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# Pro Linux High Availability Clustering By Sander Van Vugt

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Pro SQL Server 2019 Administration  
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The Linux Enterprise Cluster  
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Proxmox High Availability  
Building a Linux HPC Cluster with XCAT  
Pro Oracle Database 11g RAC on Linux  
Red Hat Cluster Training  
Advanced DBA Certification Guide and Reference for DB2 Universal Database V8 for Linux, UNIX, and Windows  
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By Sander Van Vugt *guest*

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## MAHONEY MATHEWS

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*Pro SQL Server 2019 Administration* IBM Redbooks  
As organizations strive to do more with less, IBM® DB2® for Linux, UNIX, and Windows provides various built-in high availability features. DB2 further provides high availability solutions by using enterprise system resources with broad support for clustering software, such as IBM PowerHA® SystemMirror®, IBM Tivoli® System Automation for Multiplatforms (Tivoli SA MP), and Microsoft Windows Cluster Server. This IBM Redbooks® publication describes the DB2 high availability functions and features, focusing on High Availability Disaster Recovery (HADR) in the OLTP environment. The book provides a detailed description of HADR, including setup, configuration, administration, monitoring, and preferred practices. This book explains how to configure Cluster software PowerHA, Tivoli SA MP, and MSCS with DB2 and show how to use

these products to automate HADR takeover. DB2 also provides unprecedented enterprise-class disaster recovery capability. This book covers single system view backup, backup and restore with snapshot backup, and the db2recovery command, in detail. This book is intended for database administrators and information management professionals who want to design, implement, and support a highly available DB2 system.

### CentOS High Availability IBM Redbooks

Server bottlenecks and failures are a fact of life in any database deployment, but they don't have to bring everything to a halt. MySQL has several features that can help you protect your system from outages, whether it's running on hardware, virtual machines, or in the cloud. MySQL High Availability explains how to use these replication, cluster, and monitoring features in a wide range of real-life situations. Written by engineers who designed many of the tools covered inside, this book reveals undocumented or hard-to-find aspects of MySQL reliability and high availability -- knowledge that's essential for any organization

using this database system. Explore the binary log, a file for replication that helps in disaster recovery and troubleshooting Get techniques for improving response time and handling large data sets Monitor database activity and performance, as well as major operating system parameters Keep track of what masters and slaves are doing, and deal with failures and restarts, corruption, and other incidents Automate key tasks with code from an open source library written by the authors Learn techniques for using MySQL in virtualized environments, such as Amazon Web Services Use MySQL Cluster to achieve high availability "MySQL replication is widely deployed but has never been adequately explained. This book changes that."-- Mark Callaghan, MySQL contributor and leader of MySQL engineering efforts at a few of the world's largest Internet companies

*Clusters For High Availability* PediaPress

If you want to know the secrets of virtualization and how to implement high availability on your services, this is the book for you. For those of you who are already using Proxmox, this book offers you the chance to build a high availability cluster with a distributed filesystem to further protect your system from failure.

*Practical Linux Infrastructure* Apress

The Linux Enterprise Cluster explains how to take a number of inexpensive computers with limited resources, place them on a normal computer network, and install free software so that the computers act together like one powerful server. This makes it possible to build a very inexpensive and reliable business system for a small business or a large corporation. The book includes information on how to build a high-availability server pair using the Heartbeat package, how to use the Linux Virtual Server load balancing software, how to configure a reliable printing system in a Linux cluster environment, and how to build a job scheduling system in Linux with no single point of failure.

**The Linux Enterprise Cluster** Sams Publishing

The Clustered Network File System (CNFS) is a capability based on IBM® General Parallel File System (GPFS) running on Linux® which, when combined with System x® servers or BladeCenter® Servers, IBM TotalStorage® Disk Systems, and Storage Area Networks (SAN) components, provides a scalable file services environment. This capability enables customers to run a General Parallel File System (GPFS) data-serving cluster in which some or all of the nodes actively export the file system using NFS. This IBM Redpaper™ publication shows how Cluster NFS file services are delivered and supported today through the configurable order process of the IBM Intelligent Cluster. The audience for this paper includes executive and consultant decision makers and technical administrators who want to know how to implement this solution.

