

Hyperledger Fabric Documentation Read The Docs

Integrate an end-to-end logistic chain using IBM Blockchain and IoT platforms Key Features Explore practical implementation of ledger technology in the IoT architecture Study security best practices for your smart devices Understand Blockchain implementation for end-to-end IoT solutions Book Description Blockchain has been the hot topic of late thanks to cryptocurrencies. To make matters more interesting, the financial market is looking for ways to reduce operational costs and generate new business models, and this is where blockchain solutions come into the picture. In addition to this, with Internet of Things (IoT) trending and Arduino, Raspberry Pi, and other devices flooding the market, you can now create cheap devices even at home. Hands-On IoT Solutions with Blockchain starts with an overview of IoT concepts in the current business scenario. It then helps you develop your own device on the IBM Watson IoT platform and create your first IoT solution using Watson and Intel Edison. Once you are familiar with IoT, you will learn about Blockchain technology and its use cases. You will also work with the Hyperledger framework and develop your own Blockchain network. As you progress through the chapters, you'll work with problem statements and learn how to design your solution architecture so that you can create your own integrated Blockchain and IoT solution. The next set of chapters will explain how to implement end-to-end Blockchain solutions with IoT using the IBM Cloud platform. By the end of this book, you will have mastered the convergence of IoT and Blockchain technology and exploited the best practices and drivers to develop a bulletproof integrated solution. What you will learn Understand the key roles of IoT in the current market Study the different aspects of IBM Watson IoT platform Create devices, gateways, and applications connected to the platform Explore the fundamentals of Blockchain Define good use cases for Blockchain Discover the Hyperledger Fabric and Composer frameworks Develop an IBM Watson IoT application using a Intel Edison Integrate IoT with the Blockchain platform Who this book is for Hands-On IoT Solutions with Blockchain is for you if you are an Internet of Things (IoT) analyst, architect, engineer, or any stakeholder responsible for security mechanisms on an IoT infrastructure. This book is also for IT professionals who want to start developing solutions using Blockchain and IoT on the IBM Cloud platform. Basic understanding of IoT will assist you in understanding key concepts covered in the book.

This book offers the most anticipated solution to the blockchain and digital financial questions that are present in the minds of many. It points us to where it all started, where we are at, and a careful and well-informed analysis of what the future holds regarding financial transactions and the growth of cryptocurrency and blockchain technology. The world is consciously taking giant strides into the digital aspect of accounting. With the advent of blockchain and various forms of digital money, it is pertinent for every enthusiastic young mind to understand the basics of the market. The book takes a sneak peek into the future of blockchain and financial technology tech with real-life examples, illustrations, and analysis to tailor the mind of the public to the right path. The industry's most important terminologies and concepts are broken down into bits for everyone. Every page of the book keeps you more informed about a particular subject matter.

Blockchain has emerged as a disruptive technology in the areas of trading assets and sharing information. It has the capability to transform many industries, professions, and aspects of life. The focus of this IBM® Redbooks® publication is to help developers build blockchain solutions and use IBM Blockchain Platform to start, test, and move applications into production. This publication covers some blockchain for business use cases. It also describes how to get started in defining, developing, and deploying a Hyperledger Composer business network to Hyperledger Fabric, both locally on a workstation and remotely on the IBM Blockchain Starter Plan. A fund clearing business network is used

as an example scenario for blockchain and this source code is available for download, testing, and use. The Redpaper contains detailed information on how we put it together and more, so grab a copy of it via the download link on this page as well. This paper is part one of a series of papers and educational materials. Later materials will describe how to use IBM Blockchain Platform to test and scale your business network, to integrate more completely with a COBOL business application running in IBM CICS®, and to manage changes to your business network in a production environment.

