

## Abc Of Zabbix Performance Tuning

Learn how to gather detailed statistics and data with this one-stop, comprehensive course along with hands-on recipes to get your infrastructure up and running with Zabbix. About This Book Monitor your network and deploy impressive business solutions with Zabbix Get practical recipes to automate your Zabbix infrastructure and create impressive graphs Integrate, customize, and extend your monitoring solutions with external components and software. Who This Book Is For This course is for System Administrators who have been managing and monitoring infrastructure. You do not need any knowledge about Zabbix. What You Will Learn Efficiently collect data from a large variety of monitoring objects Organize your data in graphs, charts, maps, and slide shows Write your own custom probes and monitoring scripts to extend Zabbix Configure Zabbix and its database to be high available and fault-tolerant Automate repetitive procedures using Zabbix's API Find out how to monitor SNMP devices Manage hosts, users, and permissions while acting upon monitored conditions Set up your Zabbix infrastructure efficiently Customize the Zabbix interface to suit your system needs Monitor your VMware infrastructure in a quick and easy way with Zabbix In Detail Nowadays, monitoring systems play a crucial role in any IT environment. They are extensively used to not only measure your system's performance, but also to forecast capacity issues. This is where Zabbix, one of the most popular monitoring solutions for networks and applications, comes into the picture. With an efficient monitoring system in place, you'll be able to foresee when your infrastructure runs under capacity and react accordingly. Due to the critical role a monitoring system plays, it is fundamental to implement it in the best way from its initial setup. This avoids misleading, confusing, or, even worse, false alarms that can disrupt an efficient and healthy IT department. This course is for administrators who are looking for an end-to-end monitoring solution. It will get you accustomed with the powerful monitoring solution, starting with installation and explaining the fundamentals of Zabbix. Moving on, we explore the complex functionalities of Zabbix in the form of enticing recipes. These recipes will help you to gain control of your infrastructure. You will be able to organize your data in the form of graphs and charts along with building intelligent triggers for monitoring your network proactively. Toward the end, you will gain expertise in monitoring your networks and applications using Zabbix. 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: Zabbix Network Monitoring-Second Edition Zabbix Cookbook Mastering Zabbix-Second Edition Style and approach This course is a compact practical guide that starts from the fundamentals of Zabbix and takes you all the way to building a monitoring solution that gathers data from a large variety of systems. Along the way, we will discuss the low-level operational details that should benefit you even if you have used Zabbix for a while. It also follows a step-by-step approach that is easy to follow, full of engaging examples, and will help you apply the theory to practice. Your complete guide to designing, deploying, and managing OpenStack-based clouds in mid-to-large IT infrastructures About This Book\* Design and deploy an OpenStack-based cloud in your mid-to-large IT infrastructure using automation tools and best practices\* Keep yourself up-to-date with valuable insights into OpenStack components and new services in the latest OpenStack release\* Discover how the new features in the latest OpenStack release can help your enterprise and infrastructure Who This Book Is For This book is for system administrators, cloud engineers, and system architects who would like to deploy an OpenStack-based cloud in a mid-to-large IT infrastructure. This book requires a moderate level of system administration and familiarity with cloud concepts. What You Will Learn\* Explore the main architecture design of OpenStack components and core-by-core services, and how they work together\* Design different high availability scenarios and plan for a no-single-point-of-failure environment\* Set up a multinode environment in production using orchestration tools\* Boost OpenStack's

performance with advanced configuration\* Delve into various hypervisors and container technology supported by OpenStack\* Get familiar with deployment methods and discover use cases in a real production environment\* Adopt the DevOps style of automation while deploying and operating in an OpenStack environment\* Monitor the cloud infrastructure and make decisions on maintenance and performance improvement

In Detail

In this second edition, you will get to grips with the latest features of OpenStack. Starting with an overview of the OpenStack architecture, you'll see how to adopt the DevOps style of automation while deploying and operating in an OpenStack environment. We'll show you how to create your own OpenStack private cloud. Then you'll learn about various hypervisors and container technology supported by OpenStack. You'll get an understanding about the segregation of compute nodes based on reliability and availability needs. We'll cover various storage types in OpenStack and advanced networking aspects such as SDN and NFV. Next, you'll understand the OpenStack infrastructure from a cloud user point of view. Moving on, you'll develop troubleshooting skills, and get a comprehensive understanding of services such as high availability and failover in OpenStack. Finally, you will gain experience of running a centralized logging server and monitoring OpenStack services. The book will show you how to carry out performance tuning based on OpenStack service logs. You will be able to master OpenStack benchmarking and performance tuning. By the end of the book, you'll be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies.

Apache Ignite is one of the most widely used open source memory-centric distributed, caching, and processing platform. This allows the users to use the platform as an in-memory computing framework or a full functional persistence data stores with SQL and ACID transaction support. On the other hand, Apache Ignite can be used for accelerating existing Relational and NoSQL databases, processing events & streaming data or developing Microservices in fault-tolerant fashion. This book addressed anyone interested in learning in-memory computing and distributed database. This book intends to provide someone with little to no experience of Apache Ignite with an opportunity to learn how to use this platform effectively from scratch taking a practical hands-on approach to learning. Please see the table of contents for more details.

Discover over 90 practical and exciting recipes that leverage the power of OpenVPN 2.4 to help you obtain a reliable and secure VPN

About This Book

Master the skills of configuring, managing, and securing your VPN using the latest OpenVPN

Gain expertise in establishing IPv6 connections and understand PolarSSL using the latest version of OpenVPN

This book contains enticing recipes about OpenVPN functionalities that cater to mission critical applications

Who This Book Is For

This book is for system administrators who have a basic knowledge of OpenVPN and are eagerly waiting to build, secure, and manage VPNs using the latest version. This book assumes some prior knowledge of TCP/IP networking and OpenVPN and you must have network administration skills to get the most out of this book.