**Linux Enterprise Cluster (B/Cd)** Apress

As Linux® on System z® becomes more prevalent and mainstream in the industry, the need for it to deliver higher levels of availability is increasing. IBM® supports the High Availability Linux (Linux-HA) project, which provides high availability functions to the open source community. One component of the Linux-HA project is the Heartbeat program, which runs on every known Linux platform. Heartbeat is part of the framework of the Linux-HA project. This IBM Redbooks® publication provides information to help you evaluate and implement Linux-HA release 2 by using Heartbeat 2.0 on the IBM System z platform with either SUSE® Linux Enterprise Server version 10 or Red Hat® Enterprise Linux® 5. To begin, we review the fundamentals of high availability concepts and terminology. Then we discuss the Heartbeat 2.0 architecture and its components. We examine some of the special considerations when using Heartbeat 2.0 on Linux on System z, particularly Linux on z/VM®, with logical partitions (LPARs), interguest communication by using

HiperSockets™, and Shoot The Other Node In The Head (STONITH) by using VSMERVE for Simple Network IPL (snIPL). By reading this book, you can examine our environment as we outline our installation and setup processes and configuration. We demonstrate an active and passive single resource scenario and a quorum scenario by using a single resource with three guests in the cluster. Finally, we demonstrate and describe sample usage scenarios.

**Architecting Dependable Systems VII** "O'Reilly Media, Inc."

Although there are several good books on unsupervised machine learning, we felt that many of them are too theoretical. This book provides practical guide to cluster analysis, elegant visualization and interpretation. It contains 5 parts. Part I provides a quick introduction to R and presents required R packages, as well as, data formats and dissimilarity measures for cluster analysis and visualization. Part II covers partitioning clustering methods, which subdivide the data sets into a set of k groups, where k is the number of groups pre-specified by the analyst. Partitioning clustering approaches include: K-means, K-Medoids (PAM) and CLARA algorithms. In Part III, we consider hierarchical clustering method, which is an alternative approach to partitioning clustering. The result of hierarchical clustering is a tree-based representation of the objects called dendrogram. In this part, we describe how to compute, visualize, interpret and compare dendrograms. Part IV describes clustering validation and evaluation strategies, which consists of measuring the goodness of clustering results. Among the chapters covered here, there are: Assessing clustering tendency, Determining the optimal number of clusters, Cluster validation statistics, Choosing the best clustering algorithms and Computing p-value for hierarchical clustering. Part V presents advanced clustering methods, including: Hierarchical k-means clustering, Fuzzy clustering, Model-based clustering and Density-based clustering.

*High Availability and Disaster Recovery Options for DB2 for Linux, UNIX, and Windows* Packt Publishing Ltd

IBM® PowerHATM SystemMirror for i is the IBM high-availability disk-based clustering solution for the IBM i 7.1 operating system. When combined with IBM i clustering technology, PowerHA for i delivers a complete high-availability and disaster-recovery solution for your business applications running in the IBM System i® environment. PowerHA for i enables you to support high-availability capabilities with either native disk storage or IBM DS8000® or DS6000™ storage servers or IBM Storwize V7000 and SAN Volume Controllers. The latest release of IBM PowerHA SystemMirror for i delivers a brand-new web-based PowerHA graphical user interface that effectively combines the solution-based and task-based activities for your HA environment, all in a single user interface. This IBM Redbooks® publication provides a broad understanding of PowerHA for i. This book is intended for all IBM i professionals who are planning on implementing a PowerHA solution on IBM i.