Mastering Hyperledger Fabric. A one-stop solution to become Master in the Hyperledger Fabric Key Features Detailed Explanation of One way TLS and mutual TLS Detailed Explanation of docker sockets (docker.sock) Exposed functionalities of Fabric CLI's and SDK's Enterprise-level chaincode development A glimpse of Hyperledger Fabric 2.0 Advanced examples of Node and go lang Fabric SDK Onboard new organization using Node.js SDK (No more CLI) CI/CD for chaincode (Install chaincode directly onto peers from GitHub using Node.js) Fabric setup explanation with Different real-time use cases Deployment of Hyperledger Fabric using docker swarm and Kubernetes Setup and configure caliper to check benchmarks Monitor consortium with Prometheus and grafana Monitor docker and docker swarm using swarmpit and logspout Logging consortium with ELK/EFK stack Some interesting open-source tools and some Bonus concepts Table of Contents Chapter1: Introduction to the Hyperledger Landscape Chapter2: The Disruptive Potential of TLS Chapter3: All about docker sockets Chapter4: Installation Guide Of Prerequisites Chapter5: All about fabric CLI Chapter6: All about SDK's (go lang and Node.js) Chapter7: Advanced Chaincode Development Chapter8: End to End fabric consortium with Solo consensus using docker with one use case Chapter9: End to End fabric Consortium with Kafka consensus using docker swarm with one use case Chapter10: End to End fabric Consortium with Raft consensus using Kubernetes with one use case Chapter11: Private Data Concepts, Consortium level ACL(Access Control Lists) and raft consensus mechanism Chapter12: Setup and Benchmark Blockchain Consortium Using Caliper Chapter13: Monitoring Consortium with Prometheus and grafana Chapter14: Logging Consortium with ELK Stack Chapter15: Glimpse of Hyperledger fabric 2.0 Chapter16: Some Interesting tools Who this Book is For This Book benefits Software Engineers who are ready to shift their focus to distributed technologies and Blockchain. This book provides a comprehensive view of Solution Architecture, so it will be easy for architects to architect their solution. CTO's around the world want to add hyperledger fabric to their technology stack. Managers to cope up with the latest trend. Faculty Professors in order to get industry insights. Even Engineering Students who want to be ready with the latest technologies. Book Description Mastering Hyperledger Fabric is a craving topic for all Hyperledger Fabric Developers around the world. Hyperledger Fabric is an open-source project that helps organizations create and maintain permissioned distributed Blockchain consortiums. This book is for readers who are looking for Hyperledger offerings to build end-to-end projects with growing complexity and functionalities. This book will be a one-stop solution for all developers who want to build blockchain consortiums using Hyperledger Fabric. Topics include TLS, Unix sockets, caliper(Benchmark tool), raft consensus, advanced chaincode development, key collision and MVCC, chaincode access controls, chaincode encryption, node.js SDK, go lang SDK, docker daemon API, private data concepts, onboarding organizations using node.js SDK, deploy hyperledger fabric using Kubernetes, deploy hyperledger fabric using docker swarm, monitoring hyperledger fabric, monitoring Kubernetes, monitoring docker swarm, logging hyperledger fabric. After reading this book the reader will be able to set up Production grade hyperledger fabric consortium using raft consensus mechanisms with monitoring using Prometheus and grafana, even logging. This book explains so many key concepts of hyperledger fabric including 2.0 and written with three years of hyperledger fabric production experience. A practical blockchain handbook designed to take you through implementing and re-engineering banking and financial solutions and

workflows using eight step-by-step projects Key Features Implement various end-to-end blockchain projects and learn to enhance present-day financial solutions Use Ethereum, Hyperledger, and Stellar to build public and private decentralized applications Address complex challenges faced in the BFSI domain using different blockchain platform services Book Description Blockchain technology will continue to play an integral role in the banking and finance sector in the coming years. It will enable enterprises to build transparent and secure business processes. Experts estimate annual savings of up to 20 billion dollars from this technology. This book will help you build financial apps using blockchain, guiding you through enhancing popular products and services in the banking and finance sector. The book starts by explaining the essential concepts of blockchain, and the impact of blockchain technology on the BFSI sector. Next, you'll delve into re-designing existing banking processes and building new financial apps using blockchain. To accomplish this, you'll work through eight blockchain projects. By demonstrating the entire process, the book helps you understand everything from setting up the environment and building frontend portals to system integration and testing apps. You will gain hands-on experience with the Ethereum, Hyperledger Fabric, and Stellar to develop private and public decentralized apps. Finally, you'll learn how to use ancillary platforms and frameworks such as IPFS, Truffle OpenZeppelin, and MetaMask. By the end of this blockchain book, you'll have an in-depth understanding of how to leverage distributed ledgers and smart contracts for financial use cases. What you will learn Design and implement blockchain solutions in a BFSI organization Explore common architectures and implementation models for enterprise blockchain Design blockchain wallets for multi-purpose applications using Ethereum Build secure and fast decentralized trading ecosystems with Blockchain Implement smart contracts to build secure process workflows in Ethereum and Hyperledger Fabric Use the Stellar platform to build KYC and AML-compliant remittance workflows Map complex business workflows and automate backend processes in a blockchain architecture Who this book is for This book is for blockchain and Dapps developers, or anyone looking for a guide to building innovative and highly secure solutions in the fintech domain using real-world use cases. Developers working in financial enterprises and banks, and solution architects looking to build brand new process flows using blockchain technology will also find the book useful. Experience with Solidity programming and prior knowledge of finance and trade are required to get the most out of this book.

'On an aesthetic level, the bold, graphic quality of the works should make them accessible to a wide readership. There will no doubt be a nostalgic familiarity to some of the objects, given the ubiquitous role they played in the daily life of Australians.' -- Dominic Hofstede Graphic Identities presents the work of eight designers practicing in Australia from the 1930s to 1980s whose stories when taken together tell a compelling narrative of visual culture in this country. The names Douglas Annand, Frances Burke, Dahl Collings, Pieter Huveneers, Arthur Leydin, Alistair Morrison and Shirley de Vocht resonate within their industries, but their designs have impacted all our lives through currency, packaging and postage stamps as well as advertising, publishing and architectural signage. Their work in retail (including Myer, David Jones, Farmers), travel (Qantas, Orient Line, Hayman Island), alcohol (Penfolds, Tooth and Co) and banking (Westpac, Reserve Bank of Australia) have solidified the image of some of our most iconic brands. Pioneers of a new Australian aesthetic in open dialogue with international art and design movements, many of the designers in Graphic Identities contributed to the professionalisation of the design sector through industry organisations as well as educational institutions. All played a part in formulating a bold, original, and sophisticated body of work - marking the apotheosis of the analogue era. As an adjunct to the Graphic Identities exhibition at the Powerhouse, Sydney, curated by Senior Curator of Design and Architecture, Keinton Butler, the publication features over 100 reproductions of unique work acquired by the Museum from the estates of the designers from the late-1980s onwards.

