

PgRouting: A Practical Guide

What is pgRouting? It's a PostgreSQL extension for developing network routing applications and doing graph analysis. This book will give you all the tools and information you need to get started with pgRouting, as well as complete code examples and even how to deploy your project to the web.

This book gathers a selection of the best papers presented during the 14th International Conference on Location Based Services, which was held in Zurich (Switzerland) between the 15th and 17th January 2018. It presents a general overview of recent research activities related to location based services. Such activities have grown in importance over the past several years, especially those concerning outdoor/indoor positioning, smart environments, spatial modeling, personalization and context-awareness, cartographic communication, novel user interfaces, crowdsourcing, social media, big data analysis, usability and privacy.

This book presents a remarkable collection of chapters that cover a wide range of topics in the areas of information and communication technologies and their real-world applications. It gathers the Proceedings of the Future of Information and Communication Conference 2019 (FICC 2019), held in San Francisco, USA from March 14 to 15, 2019. The conference attracted a total of 462 submissions from pioneering researchers, scientists, industrial engineers, and students from all around the world. Following a double-blind peer review process, 160 submissions (including 15 poster papers) were ultimately selected for inclusion in these proceedings. The papers highlight relevant trends in, and the latest research on: Communication, Data Science, Ambient Intelligence, Networking, Computing, Security, and the Internet of Things. Further, they address all aspects of Information Science and communication technologies, from classical to intelligent, and both the theory and applications of the latest technologies and methodologies. Gathering chapters that discuss state-of-the-art intelligent methods and techniques for solving real-world problems, along with future research directions, the book represents both an interesting read and a valuable asset.

For programmers, analysts, and database administrators, this Nutshell guide is the essential reference for the SQL language used in today's most popular database products. This new fourth edition clearly documents SQL commands according to the latest ANSI/ISO standard and details how those commands are implemented in Microsoft SQL Server 2019 and Oracle 19c, as well as in the MySQL 8, MariaDB 10.5, and PostgreSQL 14 open source database products. You'll also get a concise overview of the relational database management system (RDBMS) model and a clear-cut explanation of foundational RDBMS concepts--all packed into a succinct, comprehensive, and easy-to-use format. Sections include: Background on the relational database model, including current and previous SQL standards Fundamental concepts necessary for understanding relational

databases and SQL commands An alphabetical command reference to SQL statements, according to the SQL:2016 ANSI standard The implementation of each command by MySQL, Oracle, PostgreSQL, and SQL Server An alphabetical reference of the ANSI SQL:2016 functions and constructs as well as the vendor implementations Platform-specific functions unique to each implementation

A Practical Guide to Advanced Networking

Advances in Information and Communication

Practical Tracing of Groundwater, with Emphasis on Karst Terranes

A Desktop Quick Reference

Introduction to International Disaster Management

A Workbook for Classroom Or Independent Study

Road traffic is the most important source of pollutants in urban centers. The characterization of the pollution generated by the vehicles can be cumbersome. VEIN is an R package designed to estimate vehicular emissions with different approaches covering traffic flow processing, selection of emission factors, and estimation and post-processing of emissions into databases and maps. VEIN allows you to know where are the sources of pollution and at what time are emitted. This book also covers the generation of inputs for WRF-Chem model.

You've experienced the shiny, point-and-click surface of your Linux computer--now dive below and explore its depths with the power of the command line. The Linux Command Line takes you from your very first terminal keystrokes to writing full programs in Bash, the most popular Linux shell (or command line). Along the way you'll learn the timeless skills handed down by generations of experienced, mouse-shunning gurus: file navigation, environment configuration, command chaining, pattern matching with regular expressions, and more. In addition to that practical knowledge, author William Shotts reveals the philosophy behind these tools and the rich heritage that your desktop Linux machine has inherited from Unix supercomputers of yore. As you make your way through the book's short, easily-digestible chapters, you'll learn how to:

- Create and delete files, directories, and symlinks
- Administer your system, including networking, package installation, and process management
- Use standard input and output, redirection, and pipelines
- Edit files with Vi, the world's most popular text editor
- Write shell scripts to automate common or boring tasks
- Slice and dice text files with cut, paste, grep, patch, and sed

Once you overcome your initial "shell shock," you'll find that the command line is a natural and expressive way to communicate with your computer. Just don't be surprised if your mouse starts to gather dust.

