

Openstack Cloud Computing Architecture Guide

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Handbook of Research on End-to-End Cloud Computing Architecture Design John Wiley & Sons

Design, deploy, and maintain your own private or public Infrastructure as a Service (IaaS), using the open source OpenStack platform. In this practical guide, experienced developers and OpenStack contributors show you how to build clouds based on reference architectures, as well as how to perform daily administration tasks. Designed for horizontal scalability, OpenStack lets you build a cloud by integrating several technologies. This approach provides flexibility, but knowing which options to use can be bewildering. Once you complete this book, you'll know the right questions to ask while you organize compute, storage, and networking resources. If you already know how to manage multiple Ubuntu machines and maintain MySQL, you're ready to: Set up automated deployment and configuration Design a single-node cloud controller Use metrics to improve scalability Explore compute nodes, network design, and storage Install OpenStack packages Use an example architecture to help simplify decision-making Build a working environment to explore an IaaS cloud Manage users, projects, and quotas Tackle maintenance, debugging, and network troubleshooting Monitor, log, backup, and restore

Packt Publishing Ltd

CLOUD COMPUTING SOLUTIONS The main purpose of this book is to include all the cloud-related technologies in a single platform, so that researchers, academicians, postgraduate students, and those in the industry can easily understand the cloud-based ecosystems. This book discusses the evolution of cloud computing through grid computing and cluster computing. It will help researchers and practitioners to understand grid and distributed computing cloud infrastructure, virtual machines, virtualization, live migration, scheduling techniques, auditing concept, security and privacy, business models, and case studies through the state-of-the-art cloud computing countermeasures. This book covers the spectrum of cloud computing-related technologies and the wide-ranging contents will differentiate this book from others. The topics treated in the book include: The evolution of cloud computing from grid computing, cluster computing, and distributed systems; Covers cloud computing and virtualization environments; Discusses live migration, database, auditing, and applications as part of the materials related to cloud computing; Provides concepts of cloud storage, cloud strategy planning, and management, cloud security, and privacy issues; Explains complex concepts clearly and covers information for advanced users and beginners. Audience The primary audience for the book includes IT, computer science specialists, researchers, graduate students, designers, experts, and engineers who are occupied with research.

CCNA Data Center DCICT 200-155 Official Cert Guide Springer

Leverage the power of OpenStack to develop scalable applications with no vendor lock-in OpenStack Cloud Application Development is a fast-paced, professional book for OpenStack developers, delivering comprehensive guidance without wasting time on development fundamentals. Written by experts in the OpenStack community from Infoblox, Gigaspaces, GoDaddy, and Comcast, this book shows you how to work effectively and efficiently within the OpenStack platform to develop large, scalable applications without worrying about underlying hardware. Follow along with an OpenStack build that illustrates how and where each technology comes into play, as you learn expert tips and best practices that make your product stronger. Coverage includes OpenStack service primitives, networking within the OpenStack Ecosystem, deployment of Virtualized Network Functions for

Enterprises, containers, data protection, and much more. If you need to get on board quickly, this professional book is your ideal roadmap to OpenStack development. Understand all aspects of OpenStack technologies Follow an example build to drill down into critical elements Learn the OpenStack best practices and insider tips Leverage the full capability of IaaS at a professional pace OpenStack is supported by dozens of major technology companies, compatible with Amazon Web Services, and can be used alongside or on top of VMWare vSphere and other similar technologies. It frees developers from the confines of hardware and vendor lock-in while providing a reliable, fast, and easy platform for developing scalable cloud applications. OpenStack Cloud Application Development is an expert-led guide to getting the most out of OpenStack, designed specifically for the professional developer.