What You Will Learn

Determine the best type of OpenVPN setup for your networking needs

Get to grips with the encryption, authentication, and certifications features of OpenSSL. Integrate an OpenVPN server into the local IT infrastructure with the scripting features of OpenVPN

Ease the integration of Windows clients into the VPN using Windows-specific client-side configuration

Understand the authentication plugins for PAM and LDAP

Get to know the difference between TUN-style and TAP-style networks and when to use what

Troubleshoot your VPN setup

Establish a connection via IPv6 along with demonstrations

In Detail

OpenVPN provides an extensible VPN framework that has been designed to ease site-specific customization, such as providing the capability to distribute a customized installation package to clients, and supporting alternative authentication methods via OpenVPN's plugin module interface. This book provides you with many different recipes to help you set up, monitor, and troubleshoot an OpenVPN network. You will learn to configure a scalable, load-balanced VPN server farm that

can handle thousands of dynamic connections from incoming VPN clients. You will also get to grips with the encryption, authentication, security, extensibility, and certifications features of OpenSSL. You will also get an understanding of IPv6 support and will get a demonstration of how to establish a connection via IPv6. This book will explore all the advanced features of OpenVPN and even some undocumented options, covering all the common network setups such as point-to-point networks and multi-client TUN-style and TAP-style networks. Finally, you will learn to manage, secure, and troubleshoot your virtual private networks using OpenVPN 2.4. **Style and approach** This practical, recipe-based book covers the core functionalities of OpenVPN ending with troubleshooting, performance tuning and making the readers inquisitive about the advanced features.

Use this in-depth guide to correctly design benchmarks, measure key performance metrics of .NET applications, and analyze results. This book presents dozens of case studies to help you understand complicated benchmarking topics. You will avoid common pitfalls, control the accuracy of your measurements, and improve performance of your software. Author Andrey Akinshin has maintained BenchmarkDotNet (the most popular .NET library for benchmarking) for five years and covers common mistakes that developers usually make in their benchmarks. This book includes not only .NET-specific content but also essential knowledge about performance measurements which can be applied to any language or platform (common benchmarking methodology, statistics, and low-level features of modern hardware). **What You'll Learn** Be aware of the best practices for writing benchmarks and performance tests Avoid the common benchmarking pitfalls Know the hardware and software factors that affect application performance Analyze performance measurements **Who This Book Is For** .NET developers concerned with the performance of their applications

Monitor your network hardware, servers, and web performance effectively and efficiently. Performance is one of the main issues that every administrator faces at one point or another. This book will help you to identify and mitigate it. The book starts with an introduction to Zabbix and the most common mistakes that are usually overlooked while deploying it. You will discover the importance of an impressive and easy-to-use front-end and how to develop one, along with comparisons between Apache, Nginx, and lighttpd web servers. Storage, as an important aspect of every deployment, is covered and you will be shown how to choose the right storage system for you and configure it to suit your deployment. Towards the end of the book, you will walk through the intricacies of the operating system; the final piece of the puzzle that holds all the components together. You will then dive into advanced topics including using a specific piece of hardware for each of the components, the Zabbix proxy, and firewall settings. By the end of the book, you will be able to tune your Zabbix implementation to achieve maximum performance.

Discover practical recipes to help you efficiently monitor enterprise IT infrastructure for Windows, Linux, and networking **Key Features** Find out how you can leverage some of the most exciting features of Zabbix 5 Perform professional IT infrastructure and application monitoring on multiple platforms Discover easy-to-follow, practical solutions to problems in network monitoring with Zabbix **Book Description** Zabbix offers useful insights into your infrastructure performance and issues and enables you to enhance your monitoring setup with its variety of powerful features. This book covers hands-on, easy-to-follow recipes for using Zabbix 5 for effectively monitoring the performance of devices and applications over networks. The book starts by guiding you through the installation of Zabbix and using the Zabbix frontend. You'll then work your way through the most prominent features of Zabbix and make the right design choices for building a scalable and easily manageable environment. The book contains recipes for building items and triggers for different types of monitoring, building templates, and using Zabbix proxies. As you advance, you'll learn how to use the Zabbix API for customization and manage your Zabbix server and database efficiently. Finally, you'll find

quick solutions to the common and not-so-common problems that you may encounter in your everyday Zabbix monitoring work. By the end of this Zabbix book, you'll have learned how to use Zabbix for all your monitoring needs and be able to build a solid Zabbix setup by leveraging its key functionalities. What you will learn

- Explore the different types of monitoring available in Zabbix 5
- Find out how to build your own Zabbix templates
- Use Zabbix proxies for effective load balancing/scaling
- Work with custom integrations and the Zabbix API
- Set up triggers and alerting with Zabbix 5
- Maintain your Zabbix setup for scaling, backups, and upgrades
- Discover how to perform advanced Zabbix database management
- Monitor cloud-based products such as Amazon Web Services (AWS), Azure, and Docker

Who this book is for This book is for IT engineers who want to get started with Zabbix and anyone with an intermediate understanding of Zabbix looking to extend their knowledge. Although not necessary, prior experience with Zabbix will help you to make the most of this book.

This updated edition of Michael W. Lucas' definitive volume on FreeBSD-based systems adds coverage of modern disks, the ZFS filesystem IPv6, redesigned jail and packaging systems, and virtualization, among dozens of new features added in the last 10 years. FreeBSD is the muscle behind companies like Netflix and EMC. Any place where someone does heavy lifting on the Internet, you'll find FreeBSD. This newly revised edition of Absolute FreeBSD brings FreeBSD's strengths to bear on your problems and covers FreeBSD's newest features, all in the inimitable style that has made author Michael W. Lucas' system administration books so popular. Any computer system is only as good as the system administrator's knowledge. Absolute FreeBSD teaches you everything you need to know about managing FreeBSD systems, from installation, configuration, and taking the system from "just working" to "working well." A cohesive focus on service delivery and best practice means that you can apply much of the book to other operating systems. Absolute FreeBSD dives deep into server management, taking you beyond just making things work and into understanding why they work. You'll learn:

- How to best install FreeBSD to meet your needs
- Which filesystem to use in your environment
- How to back up and restore critical data
- How to tweak the kernel, and when not to
- Network configuration, from activating interfaces to selecting congestion control algorithms
- How to manage UFS, ZFS, and other critical filesystems
- FreeBSD's software packaging system, including how to build your own package repository
- How and when to upgrade
- Techniques to build your own FreeBSD
- Advanced security features like blacklistd and packet filtering
- How to monitor and adjust performance
- Container-style virtualization with jails
- Diskless systems
- Panic management and bug reporting

With Absolute FreeBSD you will get the solid introduction you need; and if you're a fan of the earlier editions, you will expand your skills even further.

