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# Online Library Red Hat Enterprise Linux Documentation

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As a market-leading, free, open-source Linux operating system (OS), Fedora 10 is implemented in Red Hat Enterprise Linux and serves as an excellent OS for those who want more frequent updates. Best-selling author Christopher Negus offers an ideal companion resource for both new and advanced Linux users. He presents clear, thorough instructions so you can learn how to make Linux installation simple and painless, take advantage of the desktop interface, and use the Linux shell, file system, and text editor. He also describes key system administration skills, including setting up users, automating system tasks, backing

up and restoring files, and understanding the latest security issues and threats. Included is both a DVD distribution of Fedora Linux 10 and a bootable Fedora LiveCD. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

This IBM® Redbooks® publication addresses host attachment and interoperability considerations for the IBM System Storage® DS8000® series. Within this book, you can find information about the most popular host operating systems platforms, including Windows®, IBM AIX®, VIOS, Linux®, Solaris, HP-UX, VMware, Apple, and IBM z/OS® The topics covered in this book target administrators or other technical per-

sonnel with a working knowledge of storage systems and a general understanding of open systems. You can use this book as guidance when installing, attaching, and configuring System Storage DS8000. The practical, usage-oriented guidance provided in this book complements the IBM System Storage DS8000 Host Systems Attachment Guide, SC26-7917.

More than a quarter of a million copies sold in previous editions! Freedom is a feature With Fedora's new Online Desktop, you are free to shape your desktop environment to include the services, applications, and online friends you desire. As always, Fedora's total dedication to freedom lets you draw on thousands of free soft-

ware packages to create the exact desktop or server computer you need. Fedora puts together the software (provided here on CD and DVD). This book acts as a guide to everything from playing music and writing documents to configuring many powerful Web, file, print, DHCP, and database servers. Customize Fedora or Red Hat Enterprise Linux to: Explore your computer or the Internet from GNOME®, KDE®, or Online Desktops Manage and use documents, spreadsheets, presentations, music, and images Try the new advanced PulseAudio sound server Draw from online software repositories with Package Manager and Package Updater Build an Internet server with e-mail, Web, DNS, FTP, and database services Secure your computer with firewalls, password protection, and SELinux Try out cutting-edge Fedora 8 features: Use Codeina to get legal software to play MP3, Windows media, and other audio/video formats Organize photos, music, friends, docs, and Web favorites in the new experimental Online Desktop Explore the latest in KVM and QEMU virtualization and AIGLX 3D-desktop What's on the DVD and CD-ROM? Install Fedo-

ra 8 (8GB) from DVD Boot Fedora 8 GNOME Live CD, and then install its contents to your hard drive System Requirements: Please see the Preface and Appendix A for details and complete system requirements. Open for more! Check out the new Online Desktop Find ten cool things to do with Fedora Run a Fedora 8 quick install Add pop and power with Online Desktop and 3D acceleration Organizing the people, places, and things you need on your desktop is now easier with the new GNOME Online Desktop. Get organized, then pile on some bling with 3D-accelerated desktop effects. Put friends, photos, and fun on your new Online Desktop Your favorite people and your online favorites are totally accessible from the new GNOME Online Desktop. Play with 3D desktop animations Continued improvements in 3D software let you rotate workspaces on a 3D cube, choose 3D minimize effects, and set 3D wobble effects.

The Definitive Linux Resource--Fully Updated and Expanded Get full details on the powerful features of Red Hat Enterprise Linux and Fedora 7 from this fully revised, one-stop guide. Linux expert

Richard Petersen covers all the bases, from configuring your desktop, customizing your system, and accessing software repositories to handling files and directories, managing devices and servers, and sharing system resources. Inside, you'll get in-depth coverage of Fedora 7's device and network auto-configuration, IPv6 and .NET support, SE Linux, software repository installs, custom distribution spins, and system administration tools. You'll learn how to deploy sound security measures, configure automatic device detection, set up logical volumes for file management, and create your own Fedora distribution using your favorite software. Install, use, secure, and manage Red Hat Enterprise Linux and the new Fedora 7 Configure services using Fedora administration tools for network access, software updates, and file management (LVM and GFS2) Manage users, services, file systems, hotplug devices, and printers Deploy powerful desktop, office, database, graphics, multimedia, e-mail, Web, and FTP applications Optimize security with IPsec, SE Linux, Kerberos, and Netfilter Maintain FTP, Web, mail, DNS, proxy, print, news,

and database servers Administer system resources using GRUB, Yum, HAL, MONO, and udev Select, download, and install a Fedora distribution spin Auto-configure IPv6, DHCPv6, and DHCP networks Access remote files and printers with NFS, GFS2, and SAMBA

Highlights: > Updated to the latest version of Red Hat Enterprise Linux 7 > Updated to cover ALL official exam objectives for the RHCSA and RHCE exams based on Red Hat Enterprise Linux 7 > Equally good for self-study and in-class training > Step-by-step exercises to accomplish tasks > Do-It-Yourself challenge labs at the end of each chapter > Concepts explained with diagrams > Commands and options summarized in tables > Exam tips included > FOUR scenario-based sample exams (TWO for RHCSA and TWO for RHCE) > TWENTY-FIVE chapters (THIRTEEN for RHCSA and TWELVE for RHCE) > Separate sections on RHCSA and RHCE RHCSA Section (chapters 1 to 13): covers local and network (automated with kickstart) RHEL7 installations, general Linux concepts and basic tools, compression and archiving, text file editing, file manip-

ulation and security, processes and task scheduling, bash shell features, software package administration, yum repository configuration, host virtualization, virtual machines, system boot, kernel management, system initialization and service management with systemd, local logging, users and groups, LVM and file systems, AutoFS, Swap, ACLs, firewall, SELinux, network interfaces, NTP/LDAP clients, SSH, and TCP Wrappers. RHCE Section (chapters 14 to 25): covers shell scripting, interface bonding and teaming, IPv6 and routing configuration, NTP, firewalld, Kerberos authentication, kernel tuning, resource utilization reporting, network logging, block storage sharing with iSCSI, file sharing with NFS and Samba/CIFS, HTTP/HTTPS web servers and virtual hosting, Postfix mail SMTP, DNS, and MariaDB. Each chapter lists major topics and relevant exam objectives in the beginning and ends with a summary followed by review questions/answers and Do-It-Yourself challenge labs.

