

The Practice Of Cloud System Administration Designing And Operating Large Distributed Systems Volume 2 Ebook Thomas A Limoncelli

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Designing Distributed Systems - Brendan Burns 2018-02-20

Without established design patterns to guide them, developers have had to build distributed systems from scratch, and most of these systems are very unique indeed. Today, the increasing use of containers has paved the way for core distributed system patterns and reusable containerized components. This practical guide presents a collection of repeatable, generic patterns to help make the development of reliable distributed systems far more approachable and efficient. Author Brendan Burns—Director of Engineering at Microsoft Azure—demonstrates how you can adapt existing software design patterns for designing and building reliable distributed applications. Systems engineers and application developers will learn how these long-established patterns provide a common language and framework for dramatically increasing the quality of your system. Understand how patterns and reusable components enable the rapid development of reliable distributed systems Use the side-car, adapter, and ambassador patterns to split your application into a group of containers on a single machine Explore loosely coupled multi-node distributed patterns for replication, scaling, and communication between the components Learn distributed system patterns for large-scale batch data processing covering work-queues, event-based processing, and coordinated workflows

97 Things Every Cloud Engineer Should Know - Emily Freeman 2020-12-04

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer—even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?," Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing - Management Association, Information Resources 2021-01-25

Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. The Research Anthology on Architectures, Frameworks, and Integration Strategies

for Distributed and Cloud Computing is a vital reference source that provides valuable insight into current and emergent research occurring within the field of distributed computing. It also presents architectures and service frameworks to achieve highly integrated distributed systems and solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting a range of topics such as data sharing, wireless sensor networks, and scalability, this multi-volume book is ideally designed for system administrators, integrators, designers, developers, researchers, academicians, and students.

AWS System Administration - Mike Ryan 2018-08-08

With platforms designed for rapid adaptation and failure recovery such as Amazon Web Services, cloud computing is more like programming than traditional system administration. Tools for automatic scaling and instance replacement allow even small DevOps teams to manage massively scalable application infrastructures—if team members drop their old views of development and operations and start mastering automation. This comprehensive guide shows developers and system administrators how to configure and manage AWS services including EC2, CloudFormation, Elastic Load Balancing, S3, and Route 53. Sysadmins will learn will learn to automate their favorite tools and processes; developers will pick up enough ops knowledge to build a robust and resilient AWS application infrastructure. Launch instances with EC2 or CloudFormation Securely deploy and manage your applications with AWS tools Learn to automate AWS configuration management with Python and Puppet Deploy applications with Auto Scaling and Elastic Load Balancing Explore approaches for deploying application and infrastructure updates Save time on development and operations with reusable components Learn strategies for managing log files in AWS environments Configure a cloud-aware DNS service with Route 53 Use AWS CloudWatch to monitor your infrastructure and applications

Guide to Cloud Computing - Richard Hill 2012-11-28

This book describes the landscape of cloud computing from first principles, leading the reader step-by-step through the process of building and configuring a cloud environment. The book not only considers the technologies for designing and creating cloud computing platforms, but also the business models and frameworks in real-world implementation of cloud platforms. Emphasis is placed on “learning by doing,” and readers are encouraged to experiment with a range of different tools and approaches. Topics and features: includes review questions, hands-on exercises, study activities and discussion topics throughout the text; demonstrates the approaches used to build cloud computing infrastructures; reviews the social, economic, and political aspects of the on-going growth in cloud computing use; discusses legal and security concerns in cloud computing; examines techniques for the appraisal of financial investment into cloud computing; identifies areas for further research within this rapidly-moving field.

Building Secure and Reliable Systems - Heather Adkins 2020-03-16

Can a system be considered truly reliable if it isn't fundamentally secure? Or can it be considered secure if it's unreliable? Security is crucial to the design and operation of scalable systems in production, as it plays an important part in product quality, performance, and availability. In this book, experts from Google share

best practices to help your organization design scalable and reliable systems that are fundamentally secure. Two previous O'Reilly books from Google—Site Reliability Engineering and The Site Reliability Workbook—demonstrated how and why a commitment to the entire service lifecycle enables organizations to successfully build, deploy, monitor, and maintain software systems. In this latest guide, the authors offer insights into system design, implementation, and maintenance from practitioners who specialize in security and reliability. They also discuss how building and adopting their recommended best practices requires a culture that's supportive of such change. You'll learn about secure and reliable systems through: Design strategies Recommendations for coding, testing, and debugging practices Strategies to prepare for, respond to, and recover from incidents Cultural best practices that help teams across your organization collaborate effectively