A guide for MySQL administrators covers such topics as benchmarking, server performance, indexing, queries, hardware optimization, replication, scaling, cloud hosting, and backup and recovery.

Get up to speed with Prometheus, the metrics-based monitoring system used by tens of thousands of organizations in production. This practical guide provides application developers, sysadmins, and DevOps practitioners with a hands-on introduction to the most important aspects of Prometheus, including dashboarding and alerting, direct code instrumentation, and metric collection from third-party systems with exporters. This open source system has gained popularity over the past few years for good reason. With its simple yet powerful data model and query language, Prometheus does one thing, and it does it well. Author and Prometheus developer Brian Brazil guides you through Prometheus setup, the Node exporter, and the Alertmanager, then demonstrates how to use them for application and infrastructure monitoring. Know where and how much to apply instrumentation to your application code

- Identify metrics with labels using unique key-value pairs
- Get an introduction to Grafana, a popular tool for building dashboards
- Learn how to use the Node Exporter to monitor your

infrastructure Use service discovery to provide different views of your machines and services  
Use Prometheus with Kubernetes and examine exporters you can use with containers Convert data from other monitoring systems into the Prometheus format

This book constitutes the proceedings of the 17th International Conference on Passive and Active Measurement, PAM 2016, held in Heraklion, Crete, Greece, in March/April 2016. The 30 full papers presented in this volume were carefully reviewed and selected from 93 submissions. They are organized in topical sections named: security and privacy; mobile and cellular; the last mile; testbeds and frameworks; web; DNS and routing; IXPs and MPLS; and scheduling and timing.

Gather detailed statistics and deploy impressive business solutions with Zabbix 4.0 Key Features Experience the full impact of Zabbix 4.0, a useful and increasingly popular tool Enhance your network's performance and manage hosts and systems A step-by-step guide to smarter network monitoring Book Description Zabbix 4 Network Monitoring is the perfect starting point for monitoring the performance of your network devices and applications with Zabbix. Even if you've never used a monitoring solution before, this book will get you up and running quickly. You'll learn to monitor more sophisticated operations with ease and soon feel in complete control of your network, ready to meet any challenges you might face. Starting with the installation, you will discover the new features in Zabbix 4.0. You will then get to grips with native Zabbix agents and Simple Network Management Protocol (SNMP) devices. You will also explore Zabbix's integrated functionality for monitoring Java application servers and VMware. This book also covers notifications, permission management, system maintenance, and troubleshooting, so you can be confident that every potential challenge and task is under your control. If you're working with larger environments, you'll also be able to find out more about distributed data collection using Zabbix proxies. Once you're confident and ready to put these concepts into practice, you will understand how to optimize and improve performance. Troubleshooting network issues is vital for anyone working with Zabbix, so the book also helps you work through any technical snags and glitches you might face. By the end of this book, you will have learned more advanced techniques to fine-tune your system and make sure it is in a healthy state. What you will learn Install Zabbix server and an agent from source Manage hosts, users, and permissions while acting upon monitored conditions Visualize data with the help of ad hoc graphs, custom graphs, and maps Simplify complex configurations and learn to automate them Monitor everything from web pages to IPMI devices and Java applications to VMware stats Configure Zabbix to send alerts including problem severity and time periods Troubleshoot any network issue Who this book is for If you're new to Zabbix look no further than this book. Zabbix 4 Network Monitoring is for system and network administrators who are looking to put their knowledge to work with Zabbix 4.0.

Obtain all the skills you need to configure and manage a PostgreSQL database. In this book you will begin by installing and configuring PostgreSQL on a server by focusing on system-level parameter settings before installation. You will also look at key post-installation steps to avoid issues in the future. The basic configuration of PostgreSQL is tuned for compatibility rather than performance. Keeping this in mind, you will fine-tune your PostgreSQL parameters based on your environment and application behavior. You will then get tips to improve database monitoring and maintenance followed by database security for handling sensitive data in PostgreSQL. Every system containing valuable data needs to be backed-up regularly. PostgreSQL follows a simple back-up procedure and provides fundamental approaches to back up your data. You will go through these approaches and choose the right one based on your environment. Running your application with limited resources can be tricky. To achieve this you will implement a pooling mechanism for your PostgreSQL instances to connect to other databases. Finally, you will take a look at some basic errors faced while working with PostgreSQL and learn to resolve them in the quickest manner. What You Will Learn Configure

PostgreSQL for performance Monitor and maintain PostgreSQL instances Implement a backup strategy for your data Resolve errors faced while using PostgreSQL Who This Book Is For Readers with basic knowledge of PostgreSQL who wish to implement key solutions based on their environment.

If you are an experienced network administrator looking for a comprehensive monitoring solution that will keep a watchful eye on networks, then this book is for you.

A practical book filled with advanced recipes as well as plenty of code and real-life examples which will make your learning curve quick and easy. If you are a software developer who wants to develop distributed applications based on messaging [BISAC]; then this book is for you. It's assumed that you have some experience with multithreading applications and distributed applications. You are also expected to know the basic concepts of Web and cloud applications in order to follow the recipes effectively.