PostGIS is a spatial database that integrates advanced storage and analysis of vector and raster data, and is remarkably flexible and powerful. PostGIS provides support for geographic objects to the PostgreSQL object-relational database and is currently the most popular open source spatial databases. This book is a comprehensive guide on PostGIS tools and concepts which are required to manage, manipulate, and analyse spatial data in PostGIS. It will cover key spatial data manipulation tasks, explaining not only how each task is performed, but also why. It provides practical guidance allowing you to safely take advantage of the advanced technology in PostGIS in order to simplify your spatial database administration tasks. Furthermore, you will learn to take

advantage of basic and advanced vector, raster, and routing approaches along with the concepts of data maintenance, optimization, and performance, which will help you to integrate these into a large ecosystem of desktop and web tools. By the end, you will be armed with all the tools and instructions you need to both manage the spatial database system and make better decisions as your project's requirements evolve.

SQL in a Nutshell applies the eminently useful "Nutshell" format to Structured Query Language (SQL), the elegant--but complex--descriptive language that is used to create and manipulate large stores of data. For SQL programmers, analysts, and database administrators, the new second edition of SQL in a Nutshell is the essential date language reference for the world's top SQL database products. SQL in a Nutshell is a lean, focused, and thoroughly comprehensive reference for those who live in a deadline-driven world. This invaluable desktop quick reference drills down and documents every SQL command and how to use it in both commercial (Oracle, DB2, and Microsoft SQL Server) and open source implementations (PostgreSQL, and MySQL). It describes every command and reference and includes the command syntax (by vendor, if the syntax differs across implementations), a clear description, and practical examples that illustrate important concepts and uses. And it also explains how the leading commercial and open sources database product implement SQL. This wealth of information is packed into a succinct, comprehensive, and extraordinarily easy-to-use format that covers the SQL syntax of no less than 4 different databases. When you need fast, accurate, detailed, and up-to-date SQL information, SQL in a Nutshell, Second Edition will be the quick reference you'll reach for every time. SQL in a Nutshell is small enough to keep by your keyboard, and concise (as well as clearly organized) enough that you can look up the syntax you need quickly without having to wade through a lot of useless fluff. You won't want to work on a project involving SQL without it.

PostgreSQL: Up and Running

Mastering PostGIS

Learning Geospatial Analysis with Python

A Complete Introduction

QGIS Blueprints

Proceedings of ICICC 2018, Volume 1

Disaster management is a vibrant and growing field, driven by government spending in the wake of terrorist attacks and environmental debacles, as well as private-sector hiring of risk managers and emergency planners. An ever-increasing number of practicing professionals needs a reference that can provide a solid foundation in ALL major phases of supervision – mitigation, preparedness, response, communications, and recovery. As climate change leads to further costly catastrophes and as countries around the world continue to struggle with terrorism, the demand for solutions will only grow. This revised edition of Coppola's revered resource meets said demand head-on with more focused, current, thoughtfully analyzed, and effective approaches to disaster relief. Expanded coverage of global approaches to disaster management with enhanced data and research on disasters around the world, including Cyclone Nargis, the H1N1 pandemic, and the tsunami in American Samoa More material on risk management, mitigation, myths that affect behavior during crises, and post-disaster evaluation of the response Up-to-date information on the role of aid organizations and international financial institutions like the World Bank in disaster response, as well as commentary on the latest research in disaster management and policy studies

