

The Architecture Of Open Source Applications Amy Brown

As we pointed out in *The Architecture of Open Source Applications*, architects look at thousands of buildings during their training, and study the critiques of many more. But most software developers only ever get to know a handful of programs well - usually programs they wrote themselves. This book provides you with the chance to study how 26 experienced programmers think when they are building something new. The programs you will read about in this book were all written from scratch to solve difficult problems. A web server, a pedometer, a Python interpreter, a web-based spreadsheet, and many more applications are written, in 500 lines of code or less, and described by their creators so that you can learn from their insights and their mistakes.

An account of the life and work of the architect Minoru Yamasaki that leads the author to consider how (and for whom) architectural history is written. *Sandfuture* is a book about the life of the architect Minoru Yamasaki (1912–1986), who remains on the margins of history despite the enormous influence of his work on American architecture and society. That Yamasaki's most famous projects—the Pruitt-Igoe apartments in St. Louis and the original World Trade Center in New York—were both destroyed on national television, thirty years apart, makes his relative obscurity all the more remarkable. *Sandfuture* is also a book about an artist interrogating art and architecture's role in culture as New York changes drastically after a decade bracketed by terrorism and natural disaster. From the central thread of Yamasaki's life, *Sandfuture* spirals outward to include reflections on a wide range of subjects, from the figure of the architect in literature and film and transformations in the contemporary art market to the perils of sick buildings and the broader social and political implications of how, and for whom, cities are built. The result is at once sophisticated in its understanding of material culture and novelistic in its telling of a good story.

The book describes projects which help in developing cybersecurity solution architectures and the use of the right tools from the opensource software domain. These projects are covered in detail with recipes on how to use opensource tooling to obtain standard cyber defense and the ability to do self-penetration testing and vulnerability assessment.

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.

Developing Microservices Architecture on Azure with Open Source Technologies is a complete, step-by-step guide to building flexible microservices architectures by leveraging services provided by the Microsoft Azure cloud platform, and key open-source technologies such as Java, Node.JS, .NET Core and Angular. Expert Microsoft consultants Ovais Mehboob and Arvind Chandaka guide students step-by-step through a realistic case study project that illuminates key technical implementation tasks for establishing end to end infrastructure, developing cloud-native applications, automating deployment, and realizing value.

Even more than authorship, ownership is challenged by the rise of digital and computational methods of design and production. These challenges are simultaneously legal, ethical and economic. How are new methods of fabrication and manufacture going to irreversibly change not only ways of working, but also designers' ethics and their stance on ownership? In his 2013 second-term State of the Union address, President Obama stated that 3D printing 'has the potential to revolutionize the way we make almost everything'. Nowhere will the impact of 3D printing be felt greater than in the architectural and design communities. When anyone can print out an object or structure from a digital file, will designers still exert the same creative rights or will they need to develop new practice and payment models? As architecture becomes more collaborative with open-source processes, will the emphasis on signature as the basis of ownership remain relevant? How will wider teams working globally be accredited and compensated? This issue of AD explores this subject; it features the work of designers who are developing wholly new approaches to practice by exploring means of commercialising process-based products rather than objects. Contributors: Phil Bernstein, Mark Garcia, Antoine Picon, Carlo Ratti and David Ruy Featured architects: Francis Bitonti, Marjan Colletti, Wendy W Fok, Panagiotis Michalatos, Jose Sanchez, Thibault Schwartz, Aaron Sprecher, Feng Xu and Philip Yuan

Embedded Systems and Robotics with Open-Source Tools provides easy-to-understand and easy-to-implement guidance for rapid prototype development. Designed for readers unfamiliar with advanced computing technologies, this highly accessible book: Describes several cutting-edge open-source software and hardware technologies Examines a number of embedded computer systems and their practical applications Includes detailed projects for applying rapid prototype development skills in real time Embedded Systems and Robotics with Open-Source Tools effectively demonstrates that, with the help of high-performance microprocessors, microcontrollers, and highly optimized algorithms, one can develop smarter embedded devices.

Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA. The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate

SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF™) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

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.

Describes ways to incorporate domain modeling into software development.