Design Patterns for Cloud Native Applications - Kasun Indrasiri 2021-05-17

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

Kubernetes Patterns - Bilgin Ibryam 2019-04-09

The way developers design, build, and run software has changed significantly with the evolution of microservices and containers. These modern architectures use new primitives that require a different set of practices than most developers, tech leads, and architects are accustomed to. With this focused guide, Bilgin Ibryam and Roland Huß from Red Hat provide common reusable elements, patterns, principles, and practices for designing and implementing cloud-native applications on Kubernetes. Each pattern includes a description of the problem and a proposed solution with Kubernetes specifics. Many patterns are also backed by concrete code examples. This book is ideal for developers already familiar with basic Kubernetes concepts who want to learn common cloud native patterns. You'll learn about the following pattern categories: Foundational patterns cover the core principles and practices for building container-based cloud-native applications. Behavioral patterns explore finer-grained concepts for managing various types of container and platform interactions. Structural patterns help you organize containers within a pod, the atom of the Kubernetes platform. Configuration patterns provide insight into how application configurations can be handled in Kubernetes. Advanced patterns covers more advanced topics such as extending the platform with operators.

Cloud Computing - Dan C. Marinescu 2013-05-30

Cloud Computing: Theory and Practice provides students and IT professionals with an in-depth analysis of the cloud from the ground up. Beginning with a discussion of parallel computing and architectures and distributed systems, the book turns to contemporary cloud infrastructures, how they are being deployed at leading companies such as Amazon, Google and Apple, and how they can be applied in fields such as healthcare, banking and science. The volume also examines how to successfully deploy a cloud application across the enterprise using virtualization, resource management and the right amount of networking support, including content delivery networks and storage area networks. Developers will find a complete introduction to application development provided on a variety of platforms. Learn about recent trends in cloud computing in critical areas such as: resource management, security, energy consumption, ethics, and complex systems Get a detailed hands-on set of practical recipes that help simplify the deployment of a cloud based system for practical use of computing clouds along with an in-depth discussion of several projects Understand the evolution of cloud computing and why the cloud computing paradigm has a better

chance to succeed than previous efforts in large-scale distributed computing

High Performance Drupal - Jeff Sheltren 2013-10-14

How can you help your Drupal website continue to perform at the highest level as it grows to meet demand? This comprehensive guide provides best practices, examples, and in-depth explanations for solving several performance and scalability issues. You'll learn how to apply coding and infrastructure techniques to Drupal internals, application performance, databases, web servers, and performance analysis. Covering Drupal versions 7 and 8, this book is the ideal reference for everything from site deployment to implementing specific technologies such as Varnish, memcache, or Solr. If you have a basic understanding of Drupal and the Linux-Apache-MySQL-PHP (LAMP) stack, you're ready to get started. Establish a performance baseline and define goals for improvement Optimize your website's code and front-end performance Get best and worst practices for customizing Drupal core functionality Apply infrastructure design techniques to launch or expand a site Use tools to configure, monitor, and optimize MySQL performance Employ alternative storage and backend search options as your site grows Tune your web servers through httpd and PHP configuration Monitor services and perform load tests to catch problems before they become critical

Accelerate - Nicole Forsgren PhD 2018-03-27

Winner of the Shingo Publication Award Accelerate your organization to win in the marketplace. How can we apply technology to drive business value? For years, we've been told that the performance of software delivery teams doesn't matter—that it can't provide a competitive advantage to our companies. Through four years of groundbreaking research to include data collected from the State of DevOps reports conducted with Puppet, Dr. Nicole Forsgren, Jez Humble, and Gene Kim set out to find a way to measure software delivery performance—and what drives it—using rigorous statistical methods. This book presents both the findings and the science behind that research, making the information accessible for readers to apply in their own organizations. Readers will discover how to measure the performance of their teams, and what capabilities they should invest in to drive higher performance. This book is ideal for management at every level.

Distributed Systems - Sukumar Ghosh 2014-07-14

Distributed Systems: An Algorithmic Approach, Second Edition provides a balanced and straightforward treatment of the underlying theory and practical applications of distributed computing. As in the previous version, the language is kept as unobscured as possible—clarity is given priority over mathematical formalism. This easily digestible text: Features significant updates that mirror the phenomenal growth of distributed systems Explores new topics related to peer-to-peer and social networks Includes fresh exercises, examples, and case studies Supplying a solid understanding of the key principles of distributed computing and their relationship to real-world applications, Distributed Systems: An Algorithmic Approach, Second Edition makes both an ideal textbook and a handy professional reference.

The DevOps Handbook - Gene Kim 2016-10-06

Increase profitability, elevate work culture, and exceed productivity goals through DevOps practices. More than ever, the effective management of technology is critical for business competitiveness. For decades, technology leaders have struggled to balance agility, reliability, and security. The consequences of failure have never been greater—whether it's the healthcare.gov debacle, cardholder data breaches, or missing the boat with Big Data in the cloud. And yet, high performers using DevOps principles, such as Google, Amazon, Facebook, Etsy, and Netflix, are routinely and reliably deploying code into production hundreds, or even thousands, of times per day. Following in the footsteps of The Phoenix Project, The DevOps Handbook shows leaders how to replicate these incredible outcomes, by showing how to integrate Product Management, Development, QA, IT Operations, and Information Security to elevate your company and win in the marketplace.