Summary PostGIS in Action, Second Edition teaches readers of all levels to write spatial queries that solve real-world problems. It first gives you a background in vector-, raster-, and topology-based GIS and then quickly moves into analyzing, viewing, and mapping data. This second edition covers PostGIS 2.0 and 2.1 series, PostgreSQL 9.1, 9.2, and 9.3 features, and shows you how to integrate with other GIS tools. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book Processing data tied to location and topology requires specialized know-how. PostGIS is a free spatial database extender for PostgreSQL, every bit as good as proprietary software. With it, you can easily create location-aware queries in just a few lines of SQL code and build the back end for a mapping, raster analysis, or routing application with minimal effort. PostGIS in Action, Second Edition teaches you to solve real-world geodata problems. It first gives you a background in vector-, raster-, and topology-based GIS and then quickly moves into analyzing, viewing, and mapping data. You'll learn how to optimize queries for maximum speed, simplify geometries for greater efficiency, and create custom functions for your own applications. You'll also learn how to apply your existing GIS knowledge to PostGIS and integrate with other GIS tools. Familiarity with relational database and GIS concepts is helpful but not required. What's Inside An introduction to spatial databases Geometry, geography, raster, and topology spatial types, functions, and queries Applying PostGIS to real-world problems Extending PostGIS to web and desktop applications Updated for PostGIS 2.x and PostgreSQL 9.x About the Authors Regina Obe and Leo Hsu are database consultants and authors. Regina is a member of the PostGIS core development team and the Project Steering Committee. Table of Contents PART 1 INTRODUCTION TO POSTGIS What is a spatial database? Spatial data types Spatial reference system considerations Working with real data Using PostGIS on the desktop Geometry and geography functions Raster functions PostGIS TIGER geocoder Geometry relationships PART 2 PUTTING POSTGIS TO WORK Proximity analysis Geometry and geography processing Raster processing Building and using topologies Organizing spatial data Query performance tuning PART 3 USING POSTGIS WITH OTHER TOOLS Extending PostGIS with pgRouting and procedural languages Using PostGIS in web applications

An easy-to-use guide, full of hands-on recipes for manipulating spatial data in a PostGIS database. Each topic is explained and placed in context, and for the more inquisitive, there are more details of the concepts used. If you are a web developer or a software architect, especially in location-based companies, and want to expand the range of techniques you are using with PostGIS, then this book is for you. You should have some prior experience with PostgreSQL database and spatial concepts.

Get up to speed with core PostgreSQL tasks such as database administration, application development, database performance monitoring, and database testing Key Features: Build real-world enterprise database management systems using Postgres 12 features Explore the development, administrative and security aspects of PostgreSQL 12 Implement best practices from industry experts to build powerful database applications Book Description: PostgreSQL is an open-source object-relational database management system (DBMS) that provides enterprise-level services, including high performance and scalability. This book is a collection of unique projects providing you with a wealth of information relating to administering, monitoring, and testing PostgreSQL. The focus of each project is on both the development and the administrative aspects of PostgreSQL. Starting by exploring development aspects such as database design and its implementation, you'll then cover PostgreSQL administration by understanding PostgreSQL architecture, PostgreSQL performance, and high-availability clusters. Various PostgreSQL projects are explained through current technologies such as DevOps and cloud platforms using programming languages like Python and Node.js. Later, you'll get to grips with the well-known database API tool, PostgREST, before learning how to use popular PostgreSQL database testing frameworks. The book is also packed with essential tips and tricks and common patterns for working seamlessly in a production environment. All

the chapters will be explained with the help of a real-world case study on a small banking application for managing ATM locations in a city. By the end of this DBMS book, you'll be proficient in building reliable database solutions as per your organization's needs. **What You Will Learn:** Set up high availability PostgreSQL database clusters in the same containment, a cross-containment, and on the cloud Monitor the performance of a PostgreSQL database Create automated unit tests and implement test-driven development for a PostgreSQL database Develop PostgreSQL apps on cloud platforms using DevOps with Python and Node.js Write robust APIs for PostgreSQL databases using Python programming, Node.js, and PostgREST Create a geospatial database using PostGIS and PostgreSQL Implement automatic configuration by Ansible and Terraform for Postgres **Who this book is for:** This PostgreSQL book is for database developers, database administrators, data architects, or anyone who wants to build end-to-end database projects using Postgres. This book will also appeal to software engineers, IT technicians, computer science researchers, and university students who are interested in database development and administration. Some familiarity with PostgreSQL and Linux is required to grasp the concepts covered in the book effectively.