A step-by-step guide to Fedora and Red Hat Enterprise Linux covers such topics as the shell, networking, system administration, setting up servers,

and programming tools.

\* An indispensable resource for Fedora users who must now work without customer support from Red Hat, Inc., covering critical troubleshooting techniques for networks, internal servers, and external servers \* Chris Negus is a well-known Linux authority and also the author of the top-selling Red Hat Linux Bible (0-7645-4333-4); Thomas Weeks is a trainer and administrator who manages hundreds of Red Hat Linux systems \* Covers all of the most common Fedora problem areas: firewalls, DNS servers, print servers, Samba, NFS, Web servers, FTP servers, e-mail servers, modems, adding hardware, and hardware certification \* Features easy-to-use flowcharts that guide administrators step by step through common Fedora troubleshooting scenarios \* A companion Web site offers troubleshooting updates to keep pace with the frequent Fedora Core releases as well as a forum for exchanging troubleshooting tips

"The Second Edition of Security Strategies in Linux Platforms and Applications opens with a discussion of risks, threats, and vulnerabilities. Part 2 dis-

cusses how to take advantage of the layers of security and the modules associated with AppArmor and SELinux. Part 3 looks at the use of open source and proprietary tools when building a layered sec

With this practical book, you will attain a solid understanding of threads and will discover how to put this powerful mode of programming to work in real-world applications. The primary advantage of threaded programming is that it enables your applications to accomplish more than one task at the same time by using the number-crunching power of multiprocessor parallelism and by automatically exploiting I/O concurrency in your code, even on a single processor machine. The result: applications that are faster, more responsive to users, and often easier to maintain. Threaded programming is particularly well suited to network programming where it helps alleviate the bottleneck of slow network I/O. This book offers an in-depth description of the IEEE operating system interface standard, POSIX-AE (Portable Operating System Interface) threads, commonly called Pthreads. Written for exper-

rienced C programmers, but assuming no previous knowledge of threads, the book explains basic concepts such as asynchronous programming, the lifecycle of a thread, and synchronization. You then move to more advanced topics such as attributes objects, thread-specific data, and realtime scheduling. An entire chapter is devoted to "real code," with a look at barriers, read/write locks, the work queue manager, and how to utilize existing libraries. In addition, the book tackles one of the thorniest problems faced by thread programmers—debugging—with valuable suggestions on how to avoid code errors and performance problems from the outset. Numerous annotated examples are used to illustrate real-world concepts. A Pthreads mini-reference and a look at future standardization are also included.

This IBM® Redbooks® publication provides information for attaching the IBM XIV® Storage System to various host operating system platforms, including IBM i. The book provides information and references for combining the XIV Storage System with other storage platforms, host servers, or gateways, including IBM N Series,

and IBM ProtecTIER®. It is intended for administrators and architects of enterprise storage systems. The book also addresses using the XIV storage with databases and other storage-oriented application software that include: IBM DB2® VMware ESX Microsoft HyperV SAP The goal is to give an overview of the versatility and compatibility of the XIV Storage System with various platforms and environments. The information that is presented here is not meant as a replacement or substitute for the Host Attachment kit publications. It is meant as a complement and to provide readers with usage guidance and practical illustrations.

The purpose of the Guide to the Secure Configuration of Red Hat Enterprise Linux 5 is to provide security configuration recommendations for the Red Hat Enterprises Linux (RHEL) 5 operating system for system administrators. Readers are assumed to possess basic system administration skills for Unix-like systems, as well as some familiarity with Red Hat's documentation and administration conventions.

Arguably one of the most highly regarded and widely used enterprise level op-

erating systems available today is the Red Hat Enterprise Linux 8 distribution. Not only is it considered to be among the most stable and reliable operating systems, it is also backed by the considerable resources and technical skills of Red Hat, Inc. Red Hat Enterprise Linux 8 Essentials is designed to provide detailed information on the installation, use and administration of the Red Hat Enterprise Linux 8 distribution. For beginners, the book covers topics such as operating system installation, the basics of the GNOME desktop environment, configuring email and web servers and installing packages and system updates using App Streams. Additional installation topics such as dual booting with Microsoft Windows are also covered, together with all important security topics such as configuring a firewall and user and group administration. For the experienced user, topics such as remote desktop access, the Cockpit web interface, logical volume management (LVM), disk partitioning, swap management, KVM virtualization, Secure Shell (SSH), Linux Containers and file sharing using both Samba and NFS are covered in detail to provide a thorough

overview of this enterprise class operating system.

Learn Linux, and take your career to the next level! Linux Essentials, 2nd Edition provides a solid foundation of knowledge for anyone considering a career in information technology, for anyone new to the Linux operating system, and for anyone who is preparing to sit for the Linux Essentials Exam. Through this engaging resource, you can access key information in a learning-by-doing style. Hands-on tutorials and end-of-chapter exercises and review questions lead you in both learning and applying new information—information that will help you achieve your goals! With the experience provided in this compelling reference, you can sit down for the Linux Essentials Exam with confidence. An open source operating system, Linux is a UNIX-based platform that is freely updated by developers. The nature of its development means that Linux is a low-cost and secure alternative to other operating systems, and is used in many different IT environments. Passing the Linux Essentials Exam prepares you to apply your knowledge regarding this

operating system within the workforce. Access lessons that are organized by task, allowing you to quickly identify the topics you are looking for and navigate the comprehensive information presented by the book Discover the basics of the Linux operating system, including distributions, types of open source applications, freeware, licensing, operations, navigation, and more Explore command functions, including navigating the command line, turning commands into scripts, and more Identify and create user types, users, and groups Linux Essentials, 2nd Edition is a critical resource for anyone starting a career in IT or anyone new to the Linux operating system.