Guide to Security Assurance for Cloud Computing John Wiley & Sons

Exploit the power of dynamic cloud formation and auto-scaling features to fully implement OpenStack orchestration About This Book Set up, manage, and troubleshoot Heat and effectively automate your datacenter and cloud-based services Achieve high availability, minimize down-time, and automate the deployment of cloud-based services and resources with minimum effort Upgrade your skills and manipulate resources on virtual machines in an unattended fashion using Heat Who This Book Is For If you are a System Engineer, System Administrator, Cloud Administrator, or a Cloud Engineer, then this book is for you. You should have a background of working in a Linux-based setup. Any knowledge of OpenStack-based cloud infrastructure will help you create wonders using this book. What You Will Learn Install an orchestration service for a private cloud environment Tackle errors that show up during the installation and configuration of heat Configure a template for orchestration using the native HOT format Configure a template for orchestration using the AWS cloud formation format Deploy a stack using the HOT template Deploy a test stack using the AWS CloudFormation template Automate and orchestrate cloud-based services with OpenStack Heat In Detail This book is focused on setting up and using one of the most important services in OpenStack orchestration, Heat. First, the book introduces you to the orchestration service for OpenStack to help you understand the uses of the templating mechanism, complex control groups of cloud resources, and huge-potential and multiple-use cases. We then move on to the topology and orchestration specification for cloud applications and standards, before introducing the most popular IaaS cloud framework, Heat. You will get to grips with the standards used in Heat, overview and roadmap, architecture and CLI, heat API, heat engine, CloudWatch API, scaling principles, JeOS and installation and configuration of Heat. We wrap up by giving you some insights into troubleshooting for OpenStack. With easy-to-follow, step-by-step instructions and supporting images, you will be able to manage OpenStack operations by implementing the orchestration services of Heat. Style and approach The book is a step-by-step guide to implementing an orchestration (cloud formation) service for OpenStack-based cloud environments. This book uses real-world scenarios and examples to demonstrate the procedures in an easy-to-understand language with plenty of screenshots to help you get a better understanding.

Openstack for Architects Packt Publishing Ltd

This book presents the state of the art in the field of mobile and wireless networks, and anticipates the arrival of new standards and architectures. It focuses on wireless networks, starting with small personal area networks and progressing onto the very large cells of wireless regional area networks, via local area networks dominated by WiFi technology, and finally metropolitan networks. After a description of the existing 2G and 3G standards, with LTE being the latest release, LTE-A is addressed, which is the first 4G release, and a first indication of 5G is provided as seen through the standardizing bodies. 4G technology is described in detail along with the different LTE extensions related to the massive arrival of femtocells, the increase to a 1 Gbps capacity, and relay techniques. 5G is also discussed in order to show what can be expected in the near future. The Internet of Things is explained in a specific chapter due to its omnipresence in the literature, ad hoc and mesh networks form another important chapter as they have made a comeback after a long period of near hibernation, and the final chapter discusses a particularly recent topic: Mobile-Edge Computing (MEC) servers.

OpenStack for Architects World Scientific

This multi-volume set covers a wide range of topics on innovation, which are all of great interest to academics, policymakers, university administrators, state and regional economic development officials, and students. Two unique features of the volume are the large body of global evidence on innovation presented and its consideration of the following timely and important topics in innovation: cybersecurity, open innovation, the globalization of R&D, and university technology transfer. Innovation is a topic of great importance in many fields in business administration, such as management, strategy, operations management, finance, marketing, and accounting, as well as in numerous social science disciplines, including economics, sociology, political science, and psychology. This volume fully reflects such interdisciplinary approaches. Volume 1 provides extensive global evidence on university technology transfer and innovation partnerships. Volume 2 is focused on the managerial and public policy implications of the globalization of R&D. Volume 3 presents state-of-the-art theoretical and empirical evidence on open innovation. Volume 4 is a comprehensive analysis of cybersecurity. This set is essential reading for those who wish to have a comprehensive understanding of the antecedents and consequences of innovation.