Database, GIS Maps and Threat Analysis

Practical GIS

Pro Git

Postgis Cookbook, Second Edition

Ecology and Management

The Linux Command Line, 2nd Edition

Develop analytical location-based web applications with QGIS About This Book Tame geographic information workflows with QGIS blueprints for smart web applications Create geographic web applications using QGIS and free/open source software Blueprints provide real-world applications covering many use cases Who This Book Is For This book encompasses relatively experienced GIS developers who have a strong grounding in the fundamentals of GIS development. They will have used QGIS before, but are looking to understand how to develop more complex, layered map applications that expose various data sets, utilize different visualizations, and are consumable (usable) by end users What You Will Learn Review geographic information principles and the application of these principles in the QGIS free/open source ecosystem Perform advanced analysis with site selection, hydrologic, and topological networks Build performant web applications by tile caching and generating static assets Provide collaborative editing capabilities for your team or community Develop custom and dynamic analysis and visualization capabilities Select the best components from desktop and web, for your use case Integrate it with social media and crowdsourcing In Detail QGIS, the world's most popular free/open source desktop geographic information system software, enables a wide variety of use cases involving location - previously only available through expensive specialized commercial software. However, designing and executing a multi-tiered project from scratch on this complex ecosystem remains a significant challenge. This book starts with a primer on QGIS and closely related data, software, and systems. We'll guide you through six use-case blueprints for geographic web applications. Each blueprint boils down a complex workflow into steps you can follow to reduce time lost to trial and error. By the end of this book readers should be able to build complex layered applications that visualize multiple data sets, employing different types of visualization, and give end users the ability to interact with and manipulate this data for the purpose of analysis. **Style and approach** This is a comprehensive guide to the application of QGIS and free/open source software in creating web applications from analysis. Step-by-step blueprints guide the reader through analytical and web development topics and designs.

Read Online PgRouting: A Practical Guide

Learn how to use QGIS to take your cartographic products to the highest level. With step-by-step instructions for creating the most modern print map designs seen in any instructional materials to-date, this book covers everything from basic styling and labeling to advanced techniques like illuminated contours and dynamic masking. See how QGIS is rapidly surpassing the cartographic capabilities of any other geoware available today with its data-driven overrides, flexible expression functions, multitudinous color tools, blend modes, and atlas capabilities. All example data and project files are included. Written by two of the leading experts in the realm of open source mapping, Anita Graser and Gretchen N. Peterson are experienced authors who pour their wealth of knowledge into the book. To get the most from the book, you'll need QGIS 2.14 LTR and a basic working knowledge of QGIS. Get ready to bump up your mapping experience!

This is a tutorial-style book that helps you to perform Geospatial and GIS analysis with Python and its tools/libraries. This book will first introduce various Python-related tools/packages in the initial chapters before moving towards practical usage, examples, and implementation in specialized kinds of Geospatial data analysis. This book is for anyone who wants to understand digital mapping and analysis and who uses Python or another scripting language for automation or crunching data manually. This book primarily targets Python developers, researchers, and analysts who want to perform Geospatial, modeling, and GIS analysis with Python.

This book provides an insight into recent technological trends and innovations in solutions and platforms to improve mobility of visually impaired people. The authors' goal is to help to contribute to the social and societal inclusion of the visually impaired. The book's topics include, but are not limited to, obstacle detection systems, indoor and outdoor navigation, transportation sustainability systems, and hardware/devices to aid visually impaired people. The book has a strong focus on practical applications tested in a real environment. Applications include city halls, municipalities, and companies that must keep up to date with recent trends in platforms, methodologies and technologies to promote urban mobility. Also discussed are broader realms including education, health, electronics, tourism, and transportation. Contributors include a variety of researchers and practitioners around the world.

PostGIS in Action

Mastering PostgreSQL 10

A Beginner's Guide to Storytelling with Data

Practical SQL, 2nd Edition

SQL in a Nutshell

A Practical Guide

PgRouting A Practical Guide Locate Press

"PostGIS in Action" is the first book devoted entirely to PostGIS. It will help both new and experienced users write spatial queries to solve real-world problems. It also discusses the new features available in PostgreSQL 8.4 and provides tutorials.