PRINCIPLES OF NETWORK & SYSTEM ADMIN. 2nd Ed. - Mark Burgess 2004-03

Market_Desc: · Students and novice system administrators· Professional network and systems administrators Special Features: · Coverage of both network and system administration from the perspective of the underlying principles that do not change on a day-to-day basis· Shows how to discover customer needs and then use that information to identify, interpret, and evaluate system and network

requirements· Fully updated to cover new technologies including Java Services and Ipv6 and both Unix and Windows systems· Extended coverage of security including ISO 17799 About The Book: Burgess approaches both network and system administration from the perspective of principles and ideas which do not change on a day-to-day basis.A great deal of attention is paid to the heuristics of system and network administration; technical and sociological issues are taken into account equally and are presented thoughtfully with an eye to teaching not what to do as a system or network administrator, but how to think about problems that arise in practice. As a result, the author keeps the reader looking forward to what comes next and how to implement what he or she has learned.The focus is on strategic issues, how to keep systems maintainable and how to manage configuration files across an enterprise. During the 80s and most of the 90s the frontiers of system administration were about understanding what the job entailed and building tools in order to manage networks more efficiently. The next phase is about standardization of management and practice, making system administration more formal and less ad hoc, and Burgess' book is one of the first to begin to push into this area.Whilst there are multitudes of ways to become a systems administrator, many employers prefer to hire people with some formal college education. Certification and practical experience demonstrating these skills will be essential for applicants without a degree. Systems administrators must keep their skills current and acquire new ones.

Infrastructure as Code - Kief Morris 2016-06-09

Virtualization, cloud, containers, server automation, and software-defined networking are meant to simplify IT operations. But many organizations adopting these technologies have found that it only leads to a faster-growing sprawl of unmanageable systems. This is where infrastructure as code can help. With this practical guide, author Kief Morris of ThoughtWorks shows you how to effectively use principles, practices, and patterns pioneered through the DevOps movement to manage cloud age infrastructure. Ideal for system administrators, infrastructure engineers, team leads, and architects, this book demonstrates various tools, techniques, and patterns you can use to implement infrastructure as code. In three parts, you'll learn about the platforms and tooling involved in creating and configuring infrastructure elements, patterns for using these tools, and practices for making infrastructure as code work in your environment. Examine the pitfalls that organizations fall into when adopting the new generation of infrastructure technologies Understand the capabilities and service models of dynamic infrastructure platforms Learn about tools that provide, provision, and configure core infrastructure resources Explore services and tools for managing a dynamic infrastructure Learn specific patterns and practices for provisioning servers, building server templates, and updating running servers

The Practice of Cloud System Administration - Thomas A. Limoncelli 2014-09-01

"There's an incredible amount of depth and thinking in the practices described here, and it's impressive to see it all in one place." —Win Treese, coauthor of *Designing Systems for Internet Commerce* *The Practice of Cloud System Administration, Volume 2*, focuses on "distributed" or "cloud" computing and brings a DevOps/SRE sensibility to the practice of system administration. Unsatisfied with books that cover either design or operations in isolation, the authors created this authoritative reference centered on a comprehensive approach. Case studies and examples from Google, Etsy, Twitter, Facebook, Netflix, Amazon, and other industry giants are explained in practical ways that are useful to all enterprises. The new companion to the best-selling first volume, *The Practice of System and Network Administration, Second Edition*, this guide offers expert coverage of the following and many other crucial topics: Designing and building modern web and distributed systems Fundamentals of large system design Understand the new software engineering implications of cloud administration Make systems that are resilient to failure and grow and scale dynamically Implement DevOps principles and cultural changes IaaS/PaaS/SaaS and virtual platform selection Operating and running systems using the latest DevOps/SRE strategies Upgrade production systems with zero down-time What and how to automate; how to decide what not to automate On-call best practices that improve uptime Why distributed systems require fundamentally different system administration techniques Identify and resolve resiliency problems before they surprise you Assessing and evaluating your team's operational effectiveness Manage the scientific process of continuous improvement A forty-page, pain-free assessment system you can start using today