Middleware is the bridge that connects distributed applications across different physical locations, with different hardware platforms, network technologies, operating systems, and programming languages. This book describes middleware from two different perspectives: from the viewpoint of the systems programmer and from the viewpoint of the applications programmer. It focuses on the use of open source solutions for creating middleware and the tools for developing distributed applications. The design principles presented are universal and apply to all middleware platforms, including CORBA and Web Services. The authors have created an open-source implementation of CORBA, called MICO, which is freely available on the web. MICO is one of the most successful of all open source projects and is widely used by demanding companies and institutions, and has also been adopted by many in the Linux community. * Provides a comprehensive look at the architecture and design of middleware the bridge that connects distributed software applications * Includes a complete, commercial-quality open source middleware system written in C++ * Describes the theory of the middleware standard CORBA as well as how to implement a design using open source techniques

Most modern business systems include independent applications that exchange information with each other—a technique usually called enterprise integration. An architectural approach called the Enterprise Service Bus (ESB) offers developers a way to handle the messages between those independent applications without creating a lot of custom code. While commercial ESB solutions can be quite expensive to implement and maintain, a set of high-quality open source ESB tools offer the same functionality at a substantially lower cost. Open Source ESBs in Action shows you how to implement and use two open source ESB implementations: Mule and ServiceMix. The authors introduce you to these freely-available ESB tools and present practical examples of how to use them in real-world scenarios. You will learn how the various features of an ESB such as transformation, routing, security, connectivity and more can be implemented using Mule and ServiceMix. You will also learn how to solve common enterprise integration problems using a structured approach. Beyond simply learning how Mule and Service Mix work, you'll learn the core techniques of ESB implementation such as Process Choreography, or the implementation of complex business processes through an ESB, and Service Orchestration, or exposing a set of services as a single service. The book shows you the fundamentals of ESB-based event processing and Quality of Service concerns like security, reliable delivery, and transaction management. Working in integration projects is exciting, with new technologies and paradigms arriving every day. Open Source technologies like Mule and ServiceMix both offer lower-cost solutions and a higher degree of innovation than commercial ESB implementations. Open Source ESBs in Action will help you master ESB-driven integration techniques quickly and will provide you with knowledge you need to work effectively with Mule and ServiceMix. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

It's a plain fact: regardless of how smart, creative, and innovative your organization is, there are more smart, creative, and innovative people outside your organization than inside. Open source offers the possibility of bringing more innovation into your business by building a creative community that reaches beyond the barriers of the business. The key is developing a web-driven community where new types of collaboration and creativity can flourish. Since 1998 Ron Goldman and Richard Gabriel have been helping groups at Sun Microsystems understand open source and advising them on how to build successful communities around open source projects. In this book the authors present lessons learned from their own experiences with open source, as well as those from other well-known projects such as Linux, Apache, and Mozilla. * Winner of 2006 Jolt Productivity Award for General Books * Describes how open source development works and offers persuasive reasons for using it to help achieve business goals. * Shows how to use open source in day-to-day work, discusses the various licenses in use, and describes what makes for a successful project. * Written in an engaging style for executives, managers, and engineers that addresses the human and business issues involved in open source development as well as its history, philosophy, and future

What are the ingredients of robust, elegant, flexible, and maintainable software architecture? Beautiful Architecture answers this question through a collection of intriguing essays from more than a dozen of today's leading software designers and architects. In each essay, contributors present a notable software architecture, and analyze what makes it innovative and ideal for its purpose. Some of the engineers in this book reveal how they developed a specific project, including decisions they faced and tradeoffs they made. Others take a step back to investigate how certain architectural aspects have influenced computing as a whole. With this book, you'll discover: How Facebook's architecture is the basis for a data-centric application ecosystem The effect of Xen's well-designed architecture on the way operating systems evolve How community processes within the KDE project help software architectures evolve from rough sketches to beautiful systems How creeping featurism has helped GNU Emacs gain unanticipated functionality The magic behind the Jikes RVM self-optimizable, self-hosting runtime Design choices and building blocks that made Tandem the choice platform in high-availability environments for over two decades Differences and similarities between object-oriented and functional architectural views How architectures can affect the software's evolution and the developers' engagement Go behind the scenes to learn what it takes to design elegant software architecture, and how it can shape the way you approach your own projects, with Beautiful Architecture.