Manage Your Clouds with IBM Cloud Manager with OpenStack for z Systems, V4.2 Packt Publishing Ltd

This book includes the outcomes of the International Conference on Advanced Intelligent Systems for Sustainable Development (AI2SD-2018), held in Tangier, Morocco on July 12–14, 2018. Presenting the latest research in the field of computing sciences and information technology, it discusses new challenges and provides valuable insights into the field, the goal being to stimulate debate, and to promote closer interaction and interdisciplinary collaboration between researchers and practitioners. Though chiefly intended for researchers and practitioners in advanced information technology management and networking, the book will also be of interest to those engaged in emerging fields such as data science and analytics, big data, internet of things, smart networked systems, artificial intelligence, expert systems and cloud computing.

Cloud Computing and Service Science Cengage Learning

This book constitutes extended, revised and selected papers from the 7th 11th International Conference on Cloud Computing and Service Science, CLOSER 2017, held in Porto, Portugal, in April 2017. The 16 papers presented in this volume were carefully reviewed and selected from a total of 123 submissions. CLOSER 2017 focused on the emerging area of Cloud Computing, inspired by some latest advances that concern the infrastructure, operations and available services throughout the global network.

OpenStack Operations Guide Apress

West's COMPTIA CLOUD+ GUIDE TO CLOUD COMPUTING, 2nd Edition, equips students and professionals interested in mastering fundamental, vendor-independent cloud computing concepts. Fully updated content maps to the CompTIA Cloud+ (CVO-003) exam objectives. The new exam has less emphasis on physical host configuration and more emphasis on cloud infrastructure, management and security. Each module in the second edition is packed with enriched features that provide the most effective and durable learning experience, such as self-check questions, group activities and capstone projects that enable learners to strengthen their new skills and knowledge through real design and deployment scenarios. In addition, learners have the opportunity to work with three popular cloud platforms: AWS (Amazon Web Services), Microsoft Azure and GCP (Google Cloud Platform). Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Cloud Computing Technology IBM Redbooks

This open access book introduces cloud computing and related technologies from the concept, technology, and architecture of cloud computing, combined with typical application cases of cloud; provides students with a more complete knowledge framework in the field of cloud computing; and lays the foundation for future research, development, and further study in cloud computing, big data, and other related fields. As the world's leading provider of ICT (information and communication technology) infrastructure and intelligence terminals, Huawei's products are already available in a number of areas, including connectivity, security, wireless, storage, cloud computing, intelligent computing, and artificial intelligence.

Information and Communication Technology for Intelligent Systems "O'Reilly Media, Inc."

Learn how you can put the features of OpenStack to work in the real world in this comprehensive path About This Book Harness the abilities of experienced OpenStack administrators and architects, and run your own private cloud successfully Learn how to install, configure, and manage all of the OpenStack core projects including topics on Object Storage, Block Storage, and Neutron Networking services such as LBaaS and FWaaS Get better equipped to troubleshoot and solve common problems in performance, availability, and automation that confront production-ready OpenStack environments Who This Book Is For This course is for those who are new to OpenStack who want to learn the cloud networking fundamentals and get started with OpenStack networking. Basic understanding of Linux Operating System, Virtualization, and Networking, and Storage principles will come in handy. What You Will Learn Get an introduction to OpenStack and its components Store and retrieve data and images using storage components, such as Cinder, Swift, and Glance Install and configure Swift, the OpenStack Object Storage service, including configuring Container Replication between datacenters Gain hands on experience and familiarity with Horizon, the OpenStack Dashboard