Cloud Application Architectures - George Reese 2009-04-01

If you're involved in planning IT infrastructure as a network or system architect, system administrator, or developer, this book will help you adapt your skills to work with these highly scalable, highly redundant infrastructure services. While analysts hotly debate the advantages and risks of cloud computing, IT staff and programmers are left to determine whether and how to put their applications into these virtualized services. *Cloud Application Architectures* provides answers -- and critical guidance -- on issues of cost, availability, performance, scaling, privacy, and security. With *Cloud Application Architectures*, you will: Understand the differences between traditional deployment and cloud computing Determine whether moving existing applications to the cloud makes technical and business sense Analyze and compare the long-term costs of cloud services, traditional hosting, and owning dedicated servers Learn how to build a transactional web application for the cloud or migrate one to it Understand how the cloud helps you better prepare for disaster recovery Change your perspective on application scaling To provide realistic examples of the book's principles in action, the author delves into some of the choices and operations available on Amazon Web Services, and includes high-level summaries of several of the other services available on the market today. *Cloud Application Architectures* provides best practices that apply to every available cloud service. Learn how to make the transition to the cloud and prepare your web applications to succeed.

Time Management for System Administrators - Tom Limoncelli 2006

Provides advice for system administrators on time management, covering such topics as keeping an effective calendar, eliminating time wasters, setting priorities, automating processes, and managing interruptions.

Infrastructure as Code - Kief Morris 2020-12-08

Six years ago, *Infrastructure as Code* was a new concept. Today, as even banks and other conservative organizations plan moves to the cloud, development teams for companies worldwide are attempting to build large infrastructure codebases. With this practical book, Kief Morris of ThoughtWorks shows you how to effectively use principles, practices, and patterns pioneered by DevOps teams to manage cloud-age infrastructure. Ideal for system administrators, infrastructure engineers, software developers, team leads, and architects, this updated edition demonstrates how you can exploit cloud and automation technology to make changes easily, safely, quickly, and responsibly. You'll learn how to define everything as code and apply software design and engineering practices to build your system from small, loosely coupled pieces. This book covers: Foundations: Use *Infrastructure as Code* to drive continuous change and raise the bar of operational quality, using tools and technologies to build cloud-based platforms Working with infrastructure stacks: Learn how to define, provision, test, and continuously deliver changes to infrastructure resources Working with servers and other platforms: Use patterns to design provisioning and configuration of servers and clusters Working with large systems and teams: Learn workflows, governance, and architectural patterns to create and manage infrastructure elements

Site Reliability Engineering - Niall Richard Murphy 2016-03-23

The overwhelming majority of a software system's lifespan is spent in use, not in design or implementation. So, why does conventional wisdom insist that software engineers focus primarily on the design and development of large-scale computing systems? In this collection of essays and articles, key members of Google's Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world. You'll learn the principles and practices that enable Google engineers to make systems more scalable, reliable, and efficient—lessons directly applicable to your organization. This book is divided into four sections: Introduction—Learn what site reliability engineering is and why it differs from conventional IT industry practices Principles—Examine the patterns, behaviors, and areas of concern that influence the work of a site reliability engineer (SRE) Practices—Understand the theory and practice of an SRE's day-to-day work: building and operating large distributed computing systems Management—Explore Google's best practices for training, communication, and meetings that your organization can use

Making Servers Work - 2020-03-30

This book highlights practical sysadmin skills, common architectures that you'll encounter, and best practices that apply to automating and running systems at any scale, from one laptop or server to 1,000 or more. It is intended to help orient you within the discipline, and hopefully encourages you to learn more

about system administration.

Google Cloud Platform Administration - Ranjit Singh Thakurratan 2018-09-29

Make the most of GCP's offerings to manage your data center workload and optimize deployments
Key Features
Discover new techniques to administer, manage, and deploy applications on GCP
Understand effective solutions for storing, retrieving, and deploying your container images
Explore various offerings of GCP for operations and security
Book Description
On-premise data centers are costly to manage. If you need a data center but don't want to deal with a physical one, Google Cloud Platform (GCP) is the solution. With GCP, you can build, test, and deploy applications on Google's infrastructure. Google Cloud Platform Administration begins with GCP fundamentals, with the help of which you will deploy your first app and gain an understanding of Google Cloud architecture and services. Furthermore, you will learn how to manage Compute, networking, and storage resources. As you make your way through the book, you will learn how to track and manage GCP's usage, monitoring, and billing access control. You will also be able to manage your GCP's access and permissions. In the concluding chapters, you will explore a list of different developer tools for managing and interacting with the GCP platform. By the end of this book, you will have learned how to effectively deploy workloads on GCP. What you will learn
Understand all GCP Compute components
Deploy and manage multiple GCP storage options
Manage and utilize the networking resources offered by GCP
Explore the functionalities and features of the GCP Container
Understand the workings of GCP operations such as monitoring and error reporting
Discover an immune GCP using its identity and security options
Who this book is for
Google Cloud Platform Administration is for administrators, cloud architects, and engineers who want to leverage the upcoming Google Cloud Platform. Some basic understanding of cloud computing will be useful.