Learn how to monitor your large IT environments using Zabbix with this one-stop, comprehensive guide to the Zabbix world About This Book Create a tailor-made monitoring solution based on your specific needs Learn advanced techniques of Zabbix to monitor networks, performances, and other critical features in large environments Integrate, customize, and extend your monitoring solutions with external components and software Who This Book Is For This book is intended for system administrators and IT architects who need to better integrate their Zabbix installation with their surrounding environment. A basic, working knowledge of Zabbix and Linux is assumed so that the book can focus on how to use every component to its full advantage. It will also be helpful to be familiar with programming concepts and languages but if not, all the content in the book is thorough and well documented. What You Will Learn Efficiently collect data from a large variety of monitoring objects Organize your data in graphs, charts, maps, and slide shows Build intelligent triggers and alarms to monitor your network proactively Write your own custom probes and monitoring scripts to extend Zabbix Configure Zabbix and its database to be high available and fault-tolerant Automate repetitive procedures using Zabbix's API Integrate Zabbix with external systems Understand the protocol and how to interact with it by writing your own custom agent In Detail Nowadays monitoring systems play a crucial role in any IT environment. They are extensively used to not only measure your system's performance, but also to forecast capacity issues. This is where Zabbix, one of the most popular monitoring solutions for networks and applications, comes into the picture. With an efficient monitoring system in place you'll be able to foresee when your infrastructure runs under capacity and react accordingly. Due to the critical role a monitoring system plays, it is fundamental to implement it in the best way from its initial setup. This avoids misleading, confusing, or, even worse, false alarms which can disrupt an efficient and healthy IT department. This new edition will provide you with all the knowledge you need to make strategic and practical decisions about the Zabbix monitoring system. The setup you'll do with this book will fit your environment and monitoring needs like a glove. You will be guided through the initial steps of choosing the correct size and configuration for your system, to what to monitor and how to implement your own custom monitoring component. Exporting and integrating your data with other systems is also covered. By the end of this book, you will have a tailor-made and well configured monitoring system and will understand with absolute clarity how crucial it is to your IT environment. Style and approach This book is an easy to follow, step-by-step guide to monitoring network and performance in large environments with Zabbix. It is designed for real-world Zabbix administrators, and is comprised of a perfect mix of theoretical explanations and practical applications, making it your perfect companion.

Web-based platforms have become vehicles for enterprises to realize their digital strategy and are key to positive user engagement. The performance of these platforms can make the difference between an effective sale and a negative review. There exist several tools and methodologies to enhance your digital platform's performance, and Modern Web Performance

Optimization has arrived to walk you through them with an expert's guidance. Author Shailesh Kumar Shivakumar breaks the study of web performance optimization down into four digestible, applicable dimensions: performance patterns, framework and methods, process and tools, and the modern web. This multi-faceted approach ensures a broad optimization of your platforms and avoids the typical pitfalls of neglecting essential steps that so many often do. Shivakumar analyzes web performance ecosystem components such as validation, governance, metrics, key performance indicators, assessments, and monitoring, just to name a few. The book discusses reference architectures and relevant tools and technologies for successfully implementing a best practices–driven solution. Modern web frameworks such as HTML5 and PWA are also covered. Modern Web Performance Optimization puts readers from any level of experience at ease. Accessible templates, real-world case studies, and your very own performance optimization checklist make this book an engaging and interactive learning opportunity for platform owners across industries. Developers, engineers, project managers, and more are set up for long-term success with Modern Web Performance Optimization at their fingertips. What You Will Learn Analyze the performance optimization across end-to-end layers Utilize a comprehensive web optimization framework for digital projects Implement proven methods, best practices, and tools for web performance optimization Who This Book Is For System administrators, front-end developers, professionals looking to understand how to optimize their online presence

Computer and Information Technology (CIT) are now involved in governmental, industrial, and business domains more than ever. Thus, it is important for CIT personnel to continue academic research to improve technology and its adoption to modern applications. The up-to-date research and technologies must be distributed to researchers and CIT community continuously to aid future development. The 10th International Conference on Computing and Information Technology (IC 2 IT2014) organized by King Mongkut's University of Technology North Bangkok (KMUTNB) and partners provides an exchange of the state of the art and future developments in the two key areas of this process: Computer Networking and Data Mining. Behind the background of the foundation of ASEAN, it becomes clear that efficient languages, business principles and communication methods need to be adapted, unified and especially optimized to gain a maximum benefit to the users and customers of future IT systems. The Essential Guide to Scaling Your Business Solution Written by Oracle ACE Director and MySQL expert Ronald Bradford, with coauthor Chris Schneider, Effective MySQL: Replication Techniques in Depth describes what is needed to understand and implement MySQL replication to build scalable solutions. This book includes detailed syntax examples to demonstrate the features, options, and limitations of native MySQL replication. Providing an evaluation of various new replication features and additional third-party product implementations, this Oracle Press guide helps to ensure your MySQL environment can support the various high-availability needs of your business. Master the strengths and limitations of native asynchronous replication in a MySQL topology Identify the important features to improve replication for growing business requirements Recognize the key business factors to determine your optimal highavailability needs Understand the benefits of using MySQL replication for failover scenarios Identify the key configuration variables and SQL commands affecting master/ slave replication Learn about the advancements in replication techniques provided by new products, including Tungsten Replicator and Galera Optimize your replication management with various utilities and toolkits Find additional detailed information and presentations at EffectiveMySQL.com.