Blockchain technology continues to disrupt a wide variety of organizations, from small businesses to the Fortune 500. Today hundreds of blockchain networks are in production, including many built with Hyperledger Fabric. This practical guide shows developers how the latest version of this blockchain infrastructure provides an ideal foundation for developing enterprise blockchain applications or solutions. Authors Matt Zand, Xun Wu, and Mark Anthony Morris demonstrate how the versatile design of Hyperledger Fabric 2.0 satisfies a broad range of industry use cases. Developers with or without previous Hyperledger experience will discover why no other distributed ledger technology framework enjoys such wide adoption by cloud service providers such as Amazon, Alibaba, IBM, Google, and Oracle. Walk through the architecture and components of Hyperledger Fabric 2.0 Migrate your current Hyperledger Fabric projects to version 2.0 Develop blockchain applications on the Hyperledger platform with Node.js Deploy and integrate Hyperledger on Amazon Managed Blockchain, IBM Cloud, and Oracle Cloud Develop blockchain applications with Hyperledger Aries, Avalon, Besu, and Grid Build end-to-end blockchain supply chain applications with Hyperledger

Leverage the power of Hyperledger Fabric to develop Blockchain-based distributed ledgers with ease Key Features Write your own chaincode/smart contracts using Golang on hyperledger network Build and deploy decentralized applications (DApps) Dive into real world blockchain challenges such as integration and scalability Book Description Blockchain and Hyperledger technologies are hot topics today. Hyperledger Fabric and Hyperledger Composer are open source projects that help organizations create private, permissioned blockchain networks. These find application in finance, banking, supply chain, and IoT among several other sectors. This book will be an easy reference to explore and build blockchain networks using Hyperledger technologies. The book starts by outlining the evolution of blockchain, including an overview of relevant blockchain technologies. You will learn how to configure Hyperledger Fabric and become familiar with its architectural components. Using these components, you will learn to build private blockchain networks, along with the applications that connect to them. Starting from principles first, you'll learn to design and launch a network, implement smart contracts in chaincode and much more. By the end of this book, you will be able to build and deploy your own decentralized applications, handling the key pain points encountered in the blockchain life cycle. What you will learn Discover why blockchain is a game changer in the technology landscape Set up blockchain networks using basic Hyperledger Fabric deployment Understand the considerations for creating decentralized applications Learn to integrate business networks with existing systems Write Smart Contracts quickly with Hyperledger Composer Design transaction model and chaincode with Golang Deploy Composer REST Gateway to access the Composer transactions Maintain, monitor, and govern your blockchain solutions Who this book is for The book benefits business leaders as it provides a comprehensive view on blockchain business models, governance structure, and business design considerations of blockchain solutions. Technology leaders stand to gain a lot from the detailed discussion around the technology landscape, technology design, and architecture considerations in the book. With model-driven application development, this guide will speed up understanding and concept development for blockchain application developers. The simple and well organized content will put novices at ease with blockchain concepts and constructs.

Work with blockchain and understand its potential application beyond cryptocurrencies in the domains of healthcare, Internet of Things, finance, decentralized organizations, and open science. Featuring case studies and practical insights generated from a start-up spun off from the author's own lab, this book covers a unique mix of topics not found in others and offers insight into how to overcome real hurdles that arise as the market and consumers grow accustomed to blockchain based start-ups. You'll start with a review of the historical origins of blockchain and explore the basic cryptography needed to make the blockchain work for Bitcoin. You will then learn about the technical

advancements made in the surrounded ecosystem: the Ethereum virtual machine, Solidity, Colored Coins, the Hyperledger Project, Blockchain-as-a-service offered through IBM, Microsoft and more. This book looks at the consequences of machine-to-machine transactions using the blockchain socially, technologically, economically and politically. Blockchain Enabled Applications provides you with a clear perspective of the ecosystem that has developed around the blockchain and the various industries it has penetrated. What You'll Learn Implement the code-base from Fabric and Sawtooth, two open source blockchain-efforts being developed under the Hyperledger Project Evaluate the benefits of integrating blockchain with emerging technologies, such as machine learning and artificial intelligence in the cloud Use the practical insights provided by the case studies to your own projects or start-up ideas Set up a development environment to compile and manage projects Who This Book Is For Developers who are interested in learning about the blockchain as a data-structure, the recent advancements being made and how to implement the code-base. Decision makers within large corporations (product managers, directors or CIO level executives) interested in implementing the blockchain who need more practical insights and not just theory.