The Site Reliability Workbook - Betsy Beyer 2018-07-25

In 2016, Google's Site Reliability Engineering book ignited an industry discussion on what it means to run production services today—and why reliability considerations are fundamental to service design. Now, Google engineers who worked on that bestseller introduce *The Site Reliability Workbook*, a hands-on companion that uses concrete examples to show you how to put SRE principles and practices to work in your environment. This new workbook not only combines practical examples from Google's experiences, but also provides case studies from Google's Cloud Platform customers who underwent this journey. Evernote, The Home Depot, The New York Times, and other companies outline hard-won experiences of what worked for them and what didn't. Dive into this workbook and learn how to flesh out your own SRE practice, no matter what size your company is. You'll learn: How to run reliable services in environments you don't completely control—like cloud
Practical applications of how to create, monitor, and run your services via Service Level Objectives
How to convert existing ops teams to SRE—including how to dig out of operational overload
Methods for starting SRE from either greenfield or brownfield

Designing Data-Intensive Applications - Martin Kleppmann 2017-03-16

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

AWS Administration - The Definitive Guide - Yohan Wadia 2016-02-12

Learn to design, build, and manage your infrastructure on the most popular of all the Cloud platforms—Amazon Web Services
About This Book
Learn how to leverage various Amazon Web Services

(AWS) components and services to build a secure, reliable, and robust environment to host your applications
On Deep dive into the core AWS service offerings with hands-on tutorials, real-world use case scenarios, and best practices
A self-paced, systematic, and step-by-step guide to learning and implementing AWS in your own environment
Who This Book Is For
This book is for those who want to learn and leverage AWS. Although no prior experience with AWS is required, it is recommended that you have some hands-on experience of Linux, Web Services, and basic networking
What You Will Learn
A brief introduction to Cloud Computing and AWS accompanied by steps to sign up for your first AWS account
Create and manage users, groups, and permissions using AWS Identity and Access Management services
Get started with deploying and accessing EC2 instances, working with EBS Volumes and Snapshots
Customize and create your very own Amazon Machine Image
Design and deploy your instances on a highly secured, network isolated environment using Amazon VPC
Effectively monitor your AWS environment using specialized alarms, custom monitoring metrics, and much more
Explore the various benefits of Database-as-a-Service offerings and leverage them using Amazon RDS and Amazon DynamoDB
Take an in-depth look at what's new with AWS, including EC2 Container Service and Elastic File System
In Detail
AWS is at the forefront of Cloud Computing today. Many businesses are moving away from traditional datacenters and toward AWS because of its reliability, vast service offerings, lower costs, and high rate of innovation. Because of its versatility and flexible design, AWS can be used to accomplish a variety of simple and complicated tasks such as hosting multitier websites, running large scale parallel processing, content delivery, petabyte storage and archival, and lots more. Whether you are a seasoned sysadmin or a rookie, this book will provide you with all the necessary skills to design, deploy, and manage your applications on the AWS cloud platform. The book guides you through the core AWS services such as IAM, EC2, VPC, RDS, and S3 using a simple real world application hosting example that you can relate to. Each chapter is designed to provide you with the most information possible about a particular AWS service coupled with easy to follow hands-on steps, best practices, tips, and recommendations. By the end of the book, you will be able to create a highly secure, fault tolerant, and scalable environment for your applications to run on. Style and approach
This in-depth and insightful guide is filled with easy-to-follow examples, real-world use cases, best practices, and recommendations that will help you design and leverage AWS.

Architecting Google Cloud Solutions - Victor Dantas 2021-05-14

Achieve your business goals and build highly available, scalable, and secure cloud infrastructure by designing robust and cost-effective solutions as a Google Cloud Architect. Key Features
Gain hands-on experience in designing and managing high-performance cloud solutions
Leverage Google Cloud Platform to optimize technical and business processes using cutting-edge technologies and services
Use Google Cloud Big Data, AI, and ML services to design scalable and intelligent data solutions
Book Description
Google has been one of the top players in the public cloud domain thanks to its agility and performance capabilities. This book will help you design, develop, and manage robust, secure, and dynamic solutions to successfully meet your business needs. You'll learn how to plan and design network, compute, storage, and big data systems that incorporate security and compliance from the ground up. The chapters will cover simple to complex use cases for devising solutions to business problems, before focusing on how to leverage Google Cloud's Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) capabilities for designing modern no-operations platforms. Throughout this book, you'll discover how to design for scalability, resiliency, and high availability. Later, you'll find out how to use Google Cloud to design modern applications using microservices architecture, automation, and Infrastructure-as-Code (IaC) practices. The concluding chapters then demonstrate how to apply machine learning and artificial intelligence (AI) to derive insights from your data. Finally, you will discover best practices for operating and monitoring your cloud solutions, as well as performing troubleshooting and quality assurance. By the end of this Google Cloud book, you'll be able to design robust enterprise-grade solutions using Google Cloud Platform. What you will learn
Get to grips with compute, storage, networking, data analytics, and pricing
Discover delivery models such as IaaS, PaaS, and SaaS
Explore the underlying technologies and economics of cloud computing
Design for scalability, business continuity, observability, and resiliency
Secure Google Cloud solutions and ensure compliance
Understand operational best practices and learn how to architect a monitoring solution
Gain insights into modern application design with Google Cloud
Leverage big data, machine learning, and AI with