Your Complete Guide to the World's Leading Linux Enterprise Distribution Red Hat Enterprise Linux 3 is emerging as the corporate Linux standard. One of the first books to focus on this robust product, Mastering Red Hat Enterprise Linux 3 gives you the practical information you need to install, configure, and network Linux on a large number of computers. For experienced administrators, this book uniquely features detailed coverage of Apache, TUX, Samba,

NFS, vsFTP, Squid, SSH, DNS, DHCP, iptables, CUPS, sendmail, Postfix, NIS, LDAP, MySQL, system administration command line and GUI tools and utilities for each phase of the management process. It also helps you configure the GUI for enterprise workstations. Topics include: Installing Linux on a standalone system, over a network, and automatically on multiple computers Navigating the command line interface Administering users and groups securely Managing packages with the RPM GUI tool Configuring and troubleshooting the boot process Upgrading and recompiling kernels Backing up your system with RAID Understanding basic TCP/IP networking Managing Linux on your LAN Securing Linux firewalls Ensuring secure remote access Installing, configuring, and testing DNS, DHCP, CUPS, sendmail and Postfix mail servers Configuring and troubleshooting FTP, NFS, Samba, Apache, TUX, and Squid Effectively using Linux authentication services--NIS and LDAP Using Red Hat GUI administrative tools appropriately Setting up MySQL for databases Managing X servers and X clients Working with GNOME and

KDE

Bundled or separately, this pair of books is a must for the Linux learner. The Hands On Guide gives the Linux learner all he/she needs to learn basic system administration skills for Unix-like systems. The purpose of the Guide to the Secure Configuration of Red Hat Enterprise Linux 5 is to provide security configuration recommendations for the Red Hat Enterprises Linux (RHEL) 5 operating system for system administrators. Readers are assumed to possess basic system administration skills for Unix-like systems, as well as some familiarity with Red Hat's documentation and administration conventions.

"This book was written as a lab guide to help individuals pass the RHCSA (EX200) and RHCE (EX300) exams"--Preface.

Ready to build cloud native applications? Get a hands-on introduction to daily life as a developer crafting code on OpenShift, the open source container application platform from Red Hat. Creating and packaging your apps for deployment on modern distributed systems can be daunting. Too often, adding infrastructure value can complicate de-

velopment. With this practical guide, you'll learn how to build, deploy, and manage a multitiered application on OpenShift. Authors Joshua Wood and Brian Tannous, principal developer advocates at Red Hat, demonstrate how OpenShift speeds application development. With the Kubernetes container orchestrator at its core, OpenShift simplifies and automates the way you build, ship, and run code. You'll learn how to use OpenShift and the Quarkus Java framework to develop and deploy apps using proven enterprise technologies and practices that you can apply to code in any language. Learn the development cycles for building and deploying on OpenShift, and the tools that drive them Use OpenShift to build, deploy, and manage the ongoing lifecycle of an n-tier application Create a continuous integration and deployment pipeline to build and deploy application source code on OpenShift Automate scaling decisions with metrics and trigger lifecycle events with webhooks

This comprehensive guide can help you administer Red Hat Enterprise Linux 5 effectively in any production environment, no mat-

ter how complex or challenging. Long-time Red Hat insider Tammy Fox brings together today's best practices for the entire system lifecycle, from planning and deployment through maintenance and troubleshooting. Fox shows how to maximize your efficiency and effectiveness by automating day-to-day maintenance through scripting, deploying security updates via Red Hat Network, implementing central identity management services, and providing shared data with NFS and Samba. Red Hat Enterprise Linux 5 Administration Unleashed contains extensive coverage of network and web services, from the Apache HTTP server and Sendmail email services to remote login with OpenSSH. Fox also describes Red Hat's most valuable tools for monitoring and optimization and presents thorough coverage of security—including a detailed introduction to Security-Enhanced Linux (SELinux). Develop the skills required to administer your RHEL environment on-premises and in the cloud while preparing for the RHCSA exam Purchase of the print or Kindle book includes a free eBook in PDF format Key Features-Become a pro at system

administration from installation to container managementSecure and harden your Linux environment using SSH, SELinux, firewall, and system permissionsGain confidence to pass the RHCSA exam with the help of practice testsBook Description With Red Hat Enterprise Linux 9 becoming the standard for enterprise Linux used from data centers to the cloud, Linux administration skills are in high demand. With this book, you'll learn how to deploy, access, tweak, and improve enterprise services on any system on any cloud running Red Hat Enterprise Linux 9. Throughout the book, you'll get to grips with essential tasks such as configuring and maintaining systems, including software installation, updates, and core services. You'll also understand how to configure the local storage using partitions and logical volumes, as well as assign and deduplicate storage. You'll learn how to deploy systems while also making them secure and reliable. This book provides a base for users who plan to become full-time Linux system administrators by presenting key command-line concepts and enterprise-level tools, along with essential tools for

handling files, directories, command-line environments, and documentation for creating simple shell scripts or running commands. With the help of command line examples and practical tips, you'll learn by doing and save yourself a lot of time. By the end of the book, you'll have gained the confidence to manage the filesystem, users, storage, network connectivity, security, and software in RHEL 9 systems on any footprint. What you will learnBecome well versed with the fundamentals of RHEL9—from system deployment to user managementSecure a system by using SELinux policies and configuring firewall rulesUnderstand LVM to manage volumes and maintain VDO deduplicationManage a system remotely using SSH and public key authenticationGet the hang of the boot process and kernel tunable to adjust your systemsAutomate simple tasks using scripts or Ansible PlaybooksWho this book is for This book is for Red Hat Enterprise Linux system administrators and Linux system administrators. It's also a good resource for any IT professional who wants to learn system administration. RHCSA certification candidates will find this

book useful in their preparation for the certification exam.