Intermittent Rivers and Ephemeral Streams: Ecology and Management takes an internationally broad approach, seeking to compare and contrast findings across multiple continents, climates, flow regimes, and land uses to provide a complete and integrated perspective on the ecology of these ecosystems. Coupled with this, users will find a discussion of management approaches applicable

in different regions that are illustrated with relevant case studies. In a readable and technically accurate style, the book utilizes logically framed chapters authored by experts in the field, allowing managers and policymakers to readily grasp ecological concepts and their application to specific situations. Provides up-to-date reviews of research findings and management strategies using international examples Explores themes and parallels across diverse sub-disciplines in ecology and water resource management utilizing a multidisciplinary and integrative approach Reveals the relevance of this scientific understanding to managers and policymakers

Write efficient GIS applications using PostGIS - from data creation to data consumption About This Book Learn how you can use PostGIS for spatial data analysis and manipulation Optimize your queries and build custom functionalities for your GIS application A comprehensive guide with hands-on examples to help you master PostGIS with ease Who This Book Is For If you are a GIS developer or analyst who wants to master PostGIS to build efficient, scalable GIS applications, this book is for you. If you want to conduct advanced analysis of spatial data, this book will also help you. The book assumes that you have a working installation of PostGIS in place, and have working experience with PostgreSQL. What You Will Learn Refresh your knowledge of the PostGIS concepts and spatial databases Solve spatial problems with the use of SQL in real-world scenarios Practical walkthroughs of application development examples using Postgis, GeoServer and OpenLayers. Extract, transform and load your spatial data Expose data directly or through web services. Consume your data in both desktop and web clients In Detail PostGIS is open source extension on PostgreSQL object-relational database system that allows GIS objects to be stored and allows querying for information and location services. The aim of this book is to help you master the functionalities offered by PostGIS- from data creation, analysis and output, to ETL and live edits. The book begins with an overview of the key concepts related to spatial database systems and how it applies to Spatial RDBMS. You will learn to load different formats into your Postgres instance, investigate the spatial nature of your raster data, and finally export it using built-in functionalities or 3th party tools for backup or representational purposes. Through the course of this book, you will be presented with many examples on how to interact with the database using JavaScript and Node.js. Sample web-based applications interacting with backend PostGIS will also be presented throughout the book, so you can get comfortable with the modern ways of consuming and modifying your spatial data. Style and approach This book is a

Read Online PgRouting: A Practical Guide

comprehensive guide covering all the concepts you need to master PostGIS. Packed with hands-on examples, tips and tricks, even the most advanced concepts are explained in a very easy-to-follow manner. Every chapter in the book does not only focus on how each task is performed, but also why.

Proceedings of the 2019 Future of Information and Communication Conference (FICC), Volume 1
Discover QGIS 3.x

PostGIS in Action, Third Edition

Developing Modern Database Applications with PostgreSQL

Use the Highly Available and Object-relational PostgreSQL to Build Scalable and Reliable Apps

Progress in Location Based Services 2018

QGIS is a leading user-friendly, cross-platform, open source, desktop geographic information system (GIS). It provides many useful capabilities and features and their number is continuously growing. More and more private users and companies choose QGIS as their primary GIS software because it is very easy to use, feature-rich, extensible, and has a big and constantly growing community. This book guides you from QGIS installation through data loading, and preparation to performing most common GIS analyses. You will perform different types of GIS analyses including density, visibility, and suitability analysis on practical, real-world data. Finally, you will learn how to become more productive and automate your everyday work with the help of the QGIS Processing framework and by developing your own Python plugins. By the end of this book, you will have all the necessary knowledge about handling and analyzing spatial data.

In 1994, W. Richard Stevens and Addison-Wesley published a networking classic: TCP/IP Illustrated. The model for that book was a brilliant, unfettered approach to networking concepts that has proven itself over time to be popular with readers of beginning to intermediate networking knowledge. The Illustrated Network takes this time-honored approach and modernizes it by creating not only a much larger and more complicated network, but also by incorporating all the networking advancements that have taken place since the mid-1990s, which are many. This book takes the popular Stevens approach and modernizes it, employing 2008 equipment, operating systems, and router vendors. It presents an ?illustrated? explanation of how TCP/IP works with consistent examples from a real, working network configuration that includes servers, routers, and workstations. Diagnostic traces allow the reader to follow the discussion with unprecedented clarity and precision. True to the title of the book, there are 330+ diagrams and screen shots, as well as topology diagrams and a unique repeating chapter opening diagram. Illustrations are also used as end-of-chapter questions. A complete and modern network was assembled to write this book, with all the material coming from real objects connected and running on the network, not assumptions. Presents a real world networking scenario the way the reader sees them in a device-agnostic world. Doesn't preach one platform or the other. Here are ten key differences between the two: Stevens Goralski's Older operating systems (AIX,svr4,etc.) Newer OSs (XP, Linux, FreeBSD, etc.) Two routers (Cisco, Telebit (obsolete)) Two routers (M-series, J-series) Slow Ethernet and SLIP link Fast Ethernet, Gigabit Ethernet, and SONET/SDH links (modern) Tcpcmdump for traces Newer, better utility to capture traces (Ethereal, now has a new name!) No IPSec IPSec No multicast Multicast No router security discussed Firewall routers detailed No Web Full Web browser HTML consideration No IPv6 IPv6 overview Few configuration details More configuration details (ie, SSH, SSL, MPLS, ATM/FR consideration,