The ubiquity of modern technologies has allowed for increased connectivity between people and devices across the globe. This connected infrastructure of networks creates numerous opportunities for applications and uses. As the applications of the internet of things continue to progress so do the security concerns for this technology. The study of threat prevention in the internet of things is necessary as security breaches in this field can ruin industries and lives. Securing the Internet of Things: Concepts, Methodologies, Tools, and Applications is a vital reference source that examines recent developments and emerging trends in security and privacy for the internet of things through new models, practical solutions, and technological advancements related to security. Highlighting a range of topics such as cloud security, threat detection, and open source software, this multi-volume book is ideally designed for engineers, IT consultants, ICT procurement managers, network system integrators, infrastructure service providers, researchers, academics, and professionals interested in current research on security practices pertaining to the internet of things.

In 25 concise steps, you will learn the basics of blockchain technology. No mathematical formulas, program code, or computer science jargon are used. No previous knowledge in computer science, mathematics, programming, or cryptography is required. Terminology is explained through pictures, analogies, and metaphors. This book bridges the gap that exists between purely technical books about the blockchain and purely business-focused books. It does so by explaining both the technical concepts that make up the blockchain and their role in business-relevant applications. What You'll Learn What the blockchain is Why it is needed and what problem it solves Why there is so much excitement about the blockchain and its potential Major components and their purpose How various components of the blockchain work and interact Limitations, why they exist, and what has been done to overcome them Major application scenarios Who This Book Is For Everyone who wants to get a general idea of what blockchain technology is, how it works, and how it will potentially change the financial system as we know it

Learn quick and effective techniques for developing blockchain-based distributed ledgers with ease Key Features Discover why blockchain is a game changer in the technology landscape Set up blockchain networks using Hyperledger Fabric Write smart contracts at speed with Hyperledger Composer Book Description Blockchain and Hyperledger are open source technologies that power the development of decentralized applications. This Learning Path is your helpful reference for exploring and building blockchain networks using Ethereum, Hyperledger Fabric, and Hyperledger Composer. Blockchain Development with Hyperledger will start off by giving you an overview of blockchain and demonstrating how you can set up an Ethereum development environment for developing, packaging, building, and testing

campaign-decentralized applications. You'll then explore the de facto language Solidity, which you can use to develop decentralized applications in Ethereum. Following this, you'll be able to configure Hyperledger Fabric and use it to build private blockchain networks and applications that connect to them. Toward the later chapters, you'll learn how to design and launch a network, and even implement smart contracts in chain code. By the end of this Learning Path, you'll be able to build and deploy your own decentralized applications by addressing the key pain points encountered in the blockchain life cycle. This Learning Path includes content from the following Packt products: Blockchain Quick Start Guide by Xun (Brian) Wu and Weimin Sun Hands-On Blockchain with Hyperledger by Nitin Gaur et al. What you will learn Understand why decentralized applications are necessary Develop and test a decentralized application with Hyperledger Fabric and Hyperledger Composer Write and test a smart contract using Solidity Design transaction models and chain code with Golang Deploy the Composer REpresentational State Transfer (REST) Gateway to access Composer transactions Maintain, monitor, and manage your blockchain solutions Who this book is for This Learning Path is designed for blockchain developers who want to build decentralized applications and smart contracts from scratch using Hyperledger. Basic familiarity with or exposure to any programming language will be useful to get started with this course.

Get up and running with Oracle's premium cloud blockchain services and build distributed blockchain apps with ease Key Features Discover Hyperledger Fabric and its components, features, qualifiers, and architecture Get familiar with the Oracle Blockchain Platform and its unique features Build Hyperledger Fabric-based business networks with Oracle's premium blockchain cloud service Book Description Hyperledger Fabric empowers enterprises to scale out in an unprecedented way, allowing organizations to build and manage blockchain business networks. This quick start guide systematically takes you through distributed ledger technology, blockchain, and Hyperledger Fabric while also helping you understand the significance of Blockchain-as-a-Service (BaaS). The book starts by explaining the blockchain and Hyperledger Fabric architectures. You'll then get to grips with the comprehensive five-step design strategy - explore, engage, experiment, experience, and influence. Next, you'll cover permissioned distributed autonomous organizations (pDAOs), along with the equation to quantify a blockchain solution for a given use case. As you progress, you'll learn how to model your blockchain business network by defining its assets, participants, transactions, and permissions with the help of examples. In the concluding chapters, you'll build on your knowledge as you explore Oracle Blockchain Platform (OBP) in depth and learn how to translate network topology on OBP. By the end of this book, you will be well-versed with OBP and have developed the skills required for infrastructure setup, access control, adding chaincode to a business network, and exposing chaincode to a DApp using REST configuration. What you will learn Model your blockchain-based business network by defining its components, transactions, integrations, and infrastructure through use cases Develop, deploy, and test chaincode using shim and REST, and integrate it with client apps using SDK, REST, and events Explore accounting, blockchain, hyperledger fabric, and its components, features, qualifiers, architecture and structure Understand the importance of Blockchain-as-a-Service (BaaS) Experiment Hyperledger Fabric and delve into the underlying technology Set up a consortium network, nodes, channels, and privacy, and learn how to translate network topology on OBP Who this book is for If you are a blockchain developer, blockchain architect or just a cloud developer looking to get hands-on with Oracle Blockchain Cloud Service, then this book is for you. Some familiarity with the basic concepts of blockchain will be helpful to get the most out of this book