**HIGHLIGHTS:** > Covers Red Hat Enterprise Linux 9 > Covers ALL Latest Official Exam Objectives > Great for Self-Study and In-Class/Virtual Training > 22 Chapters > 99 Real-Life Step-By-Step Exercises and Shell Scripts > 74 Do-It-Yourself Challenge Labs > 381 Review Questions & Answers > 4 Sample RHCSA Exams (4 x 22 tasks per exam) RHCSA Red Hat Enterprise Linux 9: Training and Exam Preparation Guide, Third Edition provides an in-depth coverage of the latest RHCSA (version 9) EX200 exam objectives. The most definitive guide available on the subject, this book explains concepts, analyzes configuration files, describes command outputs, shows step-by-step procedures (includes screenshots of actual commands executed and outputs they produced), and challenges the readers' comprehension of the concepts and procedures by presenting plenty of supplementary labs and sample realistic exam tasks to perform on their own. This book has 22 chapters that are organized logically, from building a lab environment to the fundamentals

of Linux to sophisticated Linux administration topics. The book covers the topics on local RHEL 9 installation; initial interaction with the system; essential Linux commands; file compression and archiving; file editing and manipulation; standard and special permissions; file searching and access controls; user monitoring and authentication files; users, groups, and password aging; bash shell features and startup files; processes and job scheduling; basic and advanced software administration techniques; system boot process and bootloader; kernel management and system initialization; logging and system tuning; basic and advanced storage management tools and solutions; local file systems and swap regions; network device and connection configuration; hostname resolution and time synchronization; remote file systems and automounting; the secure shell service; firewall and SELinux controls; bash shell scripting; and operating system virtualization using containers. Each chapter highlights the major topics and relevant exam objectives at the beginning and ends with several review questions & answers and Do-It-Your-

self challenge labs. Throughout the book, figures, tables, screenshots, examples, warnings, notes, and exam tips are furnished to support explanation and exam preparation. There are four sample RHCSA exams that are expected to be performed using the knowledge and skills attained from reading the material, following the in-chapter exercises, and completing the end-of-chapter challenge labs. The labs and the sample exams include hints to relevant topics and/or exercises. This book may be used as a self-learning guide by RHCSA 9 exam aspirants, a resource by instructors and students to follow in physical and virtual training sessions, an on-the-job resource for reference, and an easy-to-understand guide by novice and non-RHEL administrators.

Over 60 recipes to help you build, configure, and orchestrate RHEL 7 Server to make your everyday administration experience seamless About This Book Create fully unattended installations and deploy configurations without breaking a sweat Discover and kick-start the newest RHEL 7 configuration and management tools



through an easy-to-follow, practical approach for a lazy system management. Be guided by an experienced RHEL expert who is a certified Linux engineer with a passion for open source and open standards. Who This Book Is For: Red Hat Enterprise Linux Server Cookbook is for RHEL 7 system administrators and DevOps in need of a practical reference guide to troubleshoot common issues and quickly perform tasks. What You Will Learn: Set up and configure RHEL 7 Server; Use NetworkManager to configure all aspects of your network; Manage virtual environments using libvirt; Set up software repositories; Secure and monitor your RHEL environment; Configure SELinux, and create and apply its policies; Create kickstart scripts to automatically deploy RHEL 7 systems; Use Orchestration and configuration management tools to manage your environment. In Detail: Dominating the server market, the Red Hat Enterprise Linux operating system gives you the support you need to modernize your infrastructure and boost your organization's efficiency. Combining both stability and flexibility, RHEL helps you meet the challenges of today

and adapt to the demands of tomorrow. This practical Cookbook guide will help you get to grips with RHEL 7 Server and automating its installation. Designed to provide targeted assistance through hands-on recipe guidance, it will introduce you to everything you need to know about KVM guests and deploying multiple standardized RHEL systems effortlessly. Get practical reference advice that will make complex network setups look like child's play, and dive into in-depth coverage of configuring a RHEL system. Also including full recipe coverage of how to set up, configuring, and troubleshoot SELinux, you'll also discover how to secure your operating system, as well as how to monitor it. Style and approach: This practical guide is packed full of hands-on recipes that provide quick solutions to the problems faced when building your RHEL 7 system from scratch using orchestration tools. Each topic is explained sequentially in the process of setting up a system and binding everything together. PART OF THE NEW JONES & BARTLETT LEARNING INFORMATION SYSTEMS SECURITY & ASSURANCE SERIES! Security Strategies

in Linux Platforms and Applications covers every major aspect of security on a Linux system. Written by an industry expert, this book is divided into three natural parts to illustrate key concepts in the field. It opens with a discussion on the risks, threats, and vulnerabilities associated with Linux as an operating system using examples from Red Hat Enterprise Linux and Ubuntu. Part 2 discusses how to take advantage of the layers of security available to Linux—user and group options, filesystems, and security options for important services, as well as the security modules associated with AppArmor and SELinux. The book closes with a look at the use of both open source and proprietary tools when building a layered security strategy for Linux operating system environments. Using real-world examples and exercises, this useful resource incorporates hands-on activities to walk students through the fundamentals of security strategies related to the Linux system. Beginning Fedora Desktop: Fedora 18 Edition is a complete guide to using the Fedora 18 Desktop Linux release as your daily driver for mail, productivity, social networking, and

