and advanced .NET developers and software engineers who want to advance their careers and expand their

knowledge of solution architecture and design principles. Beginner or intermediate-level solution architects looking for tips and tricks to build large-scale .NET solutions will find this book useful.

Essential Architecture and Principles of Systems Engineering Packt Publishing Ltd

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

Multi-Cloud Architecture and Governance O'Reilly Media

This book captures and communicates the wealth of architecture experience Capgemini has gathered as a member of The Open Group – a vendor- and technology-neutral consortium formed by major industry players – in developing, deploying, and using its “ Integrated Architecture Framework ” (IAF) since its

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origination in 1993. Today, many elements of IAF have been incorporated into the new version 9 of TOGAF, the related Open Group standard. The authors, all working on and with IAF for many years, here provide a full reference to IAF and a guide on how to apply it. In addition, they describe in detail the relations between IAF and the architecture standards TOGAF and Archimate and other development or process frameworks like ITIL, CMMI, and RUP. Their presentation is targeted at architects, project managers, and process analysts who have either considered or are already working with IAF – they will find many roadmaps, case studies, checklists, and tips and advice for their daily work.

Fowler Yale University Press

Implement SOA strategies for Microsoft BizTalk Server solutions with this book and eBook

The TOGAF® Standard, Version 9.2 Packt Publishing Ltd

The ultimate guide to successful interviews for Enterprise, Business, Domain, Solution, and Technical Architect roles as well as IT Advisory Consultant and Software Designer roles About This Book Learn about Enterprise Architects IT strategy and NFR – this book provides you with methodologies, best practices, and frameworks to ace your interview A holistic view of key architectural skills and competencies with 500+ questions that cover 12 domains 100+ diagrams depicting scenarios, models, and methodologies designed to help you prepare for your interview Who This Book Is For This book is for aspiring enterprise, business, domain, solution, and technical architects. It is also ideal for IT

advisory consultants and IT designers who wish to interview for such a role. Interviewers will be able leverage this book to make sure they hire candidates with the right competencies to meet the role requirements. What You Will Learn Learn about IT strategies, NFR, methodologies, best practices, and frameworks to ace your interview Get a holistic view of key concepts, design principles, and patterns related to evangelizing web and Java enterprise applications Discover interview preparation guidelines through case studies Use this as a reference guide for adopting best practices, standards, and design guidelines Get a better understanding with 60+ diagrams depicting various scenarios, models, and methodologies Benefit from coverage of all architecture domains including EA (Business, Data, Infrastructure, and Application), SA, integration, NFRs, security, and SOA, with extended coverage from IT strategies to the NFR domain In Detail An architect attends multiple interviews for jobs or projects during the course of his or her career. This book is an interview resource created for designers, consultants, technical, solution, domain, enterprise, and chief architects to help them perform well in interview discussions and launch a successful career. The book begins by providing descriptions of architecture skills and competencies that cover the 12 key domains, including 350+ questions relating to these domains. The goal of this book is to cover all the core architectural domains. From an architect's perspective, it is impossible to revise or learn about all these key areas without a good reference guide – this book is the solution. It shares experiences,

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learning, insights, and proven methodologies that will benefit practitioners, SMEs, and aspirants in the long run. This book will help you tackle the NFR domain, which is a key aspect pertaining to architecting applications. It typically takes years to understand the core concepts, fundamentals, patterns, and principles related to architecture and designs. This book is a goldmine for the typical questions asked during an interview and will help prepare you for success! Style and approach This book will help you prepare for interviews for architectural profiles by providing likely questions, explanations, and expected answers. It is an insight-rich guide that will help you develop strategic, tactical, and operational thinking for your interview.

SOA Patterns with BizTalk Server 2009 Sjaak Laan

The Only Complete Technical Primer for MDM Planners, Architects, and Implementers Companies moving toward flexible SOA architectures often face difficult information management and integration challenges. The master data they rely on is often stored and managed in ways that are redundant, inconsistent, inaccessible, non-standardized, and poorly governed. Using Master Data Management (MDM), organizations can regain control of their master data, improve corresponding business processes, and maximize its value in SOA environments. Enterprise Master Data Management provides an authoritative, vendor-independent MDM technical reference for practitioners: architects, technical analysts, consultants, solution designers, and senior IT decisionmakers. Written by the IBM® data management innovators who are pioneering MDM, this book systematically introduces MDM's key concepts and technical themes, explains its business case,