Demystify architecting complex blockchain applications in enterprise environments Architecting Enterprise Blockchain Solutions helps engineers and IT administrators understand how to architect complex blockchain applications in enterprise environments. The book takes a

deep dive into the intricacies of supporting and securing blockchain technology, creating and implementing decentralized applications, and incorporating blockchain into an existing enterprise IT infrastructure. Blockchain is a technology that is experiencing massive growth in many facets of business and the enterprise. Most books around blockchain primarily deal with how blockchains are related to cryptocurrency or focus on pure blockchain development. This book teaches what blockchain technology is and offers insights into its current and future uses in high performance networks and complex ecosystems. • Provides a practical, hands-on approach • Demonstrates the power and flexibility of enterprise blockchains such as Hyperledger and R3 Corda • Explores how blockchain can be used to solve complex IT support and infrastructure problems • Offers numerous hands-on examples and diagrams Get ready to learn how to harness the power and flexibility of enterprise blockchains!

An enterprise blockchain or distributed ledger technology (DLT) is very much like a shared document stored on a cloud drive. There are just two differences. First, there is no master copy of this document stored with an escrow or arbiter, and second, any change to the document happens only after it has been signed off by all required stakeholders. This allows businesses to form a peer-to-peer network and establish a common ground of truth without giving up its control in hands of a single organization. The decentralized nature of the ledger combined with version control or immutability of the stored data is perfect for fast account reconciliation, secure tracking and tracing of products, and transparent records with no costly third-party auditing. This book teaches you how to build such decentralized applications. What's Inside: * Covers v2.0 of Fabric. Examples written in TypeScript and JavaScript* Deploying to production across multiple nodes using Docker* Securing communications with TLS* Handling Data Privacy* Comprehensive coverage of Fabric CA Server and Client* Bonus chapters on Bitcoin and LDAP The author has done justice to it by really starting from the basics and explaining with wit the core concepts and taking the reader slowly to the core of Fabric. - Satej Sahu, Senior Enterprise Architect, Honeywell A very beginner friendly introduction to a massive amount of data needed to operate in the blockchain world. - Gregory Reshetniak, Product Owner, Ocado Technology A detailed bible about Hyperledger Fabric. This book is mandatory in the blockchain world. - Krzysztof Kamyczek, Architect Software Developer, Luxoft

This book constitutes the refereed proceedings of the 10th International Conference on Applications and Techniques in Information Security, ATIS 2019, held in Tamil Nadu, India, in November 2019. The 22 full papers and 2 short papers presented in the volume were carefully reviewed and selected from 50 submissions. The papers are organized in the following topical sections: information security; network security; intrusion detection system; authentication and key management system; security centric applications.

Find out what Blockchain is, how it works, and what it can do for you Blockchain is the technology behind Bitcoin, the revolutionary 'virtual currency' that's changing the way people do business. While Bitcoin has enjoyed some well-deserved hype, Blockchain may be Bitcoin's most vital legacy. Blockchain For Dummies is the ideal starting place for business pros looking to gain a better understanding of what Blockchain is, how it can improve the integrity of their data, and how it can work to fundamentally change their business and enhance their data security. Blockchain For Dummies covers the essential things you need to know about this exciting technology's promise of revolutionizing financial transactions, data security, and information integrity. The book covers the technologies behind Blockchain, introduces a variety of existing Blockchain solutions, and even walks you through creating a small but working Blockchain-based application. Blockchain holds the promise to revolutionize a wide variety of businesses. Get in the know about Blockchain now with Blockchain For Dummies and be ready to make the changes to business that your colleagues and competitors will later wish they'd done. Discover ten ways Blockchain can change business Find out how to apply a Blockchain solution See how to make data more secure Learn how to work with vendors Filled with

vital information and tips on how this paradigm-changing technology can transform your business for the better, this book will not only show you Blockchain's full potential, but your own as well!

Become a Blockchain developer and design, build, publish, test, maintain and secure scalable decentralized Blockchain projects using Bitcoin, Ethereum, NEO, EOS and Hyperledger. This book helps you understand Blockchain beyond development and crypto to better harness its power and capability. You will learn tips to start your own project, and best practices for testing, security, and even compliance. Immerse yourself in this technology and review key topics such as cryptoeconomics, coding your own Blockchain P2P network, different consensus mechanisms, decentralized ledger, mining, wallets, blocks, and transactions. Additionally, this book provides you with hands-on practical tools and examples for creating smart contracts and dApps for different blockchains such as Ethereum, NEO, EOS, and Hyperledger. Aided by practical, real-world coding examples, you'll see how to build dApps with Angular utilizing typescript from start to finish, connect to the blockchain network locally on a test network, and publish on the production mainnet environment. Don't be left out of the next technology revolution – become a Blockchain developer using The Blockchain Developer today. What You'll Learn Explore the Blockchain ecosystem is and the different consensus mechanisms Create miners, wallets, transactions, distributed networks and DApps Review the main features of Bitcoin: Ethereum, NEO and EOS, and Hyperledger are Interact with popular node clients as well as implementing your own Blockchain Publish and test your projects for security and scalability Who This Book Is For Developers, architects and engineers who are interested in learning about Blockchain or implementing Blockchain into a new greenfield project or integrating Blockchain into a brownfield project. Technical entrepreneurs, technical investors or even executives who want to better understand Blockchain technology and its potential.