*Encyclopedia of Parallel Computing* Apress

Pro Linux High Availability Clustering teaches you how to implement this fundamental Linux add-on into your business. Linux High Availability Clustering is needed to ensure the availability of mission critical resources. The technique is applied more and more in corporate datacenters around the world. While lots of documentation about the subject is available on the internet, it isn't always easy to build a real solution based on that scattered information, which is often oriented towards specific tasks only. Pro Linux High Availability Clustering explains essential high-availability clustering components on all Linux platforms, giving you the insight to build solutions for any specific case needed. In this book four common cases will be explained: Configuring Apache for high availability Creating an Open Source

SAN based on DRBD, iSCSI and HA clustering Setting up a load-balanced web server cluster with a back-end, highly-available database Setting up a KVM virtualization platform with high-availability protection for a virtual machine. With the knowledge you'll gain from these real-world applications, you'll be able to efficiently apply Linux HA to your work situation with confidence. Author Sander Van Vugt teaches Linux high-availability clustering on training courses, uses it in his everyday work, and now brings this knowledge to you in one place, with clear examples and cases. Make the best start with HA clustering with Pro Linux High Availability Clustering at your side.

#### **Professional Red Hat Enterprise Linux 3 STHDA**

"This book covers a wide spectrum of topics relevant to implementing and managing a modern data center. The chapters are comprehensive and the flow of concepts is easy to understand." -Cisco reviewer Gain a practical knowledge of data center concepts To create a well-designed data center (including storage and network architecture, VoIP implementation, and server consolidation) you must understand a variety of key concepts and technologies. This book explains those factors in a way that smoothes the path to implementation and management. Whether you need an introduction to the technologies, a refresher course for IT managers and data center personnel, or an additional resource for advanced study, you'll find these guidelines and solutions provide a solid foundation for building reliable designs and secure data center policies. \* Understand the common causes and high costs of service outages \* Learn how to measure high availability and achieve maximum levels \* Design a data center using optimum physical, environmental, and technological elements \* Explore a modular design for cabling, Points of Distribution, and WAN connections from ISPs \* See what must be considered when consolidating data center resources \* Expand your knowledge of best practices and security \* Create a data center environment that is user- and manager-friendly \* Learn how high availability, clustering, and disaster recovery solutions can be deployed to protect critical information \* Find out how to use a single network infrastructure for IP data, voice, and storage

#### **Building Clustered Linux Systems Lulu.com**

Create high availability clusters to enhance system performance using CentOS 7 About This Book • Master the concepts of high performance and high availability to eliminate performance bottlenecks • Maximize the uptime of services running in a CentOS 7 cluster • A step-by-step guide that will provide knowledge of methods and approaches to optimize the performance of CentOS clusters Who This Book Is For This book is targeted at system administrators: those who want a detailed, step-by-step guide to learn how to set up a high-availability CentOS 7 cluster, and those who are looking for a reference book to help them learn or refresh the necessary skills to ensure their systems and respective resources are utilized optimally. No previous knowledge of high-availability systems is needed, though the reader is expected to have at least some degree of familiarity with any spin-off of the Fedora family of Linux distributions, preferably CentOS. What You Will Learn • Install a CentOS 7 cluster and network infrastructure • Configure firewall, networking, and clustering services and settings • Set up and test a HAC (high-availability cluster) to host an Apache web server and a MariaDB database server • Monitor performance and availability • Identify bottlenecks and troubleshoot issues • Improve performance and ensure high availability In Detail CentOS is the enterprise level Linux OS, which is 100% binary compatible to Red Hat Enterprise Linux (RHEL). It acts as a free alternative to RedHat's commercial Linux offering, with only a change in the branding. A high performance cluster consists in a group of

computers that work together as one set parallel, hence minimizing or eliminating the downtime of critical services and enhancing the performance of the application. Starting with the basic principles of clustering, you will learn the necessary steps to install a cluster with two CentOS 7 servers. We will then set up and configure the basic required network infrastructure and clustering services. Further, you will learn how to take a proactive approach to the split-brain issue by configuring the failover and fencing of the cluster as a whole and the quorum of each node individually. Further, we will be setting up HAC and HPC clusters as a web server and a database server. You will also master the art of monitoring performance and availability, identifying bottlenecks, and exploring troubleshooting techniques. At the end of the book, you'll review performance-tuning techniques for the recently installed cluster, test performance using a payload simulation, and learn the necessary skills to ensure that the systems, and the corresponding resources and services, are being utilized to their best capacity. Style and approach An easy-to-follow and step-by-step guide with hands-on instructions to set up real-world simple cluster scenarios that will start you on the path to building more complex applications on your own.