Apply business requirements to IT infrastructure and deliver a high-quality product by understanding architectures such as microservices, DevOps, and cloud-native using modern C++ standards and features Key Features Design scalable large-scale applications with the C++ programming language Architect software solutions in a cloud-based environment with continuous integration and continuous delivery (CI/CD) Achieve architectural goals by leveraging design patterns, language features, and useful tools Book Description Software architecture refers to the high-level design of complex applications. It is evolving just like the languages we use. Modern C++ allows developers to write high-performance apps in a high-level language without sacrificing readability and maintainability. If you're working with

modern C++, this practical guide will help you put your knowledge to work and design distributed, large-scale apps. You'll start by getting up to speed with architectural concepts, including established patterns and rising trends. The book will then explain what software architecture is and help you explore its components. Next, you'll discover the design concepts involved in application architecture and the patterns in software development, before going on to learn how to build, package, integrate, and deploy your components. In the concluding chapters, you'll explore different architectural qualities, such as maintainability, reusability, testability, performance, scalability, and security. Finally, you will get an overview of distributed systems, such as service-oriented architecture, microservices, and cloud-native, and understand how to apply them in application development. By the end of this book, you'll be able to build distributed services using modern C++ and associated tools to deliver solutions as per your clients' requirements. What you will learn Understand how to apply the principles of software architecture Apply design patterns and best practices to meet your architectural goals Write elegant, safe, and performant code using the latest C++ features Build applications that are easy to maintain and deploy Explore the different architectural approaches and learn to apply them as per your requirement Simplify development and operations using application containers Discover various techniques to solve common problems in software design and development Who this book is for This software architecture C++ programming book is for experienced C++ developers who are looking to become software architects or are interested in developing enterprise-grade applications.

Are you working on a codebase where cost overruns, death marches, and heroic fights with legacy code monsters are the norm? Battle these adversaries with novel ways to identify and prioritize technical debt, based on behavioral data from how developers work with code. And that's just for starters. Because good code involves social design, as well as technical design, you can find surprising dependencies between people and code to resolve coordination bottlenecks among teams. Best of all, the techniques build on behavioral data that you already have: your version-control system. Join the fight for better code! Use statistics and data science to uncover both problematic code and the behavioral patterns of the developers who build your software. This combination gives you insights you can't get from the code alone. Use these insights to prioritize refactoring needs, measure their effect, find implicit dependencies between different modules, and automatically create knowledge maps of your system based on actual code contributions. In a radical, much-needed change from common practice, guide organizational decisions with objective data by measuring how well your development teams align with the software architecture. Discover a comprehensive set of practical analysis techniques based on version-control data, where each point is illustrated with a case study from a real-world codebase. Because the techniques are language neutral, you can apply them to your own code no matter what programming language you use. Guide organizational decisions with objective data by measuring how well your development teams align with the software architecture. Apply research findings from social psychology to software development, ensuring you get the tools you need to coach your organization towards better code. If you're an experienced programmer, software architect, or technical manager, you'll get a new perspective that will change how you work with code. What You Need: You don't have to install anything to follow along in the book. The case studies in the book use well-known open source projects hosted on GitHub. You'll use CodeScene, a free software analysis tool for open source projects, for the case studies. We also discuss alternative tooling options where they exist.

Due to the continuously stream of security breaches two security architects in the Netherlands started a project to harvest good practices for better and faster creating architecture and privacy solution designs. This project resulted in a reference architecture that is aimed to help all security architects and designers worldwide. All kinds of topics that help creating a security or privacy solution architecture are outlined, such as: security and privacy principles, common attack vectors, threat models while in-depth guidelines are also given to evaluate the use of Open Source security and privacy application in various use cases.