Discover your complete guide to designing, deploying, and managing OpenStack-based clouds in mid-to-large IT infrastructures with best practices, expert understanding, and more About This Book Design and deploy an OpenStack-based cloud in your mid-to-large IT infrastructure using automation tools and best practices Keep yourself up-to-date with valuable insights into

OpenStack components and new services in the latest OpenStack release Discover how the new features in the latest OpenStack release can help your enterprise and infrastructure Who This Book Is For This book is for system administrators, cloud engineers, and system architects who would like to deploy an OpenStack-based cloud in a mid-to-large IT infrastructure. This book requires a moderate level of system administration and familiarity with cloud concepts. What You Will Learn Explore the main architecture design of OpenStack components and core-by-core services, and how they work together Design different high availability scenarios and plan for a no-single-point-of-failure environment Set up a multinode environment in production using orchestration tools Boost OpenStack's performance with advanced configuration Delve into various hypervisors and container technology supported by OpenStack Get familiar with deployment methods and discover use cases in a real production environment Adopt the DevOps style of automation while deploying and operating in an OpenStack environment Monitor the cloud infrastructure and make decisions on maintenance and performance improvement In Detail In this second edition, you will get to grips with the latest features of OpenStack. Starting with an overview of the OpenStack architecture, you'll see how to adopt the DevOps style of automation while deploying and operating in an OpenStack environment. We'll show you how to create your own OpenStack private cloud. Then you'll learn about various hypervisors and container technology supported by OpenStack. You'll get an understanding about the segregation of compute nodes based on reliability and availability needs. We'll cover various storage types in OpenStack and advanced networking aspects such as SDN and NFV. Next, you'll understand the OpenStack infrastructure from a cloud user point of view. Moving on, you'll develop troubleshooting skills, and get a comprehensive understanding of services such as high availability and failover in OpenStack. Finally, you will gain experience of running a centralized logging server and monitoring OpenStack services. The book will show you how to carry out performance tuning based on OpenStack service logs. You will be able to master OpenStack benchmarking and performance tuning. By the end of the book, you'll be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies. Style and approach This book will help you understand the flexibility of OpenStack by showcasing integration of several out-of-the-box solutions in order to build a large-scale cloud environment.. It will also cover detailed discussions on the various design and deployment strategies for implementing a fault-tolerant and highly available cloud infrastructure.

If you have some experience with Zabbix and wish to take your infrastructure to the next level, then this book is for you. Before you start with Zabbix, or monitoring in general, it is best to have some basic Linux knowledge and a good understanding of snmp, virtualization, and scripting.

A practical guide to administer, monitor and replicate your PostgreSQL 11 database Key Features Study and apply the newly introduced features in PostgreSQL 11 Tackle any problem in PostgreSQL 11 administration and management Catch up on expert techniques for monitoring, fine-tuning, and securing your database Book Description PostgreSQL is a powerful, open source database management system with an enviable reputation for high performance and stability. With many new features in its arsenal, PostgreSQL 11 allows you to scale up your PostgreSQL infrastructure. This book takes a step-by-step, recipe-based approach to effective PostgreSQL administration. The book will introduce you to new features such as logical replication, native table partitioning, additional query parallelism, and much more to help you to understand and control, crash recovery and plan backups. You will learn how to tackle a variety of problems and pain points for any database administrator such as creating tables, managing views, improving performance, and securing your database. As you make steady progress, the book will draw attention to important topics such as monitoring roles, backup, and recovery of your PostgreSQL 11 database to help you understand roles and



produce a summary of log files, ensuring high availability, concurrency, and replication. By the end of this book, you will have the necessary knowledge to manage your PostgreSQL 11 database efficiently. What you will learn Troubleshoot open source PostgreSQL version 11 on various platforms Deploy best practices for planning and designing live databases Select and implement robust backup and recovery techniques in PostgreSQL 11 Use pgAdmin or OmniDB to perform database administrator (DBA) tasks Adopt efficient replication and high availability techniques in PostgreSQL Improve the performance of your PostgreSQL solution Who this book is for This book is designed for database administrators, data architects, database developers, or anyone with an interest in planning and running live production databases using PostgreSQL 11. It is also ideal if you're looking for hands-on solutions to any problem associated with PostgreSQL 11 administration. Some experience with handling PostgreSQL databases will be beneficial

With this practical book, you'll discover how to catch complications in your distributed system before they develop into costly problems. Based on his extensive experience in systems ops at large technology companies, author Slawek Ligus describes an effective data-driven approach for monitoring and alerting that enables you to maintain high availability and deliver a high quality of service. Learn methods for measuring state changes and data flow in your system, and set up alerts to help you recover quickly from problems when they do arise. If you're a system operator waging the daily battle to provide the best performance at the lowest cost, this book is for you. Monitor every component of your application stack, from the network to user experience Learn how to draw the right conclusions from the metrics you obtain Develop a robust alerting system that can identify problematic anomalies—without raising false alarms Address system failures by their impact on resource utilization and user experience Plan an alerting configuration that scales with your expanding network Learn how to choose appropriate maintenance times automatically Develop a work environment that fosters flexibility and adaptability

This IBM® Redbooks® publication addresses performance tuning topics to help leverage the virtualization strengths of the POWER® platform to solve clients' system resource utilization challenges, and maximize system throughput and capacity. We examine the performance monitoring tools, utilities, documentation, and other resources available to help technical teams provide optimized business solutions and support for applications running on IBM POWER systems' virtualized environments. The book offers application performance examples deployed on IBM Power Systems™ utilizing performance monitoring tools to leverage the comprehensive set of POWER virtualization features: Logical Partitions (LPARs), micro-partitioning, active memory sharing, workload partitions, and more. We provide a well-defined and documented performance tuning model in a POWER system virtualized environment to help you plan a foundation for scaling, capacity, and optimization . This book targets technical professionals (technical consultants, technical support staff, IT Architects, and IT Specialists) responsible for providing solutions and support on IBM POWER systems, including performance tuning.