wireless LANS, OSPF and BGP routing protocols New Modern Approach to Popular Topic Adopts the popular Stevens approach and modernizes it, giving the reader insights into the most up-to-date network equipment, operating systems, and router vendors. Shows and Tells Presents an illustrated explanation of how TCP/IP works with consistent examples from a real, working network configuration that includes servers, routers, and workstations, allowing the reader to follow the discussion with unprecedented clarity and precision. Over 330 Illustrations True to the title, there are 330 diagrams, screen shots, topology diagrams, and a unique repeating chapter opening diagram to reinforce concepts Based on Actual Networks A complete and modern network was assembled to write this book, with all the material coming from real objects connected and running on the network, bringing the real world, not theory, into sharp focus.

Practical SQL is an approachable and fast-paced guide to SQL (Structured Query Language), the standard programming language for defining, organizing, and exploring data in relational databases. The book focuses on using SQL to find the story your data tells, with the popular open-source database PostgreSQL and the pgAdmin interface as its primary tools. You'll first cover the fundamentals of databases and the SQL language, then build skills by analyzing data from the U.S. Census and other federal and state government agencies. With exercises and real-world examples in each chapter, this book will teach even those who have never programmed before all the tools necessary to build powerful databases and access information quickly and efficiently. You'll learn how to: - Create databases and related tables using your own data - Define the right data types for your information - Aggregate, sort, and filter data to find patterns - Use basic math and advanced statistical functions - Identify errors in data and clean them up - Import and export data using delimited text files - Write queries for geographic information systems (GIS) - Create advanced queries and automate tasks Learning SQL doesn't have to be dry and complicated. Practical SQL delivers clear examples with an easy-to-follow approach to teach you the tools you need to build and manage your own databases. This book uses PostgreSQL, but the SQL syntax is applicable to many database applications, including Microsoft SQL Server and MySQL.

Learn GIS skills for catchment hydrology and water management with QGIS for Hydrological Applications! This updated, second edition, workbook teaches GIS and applies the state of the art functionality of QGIS 3.x for hydrological applications.

Advanced Networking Concepts Applied Using Linux on IBM System z

Mobile Solutions and Their Usefulness in Everyday Life

Extending QGIS 3 with Python 3

Recipes for Catchment Hydrology and Water Management

PgRouting

Qgis Map Design

PostGIS in Action, Third Edition shows you how to solve real-world geodata problems. You'll go beyond basic mapping, and explore custom functions for your applications. Summary In PostGIS in Action, Third Edition you will learn: An introduction to spatial databases Geometry, geography, raster, and topology spatial types, functions, and queries Applying PostGIS to real-world problems Extending PostGIS to web and desktop applications Querying data from external sources using PostgreSQL Foreign Data Wrappers Optimizing queries for maximum speed Simplifying