user interface Learn how to automate OpenStack installations using Ansible and Foreman Follow practical advice and examples for running OpenStack in production Fix common issues with images served through Glance and master the art of troubleshooting Neutron networking In Detail OpenStack is a collection of software projects that work together to provide a cloud fabric. Learning OpenStack Cloud Computing course is an exquisite guide that you will need to build cloud environments proficiently. This course will help you gain a clearer understanding of OpenStack's components and their interaction with each other to build a cloud environment. The first module, Learning OpenStack, starts with a brief look into the need for authentication and authorization, the different aspects of dashboards, cloud computing fabric controllers, along with 'Networking as a Service' and 'Software defined Networking'. Then, you will focus on installing, configuring, and troubleshooting different architectures such as Keystone, Horizon, Nova, Neutron, Cinder, Swift, and Glance. After getting familiar with the fundamentals and application of OpenStack, let's move deeper into the realm of OpenStack. In the second module, OpenStack Cloud Computing Cookbook, preview how to build and operate OpenStack cloud computing, storage, networking, and automation. Dive into Neutron, the OpenStack Networking service, and get your hands dirty with configuring ML2, networks, routers, and distributed virtual routers. Further, you'll learn practical examples of Block Storage, LBaaS, and FBaaS. The final module, Troubleshooting OpenStack, will help you quickly diagnose, troubleshoot, and correct problems in your OpenStack. We will diagnose and remediate issues in Keystone, Glance, Neutron networking, Nova, Cinder block storage, Swift object storage, and issues caused by Heat orchestration. This Learning Path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following Packt products: Learning OpenStack by Alok Shrivastwa, Sunil Sarat OpenStack Cloud Computing Cookbook - Third Edition by Kevin Jackson , Cody Bunch, Egle Sigler Troubleshooting OpenStack by Tony Campbell Style and approach This course aims to create a smooth learning path that will teach you how to get started with setting up private and public clouds using a free and open source cloud computing platform—OpenStack. Through this comprehensive course, you'll learn OpenStack Cloud computing from scratch to finish and more!

OpenStack for Architects John Wiley & Sons

This book describes how to architect and design Internet of Things (IoT) solutions that provide end-to-end security and privacy at scale. It is unique in its detailed coverage of threat analysis, protocol analysis, secure design principles, intelligent IoT's impact on privacy, and the effect of usability on security. The book also unveils the impact of digital currency and the dark web on the IoT-security economy. It's both informative and entertaining. "Filled with practical and relevant examples based on years of experience ... with lively discussions and storytelling related to IoT security design flaws and architectural issues."— Dr. James F. Ransome, Senior Director of Security Development Lifecycle (SOL) Engineering, Intel "There is an absolute treasure trove of information within this book that will benefit anyone, not just the engineering community. This book has earned a permanent spot on my office bookshelf."— Erv Comer, Fellow of Engineering, Office of Chief Architect Zebra Technologies "The importance of this work goes well beyond the engineer and architect. The IoT Architect's Guide to Attainable Security & Privacy is a crucial resource for every executive who delivers connected products to the market or uses connected products to run their business."— Kurt Lee, VP Sales and Strategic Alliances at PWNIE Express "If we collectively fail to follow the advice described here regarding IoT security and Privacy, we will continue to add to our mounting pile of exploitable computing devices. The attackers are having a field day. Read this book, now."— Brook S.E. Schoenfeld, Director of Advisory Services at IOActive, previously Master Security Architect at McAfee, and author of Securing Systems

Mobile and Wireless Networks Packt Publishing Ltd

Guide to Cloud Computing for Business and Technology Managers: From Distributed Computing to Cloudware Applications unravels the mystery of cloud computing and explains how it can transform the operating contexts of business enterprises. It provides a clear understanding of what cloud computing really means, what it can do, and when it is practical to use. Addressing the primary management and operation concerns of cloudware, including performance, measurement, monitoring, and security, this pragmatic book: Introduces the enterprise applications integration (EAI) solutions that were a first step toward enabling an integrated enterprise Details service-oriented architecture (SOA) and related technologies that paved the road for cloudware applications Covers delivery models like IaaS, PaaS, and SaaS, and deployment models like public, private, and hybrid clouds Describes Amazon, Google, and Microsoft cloudware solutions and services, as well as those of several other players Demonstrates how cloud computing can reduce costs, achieve business flexibility, and sharpen strategic focus Unlike customary discussions of cloud computing, Guide to Cloud Computing for Business and Technology Managers: From Distributed Computing to Cloudware Applications emphasizes the key differentiator—that cloud computing is able to treat enterprise-level services not merely as discrete stand-alone services, but as Internet-locatable, composable, and repackable building blocks for generating dynamic real-world enterprise business processes.