Discover real world scenarios for Proxmox troubleshooting and become an expert cloud builder About This Book Formulate Proxmox-based solutions and set up virtual machines of any size while gaining expertise even on the most complex multi-cluster setups Master the skills needed to analyze, monitor, and troubleshoot real-world virtual environments This is the most up-to-date title on mastering Proxmox, with examples based on the new Linux Kernel 4.10.15 and Debian Stretch (9.x) Who This Book Is For This book is for Linux and system administrators and professionals working in IT teams who would like to design and implement an enterprise-quality virtualized environment using Proxmox. Some knowledge of networking and virtualization concepts is assumed. What You Will Learn Install basic Proxmox VE nodes and get to know the Proxmox GUI Get to know Proxmox's internal structure and mechanics Create

and manage KVM or LXC-based virtual machines Understand advanced virtual networks Configure high availability Proxmox nodes Integrate Ceph big data storage with the Proxmox hypervisor Plan a large virtual environment for cloud-based services Discover real-world scenarios for Proxmox troubleshooting In Detail Proxmox is an open source server virtualization solution that has enterprise-class features for managing virtual machines, for storage, and to virtualize both Linux and Windows application workloads. You'll begin with a refresher on the advanced installation features and the Proxmox GUI to familiarize yourself with the Proxmox VE hypervisor. Then, you'll move on to explore Proxmox under the hood, focusing on storage systems, such as Ceph, used with Proxmox. Moving on, you'll learn to manage KVM virtual machines, deploy Linux containers fast, and see how networking is handled in Proxmox. You'll also learn how to protect a cluster or a VM with a firewall and explore the new high availability features introduced in Proxmox VE 5.0. Next, you'll dive deeper into the backup/restore strategy and see how to properly update and upgrade a Proxmox node. Later, you'll learn how to monitor a Proxmox cluster and all of its components using Zabbix. Finally, you'll discover how to recover Proxmox from disaster strikes through some real-world examples. By the end of the book, you'll be an expert at making Proxmox work in production environments with minimal downtime. Style and approach This book walks you through every aspect of virtualization using Proxmox using a practical, scenario-based approach that features best practices and all the weaponry you need to succeed when building virtual environments with Proxmox 5.0.

The rapid increase of cloud computing, high performance computing (HPC) and the vast growth in Internet and Social Media use have aroused the interest in energy consumption and the carbon footprint of Data Centres. Data Centres primarily contain electronic equipment used for data processing (servers), data storage (storage equipment), and communications (network equipment). Collectively, this equipment processes, stores, and transmits digital information and is known as information technology (IT) equipment. Advanced Concepts for Renewable Energy Supply of Data Centres introduces a number of technical solutions for the supply of power and cooling energy into Data Centres with enhanced utilisation of renewable energy sources in order to achieve low energy Data Centres. Because of the high energy density nature of these unique infrastructures, it is essential to implement energy efficiency measures and reduce consumption before introducing any renewable energy source. A holistic approach is used with the objective of integrating many technical solutions such as management of the IT (Information Technology) load, efficient electrical supply to the IT systems, Low-Ex air-conditioning systems, interaction with district heating and cooling networks, re-use of heat, free cooling (air, seawater, groundwater), optimal use of heat and cold storage, electrical storage and integration in smart grids. This book is therefore a catalogue of advanced technical concepts that could be integrated into Data Centres portfolio in order to increase the overall efficiency and the share of renewable energies in power and cooling supply. Based on dynamic energy models implemented in TRNSYS some concepts are deeply evaluated through yearly simulations. The results of the simulation are illustrated with Sankey charts, where the energy flows per year within the subsystems of each concept for a selected scenario are shown, and graphs showing the results of parametric analysis. A set of environmental metrics (as the non-renewable primary energy) and financial metrics (CAPEX and OPEX) as well of energy efficiency metrics like the well-known PUE, are described and used to evaluate the different technical concepts.

Making Grids Work includes selected articles from the CoreGRID Workshop on Grid Programming Models, Grid and P2P Systems Architecture, Grid Systems, Tools and Environments held at the Institute of Computer Science, Foundation for Research and Technology - Hellas in Crete, Greece, June 2007. This workshop brought together representatives of the academic and industrial communities performing Grid research in

Europe. Organized within the context of the CoreGRID Network of Excellence, this workshop provided a forum for the presentation and exchange of views on the latest developments in Grid Technology research. This volume is the 7th in the series of CoreGRID books. Making Grids Work is designed for a professional audience, composed of researchers and practitioners in industry. This volume is also suitable for graduate-level students in computer science.

A comprehensive guide to rolling out Datadog to monitor infrastructure and applications running in both cloud and datacenter environments

- Key Features
- Learn Datadog to proactively monitor your infrastructure and cloud services
- Use Datadog as a platform for aggregating monitoring efforts in your organization
- Leverage Datadog's alerting service to implement on-call and site reliability engineering (SRE) processes

**Book Description** Datadog is an essential cloud monitoring and operational analytics tool which enables the monitoring of servers, virtual machines, containers, databases, third-party tools, and application services. IT and DevOps teams can easily leverage Datadog to monitor infrastructure and cloud services, and this book will show you how. The book starts by describing basic monitoring concepts and types of monitoring that are rolled out in a large-scale IT production engineering environment. Moving on, the book covers how standard monitoring features are implemented on the Datadog platform and how they can be rolled out in a real-world production environment. As you advance, you'll discover how Datadog is integrated with popular software components that are used to build cloud platforms. The book also provides details on how to use monitoring standards such as Java Management Extensions (JMX) and StatsD to extend the Datadog platform. Finally, you'll get to grips with monitoring fundamentals, learn how monitoring can be rolled out using Datadog proactively, and find out how to extend and customize the Datadog platform. By the end of this Datadog book, you will have gained the skills needed to monitor your cloud infrastructure and the software applications running on it using Datadog. What you will learn

- Understand monitoring fundamentals, including metrics, monitors, alerts, and thresholds
- Implement core monitoring requirements using Datadog features
- Explore Datadog's integration with cloud platforms and tools
- Extend Datadog using custom scripting and standards such as JMX and StatsD
- Discover how proactive monitoring can be rolled out using various Datadog features
- Understand how Datadog can be used to monitor microservices in both Docker and Kubernetes environments
- Get to grips with advanced Datadog features such as APM and Security Monitoring

Who this book is for This book is for DevOps engineers, site reliability engineers (SREs), IT Production engineers, software developers and architects, cloud engineers, system administrators, and anyone looking to monitor and visualize their infrastructure and applications with Datadog. Basic working knowledge of cloud and infrastructure is useful. Working experience of Linux distribution and some scripting knowledge is required to fully take advantage of the material provided in the book.