The book not only implements Hyperledger Fabric, but also shows you how to build and model a blockchain network with Composer. You will master several business blockchain technologies under the Hyperledger umbrella, including Sawtooth, Iroha, decentralized Identity Hyperledger Indy, and Ethereum smart contract machine Burrow etc.

This book constitutes the proceedings of the 6th International Conference on Future Data and Security Engineering, FDSE 2019, held in Nha Trang City, Vietnam, in November 2019. The 38 full papers and 14 short papers presented together with 2 papers of keynote speeches were carefully reviewed and selected from 159 submissions. The selected papers are organized into the following topical headings: Invited Keynotes, Advanced Studies in Machine Learning, Advances in Query Processing and Optimization, Big Data Analytics and Distributed Systems, Deep Learning and Applications, Cloud Data Management and Infrastructure, Security and Privacy Engineering, Authentication and Access Control, Blockchain and Cybersecurity, Emerging Data Management Systems and Applications, Short papers: Security and Data Engineering.

This book constitutes selected papers from the 16th European, Mediterranean, and Middle Eastern Conference, EMCIS 2019, held in Dubai, UAE, in October 2019. EMCIS is dedicated to the definition and establishment of Information Systems as a discipline of high impact for the methodical community and IS professionals, focusing on approaches that facilitate the identification of innovative research of significant relevance to the IS discipline. The 48 full papers presented in this volume were carefully reviewed and selected from a total of 138 submissions. They were organized in topical sections named: Big Data and Analytics; Blockchain Technology and Applications; Cloud Computing; Digital Services and Social Media; e-Government; Enterprise Information Systems; Health-Care Information Systems; Information Systems Security and Information Privacy Protection; Innovative Research Projects; IT Governance; and Management and Organizational

Issues in Information Systems.

This book constitutes the proceedings of the 15th International Workshop on Security and Trust Management, STM 2019, held in Luxembourg City, Luxembourg, in September 2019, and co-located with the 24th European Symposium Research in Computer Security, ESORICS 2019. The 9 full papers and 1 short paper were carefully reviewed and selected from 23 submissions. The papers present novel research on all theoretical and practical aspects of security and trust in ICTs.

In recent years, the surge of blockchain technology has been rising due to its proven reliability in ensuring secure and effective transactions, even between untrusted parties. Its application is broad and covers public and private domains varying from traditional communication networks to more modern networks like the internet of things and the internet of energy crossing fog and edge computing, among others. As technology matures and its standard use cases are established, there is a need to gather recent research that can shed light on several aspects and facts on the use of blockchain technology in different fields of interest. Enabling Blockchain Technology for Secure Networking and Communications consolidates the recent research initiatives directed towards exploiting the advantages of blockchain technology for benefiting several areas of applications that vary from security and robustness to scalability and privacy-preserving and more. The chapters explore the current applications of blockchain for networking and communications, the future potentials of blockchain technology, and some not-yet-prospected areas of research and its application. This book is ideal for practitioners, stakeholders, researchers, academicians, and students interested in the concepts of blockchain technology and the potential and pitfalls of its application in different utilization domains.

This book constitutes the thoroughly refereed post-conference proceedings of the IFIP WG 11.4 International Workshop on Open Problems in Network Security, iNetSec 2015, held in Zurich, Switzerland, in October 2015. iNetSec is the main workshop of the IFIP working group WG 11.4; its objective is to present and discuss open problems and new research directions on all aspects related to network security. The 9 revised full papers presented in this volume were carefully reviewed and selected from 13 submissions. They were organized in topical sections named: network security; intrusion detection; anonymous communication; and cryptography.

The internet is making our daily life as digital as possible and this new era is called the Internet of Everything (IoE). Edge computing is an emerging data analytics concept that addresses the challenges associated with IoE. More specifically, edge computing facilitates data analysis at the edge of the network instead of interacting with cloud-based servers. Therefore, more and more devices need to be added in remote locations without any substantial monitoring strategy. This increased connectivity and the devices used for edge computing will create more room for cyber criminals to exploit the system's vulnerabilities. Ensuring cyber security at the edge should not be an afterthought or a huge challenge. The devices used for edge computing are not designed with traditional IT hardware protocols. There are diverse-use cases in the context of edge computing and Internet of Things (IoT) in remote locations. However, the cyber security configuration and software updates are often overlooked when they are most needed to fight cyber crime and ensure data privacy. Therefore, the threat landscape in the context of edge computing becomes wider and far more challenging. There is a clear need for collaborative work throughout the entire value chain of the network. In this context, this book addresses the cyber security challenges associated with edge computing, which provides a bigger picture of the concepts, techniques, applications, and open research directions in this area. In addition, the book serves as a single source of reference for acquiring the knowledge on the technology, process and people involved in next generation computing and security. It will be a valuable aid for researchers, higher level students and professionals working in the area.

This book covers all the relevant concepts and phases of the blockchain development cycle. It will walk you through a step-by-step process to

build three blockchain projects with differing complexity levels and hurdles. By the end of this book, you will be ready to tackle common issues in the blockchain ecosystem.