Google CloudWho this book is for This book is for cloud architects who are responsible for designing and managing cloud solutions with GCP. You'll also find the book useful if you're a system engineer or enterprise architect looking to learn how to design solutions with Google Cloud. Moreover, cloud architects who already have experience with other cloud providers and are now beginning to work with Google Cloud will benefit from the book. Although an intermediate-level understanding of cloud computing and distributed apps is required, prior experience of working in the public and hybrid cloud domain is not mandatory.

The Practice of Cloud System Administration - Tom Limoncelli 2014-09-03

The Practice of Cloud System Administration, Volume 2 focuses on today's fastest-growing areas of system administration: cloud computing and DevOps. For the first time, it brings together comprehensive knowledge and best practices for administering systems in the age of cloud computing, and for architecting, scaling, and operating services that perform reliably and well. The new companion volume to our best-selling Practice of System and Network Administration, it offers expert coverage of these and many other crucial topics.

Practical Cloud Security - Chris Dotson 2019-03-04

With their rapidly changing architecture and API-driven automation, cloud platforms come with unique security challenges and opportunities. This hands-on book guides you through security best practices for multivendor cloud environments, whether your company plans to move legacy on-premises projects to the cloud or build a new infrastructure from the ground up. Developers, IT architects, and security professionals will learn cloud-specific techniques for securing popular cloud platforms such as Amazon Web Services, Microsoft Azure, and IBM Cloud. Chris Dotson—an IBM senior technical staff member—shows you how to establish data asset management, identity and access management, vulnerability management, network security, and incident response in your cloud environment.

Classic Operating Systems - Per Brinch Hansen 2013-04-17

An essential reader containing the 25 most important papers in the development of modern operating systems for computer science and software engineering. The papers illustrate the major breakthroughs in operating system technology from the 1950s to the 1990s. The editor provides an overview chapter and puts all development in perspective with chapter introductions and expository apparatus. Essential resource for graduates, professionals, and researchers in CS with an interest in operating system principles.

Occupational Outlook Handbook - United States. Bureau of Labor Statistics 1976

Modern System Administration - Jennifer Davis 2020-08-11

Early system administration required in-depth knowledge of a variety of services on individual systems. Now, the job is increasingly complex and different from one company to the next with an ever-growing list of technologies and third-party services to integrate. How does any one individual stay relevant in systems and services? This practical guide helps anyone in operations--sysadmins, automation engineers, IT professionals, and site reliability engineers--understand the essential concepts of the role today. Collaboration, automation, and the evolution of systems change the fundamentals of operations work. No matter where you are in your journey, this book provides you the information to craft your path to advancing essential system administration skills. Author Jennifer Davis provides examples of modern practices and tools with recommended materials to advance your skills. Topics include: Development and testing: Version control, fundamentals of virtualization and containers, testing, and architecture review Deploying and configuring services: Infrastructure management, networks, security, storage, serverless, and release management Scaling administration: Monitoring and observability, capacity planning, log management and analysis, and security and compliance

System Engineering Analysis, Design, and Development - Charles S. Wasson 2015-11-16

Praise for the first edition: "This excellent text will be useful to every system engineer (SE) regardless of the domain. It covers ALL relevant SE material and does so in a very clear, methodical fashion. The breadth and depth of the author's presentation of SE principles and practices is outstanding." -Philip Allen This textbook presents a comprehensive, step-by-step guide to System Engineering analysis, design, and development via