Neuroanatomy is an extremely complex subject. Overwhelmed by anatomical detail, students often miss out on the functional beauty of the nervous system and its relevance to clinical practice. This book resolves this dilemma, using high-quality radiological images, interactive pedagogy & case studies to bring the subject to life.

Today's global organizations depend on being able to unlock business insights from massive volumes of data. Now, with IBM® FlashSystem 900, powered by IBM FlashCore™ technology, they can make faster decisions based on real-time insights and unleash the power of the most demanding applications, including online transaction processing (OLTP) and analytics databases, virtual desktop infrastructures (VDIs), technical computing applications, and cloud environments. This IBM Redbooks® publication introduces clients to the IBM FlashSystem® 900. It provides in-depth knowledge of the product architecture, software and hardware, implementation, and hints and tips. Also illustrated are use cases that show real-world solutions for tiering, flash-only, and preferred-read, and also examples of the benefits

gained by integrating the FlashSystem storage into business environments. This book is intended for pre-sales and post-sales technical support professionals and storage administrators, and for anyone who wants to understand how to implement this new and exciting technology. This book describes the following offerings of the IBM Spectrum™ Storage family: IBM Spectrum Storage™ IBM Spectrum Control™ IBM Spectrum Virtualize™ IBM Spectrum Scale™ IBM Spectrum Accelerate™

The Sarbanes-Oxley Act (officially titled the Public Company Accounting Reform and Investor Protection Act of 2002), signed into law on 30 July 2002 by President Bush, is considered the most significant change to federal securities laws in the United States since the New Deal. It came in the wake of a series of corporate financial scandals, including those affecting Enron, Arthur Andersen, and WorldCom. The law is named after Senator Paul Sarbanes and Representative Michael G. Oxley. It was approved by the House by a vote of 423-3 and by the Senate 99-0. This book illustrates the many Open Source cost-saving opportunities that public companies can explore in their IT enterprise to meet mandatory compliance requirements of the Sarbanes-Oxley act. This book will also demonstrate by example and technical reference both the infrastructure components for Open Source that can be made compliant, and the Open Source tools that can aid in the journey of compliance. Although many books and reference material have been authored on the financial and business side of Sox compliance, very little material is available that directly address the information technology considerations, even less so on how Open Source fits into that discussion. The format of the book will begin each chapter with the IT business and executive considerations of Open Source and SOX compliance. The remaining chapter verbiage will include specific examinations of Open Source applications and tools which relate to the given subject matter. \* Only book that shows companies how to use Open Source tools to achieve SOX compliance, which dramatically lowers the cost of using proprietary, commercial applications. \* Only SOX compliance book specifically detailing steps to achieve SOX compliance for IT Professionals.

Gather detailed statistics and deploy impressive business solutions with Zabbix 4.0 Key Features Experience the full impact of Zabbix 4.0, a useful and increasingly popular tool Enhance your network's performance and manage hosts and systems A step-by-step guide to smarter network monitoring Book Description Zabbix 4 Network Monitoring is the perfect starting point for monitoring the performance of your network devices and applications with Zabbix. Even if you've never used a monitoring solution before, this book will get you up and running quickly. You'll learn to monitor more sophisticated operations with ease and soon feel in complete control of your network, ready to meet any challenges you might face. Starting with the installation, you will discover the new features in Zabbix 4.0. You will then get to grips with native Zabbix agents and Simple Network Management Protocol (SNMP) devices. You will also explore Zabbix's integrated functionality for monitoring Java application servers and VMware. This book also covers notifications, permission management, system maintenance, and troubleshooting, so you can be confident that every potential challenge and task is under your control. If you're working with larger environments, you'll also be able to find out more about distributed data collection using Zabbix proxies. Once you're confident and ready to put these concepts into practice, you will understand how to optimize and improve performance. Troubleshooting network issues is vital for anyone working with Zabbix, so the book also helps you work through any technical snags and glitches you might face. By the end of this book, you will have learned more advanced techniques to fine-tune your system and make sure it is in a healthy state. What you will learn Install Zabbix server and an agent from source Manage hosts, users, and permissions while acting upon monitored conditions Visualize data with the help of ad hoc graphs, custom graphs, and maps Simplify complex configurations and learn to automate them Monitor everything from web pages to IPMI devices and Java applications to VMware stats Configure Zabbix to send alerts including problem severity and time periods

Troubleshoot any network issue Who this book is for If you're new to Zabbix look no further than this book. Zabbix 4 Network Monitoring is for system and network administrators who are looking to put their knowledge to work with Zabbix 4.0. Downloading the example code for this book ...

Zabbix Performance TuningPackt Publishing Ltd

This comprehensive guide will help you to choose the right practical option and make strategic decisions about the OpenStack cloud environment to fit your infrastructure in production. At the start, this book will explain the OpenStack core architecture. You will soon be shown how to create your own OpenStack private cloud. Next, you will move on to cover the key security layer and network troubleshooting skills, along with some advanced networking features. Finally, you will gain experience of centralizing and logging OpenStack. The book will show you how to carry out performance tuning based on OpenStack service logs. By the end of this book, you will be ready to take steps to deploy and manage an OpenStack cloud with the latest open source technologies.