Open Sources 2.0 is a collection of insightful and thought-provoking essays from today's technology leaders that continues painting the evolutionary picture that developed in the 1999 book *Open Sources: Voices from the Revolution*. These essays explore open source's impact on the software industry and reveal how open source concepts are infiltrating other areas of commerce and society. The essays appeal to a broad audience: the software developer will find thoughtful reflections on practices and methodology from leading open source developers like Jeremy Allison and Ben Laurie, while the business executive will find analyses of business strategies from the likes of Sleepycat co-founder and CEO Michael Olson and Open Source Business Conference founder Matt Asay. From China, Europe, India, and Brazil we get essays that describe the developing world's efforts to join the technology forefront and use open source to take control of its high tech destiny. For anyone with a strong interest in technology trends, these essays are a must-read. The enduring significance of open source goes well beyond high technology, however. At the heart of the new paradigm is network-enabled distributed collaboration: the growing impact of this model on all forms of online collaboration is fundamentally challenging our modern notion of community. What does the future hold? Veteran open source commentators Tim O'Reilly and Doc Searls offer their perspectives, as do leading open source scholars Steven Weber and Sonali Shah. Andrew Hessel traces the migration of open source ideas from computer technology to biotechnology, and Wikipedia co-founder Larry Sanger and Slashdot co-founder Jeff Bates provide frontline views of functioning, flourishing online collaborative communities. The power of collaboration, enabled by the internet and open source software, is changing the world in ways we can only begin to imagine. *Open Sources 2.0* further develops the evolutionary picture that emerged in the original *Open Sources* and expounds on the transformative open source philosophy. "This is a wonderful collection of thoughts and examples by great minds from the free software movement, and is a must have for anyone who follows free software development and project histories." --Robin Monks, *Free Software Magazine* The list of contributors include Alolita Sharma Andrew Hessel Ben Laurie Boon-Lock Yeo Bruno Souza Chris DiBona Danese Cooper Doc Searls Eugene Kim Gregorio Robles Ian Murdock Jeff Bates Jeremy Allison Jesus M. Gonzalez-Barahona Kim Polese Larry Sanger Louisa Liu Mark Stone Mark Stone Matthew N. Asay Michael Olson Mitchell Baker Pamela Jones Robert Adkins Russ Nelson Sonali K. Shah Stephen R. Walli Steven Weber Sunil Saxena Tim O'Reilly Wendy Seltzer

Structure As Architecture provides readers with an accessible insight into the relationship between structure and architecture, focusing on the design principles that relate to both fields. Over one hundred case studies of contemporary buildings from countries across the globe including the UK, the US, France, Germany, Spain, Hong Kong and Australia are interspersed throughout the book. The author has visited and photographed each of these examples and analyzed them to show how structure plays a significant architectural role, as well as bearing loads. This is a highly illustrated sourcebook, providing a new insight into the role of structure, and discussing the point where the technical and the

aesthetic meet to create the discipline of 'architecture'.

Software Systems Architecture, Second Edition is a highly regarded, 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. With this book you will learn how to Design and communicate an architecture that reflects and balances the different needs of its stakeholders 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 Reflecting new standards and developments in the field, this new edition extends and updates much of the content, and Adds a "system context viewpoint" that documents the system's interactions with its environment Expands the discussion of architectural principles, showing how they can be used to provide traceability and rationale for architectural decisions Explains how agile development and architecture can work together Positions requirements and architecture activities in the project context Presents a new lightweight method for architectural validation 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.

From the Internet's infrastructure to operating systems like GNU/Linux, the open source movement comprises some of the greatest accomplishments in computing over the past quarter century. Its story embraces technological advances, unprecedented global collaboration, and remarkable tools for facilitating distributed development. The evolution of the Internet enabled an enormous expansion of open development, allowing developers to exchange information and ideas without regard to constraints of space, time, or national boundary. The movement has had widespread impact on education and government, as well as historic cultural and commercial repercussions. Part I discusses key open source applications, platforms, and technologies used in open development. Part II explores social issues ranging from demographics and psychology to legal and economic matters. Part III discusses the Free Software Foundation, open source in the public sector (government and education), and future prospects.

Beschrijving van vijftientig open source applicaties.

The free/open source approach has grown from a minor activity to become a significant producer of robust, task-orientated software for a wide variety of situations and applications. To life science informatics groups, these systems present an appealing proposition - high quality software at a very attractive price. Open source software in life science research considers how industry and applied research groups have embraced these resources, discussing practical implementations that address real-world business problems. The book is divided into four parts. Part one looks at laboratory data management and chemical informatics, covering software such as Bioclipse, OpenTox, ImageJ and KNIME. In part two, the focus turns to genomics and bioinformatics tools, with chapters examining GenomicsTools and EBI Atlas software, as well as the practicalities of setting up an 'omics' platform and managing large volumes of data. Chapters in part three examine information and knowledge management, covering a range of topics including software for web-based collaboration, open source search and visualisation technologies for scientific business applications, and specific software such as DesignTracker and Utopia Documents. Part four looks at semantic technologies such as Semantic MediaWiki, TripleMap and Chem2Bio2RDF, before part five examines clinical analytics, and validation and regulatory compliance of free/open source software. Finally, the book concludes by looking at future perspectives and the economics and free/open source software in industry. Discusses a broad range of applications from a variety of sectors Provides a unique perspective on work normally performed behind closed doors Highlights the criteria used to compare and assess different approaches to solving problems