and illuminates how it interrelates with and enables SOA. Drawing on their experience with cutting-edge projects, the authors introduce MDM patterns, blueprints, solutions, and best practices published nowhere else—everything you need to establish a consistent, manageable set of master data, and use it for competitive advantage. Coverage includes How MDM and SOA complement each other Using the MDM Reference Architecture to position and design MDM solutions within an enterprise Assessing the value and risks to master data and applying the right security controls Using PIM-MDM and CDI-MDM Solution Blueprints to address industry-specific information management challenges Explaining MDM patterns as enablers to accelerate consistent MDM deployments Incorporating MDM solutions into existing IT landscapes via MDM Integration Blueprints Leveraging master data as an enterprise asset—bringing people, processes, and technology together with MDM and data governance Best practices in MDM deployment, including data warehouse and SAP integration It Infrastructure Architecture - Infrastructure Building Blocks and Concepts Second Edition Van Haren Salary surveys worldwide regularly place software architect in the top 10 best jobs, yet no real guide exists to help developers become architects. Until now. This book provides the first comprehensive overview of software architecture's many aspects. Aspiring and existing architects alike will examine architectural characteristics, architectural patterns, component determination, diagramming and presenting architecture, evolutionary architecture, and many other topics. Mark Richards and Neal Ford—hands-on practitioners who have taught software architecture classes professionally for years—focus on architecture principles that apply across all technology stacks. You'll explore software architecture in a modern light, taking into account all the innovations of the past

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decade. This book examines: Architecture patterns: The technical basis for many architectural decisions Components: Identification, coupling, cohesion, partitioning, and granularity Soft skills: Effective team management, meetings, negotiation, presentations, and more Modernity: Engineering practices and operational approaches that have changed radically in the past few years Architecture as an engineering discipline: Repeatable results, metrics, and concrete valuations that add rigor to software architecture

Architectural Principles in the Age of Historicism Packt Publishing Ltd

This document is a compilation of three documents within the TOGAF® Standard. It has been developed and approved by The Open Group, and is part of the TOGAF Standard, 10th Edition. The three documents in this set are:

- The TOGAF Standard — Architecture Development Method This document describes the TOGAF Architecture Development Method (ADM) — an iterative approach to developing an Enterprise Architecture.
- The TOGAF Standard — ADM Techniques This document contains a collection of techniques available for use in applying the TOGAF approach and the TOGAF ADM.
- The TOGAF Standard — Applying the ADM This document contains guidelines for adapting the TOGAF ADM to address the specific style of architecture required in a practical context. The TOGAF Standard is intended for Enterprise Architects, Business Architects, IT Architects, Data Architects, Systems Architects, Solution Architects, and anyone responsible for the architecture function within an organization.

Method This document describes the TOGAF

Architecture Development Method (ADM) — an iterative approach to developing an Enterprise Architecture. • The TOGAF Standard — ADM Techniques This document contains a collection of techniques available for use in applying the TOGAF approach and the TOGAF ADM. •

The TOGAF Standard — Applying the ADM This document contains guidelines for adapting the TOGAF ADM to address the specific style of architecture required in a practical context. The TOGAF Standard is intended for Enterprise Architects, Business Architects, IT Architects, Data Architects, Systems Architects, Solution Architects, and anyone responsible for the architecture function within an organization.

AWS for Solutions Architects CRC Press

The Definitive Guide to Building Web-Centric SOA with REST The World Wide Web is based on the most successful technology architecture in history. It has changed how we view, access, and exchange information and, with the advent of REST, it has also provided us with compelling ways to build and improve automation solutions. REST provides a great deal of guidance to ensure that an architecture and its automation logic are technically sound, though it is still your responsibility to build services that actually add value to your business. SOA with REST is the first comprehensive tutorial and reference for designing and building RESTful services as part of service-oriented solutions and in conjunction with service-oriented architecture (SOA). This book demonstrates that REST is not only a suitable medium for building truly service-oriented solutions, but also that the service-oriented architectural model is a necessary foundation for REST technology architectures to realize their full business potential. The authors provide thorough mapping of REST constraints and architectural goals with service-orientation principles and SOA characteristics. Using real-world examples, they show how to leverage REST 's simplicity, flexibility, and low overhead without compromising the power or manageability of service-oriented solutions and architectures. This ebook will be valuable to IT architects, developers, and any practitioner seeking to use SOA and REST together.