World Scientific Reference On Innovation, The (In 4 Volumes) Packt Publishing Ltd

The book gathers papers addressing state-of-the-art research in all areas of Information and Communication Technologies and their applications in intelligent computing, cloud storage, data mining and software analysis. It

presents the outcomes of the third International Conference on Information and Communication Technology for Intelligent Systems, which was held on April 6 – 7, 2018, in Ahmedabad, India. Divided into two volumes, the book discusses the fundamentals of various data analytics and algorithms, making it a valuable resource for researchers ' future studies.

Learning OpenStack Networking (Neutron) IBM Redbooks Discover new opportunities to empower your private cloud by making the most of the OpenStack universe Key Features This practical guide teaches you how to extend the core functionalities of OpenStack Discover OpenStack's flexibility by writing custom applications and network plugins Deploy a containerized environment in OpenStack through a hands-on and example-driven approach Book Description OpenStack is a very popular cloud computing platform that has enabled several organizations during the last few years to successfully implement their Infrastructure as a Service (IaaS) platforms. This book will guide you through new features of the latest OpenStack releases and how to bring them into production straightaway in an agile way. It starts by showing you how to expand your current OpenStack setup and how to approach your next OpenStack Data Center generation deployment. You will discover how to extend your storage and network capacity and also take advantage of containerization technology such as Docker and Kubernetes in OpenStack. Additionally, you'll explore the power of big data as a Service terminology implemented in OpenStack by integrating the Sahara project. This book will teach you how to build Hadoop clusters and launch jobs in a very simple way. Then you'll automate and deploy applications on top of OpenStack. You will discover how to write your own plugin in the Murano project. The final part of the book will go through best practices for security such as identity, access management, and authentication exposed by Keystone in OpenStack. By the end of this book, you will be ready to extend and customize your private cloud based on your requirements. What you will learn Explore new incubated projects in the OpenStack ecosystem and see how they work Architect your OpenStack private cloud with extended features of the latest versions Consolidate OpenStack authentication in your large infrastructure to avoid complexity Find out how to expand your computing power in OpenStack on a large scale Reduce your OpenStack storage cost management by taking advantage of external tools Provide easy, on-demand, cloud-ready applications to developers using OpenStack in no time Enter the big data world and find out how to launch elastic jobs easily in OpenStack Boost your extended OpenStack private cloud performance through real-world scenarios Who this book is for This book is for system administrators, cloud architects, and developers who have experience working with OpenStack and are ready to step up and extend its functionalities. A good knowledge of basic OpenStack components is required. In addition, familiarity with Linux boxes and a good understanding of network and virtualization jargon is required.

OpenStack Cloud Application Development CRC Press

This book is written to help enterprise architects implement an OpenStack(r) cloud. With architects with one foot in information technology and the other in business operations in mind, we want to offer insights and best practices to help you achieve multiple (and sometimes competing) goals. If you're looking for vendor-neutral answers about planning your path to an OpenStack cloud, you're in the right place. Members of the OpenStack community—technologists, business leaders and product managers—collaborated on this book to explain how to get started with an OpenStack cloud. We've included pros and cons to help you make better choices when setting up your cloud, along with anticipated investments of both time and money. In this book, we'll discuss the considerations involved and how to make OpenStack cloud decisions about models, forming your team, organization and process changes, choosing workloads, and implementation from proof-of-concept through ongoing maintenance. Topics include: * Your technology options and their pros and cons * What to expect in support, level of investment, and customization—from each type of cloud and consumption model * Operational models for a cloud, including staffing, plus how to manage consumption of cloud services in your business * How to assess the cloud's value to your business. After reading this book, you'll understand the process of building an OpenStack cloud, various cloud models, and operational and application approaches. You'll understand what decisions to make before building your cloud, and their effects on cost, resources and capabilities.