A quick start guide to learning essential software architecture tools, frameworks, design patterns, and best practices Key Features Apply critical thinking to your software development and architecture practices and bring structure to your approach using well-known IT standards Understand the impact of cloud-native approaches on software architecture Integrate the latest technology trends into your architectural designs Book Description Are you a seasoned developer who likes to add value to a project beyond just writing code? Have you realized that good development practices are not enough to make a project successful, and you now want to embrace the bigger picture in the IT landscape? If so, you're ready to become a software architect; someone who can deal with any IT stakeholder as well as add value to the numerous dimensions of software development. The sheer volume of content on software architecture can be overwhelming, however. Software Architecture for Busy Developers is here to help. Written by Stephane Eyskens, author of The Azure Cloud Native Mapbook, this book guides you through your software architecture journey in a pragmatic way using real-world scenarios. By drawing on over 20 years of consulting experience, Stephane will help you understand the role of a software architect, without the fluff or unnecessarily complex theory. You'll begin by understanding what non-functional requirements mean and how they concretely impact target architecture. The book then covers different frameworks used across the entire enterprise landscape with the help of use cases and examples. Finally, you'll discover ways in which the cloud is becoming a game changer in the world of software architecture. By the end of this book, you'll have gained a holistic understanding of the architectural landscape, as well as more specific software architecture skills. You'll also be ready to pursue your software architecture journey on your own - and in just one weekend! What you will learn Understand the roles and responsibilities of a software architect Explore enterprise architecture tools and frameworks such as The Open Group Architecture Framework (TOGAF) and ArchiMate Get to grips with key design patterns used in software development Explore the widely adopted Architecture Tradeoff Analysis Method (ATAM) Discover the benefits and drawbacks of monoliths, service-oriented architecture (SOA), and microservices Stay on top of trending architectures such as API-driven, serverless, and cloud native Who this book is for This book is for developers

who want to move up the organizational ladder and become software architects by understanding the broader application landscape and discovering how large enterprises deal with software architecture practices. Prior knowledge of software development is required to get the most out of this book.

The Future of Modular Architecture presents an unprecedented proposal for mass-customized mid- and high-rise modular housing that can be manufactured and distributed on a global scale. Advocating for the adoption of open-source design based on a new modular standard, the book shows how the construction industry and architectural practice may soon be radically reshaped. By leveraging the existing intermodal freight transport system, global supply chains can be harnessed to realize the long-held promise that housing will be a well-designed and affordable industrial product. We are on the cusp of a transformative change in the way we design and build our cities. Author David Wallance argues that modular architecture is profoundly intertwined with globalization, equitable urbanism, and sustainable development. His book addresses these timely issues through a specific approach grounded in fundamental concepts. Going beyond the individual modular building, Wallance forecasts the emergence of a new type of design, manufacturing, and construction enterprise. Written in an approachable style with illustrated examples, the book is a must read for professionals in architecture and design, city planning, construction, real estate, as well as the general reader with an interest in these topics.

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.

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.

This topical volume offers a comprehensive review of secret intelligence organizations and activities. Intelligence has been in the news consistently since 9/11 and the Iraqi WMD errors. Leading experts in the field approach the three major missions of intelligence: collection-and-analysis; covert action; and counterintelligence. Within each of these missions, the dynamically written essays dissect the so-called intelligence cycle to reveal the challenges of gathering and assessing information from around the world. Covert action, the most controversial intelligence activity, is explored, with special attention on the issue of military organizations moving into what was once primarily a civilian responsibility. The authors furthermore examine the problems that are associated with counterintelligence, protecting secrets from foreign spies and terrorist organizations, as well as the question of intelligence accountability, and how a nation can protect its citizens against the possible abuse of power by its own secret agencies. The Handbook of Intelligence Studies is a benchmark publication with major importance both for current research and for the future of the field. It is essential reading for advanced undergraduates, graduate students and scholars of intelligence studies, international security, strategic studies and political science in general.