Cracking the IT Architect Interview Software Architecture The goal of this book is to present a modeling framework for the Virtual Organization that is focused on process

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

**Solutions Architect's Handbook Morgan Kaufmann**

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.

Purchase of the print or Kindle book includes a free eBook in the PDF format. Endorsements "For new or existing solutions architects looking to keep their skills sharp in the cloud era, this book hits all the key areas." -Rajesh Sheth, GM, Messaging and Streaming, AWS "...the go-to guide for understanding various functions in the age of cloud computing." -Rohan

Karmarkar, Director, Solutions Architecture, AWS  
"...you will find very important nuggets of knowledge that will help you be a successful solutions architect, and open up a new world of infinite possibilities!"  
-Kamal Arora, Senior Manager, Solutions Architecture, AWS  
Book Description Becoming a solutions architect requires a hands-on approach, and this edition of the Solutions Architect's Handbook brings exactly that. This handbook will teach you how to create robust, scalable, and fault-tolerant solutions and next-generation architecture designs in a cloud environment. It will also help you build effective product strategies for your business and implement them from start to finish. This new edition features additional chapters on disruptive technologies, such as Internet of Things (IoT), quantum computing, data engineering, and machine learning. It also includes updated discussions on cloud-native architecture, blockchain data storage, and mainframe modernization with public cloud. The Solutions Architect's Handbook provides an understanding of solution architecture and how it fits into an agile enterprise environment. It will take you through the journey of solution architecture design by providing detailed knowledge of design pillars, advanced design patterns, anti-patterns, and the cloud-native aspects of modern software design. By the end of this handbook, you'll have learned the techniques needed to create efficient architecture

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designs that meet your business requirements. What you will learn Explore the various roles of a solutions architect in the enterprise landscape Implement key design principles and patterns to build high-performance cost-effective solutions Choose the best strategies to secure your architectures and increase their availability Modernize legacy applications with the help of cloud integration Understand how big data processing, machine learning, and IoT fit into modern architecture Integrate a DevOps mindset to promote collaboration, increase operational efficiency, and streamline production Who this book is for This book is for software developers, system engineers, DevOps engineers, architects, and team leaders who already work in the IT industry and aspire to become solutions architect professionals. Existing solutions architects who want to expand their skillset or get a better understanding of new technologies will also learn valuable new skills. To get started, you'll need a good understanding of the real-world software development process and general programming experience in any language.

Software Architect 's Handbook Van Haren

This book is for everyone interested in systems and the modern practice of engineering. The revolution in engineering and systems that has occurred over the past decade has led to an expansive advancement of systems engineering tools and languages. A new age of information-

intensive complex systems has arrived with new challenges in a global business market. Science and information technology must now converge into a cohesive multidisciplinary approach to the engineering of systems if products and services are to be useful and competitive. For the non-specialist and even for practicing engineers, the subject of systems engineering remains cloaked in jargon and a sense of mystery. This need not be the case for any reader of this book and for students no matter what their background is. The concepts of architecture and systems engineering put forth are simple and intuitive. Readers and students of engineering will be guided to an understanding of the fundamental principles of architecture and systems and how to put them into engineering practice. This book offers a practical perspective that is reflected in case studies of real-world systems that are motivated by tutorial examples. The book embodies a decade of research and very successful academic instruction to postgraduate students that include practicing engineers. The material has been continuously improved and evolved from its basis in defence and aerospace towards the engineering of commercial systems with an emphasis on speed and efficiency. Most recently, the concepts, processes, and methods in this book have been applied to the commercialisation of wireless charging for electric vehicles. As a postgraduate or professional development course of study, this book will lead you into the modern practice of engineering in the twenty-first century. Much more than a textbook, though, Essential Architecture and Principles of Systems Engineering

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challenges readers and students alike to think about the world differently while providing them a useful reference book with practical insights for exploiting the power of architecture and systems.

Enterprise Architecture for Strategic Management of Modern IT Solutions Springer Science & Business Media

Through the application of information architecture principles, the development of a comprehensible strategic planning process and a useable planning document together will provide an effective solution to any business's strategic planning problems.