an integrated set of concepts, principles, practices, and methodologies. The methods presented in this text apply to any type of human system -- small, medium, and large organizational systems and system development projects delivering engineered systems or services across multiple business sectors such as medical, transportation, financial, educational, governmental, aerospace and defense, utilities, political, and charity, among others. Provides a common focal point for "bridging the gap" between and unifying System Users, System Acquirers, multi-discipline System Engineering, and Project, Functional, and Executive Management education, knowledge, and decision-making for developing systems, products, or services Each chapter provides definitions of key terms, guiding principles, examples, author's notes, real-world examples, and exercises, which highlight and reinforce key SE&D concepts and practices Addresses concepts employed in Model-Based Systems Engineering (MBSE), Model-Driven Design (MDD), Unified Modeling Language (UMLTM) / Systems Modeling Language (SysMLTM), and Agile/Spiral/V-Model Development such as user needs, stories, and use cases analysis; specification development; system architecture development; User-Centric System Design (UCSD); interface definition & control; system integration & test; and Verification & Validation (V&V) Highlights/introduces a new 21st Century Systems Engineering & Development (SE&D) paradigm that is easy to understand and implement. Provides practices that are critical staging points for technical decision making such as Technical Strategy Development; Life Cycle requirements; Phases, Modes, & States; SE Process; Requirements Derivation; System Architecture Development, User-Centric System Design (UCSD); Engineering Standards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises and numerous case studies and examples, Systems Engineering Analysis, Design, and Development, Second Edition is a primary textbook for multi-discipline, engineering, system analysis, and project management undergraduate/graduate level students and a valuable reference for professionals.

Systems Performance - Brendan Gregg 2014

The Complete Guide to Optimizing Systems Performance Written by the winner of the 2013 LISA Award for Outstanding Achievement in System Administration Large-scale enterprise, cloud, and virtualized computing systems have introduced serious performance challenges. Now, internationally renowned performance expert Brendan Gregg has brought together proven methodologies, tools, and metrics for analyzing and tuning even the most complex environments. Systems Performance: Enterprise and the Cloud focuses on Linux® and Unix® performance, while illuminating performance issues that are relevant to all operating systems. You'll gain deep insight into how systems work and perform, and learn methodologies for analyzing and improving system and application performance. Gregg presents examples from bare-metal systems and virtualized cloud tenants running Linux-based Ubuntu®, Fedora®, CentOS, and the illumos-based Joyent® SmartOS™ and OmniTI OmniOS®. He systematically covers modern systems performance, including the "traditional" analysis of CPUs, memory, disks, and networks, and new areas including cloud computing and dynamic tracing. This book also helps you identify and fix the "unknown unknowns" of complex performance: bottlenecks that emerge from elements and interactions you were not aware of. The text concludes with a detailed case study, showing how a real cloud customer issue was analyzed from start to finish. Coverage includes • Modern performance analysis and tuning: terminology, concepts, models, methods, and techniques • Dynamic tracing techniques and tools, including examples of DTrace, SystemTap, and perf • Kernel internals: uncovering what the OS is doing • Using system observability tools, interfaces, and frameworks • Understanding and monitoring application performance • Optimizing CPUs: processors, cores, hardware threads, caches, interconnects, and kernel scheduling • Memory optimization: virtual memory, paging, swapping, memory architectures, busses, address spaces, and allocators • File system I/O, including caching • Storage devices/controllers, disk I/O workloads, RAID, and kernel I/O • Network-related performance issues: protocols, sockets, interfaces, and physical connections • Performance implications of OS and hardware-based virtualization, and new issues encountered with cloud computing • Benchmarking: getting accurate results and avoiding common mistakes This guide is indispensable for anyone who operates enterprise or cloud environments: system, network, database, and web admins; developers; and other professionals. For students and others new to optimization, it also provides exercises reflecting Gregg's extensive instructional experience.

Principles of Network and System Administration - Mark Burgess 2000-07-31

A practical guide for meeting the challenges of planning and designing a network Network design has to be logical and efficient, decisions have to be made about what services are needed, and security concerns must be addressed. Focusing on general principles, this book will help make the process of setting up, configuring, and maintaining a network much easier. It outlines proven procedures for working in a global community of networked machines, and provides practical illustrations of technical specifics. Readers will also find broad coverage of Linux and other Unix versions, Windows(r), Macs, and mainframes. The author includes discussions on the social and ethical aspects of system administration.

The Enterprise Cloud - James Bond 2015-05-19

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

The Practice of System and Network Administration - Thomas A. Limoncelli 2007

Shares the six key principles of site design and support practices: simplicity, clarity, generality, automation, communication, and basics first. This book provides advice on topics which include the key elements your networks/systems need that will make all other services run better, and building and running reliable, scalable services.

Microservice Architecture - Irakli Nadareishvili 2016-07-18

Have you heard about the tremendous success Amazon and Netflix have had by switching to a microservice architecture? Are you wondering how this can benefit your company? Or are you skeptical about how it might work? If you've answered yes to any of these questions, this practical book will benefit you. You'll learn how to take advantage of the microservice architectural style for building systems, and learn from the experiences of others to adopt and execute this approach most successfully.