The Architecture of Open Source Applications Elegance, Evolution, and a Few Fearless Hacks Lulu.com

Introduce yourself to the nuances of modern monitoring for cloud-native applications running on Kubernetes clusters. This book will help you get started with the concepts of monitoring, introduce you to popular open-source monitoring tools, and help with finding the correct set of use cases for their implementation. It covers the in-depth technical details of open-source software used in modern monitoring systems that are tailor made for environments running microservices. Monitoring Cloud-Native Applications is divided into two parts. Part 1 starts with an introduction to cloud-native applications and the foundational concepts of monitoring. It then walks you through the various aspects of monitoring containerized workloads using Kubernetes as the de-facto orchestration platform. You will dive deep into the architecture of a modern monitoring system and look at its individual components in detail. Part 2 introduces you to popular open-source tools which are used by enterprises and startups alike and are well established as the tools of choice for industry stalwarts. First off, you will look at Prometheus and understand its architecture and usage. You will also learn about InfluxDB, formerly called TICK Stack (Telegraf, InfluxDB, Chronograf, and Kapacitor). You will explore the technical details of its architecture and the use cases which it solves. Your next stop will be Elastic Stack, formerly known as the ELK Stack (ElasticSearch, LogStash, and Kibana) and you will examine the scenarios where you can use it effectively. In the next chapter, you will be introduced to Grafana, a multi-platform open source analytics and interactive visualization tool that can help you with visualization of data and dashboards. After reading this book, you will have a much better understanding of key terminologies and general concepts around monitoring and observability. You will also be able to select a suitable monitoring solution from the bouquet of open-source monitoring solutions available for applications, microservices, and containers. Armed with this knowledge, you will be better prepared to design and lead a successful agile operations team. What You Will Learn Monitor and observe of metrics, events, logs, and traces Carry out infrastructure and application monitoring for microservices architecture Analyze and visualize collected data Use alerting, reporting, and automated actions for problem resolution Who This Book Is For DevOps administrators, cloud administrators, and site reliability engineers (SREs) who manage and monitor applications and cloud infrastructure on a day-to-day basis within their organizations.

Open source provides the competitive advantage in the Internet Age. According to the August Forrester Report, 56 percent of IT managers interviewed at Global 2,500 companies are already using some type of open source software in their infrastructure and another 6 percent will install it in the next two years. This revolutionary model for collaborative software development is being embraced and studied by many of the biggest players in the high-tech industry, from Sun Microsystems to IBM to Intel. The Cathedral & the Bazaar is a must for anyone who cares about the future of the computer industry or the dynamics of the information economy. Already, billions of dollars have been made and lost based on the ideas in this book. Its conclusions will be studied, debated, and implemented for years to come. According to Bob Young, "This is Eric Raymond's great contribution to the success of the open source revolution, to the adoption of Linux-based operating systems, and to the success of open source users

and the companies that supply them."The interest in open source software development has grown enormously in the past year. This revised and expanded paperback edition includes new material on open source developments in 1999 and 2000. Raymond's clear and effective writing style accurately describing the benefits of open source software has been key to its success. With major vendors creating acceptance for open source within companies, independent vendors will become the open source story in 2001. In 1974, Donald Knuth wrote, "We should forget about small efficiencies, say about 97%% of the time: premature optimization is the root of all evil." With computers available now that are millions of times faster than those available then, today's programmers have even less reason to worry about shaving cycles and saving bytes than those a generation ago. But "less" isn't "none": every once in a while, squeezing the last ounce of performance out of the machine really does matter. This book is written by over a dozen developers who have grappled with slow code, memory leaks, or uncontrollable latency in open source software. They share their mistakes and successes, and give the reader an over-the-shoulder view of how they approached their specific challenges. With examples from bioinformatics research code to web browsers, the solutions are as varied as the problems. This book will help junior and senior developers alike understand how their colleagues think about performance.