Blockchain with Hyperledger Fabric Build decentralized applications using Hyperledger Fabric 2, 2nd Edition Packt Publishing Ltd
AN ESSENTIAL GUIDE TO USING BLOCKCHAIN TO PROVIDE FLEXIBILITY, COST-SAVINGS, AND SECURITY TO DATA MANAGEMENT, DATA ANALYSIS, AND INFORMATION SHARING Blockchain for Distributed Systems Security contains a description of the properties that underpin the formal foundations of Blockchain technologies and explores the practical issues for deployment in cloud and Internet of Things (IoT) platforms. The authors—noted experts in the field—present security and privacy issues that must be addressed for Blockchain technologies to be adopted for civilian and military domains. The book covers a range of topics including data provenance in cloud storage, secure IoT models, auditing architecture, and empirical validation of permissioned Blockchain platforms. The book's security and privacy analysis helps with an understanding of the basics of Blockchain and it explores the quantifying impact of the new attack surfaces introduced by Blockchain technologies and platforms. In addition, the book contains relevant and current updates on the topic. This important resource: Provides an overview of Blockchain-based secure data management and storage for cloud and IoT Covers cutting-edge research findings on topics including invariant-based supply chain protection, information sharing framework, and trust worthy information federation Addresses security and privacy concerns in Blockchain in key areas, such as preventing digital currency miners from launching attacks against mining pools, empirical analysis of the attack surface of Blockchain, and more Written for researchers and experts in computer science and engineering, Blockchain for Distributed Systems Security contains the most recent information and academic research to provide an understanding of the application of Blockchain technology.

The construction industry is amidst a digital transformation that is focused on addressing well-documented issues and calls for significant improvements and changes through increased productivity, whole-life value, client focus, reduction of waste, and being more sustainable. The key aspect to driving change and transformation is the education and upskilling of the required workforce towards developing the required capacities. Various approaches can be taken to embed digital construction within education and through collaborative efforts in order to drive change and facilitate improvements. The Handbook of Research on Driving Transformational Change in the Digital Built Environment focuses on current developments in practice and education towards facilitating transformation in the built environment. This book provides insight, from a practice perspective, in relation to the client's understanding, digitally enabled collaboration, interoperability and open standards, and maturity/capability. Covering topics that include digital transformation and construction, digitally enabled infrastructure, building information modelling, collaborative digital education, and the digital built environment, this book is an ideal reference source for engineers, professionals, and researchers in the field of digital transformation as well as doctoral scholars, doctoral researchers, professionals, and academicians.

This volume constitutes the refereed proceedings of the Confederated International International Workshop on Enterprise Integration, Interoperability and Networking (EI2N), Fact Based Modeling (FBM), Industry Case Studies Program (ICSP), and International Workshop on Methods, Evaluation, Tools and Applications for the Creation and Consumption of Structured Data for the e-Society (Meta4eS), held as part of OTM 2018 in October 2018 in Valletta, Malta. As the three main conferences and the associated workshops all share the distributed aspects of modern computing systems, they experience the application pull created by the Internet and by the so-called Semantic Web, in particular developments of Big Data, increased importance of security issues, and the globalization of mobile-based technologies.

Trade has always been shaped by technological innovation. In recent times, a new technology, Blockchain, has been greeted by many as the next big game-changer. Can Blockchain revolutionize international trade? This publication seeks to demystify the Blockchain phenomenon by providing a basic explanation of the technology. It analyses the relevance of this technology for international trade by reviewing how it is currently used or can be used in the various areas covered by WTO rules. In doing so, it provides an insight into the extent to which this technology could affect cross-border trade in goods and services, and intellectual property rights. It discusses the potential of Blockchain for reducing trade costs and enhancing supply chain transparency as well as the opportunities it provides for small-scale producers and companies. Finally, it reviews various challenges that must be addressed before the technology can be used on a wide scale and have a significant impact on international trade.

Mastering Corda provides you with a consistent, linear, and paced path to learning Corda and building modern enterprise-grade decentralized applications. Using this book, anyone from a complete blockchain beginner to an experienced blockchain or enterprise architect can rapidly understand and write applications like a pro while exploring the technical nuances and intricacies of the Corda platform. Corda is designed for use cases such as finance and investments, supply chain, healthcare, trade finance, insurance, and real estate that require a high-volume of transactions, scalability, and data privacy. If you have basic Java skills, this book will help you understand blockchain and show how you can get started immediately and be involved in the disruption of the future. With this book, you will: Understand Corda's value proposition and alignment with business strategies--particularly relevant to business executives and architects Dive deep into Corda's architecture and blockchain fundamentals Rapidly gain extensive knowledge of and hands-on experience with building Corda applications Compare and contrast Corda with Bitcoin, Ethereum, and Hyperledger Effectively prepare for the Corda certification exam and job interviews involving blockchain Perform data analytics and machine learning on Corda nodes

This Blueprint is intended to define the infrastructure that is required for a blockchain remote peer and to facilitate the deployment of IBM Blockchain Platform on IBM Cloud Private using that infrastructure. This infrastructure includes the necessary document handler components, such as IBM Blockchain Document Store, and covers the required storage for on-chain and off-chain blockchain data. To complete these tasks, you must have a basic understanding of each of the used components or have access the correct educational material to gain that knowledge.