Learn how to monitor your large IT environments using Zabbix with this one-stop, comprehensive guide to the Zabbix worldAbout This Book• Create a tailor-made monitoring solution based on your specific needs• Learn advanced techniques of Zabbix to monitor networks, performances, and other critical features in large environments• Integrate, customize, and extend your monitoring solutions with external components and softwareWho This Book Is ForThis book is intended for system administrators and IT architects who need to better integrate their Zabbix installation with their surrounding environment. A basic, working knowledge of Zabbix and Linux is assumed so that the book can focus on how to use every component to its full advantage. It will also be helpful to be familiar with programming concepts and languages but if not, all the content in the book is thorough and well documented.What You Will Learn• Efficiently collect data from a large variety of monitoring objects• Organize your data in graphs, charts, maps, and slide shows• Build intelligent triggers and alarms to monitor your network proactively• Write your own custom probes and monitoring scripts to extend Zabbix• Configure Zabbix and its database to be high available and fault-tolerant• Automate repetitive procedures using Zabbix's API• Integrate Zabbix with external systems• Understand the protocol and how to interact with it by writing your own custom agentIn DetailNowadays monitoring systems play a crucial role in any IT environment. They are extensively used to not only measure your system's performance, but also to forecast capacity issues. This is where Zabbix, one of the most popular monitoring solutions for networks and applications, comes into the picture. With an efficient monitoring system in place you'll be able to foresee when your infrastructure runs under capacity and react accordingly. Due to the critical role a monitoring system plays, it is fundamental to implement it in the best way from its initial setup. This avoids misleading, confusing, or, even worse, false alarms which can disrupt an efficient and healthy IT department.This new edition will provide you with all the knowledge you need to make strategic and practical decisions about the Zabbix monitoring system. The setup you'll do with this book will fit your environment and monitoring needs like a glove. You will be guided through the initial steps of choosing the correct size and configuration for your system, to what to monitor and how to implement your own custom monitoring component. Exporting and integrating your data with other systems is also covered.By the end of this book, you will have a tailor-made and well configured monitoring system and will understand with absolute clarity how crucial it is to your IT environment.Style and approachThis book is an easy to follow, step-by-step guide to monitoring network and performance in large environments with Zabbix. It is designed for real-world Zabbix administrators, and is comprised of a perfect mix of theoretical explanations and practical applications, making it your perfect companion. The Cloud Computing Bible is a complete reference to cloud computing that presents the technologies, protocols, platforms and infrastructure that make cloud computing possible and

desirable. Many of the cloud computing books on the market today are small books of 300 pages or less and the larger books tend to be programming books or security titles. A longer format book such as Cloud Computing Bible allows a complete definition of the topic as well as in-depth introductions to essential technologies and platforms. Additionally it allows significant technologies to be presented in a form that provides enough detail for the reader to determine if it is something that they are interested in learning more about. It is important to stress platform and technologies as the main subject and intersperse that with products in order to provide an extended life span, but have current appeal. The book will be divided into five parts: The Value Proposition, Platforms, Infrastructure, Services and Applications, and The Mobile Cloud.

Die Anzahl der IT-Systeme wächst stetig. Täglich kommen neue Server und Geräte in unseren Netzwerken zum Einsatz. Doch die Anzahl der Personen, die diese Netzwerke betreuen, nimmt nicht im gleichen Maße zu. Damit Systeme und Netzwerke dennoch stabil bleiben, wird effektives und effizientes Monitoring zu einem entscheidenden Faktor. Eine Monitoring-Lösung, die sich für komplexere Aufgaben in Unternehmen bewährt hat, bietet seit mehr als 10 Jahren das Open-Source-Monitoring-System Zabbix. In diesem Buch erfahren Sie alles über das Monitoring mit Zabbix. Neben den Grundlagen werden auch Spezialthemen wie Skalierung, Tuning und Erweiterung eines Zabbix-Servers erläutert. Mit zahlreichen konkreten Beispielen aus seiner beruflichen Praxis veranschaulicht der Autor die Arbeit mit Zabbix und bezieht dabei auch die wesentlichen Neuerungen der Version 3 ein. Der Inhalt richtet sich gleichermaßen an Anfänger und Profis. Wenn Sie noch nicht mit Zabbix überwachen, lernen Sie Schritt für Schritt die Einrichtung eines professionellen IT-Monitorings. Wenn Sie Zabbix bereits nutzen, gibt Ihnen das Buch viele Tipps aus der Praxis und sofort nutzbare Beispiele, wie Sie konkrete Anforderungen umsetzen.

High Performance MySQL is the definitive guide to building fast, reliable systems with MySQL. Written by noted experts with years of real-world experience building very large systems, this book covers every aspect of MySQL performance in detail, and focuses on robustness, security, and data integrity. High Performance MySQL teaches you advanced techniques in depth so you can bring out MySQL's full power. Learn how to design schemas, indexes, queries and advanced MySQL features for maximum performance, and get detailed guidance for tuning your MySQL server, operating system, and hardware to their fullest potential. You'll also learn practical, safe, high-performance ways to scale your applications with replication, load balancing, high availability, and failover. This second edition is completely revised and greatly expanded, with deeper coverage in all areas. Major additions include: Emphasis throughout on both performance and reliability Thorough coverage of storage engines, including in-depth tuning and optimizations for the InnoDB storage engine Effects of new features in MySQL 5.0 and 5.1, including stored procedures, partitioned databases, triggers, and views A detailed discussion on how to build very large, highly scalable systems with MySQL New options for backups and replication Optimization of advanced querying features, such as full-text searches Four new appendices The book also includes chapters on benchmarking, profiling, backups, security, and tools and techniques to help you measure, monitor, and manage your MySQL installations.

The goal of the project is to provide the polish scientific community with an IT platform based on grid computer clusters, enabling e-science research in various fields. The created infrastructure is both compatible and interoperable with existing european and worldwide grid frameworks. The system ensures scalability and enables the integration of additional local clusters, belonging to universities, research institutions and technology platforms. This state-of-the-art survey describes the experience and the scientific results obtained by project partners as well as the outcome of research and development activities carried out within the Polish Infrastructure for Information Science Support in the European Research Space PL-Grid (PL-

Grid 2011), held in December 2011 in Krakow, Poland. The 26 papers are organized in topical sections on: eclipse parallel tools platform integrated with QoSGrid, the migrating desktop, science gateways based on the vine toolkit, the gridspace experiment platform, and the InSilico-Lab environment.

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