Applying Principles from IT Architecture to Strategic Business Planning describes the principles of IT architecture to develop the creation of an information model of business strategic requirements.

Highlighting the importance of organizational goals within a business, this book is an essential read for employees on a managerial and executive level who are involved in the organizational development of a company.

AWS Certified Solutions Architect (Associate) Packt Publishing Ltd

A comprehensive guide to architecting, managing, implementing, and controlling multi-cloud environments  
Key Features  
Deliver robust multi-cloud environments and improve your business productivity  
Stay in control of the cost, governance, development, security, and continuous improvement of your multi-cloud solution  
Integrate different

solutions, principles, and practices into one multi-cloud foundation  
Book Description  
Multi-cloud has emerged as one of the top cloud computing trends, with businesses wanting to reduce their reliance on only one vendor. But when organizations shift to multiple cloud services without a clear strategy, they may face certain difficulties, in terms of how to stay in control, how to keep all the different components secure, and how to execute the cross-cloud development of applications. This book combines best practices from different cloud adoption frameworks to help you find solutions to these problems. With step-by-step explanations of essential concepts and practical examples, you'll begin by planning the foundation, creating the architecture, designing the governance model, and implementing tools, processes, and technologies to manage multi-cloud environments. You'll then discover how to design workload environments using different cloud propositions, understand how to optimize the use of these cloud technologies, and automate and monitor the environments. As you advance, you'll delve into multi-cloud governance, defining clear demarcation models and management processes. Finally, you'll learn about managing identities in multi-cloud: who's doing what, why, when, and where  
By the end of this book, you'll be able to create, implement, and manage multi-cloud architectures with confidence  
What you will learn  
Get to grips with the core functions of multiple cloud platforms  
Deploy, automate, and secure different cloud solutions  
Design network strategy and get to grips with identity and access management for multi-cloud  
Design a landing zone spanning multiple cloud platforms  
Use automation, monitoring, and management tools for multi-cloud  
Understand multi-cloud management with the principles of BaseOps, FinOps, SecOps, and DevOps  
Define multi-cloud security policies and use cloud security tools  
Test, integrate, deploy, and release using multi-cloud CI/CD



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pipelinesWho this book is for This book is for architects and lead engineers involved in architecting multi-cloud environments, with a focus on getting governance right to stay in control of developments in multi-cloud. Basic knowledge of different cloud platforms (Azure, AWS, GCP, VMWare, and OpenStack) and understanding of IT governance is necessary.

Continuous Architecture "O'Reilly Media, Inc." 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.

SOA with REST Springer Science & Business Media

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

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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

Architecture in Practice, Third Edition, has been substantially revised to reflect the latest developments in the field. In a real-world setting, the book once again introduces the concepts and best practices of software architecture—how a software system is structured and how that system's elements are meant to interact. Distinct from the details of implementation, algorithm, and data representation, an architecture holds the key to achieving system quality, is a reusable asset that can be applied to subsequent systems, and is crucial to a software organization's business strategy. The authors have structured this edition around the concept of architecture influence cycles. Each cycle shows how architecture influences, and is influenced by, a particular context in which architecture plays a critical role. Contexts include technical environment, the life cycle of a project, an organization's business profile, and the architect's professional practices. The authors also have greatly expanded their treatment of quality attributes, which remain central to their architecture philosophy—with an entire chapter devoted to each attribute—and broadened their treatment of architectural patterns. If you design, develop, or manage large software systems (or plan to do so), you will find this book to be a valuable resource for getting up to speed on the state of the art. Totally new material covers Contexts of software architecture: technical, project, business, and professional Architecture competence: what this means both for individuals and organizations The origins of business goals and how this affects architecture Architecturally significant requirements, and how to determine them Architecture in the life cycle, including generate-and-test as a design philosophy; architecture conformance during implementation; architecture and testing; and architecture and agile development Architecture and current technologies, such as the cloud, social networks, and end-user devices

Pearson Education India

The award-winning and highly influential Software

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Microservice Architecture Packt Publishing Ltd  
Solution Architecture with .NET Packt Publishing Ltd  
Applied Architecture Patterns on the Microsoft  
Platform Solution Architecture with .NET  
Explores the relationship between architectural  
history and the current practice of architecture. The  
authors draw on insights from anthropology, ancient  
history, theology, philosophy and the Holocaust. They  
also provide practical ideas which should help  
students build a more human world.