more. Author and Linux expert Richard Petersen delves into the operating system as a whole and offers you a complete treatment of Fedora 18 Desktop installation, configuration, and use. You'll discover how to install Fedora 18 Desktop on any hardware, learn which applications perform which functions, how to manage software updates, tips and tricks for the GNOME 3 and KDE desktops, useful shell commands, and both the Fedora administration and network tools. Get the most out of Fedora 18 Desktop -- including free Office suites, editors, e-book readers, music and video applications and codecs, email clients, Web and FTP browsers, microblogging and IM applications -- with a copy of *Beginning Fedora Desktop: Fedora 18 Edition* at your side. "Incorporating real-world examples and exercises throughout, *Security Strategies in Linux Platforms and Applications* discusses every major aspect of security on a Linux system, including coverage of the latest Linux distributions and kernels. Written by industry experts, the text opens with a review of the risks, threats, and vulnerabilities associated with Linux as an operating

system. Part 2 discusses how to take advantage of the layers of security available to Linux - user and group options, filesystems, and security options for important services. The text concludes with a look at the use of both open source and proprietary tools when building a layered security strategy for Linux operating system environments"--

This book constitutes the revised selected papers of the 12th International Conference on Service-Oriented Computing, ICSOC 2014, held in Paris, France, in November 2014. The conference hosted the following seven workshops: 10th International Workshop in Engineering Service-Oriented Applications, WESOA 2014; First Workshop on Resource Management in Service-Oriented Computing, RMSOC 2014; First International Workshop on Knowledge Aware Service Oriented Applications, Performance Assessment and Auditing in Service Computing, KASA 2014; Workshop on Intelligent Service Clouds, ISC 2014; Third International Workshop on Self-Managing Pervasive Service Systems, SeMaPS 2014; First International Workshop on Formal Modeling and Verification of

Service-Based Systems, FOR-MOVES 2014; 4th International Workshop on Cloud Computing and Scientific Applications, CCSA 2014. The papers included in this volume were carefully reviewed and selected from numerous submissions. They address various topics in the service-oriented computing domain and its emerging applications.

Identify, capture and resolve common issues faced by Red Hat Enterprise Linux administrators using best practices and advanced troubleshooting techniques About This Book Develop a strong understanding of the base tools available within Red Hat Enterprise Linux (RHEL) and how to utilize these tools to troubleshoot and resolve real-world issues Gain hidden tips and techniques to help you quickly detect the reason for poor network/storage performance Troubleshoot your RHEL to isolate problems using this example-oriented guide full of real-world solutions Who This Book Is For If you have a basic knowledge of Linux from administration or consultant experience and wish to add to your Red Hat Enterprise Linux troubleshooting skills, then this book is ideal for you.

The ability to navigate and use basic Linux commands is expected. What You Will Learn Identify issues that need rapid resolution against long term root cause analysis Discover commands for testing network connectivity such as telnet, netstat, ping, ip and curl Spot performance issues with commands such as top, ps, free, iostat, and vmstat Use tcpdump for traffic analysis Repair a degraded file system and rebuild a software raid Identify and troubleshoot hardware issues using dmesg Troubleshoot custom applications with strace and knowledge of Linux resource limitations In Detail Red Hat Enterprise Linux is an operating system that allows you to modernize your infrastructure, boost efficiency through virtualization, and finally prepare your data center for an open, hybrid cloud IT architecture. It provides the stability to take on today's challenges and the flexibility to adapt to tomorrow's demands. In this book, you begin with simple troubleshooting best practices and get an overview of the Linux commands used for troubleshooting. The book will cover the troubleshooting methods for web applications and services such as

Apache and MySQL. Then, you will learn to identify system performance bottlenecks and troubleshoot network issues; all while learning about vital troubleshooting steps such as understanding the problem statement, establishing a hypothesis, and understanding trial, error, and documentation. Next, the book will show you how to capture and analyze network traffic, use advanced system troubleshooting tools such as strace, tcpdump & dmesg, and discover common issues with system defaults. Finally, the book will take you through a detailed root cause analysis of an unexpected reboot where you will learn to recover a downed system. Style and approach This is an easy-to-follow guide packed with examples of real-world core Linux concepts. All the topics are presented in detail while you're performing the actual troubleshooting steps.

**HIGHLIGHTS >** Covers ALL Latest Official Exam Objectives for RHCSA 8 including Containers and Shell Scripting > Great for Self-Study and In-Class/Virtual Training > 108 Real-Life Step-By-Step Exercises and Shell Scripts > 80 Do-It-Yourself Challenge Labs > 408 Review Questions

& Answers > 4 Realistic Sample RHCSA Exams (23 tasks per exam) RHCSA Red Hat Enterprise Linux 8 (UPDATED): Training and Exam Preparation Guide, Second Edition provides in-depth coverage of the latest RHCSA EX200 exam objectives that include Shell Scripting and Containers. The most definitive guide available on the subject, this book explains concepts, analyzes configuration files, describes command outputs, shows step-by-step procedures (includes screenshots of actual commands executed and outputs they produced), and challenges the readers' comprehension of the concepts and procedures by presenting plenty of additional labs and sample realistic exam tasks to perform on their own. This book has 23 chapters that are organized logically, from setting up the lab to the fundamentals of Linux to sophisticated Linux administration topics. The book covers the topics on local RHEL 8 installation; initial interaction with the system; basic Linux commands; compression and archiving; file editing and manipulation; standard and special permissions; file searching and access controls; user monitoring and authentication files;