#### **SQL Server 2019 AlwaysOn Apress**

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 discussion 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.

#### **Red Hat Enterprise Linux 6 Administration "O'Reilly Media, Inc."**

Gain the essential skills and hands-on expertise required to pass the LPIC-3 300 certification exam. This book provides the insight for you to confidently install, manage and troubleshoot OpenLDAP, Samba, and FreeIPA. Helping you to get started from scratch, this guide is divided into three comprehensive sections covering everything you'll need to prepare for the exam. Part 1 focuses on OpenLDAP and topics including securing the directory, integration with PAM and replication. Part 2 covers Samba and teaches you about Samba architecture, using different back ends, print services, and deploying Samba as a stand-alone server, PDC, and Active Directory Domain Controller. Finally, Part 3 explains how to manage FreeIPA and how to integrate it with Active Directory. Practical LPIC-3 300 is the perfect study guide for anyone interested in the LPIC-3 300 certification exam, OpenLDAP, Samba, or FreeIPA. What You'll Learn Integrate LDAP with PAM and NSS, and with Active Directory and Kerberos Manage OpenLDAP replication and server performance tuning Use Samba as a PDC and BDC Configure Samba as a domain member server in an existing NT domain Use Samba as an AD

Compatible Domain Controller Replicate, manage, and integrate FreeIPA Who This Book Is For This book is for anyone who is preparing for the LPIC-3 300 exam, or those interested in learning about OpenLDAP and Samba in general.

*Centos High Performance* IBM Redbooks

This ebook provides Red Hat Cluster Training for Red Hat Certified Professionals. Contains steps and commands to build a High Availability Cluster thru Luci Portal, adding/removing resources, services, nodes, setting up scsi targets and logging into them, and cluster commands.

**A Guide to the IBM Clustered Network File System** John Wiley & Sons

Pro Oracle Database 11g RAC on Linux provides full-life-cycle guidance on implementing Oracle Real Application Clusters in a Linux environment. Real Application Clusters, commonly abbreviated as RAC, is Oracle's industry-leading architecture for scalable and fault-tolerant databases. RAC allows you to scale up and down by simply adding and subtracting inexpensive Linux servers. Redundancy provided by those multiple, inexpensive servers is the basis for the failover and other fault-tolerance features that RAC provides. Written by authors well-known for their talent with RAC, Pro Oracle Database 11g RAC on Linux gives you a rock-solid and technically flawless foundation on which to build your RAC-management skills. Authors Julian Dyke and Steve Shaw share their hard-won experience in building RAC clusters, showing you how to build for success using the very latest Oracle technologies, such as Automatic Storage Management (ASM) and Oracle Clusterware. You'll learn to troubleshoot performance and other problems. You'll even learn how to correctly deploy RAC in a virtual-machine environment based upon Oracle VM, which is the only virtualization solution supported by Oracle Corporation. RAC is a complex and powerful technology. It demands expertise in its deployment. You can't just "wing it" in creating a RAC solution. Julian and Steve have earned the right to term themselves expert—in Pro Oracle Database 11g RAC on Linux, they offer a rigorous and technically-correct treatment of RAC that helps you build a solid foundation of expertise and achieve success. Rigorous and technically accurate content Complete coverage of RAC, from planning to implementation to rollout to ongoing maintenance and troubleshooting Up-to-date with the very latest RAC features