Understand the principles of software architecture with coverage on SOA, distributed and messaging systems, and database modeling Key Features Gain knowledge of architectural approaches on SOA and microservices for architectural decisions Explore different architectural patterns for building distributed applications Migrate applications written in Java or Python to the Go language Book Description Building software requires careful planning and architectural considerations; Golang was developed with a fresh perspective on building next-generation applications on the cloud with distributed and concurrent computing concerns. Hands-On Software Architecture with Golang starts with a brief introduction to architectural elements, Go, and a case study to demonstrate architectural principles. You'll then move on to look at code-level aspects such as modularity, class design, and constructs specific to Golang and implementation of design patterns. As you make your way through the chapters, you'll explore the core objectives of architecture such as effectively managing complexity, scalability, and reliability of software systems. You'll also work through creating distributed systems and their communication before moving on to modeling and scaling of data. In the concluding chapters, you'll learn to deploy architectures and plan the migration of applications from other languages. By the end of this book, you will have gained insight into various design and architectural patterns, which will enable you to create robust, scalable architecture using Golang. What you will learn Understand architectural paradigms and deep dive into Microservices Design parallelism/concurrency patterns and learn object-oriented design patterns in Go Explore API-driven systems architecture with introduction to REST and GraphQL standards Build event-driven architectures and make your architectures anti-fragile Engineer scalability and learn how to migrate to Go from other languages Get to grips with deployment considerations with CICD pipeline, cloud deployments, and so on Build an end-to-end e-commerce (travel) application backend in Go Who this book is for Hands-On Software Architecture with Golang is for software developers, architects, and CTOs looking to use Go in their software architecture to build enterprise-grade applications. Programming knowledge of Golang is assumed.

So you're thinking of creating an open source community around your code? Here are some things you ought to know before you make your plans too firm. Community Types: There is no single "open source community." Rather, there are many groups of people gathered around many free software commons. Those gatherings are themselves of several different types; you really need to understand those differences. Payment at the Point of Value: Open source is of course free software. But the freedom you're finding brings you value varies depending on the role you play with respect to the software. "Free" doesn't mean the same to everyone. Open Core Is Bad For You: The "open core" business model is popular with VC-funded startup companies but does not deliver the core freedoms from which lasting business value for customers is derived. Transparency and Privacy: The key success factor in an open source community is the equality of all the participants. A strong community is characterized by high levels of transparency about the project coupled with strong respect for the privacy of the participants. Read why you should not impose your business model on anyone.

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

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

This provocative book argues that it is high time the practice of architecture moved away from the ego-fuelled grand visions of starchitects to a networked, collaborative, inclusive model inspired by 21st-century trends such as crowd-sourcing, open access and mass customization. But how can collaborative design avoid becoming design-by-committee? Carlo Ratti and Matthew Claudel deftly navigate this and other vital questions, considering along the way the applications of open-source architecture not only conceptually, but also in practice. Open Source Architecture is a rallying cry to students and open-minded professionals seeking new perspectives on a profession that the authors passionately believe to be moribund.

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.

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine some of the tools and technologies you'll need for building cloud native systems

This proceedings volume presents the latest research from the worldwide mass customization, personalization and co-creation (MCPC) community bringing together new thoughts and results from various disciplines within the field. The chapters are based on papers from The MCPC 2015 Conference where the emphasis was placed on "managing complexity." MCPC is now beginning to emerge in many industries as a profitable business model. But customization and personalization go far beyond the sheer individualization of products and become an extension of current business models and production styles. This book covers topics such as complexity management of knowledge-based systems in manufacturing design and production, sustainable mass customization, choice navigation, and product modeling. The chapters are contributed by a wide range of specialists, offering cutting-edge research, as well as insightful advances in industrial practice in key areas. The MCPC 2015 Conference had a strong focus on real life MCPC applications, and this proceedings volume reflects this. MCPC strategies aim to profit from the fact that people are different. Their objective is to turn customer heterogeneities into profit opportunities, hence addressing the current trend of long tail business models. Mass customization means to provide goods and services that best serve individual customers' personal needs with near mass production efficiency. This book brings together the latest from MCPC thought leaders, entrepreneurs, technology developers, and researchers that use these strategies in practice.

[Copyright: 6dd723bd0ccfe4152b9a2562331765d1](#)