users, groups, and password aging; bash shell features and startup files; processes and task scheduling; basic and advanced software administration techniques; system boot process and bootloader; kernel management and system initialization; logging and system tuning; basic and advanced storage management tools and solutions; local file systems and swap regions; network device and connection configuration; remote file systems and automounting; time synchronization and host-name resolution; the secure shell service; firewall and SELinux controls; and shell scripting and containers. Each chapter highlights the major topics and relevant exam objectives at the beginning and ends with several review questions & answers and Do-It-Yourself challenge labs. Throughout the book, figures, tables, screen shots, examples, notes, and exam tips are furnished to support explanation and exam preparation. This book includes four sample RHCSA exams that are expected to be performed using the knowledge and skills attained from reading the material, following the exercises, and completing the challenge labs. The

labs and the sample exams include hints to relevant topics and/or exercises. This book may be used as a self-learning guide by RHCSA 8 exam aspirants, a resource by instructors and students to follow in physical and virtual training sessions, an on-the-job resource for reference, and an easy-to-understand guide by novice and non-RHEL administrators. Develop the skill to manage and administer Red Hat Enterprise Linux and get ready to achieve the RHCSA certification Key Features Learn the most common administration and security tasks and manage enterprise Linux infrastructures efficiently Assess your knowledge using self-assessment questions based on real-world examples Understand how to apply the concepts of core systems administration in the real world Book Description Whether in infrastructure or development, as a DevOps or site reliability engineer, Linux skills are now more relevant than ever for any IT job, forming the foundation of understanding the most basic layer of your architecture. With Red Hat Enterprise Linux (RHEL) becoming the most popular choice for enterprises worldwide, achieving the Red Hat Certified System

Administrator (RHCSA) certification will validate your Linux skills to install, configure, and troubleshoot applications and services on RHEL systems. Complete with easy-to-follow tutorial-style content, self-assessment questions, tips, best practices, and practical exercises with detailed solutions, this book covers essential RHEL commands, user and group management, software management, networking fundamentals, and much more. You'll start by learning how to create an RHEL 8 virtual machine and get to grips with essential Linux commands. You'll then understand how to manage users and groups on an RHEL 8 system, install software packages, and configure your network interfaces and firewall. As you advance, the book will help you explore disk partitioning, LVM configuration, Stratis volumes, disk compression with VDO, and container management with Podman, Buildah, and Skopeo. By the end of this book, you'll have covered everything included in the RHCSA EX200 certification and be able to use this book as a handy, on-the-job desktop reference guide. This book and its contents are

solely the work of Miguel Perez Colino, Pablo Iranzo Gomez, and Scott McCarty. The content does not reflect the views of their employer (Red Hat Inc.). This work has no connection to Red Hat, Inc. and is not endorsed or supported by Red Hat, Inc. What you will learn Deploy RHEL 8 in different footprints, from bare metal and virtualized to the cloud Manage users and software on local and remote systems at scale Discover how to secure a system with SELinux, OpenSCAP, and firewalld Gain an overview of storage components with LVM, Stratis, and VDO Master remote administration with passwordless SSH and tunnels Monitor your systems for resource usage and take actions to fix issues Understand the boot process, performance optimizations, and containers Who this book is for This book is for IT professionals or students who want to start a career in Linux administration and anyone who wants to take the RHCSA 8 certification exam. Basic knowledge of Linux and familiarity with the Linux command-line is necessary.

For many organizations, a big part of DevOps' appeal is software automa-

tion using infrastructure-as-code techniques. This book presents developers, architects, and infra-ops engineers with a more practical option. You'll learn how a container-centric approach from OpenShift, Red Hat's cloud-based PaaS, can help your team deliver quality software through a self-service view of IT infrastructure. Three OpenShift experts at Red Hat explain how to configure Docker application containers and the Kubernetes cluster manager with OpenShift's developer- and operational-centric tools. Discover how this infrastructure-agnostic container management platform can help companies navigate the murky area where infrastructure-as-code ends and application automation begins. Get an application-centric view of automation—and understand why it's important Learn patterns and practical examples for managing continuous deployments such as rolling, A/B, blue-green, and canary Implement continuous integration pipelines with OpenShift's Jenkins capability Explore mechanisms for separating and managing configuration from static runtime software Learn how to use and customize Open-

Shift's source-to-image capability Delve into management and operational considerations when working with OpenShift-based application workloads Install a self-contained local version of the OpenShift environment on your computer

Explains how to install and configure Linux, how to run productivity tools, how to burn CDs and synchronize a PalmPilot, how to set up software, how to configure a network, and how to use the system administration tools.

Master the latest version of Fedora and Red Hat Enterprise Linux with the step-by-step instructions and hands-on advice in Fedora 9 and Red Hat Enterprise Linux Bible. Learn key system administration skills like setting users and automating system tasks, understand the latest security issues and threats, and gain confidence with using and customizing the desktop menus, icons, and window manager. Updated every six months to correspond with the latest Fedora release, this book includes an official Fedora 9 LiveCD so that you can practice your knowledge and improve your skills. Note: CD-ROM/DVD and other supplementary ma-

materials are not included as part of eBook file.

This book examines Red Hat Enterprise Linux 8 for the desktop user and administrator (including RHEL 8.1). Though administrative tools are covered, the emphasis is on what a user would need to know to perform tasks. The focus here is on what users face when using Red Hat Enterprise Linux 8, covering topics like applications, the GNOME desktop, shell commands, and the administration and network tools. The GNOME desktop is examined in detail, including configuration options. Administration topics are also covered including user management, software management, repositories, services, systemd, system monitoring, shell configuration, encryption, network connections, shared resources, authentication, SELinux, firewalls, shell configuration, backups, and printers. The book is organized into two parts: desktops and administration.