This book provides a comprehensive view of blockchain business models, governance structure, technology landscape, and architecture considerations. It will speed up your understanding and concept development for distributed ledgers.

With new technologies constantly being created, implemented, and sold, it is a robust opportunity for companies to hop on board with the latest digital trends. With the business world undergoing rapid changes and advancements in current times, the transformation process has been rapid and the disruptions significant. This has created a culture of innovation and a plethora of available business opportunities, especially when focused on Central Asia, Southeast Asia, and East Asia. Along with these innovative technologies and new opportunities in the business world comes challenges and trends within the Asian region that require more attention and advanced research to fully understand this digital transformation era and the resulting impacts, challenges, and solutions. The Handbook of Research on Disruptive Innovation and Digital Transformation in Asia addresses key topics for understanding business opportunities in Asia, covering a variety of challenges and nations in the Asian region from technological disruption and innovation to connectivity and economic corridors in Asia, Islamic finance and tourism, and more. Due to its innovative topics and approaches, geographical focus, and methodologies, the chapters

provide readers with a unique value in bringing new perspectives to understanding emerging businesses and challenges in Asia. This book is ideal for professors in academia, deans, students, politicians, policymakers, corporate heads of firms, senior general managers, managing directors, information technology directors and managers, and researchers.

Create real-world applications using Hyperledger Fabric with ease

KEY FEATURES - Understand the importance of Blockchain in an Enterprise. - Master the core characteristics of Blockchain, i.e., Decentralization, Cryptography, and Consensus Algorithms. - Get yourself acquainted with Hyperledger Fabric's core concepts and the design philosophy behind it. - Learn how to work with network configurations, TLS, PDC, ACL, RAFT, monitoring using Prometheus, and Grafana.

DESCRIPTION Hyperledger Fabric is an open-source Enterprise Blockchain project. It is best suited for Enterprise Solutions, where the aim is to deliver Blockchain ready solutions in a closed environment between multiple parties. This book aims to cover Hyperledger Fabric in-depth and its role in enterprise applications. This book is divided into two parts. The first part talks about Blockchain in general, decentralization, consensus algorithms, and various cryptographic primitives in Blockchain. It takes a cue from Bitcoin and Ethereum wherever required. This section aims to cement foundational concepts of Blockchain. The second section focuses on Hyperledger Fabric. It helps you to get a deep level understanding of its key core concepts, main constituents, architecture internals, and transaction flow. It is then followed by examples that will help you set up a network. A detailed explanation of Chaincode will help you understand how to write a Smart Contract, unit test, and deploy them in the dev network. This book also covers Network Configurations, ACLs, RAFT, and Monitoring so that you can start thinking about making production-grade applications.

WHAT WILL YOU LEARN - Get familiar with the fundamentals of Blockchain. - Understand the core concepts of Hyperledger's system architecture. - Create Fabric based blockchain networks with different configurations. - Learn to write, test and deploy smart contracts (chaincode) in Hyperledger. - Get familiar with the Security and Privacy aspect in Blockchain.

WHO THIS BOOK IS FOR This book is for anyone who wants to get started on blockchain. This book is for developers and architects who want to learn how to develop a fabric based blockchain application and apply advanced concepts that help them build enterprise grade applications.

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A radical shift in perspective to transform your organization to become more innovative

The Design Thinking Playbook is an actionable guide to the future of business. By stepping back and questioning the current mindset, the faults of the status quo stand out in stark relief—and this guide gives you the tools and frameworks you need to kick off a digital transformation. Design Thinking is about approaching things differently with a strong user orientation and fast iterations with multidisciplinary teams to solve wicked problems. It is equally applicable to (re-)design products, services, processes, business models, and ecosystems. It inspires radical innovation as a matter of course, and ignites capabilities beyond mere potential. Unmatched as a source of competitive advantage, Design Thinking is the driving force behind those who will lead industries through transformations and evolutions. This book describes how Design Thinking is applied across a variety of industries, enriched with other proven approaches as well as the necessary tools, and the knowledge to use them effectively. Packed with solutions for common challenges including digital transformation, this practical, highly visual discussion shows you how Design Thinking fits into agile methods within management, innovation, and startups. Explore the digitized future using new design criteria to create real value for the user

Foster radical innovation through an inspiring framework for action

Gather the right people to build highly-motivated teams

Apply Design

Thinking, Systems Thinking, Big Data Analytics, and Lean Start-up using new tools and a fresh new perspective Create Minimum Viable Ecosystems (MVEs) for digital processes and services which becomes for example essential in building Blockchain applications Practical frameworks, real-world solutions, and radical innovation wrapped in a whole new outlook give you the power to mindfully lead to new heights. From systems and operations to people, projects, culture, digitalization, and beyond, this invaluable mind shift paves the way for organizations—and individuals—to do great things. When you're ready to give your organization a big step forward, The Design Thinking Playbook is your practical guide to a more innovative future.

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