*MySQL High Availability* Springer Science & Business Media

Pro Ubuntu Server Administration teaches you advanced Ubuntu system building. After reading this book, you will be able to manage anything from simple file servers to multiple virtual servers to high-availability clusters. This is the capstone volume of the Apress Ubuntu trilogy that includes Beginning Ubuntu Linux, Third Edition and Beginning Ubuntu Server LTS Administration: From Novice to Professional, Second Edition. You will be able to make Ubuntu technology shine in a Fortune 500 environment and let Ubuntu server become the backbone of your infrastructure. Topics covered include Performance monitoring and optimization High-availability clustering Advanced Lightweight Directory Access Protocol (LDAP) integrated networking

*High Availability and Performance Linux Cluster* Packt Publishing Ltd

Practical Linux Infrastructure teaches you how to use the best open source tools to build a new Linux infrastructure, or alter an existing infrastructure, to ensure it stands up to enterprise-level needs. Each chapter covers a key area of implementation, with clear examples and step-by-step instructions. Using this book,

you'll understand why scale matters, and what considerations you need to make. You'll see how to switch to using Google Cloud Platform for your hosted solution, how to use KVM for your virtualization, how to use Git, Postfix, and MySQL for your version control, email, and database, and how to use Puppet for your configuration management. For enterprise-level fault tolerance you'll use Apache, and for load balancing and high availability, you'll use HAProxy and Keepalived. For trend analysis you'll learn how to use Cacti, and for notification you'll use Nagios. You'll also learn how to utilize BIND to implement DNS, how to use DHCP (Dynamic Host Configuration Protocol), and how to setup remote access for your infrastructure using VPN and Iptables. You will finish by looking at the various tools you will need to troubleshoot issues that may occur with your hosted infrastructure. This includes how to use CPU, network, disk and memory management tools such as top, netstat, iostat and vmstat. Author Syed Ali is a senior site reliability engineering manager, who has extensive experience with virtualization and Linux cloud based infrastructure. His previous experience as an entrepreneur in infrastructure computing offers him deep insight into how a business can leverage the power of Linux to their advantage. He brings his expert knowledge to this book to teach others how to perfect their Linux environments. Become a Linux infrastructure pro with Practical Linux Infrastructure today.

*Pro Ubuntu Server Administration* Prentice Hall Professional Oracle Database 12c running on Linux is available for deployment on IBM® LinuxONE. The enterprise-grade Linux on LinuxONE solution is designed to add value to Oracle Database solutions, including the new functions that are introduced in Oracle Database 12c. In this IBM Redbooks® publication, we explore the IBM and Oracle Alliance and describe how Oracle Database benefits from LinuxONE. We then explain how to set up Linux guests to install Oracle Database 12c. We also describe how to use the Oracle Enterprise Manager Cloud Control Agent to manage Oracle Database 12c Release 1. Additionally, we discuss encryption for Oracle using Oracle Transparent Data Encryption (TDE) on Oracle 12c Release 2. We also describe a successful consolidation project from sizing to migration, performance management topics, and high availability. Finally, we end with a chapter about surrounding Oracle with Open Source software. The audience for this publication includes database consultants, installers, administrators, and system programmers. This publication is not meant to replace Oracle documentation, but to supplement it with our experiences while installing and using Oracle products.

*Paradigm Shift* IBM

This book is targeted at system engineers and system administrators who want to upgrade their knowledge and skills in high availability and want to learn practically how to achieve high availability with CentOS Linux. You are expected to have good CentOS Linux knowledge and basic networking experience.

Pro Oracle Database 10g RAC on Linux John Wiley & Sons

\* Only book on the market to actually show you how to build an Oracle RAC cluster on Linux. \* Author expertise & quality: Steve Shaw's Hammerora project is one of the most visited sites in SourceForge.net. Julian Dyke is Chair of UK Oracle User Group RAC SIG and a member of the Oak Table Network. \* Based on latest Oracle release (10g R2) which we anticipate being the release where the largest number of customers migrate from existing single instance databases to RAC clusters. \* Linux is highest growth sector in relational database market and Oracle has 69% of that market (Gartner).

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