> Covers Red Hat Enterprise Linux 8 > Covers ALL official exam objectives for the RHCSA exam based on Red Hat Enterprise Linux 8 > Equally good for self-study and in-class training > 81 Step-

by-Step exercises > 70 Do-It-Yourself Challenge Labs > 375 Check Your Understanding Questions & Answers > Concepts explained with diagrams > Commands and options summarized in tables > Exam tips included > 4 Unique Sample RHCSA Exams This book has 21 chapters that are organized logically. It covers the topics on local RHEL 8 installation; initial interaction with the system and basic commands; compression and archiving; file editing and manipulation; standard and special permissions; file searching and access controls; user monitoring and authentication files; users, groups, and password aging; bash shell features and startup files; processes and task scheduling; basic and advanced software administration techniques; system boot process and bootloader; kernel management and system initialization; logging and system tuning; basic and advanced storage management tools and solutions; local and remote file systems and swap regions; network device and connection configuration; time synchronization and hostname resolution; the secure shell service; and firewall and SELinux controls. Each chapter high-

lights the major topics and relevant exam objectives at the beginning, and ends with review questions & answers and Do-It-Yourself challenge labs. Throughout the book, figures, tables, screen shots, examples, and exam tips have been furnished to support explanation and exam preparation. This book includes four sample exams for RHCSA, which are expected to be done using the knowledge and skills attained from reading the material and practicing the exercises and challenge labs. The labs and the sample exams include references to relevant topics and/or exercises.

This IBM® Redbooks® publication is Volume 2 of a five-volume series of books entitled The Virtualization Cookbook for IBM Z®. This volume includes the following chapters: Chapter 1, "Installing Red Hat Enterprise Linux on LNXADMIN" on page 3, describes how to install and configure Red Hat Enterprise Linux onto the Linux Administration server, which performs the cloning and other tasks. Chapter 2, "Automated Red Hat Enterprise Linux installations by using Kickstart" on page 37, describes how to use Red Hat's kickstart tool to cre-

ate Linux systems. This tool is fundamentally different from cloning in that an automated installation is implemented. You can try kickstart and cloning. Understand that these applications attempt to accomplish the same goal of quickly getting Linux systems up and running, and that you do not need to use both. Chapter 3, "Working with subscription-manager, yum, and DaNdiFied" on page 47, describes how the Red Hat Network works. It provides centralized management and provisioning for multiple Red Hat Enterprise Linux systems. Kickstart is an easy and fast way to provision your Linux guests in any supported Linux platform. It recreates the operating system from the beginning by using the kickstart profile configuration file that installs the new operating system unattended. It also sets up the new guest according to the definition that was set up in the kickstart file. Usually, Linux is administered by the same team that manages Linux on all platforms. By using kickstart, you can create a basic profile that can be used in all supported platforms and customize Linux profiles, as needed. Cloning requires a better un-

derstanding of the z/VM environment and z/VM skills. It is a fast process if you enable the IBM FlashCopy® feature in advance. It clones the disks from a golden image to new disks that are used by the new Linux guest. The process can be automated by using the cloning scripts that are supplied with this book. It is recommended that you start with *The Virtualization Cookbook for IBM Z Volume 1: IBM z/VM 7.2, SG24-8147* of this series because the IBM® z/VM hypervisor is the foundation (or base "layer") for installing Linux on IBM Z. Based on Red Hat Enterprise Linux 6 (RHEL 6), this guide covers all official exam objectives and includes more than 100 exercises, more than 550 exam review questions, more than 70 practice labs, and two sample exams.

To thoroughly understand what makes Linux tick and why it's so efficient, you need to delve deep into the heart of the operating system--into the Linux kernel itself. The kernel is Linux--in the case of the Linux operating system, it's the only bit of software to which the term "Linux" applies. The kernel handles all the requests or completed I/O

operations and determines which programs will share its processing time, and in what order. Responsible for the sophisticated memory management of the whole system, the Linux kernel is the force behind the legendary Linux efficiency. The new edition of *Understanding the Linux Kernel* takes you on a guided tour through the most significant data structures, many algorithms, and programming tricks used in the kernel. Probing beyond the superficial features, the authors offer valuable insights to people who want to know how things really work inside their machine. Relevant segments of code are dissected and discussed line by line. The book covers more than just the functioning of the code, it explains the theoretical underpinnings for why Linux does things the way it does. The new edition of the book has been updated to cover version 2.4 of the kernel, which is quite different from version 2.2: the virtual memory system is entirely new, support for multiprocessor systems is improved, and whole new classes of hardware devices have been added. The authors explore each new feature in detail. Other topics in the book include: Memory ma-

management including file buffering, process swapping, and Direct memory Access (DMA) The Virtual Filesystem and the Second Extended Filesystem Process creation and scheduling Signals, interrupts, and the essential interfaces to device drivers Timing Synchronization in the kernel Interprocess Communication (IPC) Program execution Understanding the Linux Kernel, Second Edition will acquaint you with all the inner workings of Linux, but is more than just an academic exercise. You'll learn what conditions bring out Linux's best performance, and you'll see how it meets the challenge of providing good system response during process scheduling, file access, and memory management in a wide variety of environments. If knowledge is power, then this book will help you make the most of your Linux system.