The Practice of System and Network Administration - Thomas A. Limoncelli 2016-10-25

With 28 new chapters, the third edition of *The Practice of System and Network Administration* innovates yet again! Revised with thousands of updates and clarifications based on reader feedback, this new edition also incorporates DevOps strategies even for non-DevOps environments. Whether you use Linux, Unix, or Windows, this new edition describes the essential practices previously handed down only from mentor to protégé. This wonderfully lucid, often funny cornucopia of information introduces beginners to advanced frameworks valuable for their entire career, yet is structured to help even experts through difficult projects. Other books tell you what commands to type. This book teaches you the cross-platform strategies that are timeless! DevOps techniques: Apply DevOps principles to enterprise IT infrastructure, even in environments without developers Game-changing strategies: New ways to deliver results faster with less stress Fleet management: A comprehensive guide to managing your fleet of desktops, laptops, servers and mobile devices Service management: How to design, launch, upgrade and migrate services Measurable improvement: Assess your operational effectiveness; a forty-page, pain-free assessment system you can

start using today to raise the quality of all services Design guides: Best practices for networks, data centers, email, storage, monitoring, backups and more Management skills: Organization design, communication, negotiation, ethics, hiring and firing, and more Have you ever had any of these problems? Have you been surprised to discover your backup tapes are blank? Ever spent a year launching a new service only to be told the users hate it? Do you have more incoming support requests than you can handle? Do you spend more time fixing problems than building the next awesome thing? Have you suffered from a botched migration of thousands of users to a new service? Does your company rely on a computer that, if it died, can't be rebuilt? Is your network a fragile mess that breaks any time you try to improve it? Is there a periodic "hell month" that happens twice a year? Twelve times a year? Do you find out about problems when your users call you to complain? Does your corporate "Change Review Board" terrify you? Does each division of your company have their own broken way of doing things? Do you fear that automation will replace you, or break more than it fixes? Are you underpaid and overworked? No vague "management speak" or empty platitudes. This comprehensive guide provides real solutions that prevent these problems and more!

Distributed and Cloud Computing - Kai Hwang 2013-12-18

Distributed and Cloud Computing: From Parallel Processing to the Internet of Things offers complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing. It is the first modern, up-to-date distributed systems textbook; it explains how to create high-performance, scalable, reliable systems, exposing the design principles, architecture, and innovative applications of parallel, distributed, and cloud computing systems. Topics covered by this book include: facilitating management, debugging, migration, and disaster recovery through virtualization; clustered systems for research or ecommerce applications; designing systems as web services; and social networking systems using peer-to-peer computing. The principles of cloud computing are discussed using examples from open-source and commercial applications, along with case studies from the leading distributed computing vendors such as Amazon, Microsoft, and Google. Each chapter includes exercises and further reading, with lecture slides and more available online. This book will be ideal for students taking a distributed systems or distributed computing class, as well as for professional system designers and engineers looking for a reference to the latest distributed technologies including cloud, P2P and grid computing. Complete coverage of modern distributed computing technology including clusters, the grid, service-oriented architecture, massively parallel processors, peer-to-peer networking, and cloud computing Includes case studies from the leading distributed computing vendors: Amazon, Microsoft, Google, and more Explains how to use virtualization to facilitate management, debugging, migration, and disaster recovery Designed for undergraduate or graduate students taking a distributed systems course—each chapter includes exercises and further reading, with lecture slides and more available online

UNIX and Linux System Administration Handbook - Evi Nemeth 2017-09-14

"As an author, editor, and publisher, I never paid much attention to the competition—except in a few cases. This is one of those cases. The UNIX System Administration Handbook is one of the few books we ever measured ourselves against." —Tim O'Reilly, founder of O'Reilly Media "This edition is for those whose systems live in the cloud or in virtualized data centers; those whose administrative work largely takes the form of automation and configuration source code; those who collaborate closely with developers, network engineers, compliance officers, and all the other worker bees who inhabit the modern hive." —Paul Vixie, Internet Hall of Fame-recognized innovator and founder of ISC and Farsight Security "This book is fun and functional as a desktop reference. If you use UNIX and Linux systems, you need this book in your short-reach library. It covers a bit of the systems' history but doesn't bloviate. It's just straight-forward information delivered in a colorful and memorable fashion." —Jason A. Nunnelley UNIX® and Linux® System Administration Handbook, Fifth Edition, is today's definitive guide to installing, configuring, and maintaining any UNIX or Linux system, including systems that supply core Internet and cloud infrastructure. Updated for new distributions and cloud environments, this comprehensive guide covers best practices for every facet of system administration, including storage management, network design and administration, security, web hosting, automation, configuration management, performance analysis,

virtualization, DNS, security, and the management of IT service organizations. The authors—world-class, hands-on technologists—offer indispensable new coverage of cloud platforms, the DevOps philosophy,

continuous deployment, containerization, monitoring, and many other essential topics. Whatever your role in running systems and networks built on UNIX or Linux, this conversational, well-written guide will improve your efficiency and help solve your knottiest problems.