Certified OpenStack Administrator Study Guide Springer

Integrate, deploy, rapidly configure, and successfully manage your own big data-intensive clusters in the cloud using OpenStack Sahara About This Book A fast paced guide to help you utilize the benefits of Sahara in OpenStack to meet the Big Data world of Hadoop. A step by step approach to simplify the complexity of Hadoop configuration, deployment and maintenance. Who This Book Is For This book targets data scientists, cloud developers and Devops Engineers who would like to become proficient with OpenStack Sahara. Ideally, this book is well suitable for readers who are familiar with databases, Hadoop and Spark solutions. Additionally, a basic prior knowledge of OpenStack is expected. The readers should also be familiar with different Linux boxes, distributions and virtualization technology. What You Will Learn Integrate and Install Sahara with OpenStack environment Learn Sahara architecture under the hood Rapidly configure and scale Hadoop clusters on top of OpenStack Explore the Sahara REST API to create, deploy and manage a Hadoop cluster Learn the Elastic Processing Data (EDP) facility to execute jobs in clusters from Sahara Cover other Hadoop stable plugins existing supported by Sahara Discover different features provided by Sahara for Hadoop provisioning and deployment Learn how to troubleshoot OpenStack Sahara issues In

Detail The Sahara project is a module that aims to simplify the building of data processing capabilities on OpenStack. The goal of this book is to provide a focused, fast paced guide to installing, configuring, and getting started with integrating Hadoop with OpenStack, using Sahara. The book should explain to users how to deploy their data-intensive Hadoop and Spark clusters on top of OpenStack. It will also cover how to use the Sahara REST API, how to develop applications for Elastic Data Processing on Openstack, and setting up hadoop or spark clusters on Openstack. Style and approach This book takes a step by step approach teaching how to integrate, deploy and manage data using OpenStack Sahara. It will teach how the OpenStack Sahara is beneficial by simplifying the complexity of Hadoop configuration, deployment and maintenance.

The IoT Architect's Guide to Attainable Security and Privacy Packt Publishing Ltd

Cloud computing has become integrated into all sectors, from business to quotidian life. Since it has revolutionized modern computing, there is a need for updated research related to the architecture and frameworks necessary to maintain its efficiency. The Handbook of Research on End-to-End Cloud Computing Architecture Design provides architectural design and implementation studies on cloud computing from an end-to-end approach, including the latest industrial works and extensive research studies of cloud computing. This handbook enumerates deep dive and systemic studies of cloud computing from architecture to implementation. This book is a comprehensive publication ideal for programmers, IT professionals, students, researchers, and engineers.

Integration of Services into Workflow Applications Packt Pub Limited

Today, new business models in the marketplace coexist with traditional ones and their well-established IT architectures. They generate new business needs and new IT requirements that can only be satisfied by new service models and new technological approaches. These changes are reshaping traditional IT concepts. Cloud in its three main variants (Public, Hybrid, and Private) represents the major and most viable answer to those IT requirements, and software-defined infrastructure (SDI) is its major technological enabler. IBM® technology, with its rich and complete set of storage hardware and software products, supports SDI both in an open standard framework and in other vendors' environments. IBM services are able to deliver solutions to the customers with their extensive knowledge of the topic and the experiences gained in partnership with clients. This IBM Redpaper™ publication focuses on software-defined storage (SDS) and IBM Storage Systems product offerings for software-defined environments (SDEs). It also provides use case examples across various industries that cover different client needs, proposed solutions, and results. This paper can help you to understand current organizational capabilities and challenges, and to identify specific business objectives to be achieved by implementing an SDS solution in your enterprise.

Advanced Intelligent Systems for Sustainable Development (AI2SD ' 2018) Manning Publications Company OpenStack for Architects Packt Publishing Ltd