The leading Fedora book—over a quarter of a million copies sold of previous editions! What better way to learn Fedora 11 than with the leading Fedora book from the best-selling Linux author, Christopher Negus with Eric Foster Johnson? Whether you're new to Linux or an advanced

user, this power-packed guide is loaded with what you need. Install, run, and manage the latest version of Fedora and Red Hat Enterprise Linux—then polish your system administration skills and get up to speed on the very latest in networking, desktop, and server enhancements. Master the Linux shell, file system, and text editor; how to set up users and automate system tasks; and much more in over a thousand pages of step-by-step instruction. Boot the full DVD of Fedora 11, including almost all binary code packages, or do a Live Install of the CD for rescuing, troubleshooting, or installing Fedora. Fedora is a free, open source Linux operating system sponsored by Red Hat as an open source community project; the technological innovations from the Fedora Project are then implemented in Red Hat's commercial offering, Red Hat Enterprise Linux. Covers step-by-step instructions for making Linux installation simple and painless; how to take advantage of the desktop interface (including coverage of AIGLX); and how to use the Linux shell, file system, and text editor Also covers setting up users; automating system tasks;

backing up and restoring files; dealing with the latest security issues and threats; using and customizing the desktop menus, icons, window manager, and xterm; and how to create and publish formatted documents with Linux applications The DVD and CD that come with the book include Fedora Linux 11 and an official Fedora 11 LiveCD (bootable and installable) This is the book you need to succeed with Fedora 11 and Red Hat Enterprise Linux. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

Master every topic on Red Hat's new RHCSA™ and RHCE® exams. Assess your knowledge and focus your learning. Get the practical workplace knowledge you need! Start--to-finish RHCSA™ and RHCE® preparation from leading Linux system administrator, IT trainer, and certification expert Damian Tommasino! Master every RHCSA™ and RHCE® topic! Red Hat Enterprise Linux 6 local and network installation System services, runlevels, and bootup Disks, partitions, and file systems, including LUKS encryption Networking Package management User administration Logging, monitoring,



and automation Kernel updates and tuning Security, including SELinux, firewalls, and policies Remote access, including SSH Apache, Squid, DNS, DHCP, NTP, and email NFS and Samba Client and network troubleshooting KVM virtualization Test your knowledge, build your confidence, and succeed! 22 hands-on RHCSA™ and RHCE® Labs, each with multiple real-world tasks Downloadable troubleshooting scripts Practical tutorials and real-world tips Exam tips Red Hat Enterprise Linux 6 Command Quick Reference Exclusive Red Hat exam prep advice and task lists Two full length lab-based practice exams Damian Tommasino (RHCE, RHCSA, MCSA, CCNA, CCENT, MCP, Security+, Network+, A+) is a Linux system administrator at TradeCard and CEO of Modular Learning Inc., an online IT training company. He blogs on Red Hat, Linux, and security at Security Nut (<http://secnut.blogspot.com>), and actively contributes to the popular IT exam certification forums at techexams.net.

An end-to-end guide for IBM implementation partners and solution providers. **KEY FEATURES**

- Detailed step-by-step

IBM Software installation and configuration that saves time for installing and configuring computers. ● Designed for students, IT consultants, systems and solution architects, data analysts, and developers. ● Unique solution documentation for running Cognos configuration designed for banks, financial services, and insurance companies. **DESCRIPTION** This book shows how to install IBM Cognos Analytics software and related systems on RedHat Enterprise Linux 8.0, IBM Cloud, IBM Cloud Private (Community Edition), and Windows 10. It includes step-by-step instructions for downloading and installing IBM Cognos Analytics. It also includes numerous examples of setups and updates to analyze the OLAP database utilized by the IBM Case Manager. The initial chapters discuss the installation of IBM Information Management Products. The reader will know the URLs of the downloading sites, the product codes, descriptions, sizes, and the names of each software downloaded to the gzip tar file. It includes setting up RHEL 8.0 Linux OS and using the Docker system for installation on IBM Cloud PAK servers, RedHat Openshift clus-

ters, and IBM Cloud Private. The IBM Cognos installation contains versions 11.1.1 through 11.4.0 on RedHat Linux 8.0 and Windows 10. The book includes the usage of the IBM Cognos Analytics 11.1 R4 Dynamic Cube Datasource and the 11.1 R4 Cube Designer for the report and dashboard. Additionally, the book includes constructing the essential Zlib library from the C language source download, its compilation, and linking. **WHAT YOU WILL LEARN**

- Detailed step-by-step instructions for installing IBM Cognos Analytics.
- Installation on Windows 10, RedHat Enterprise Linux 8.0, IBM Cloud, and IBM Cloud Private (CE).
- Downloading, compiling, and linking the necessary zlib library on Linux.
- Connecting to the CASTORE database using an example of Cognos Analytics configuration.
- Creating OLAP Cubes for IBM Case Manager dashboard reports.

**WHO THIS BOOK IS FOR** This book is for IT consultants, architects for systems and solutions, data analysts, and data analytics solution developers. All the examples in the book are based on Unix/Windows and web-based tool basic knowledge. **TABLE OF CONTENTS**

1. Getting Started

with IBM Resources for Cognos 2. IBM Cloud PAK Systems 3. RedHat OpenShift 4.x Installations 4. IBM Cloud Private Cluster systems 5. IBM Cognos Analytics 11. On RHEL 8.0 6. IBM Cognos Analytics 11. On Windows 10.0 7. IBM Cognos Analytics 11 on RHEL 8.0 Linux Fix for Zlib What is this book about? Professional Red Hat Enterprise Linux 3 is a complete professional guide to setting up, configuring, and deploying Red Hat Enterprise Linux in the corporate production environment. The book focuses on Enterprise Server and Advanced Server features, including the key areas of

high availability with the Red Hat Cluster Suite, Red Hat Network Control Center, and Red Hat Enterprise applications such as the Content Management System and portal server. Other key unique features include kernel tuning for various performance profiles; advanced Apache configuration; Tux installation/maintenance; building high-performance FTP servers; building high-performance mail servers (which means replacing Sendmail); Mailing list management; how to efficiently add, remove, or modify 100 users at the same time; and a discus-

sion of disk quota management and monitoring. What does this book cover? The key features of the book include the following: How to install and setup RHEL 3 How to deploy RHEL 3 in production environment How to manage an RHEL system using Perl and shell scripting Advanced administration tools How to use Red Hat network service Details on installation and setup of security tools Ability to use and deploy High Availability solutions provided with RHEL 3 Performance tuning How to use monitoring tools Ability to use RHEL to provide scalable infrastructure solutions.