geometries for greater efficiency PostGIS in Action, Third Edition teaches readers of all levels to write spatial queries for PostgreSQL. You'll start by exploring vector-, raster-, and topology-based GIS before quickly progressing to analyzing, viewing, and mapping data. This fully updated third edition covers key changes in PostGIS 3.1 and PostgreSQL 13, including parallelization support, partitioned tables, and new JSON functions that help in creating web mapping applications. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology PostGIS is a spatial database extender for PostgreSQL. It offers the features and firepower you need to take on nearly any geodata task. PostGIS lets you create location-aware queries with a few lines of SQL code, then build the backend for mapping, raster analysis, or routing application with minimal effort. About the book PostGIS in Action, Third Edition shows you how to solve real-world geodata problems. You'll go beyond basic mapping, and explore custom functions for your applications. Inside this fully updated edition, you'll find coverage of new PostGIS features such as PostGIS Window functions, parallelization of queries, and outputting data for applications using JSON and Vector Tile functions. What's inside Fully revised for PostGIS version 3.1 and PostgreSQL 13 Optimize queries for maximum speed Simplify geometries for greater efficiency Extend PostGIS to web and desktop applications About the reader For readers familiar with relational databases and basic SQL. No prior geodata or GIS experience required. About the author Regina Obe and Leo Hsu are database consultants and authors. Regina is a member of the PostGIS core development team and the Project Steering Committee. Table of Contents PART 1 INTRODUCTION TO POSTGIS 1 What is a spatial database? 2 Spatial data types 3 Spatial reference systems 4 Working with real data 5 Using PostGIS on the desktop 6 Geometry and geography functions 7 Raster functions 8 Spatial relationships PART 2 PUTTING POSTGIS TO WORK 9 Proximity analysis 10 PostGIS TIGER geocoder 11 Geometry and geography processing 12 Raster processing 13 Building and using topologies 14 Organizing spatial data 15 Query performance tuning PART 3 USING POSTGIS WITH OTHER TOOLS 16 Extending PostGIS with pgRouting and procedural languages 17 Using PostGIS in web applications

Learn the basics of Geographic Information Systems by solving real-world problems with powerful open source tools About This Book This easy-to-follow guide allows you to manage and analyze geographic data with ease using open source tools Publish your geographical data online Learn the basics of geoinformatics in a practical way by solving problems Who This Book Is For The

book is for IT professionals who have little or no knowledge of GIS. It's also useful for those who are new to the GIS field who don't want to spend a lot of money buying licenses of commercial tools and training. What You Will Learn Collect GIS data for your needs Store the data in a PostGIS database Exploit the data using the power of the GIS queries Analyze the data with basic and more advanced GIS tools Publish your data and share it with others Build a web map with your published data In Detail The most commonly used GIS tools automate tasks that were historically done manually—compiling new maps by overlaying one on top of the other or physically cutting maps into pieces representing specific study areas, changing their projection, and getting meaningful results from the various layers by applying mathematical functions and operations. This book is an easy-to-follow guide to use the most matured open source GIS tools for these tasks. We'll start by setting up the environment for the tools we use in the book. Then you will learn how to work with QGIS in order to generate useful spatial data. You will get to know the basics of queries, data management, and geoprocessing. After that, you will start to practice your knowledge on real-world examples. We will solve various types of geospatial analyses with various methods. We will start with basic GIS problems by imitating the work of an enthusiastic real estate agent, and continue with more advanced, but typical tasks by solving a decision problem. Finally, you will find out how to publish your data (and results) on the web. We will publish our data with QGIS Server and GeoServer, and create a basic web map with the API of the lightweight Leaflet web mapping library. Style and approach The book guides you step by step through each of the core concepts of the GIS toolkit, building an overall picture of its capabilities. This guide approaches the topic systematically, allowing you to build upon what you learned in previous chapters. By the end of this book, you'll have an understanding of the aspects of building a GIS system and will be able to take that knowledge with you to whatever project calls for it.

This IBM® Redbooks® publication describes important networking concepts and industry standards that are used to support high availability on IBM System z®. Some of the networking standards described here are VLANs, VLAN trunking, link aggregation, virtual switches, VNICs, and load-balancing. We examine the various aspects of network setups and introduce the main Linux on System z networking commands and configuration files. We describe the management of network interface parameters, assignment of addresses to a network interface, and usage of the `ifconfig` command to configure network interfaces. We provide an overview of connectivity options

available on the System z platform. We also describe high availability concepts and building a high availability solution using IBM Tivoli® System Automation. We also provide the implementation steps necessary to build a redundant network connections set up between an IBM z/VM® system and the external network switches using two Open Systems Adapter-Express 3 (OSA-Express 3) adapters with 10 Gb Ethernet ports. We describe the tests performed in our lab environment. The objectives of these tests were to gather information about performance and failover from the perspective of a real scenario, where the concepts of described in this book were applied. This book is focused on information that is practical and useful for readers with experience in network analysis and engineering networks, System z and Linux systems administrators, especially for readers that administer networks in their day-to-day activities. For additional reading: A Technote is available that explains changes to using channel bonding interfaces introduced with SLES 11 SP 2. It can be found at:

<http://www.redbooks.ibm.com/abstracts/tips1000.html?Open>

Analyze data like a pro, even if you're a beginner. Practical SQL is an approachable and fast-paced guide to SQL (Structured Query Language), the standard programming language for defining, organizing, and exploring data in relational databases. Anthony DeBarros, a journalist and data analyst, focuses on using SQL to find the story within your data. The examples and code use the open-source database PostgreSQL and its companion pgAdmin interface, and the concepts you learn will apply to most database management systems, including MySQL, Oracle, SQLite, and others.* You'll first cover the fundamentals of databases and the SQL language, then build skills by analyzing data from real-world datasets such as US Census demographics, New York City taxi rides, and earthquakes from US Geological Survey. Each chapter includes exercises and examples that teach even those who have never programmed before all the tools necessary to build powerful databases and access information quickly and efficiently. You'll learn how to:

- Create databases and related tables using your own data
- Aggregate, sort, and filter data to find patterns
- Use functions for basic math and advanced statistical operations
- Identify errors in data and clean them up
- Analyze spatial data with a geographic information system (PostGIS)
- Create advanced queries and automate tasks

This updated second edition has been thoroughly revised to reflect the latest in SQL features, including additional advanced query techniques for wrangling data. This edition also has two new chapters: an expanded set of instructions on for setting up your system plus a chapter on using PostgreSQL with the popular

*JSON data interchange format. Learning SQL doesn't have to be dry and complicated. Practical SQL delivers clear examples with an easy-to-follow approach to teach you the tools you need to build and manage your own databases. * Microsoft SQL Server employs a variant of the language called T-SQL, which is not covered by Practical SQL.*

Data Science for Transport

QGIS for Hydrological Applications - Second Edition

Estimating Vehicular Emissions with the R Package Vein

How TCP/IP Works in a Modern Network

A Practical Guide to the Advanced Open Source Database

Practical SQL

Thinking of migrating to PostgreSQL? This updated guide helps you quickly understand and use the 9.3 release of this open source database system. You'll not only learn about its unique enterprise-class features, but also discover that PostgreSQL is more than just a database system—it's also an impressive application platform. Using numerous examples, this book shows you how to achieve tasks that are difficult or impossible in other databases. The second edition covers LATERAL queries, augmented JSON support, materialized views, and other key topics. If you're an existing PostgreSQL user, you'll pick up gems you may have missed along the way. Learn basic administration tasks, such as role management, database creation, backup, and restore Apply the psql command-line utility and the pgAdmin graphical administration tool Explore PostgreSQL tables, constraints, and indexes Learn powerful SQL constructs not generally found in other databases Use several different languages to write database functions Tune your queries to run as fast as your hardware will allow Query external and variegated data sources with Foreign Data Wrappers Learn how to replicate data, using built-in replication features

Thinking of migrating to PostgreSQL? This clear, fast-paced introduction helps you understand and use this open source database system. Not only will you learn about the enterprise class features in versions 9.5 to 10, you'll also discover that PostgreSQL is more than a database system—it's an impressive application platform as well. With examples throughout, this book shows you how to achieve tasks that are difficult or impossible in other databases. This third edition covers new features, such as ANSI-SQL constructs found only in proprietary databases until now: foreign data wrapper (FDW) enhancements; new full text functions and operator syntax introduced in version 9.6; XML constructs new in version 10; query parallelization features

introduced in 9.6 and enhanced in 10; built-in logical replication introduced in Version 10.e. If you're a current PostgreSQL user, you'll pick up gems you may have missed before. Learn basic administration tasks such as role management, database creation, backup, and restore Apply the psql command-line utility and the pgAdmin graphical administration tool Explore PostgreSQL tables, constraints, and indexes Learn powerful SQL constructs not generally found in other databases Use several different languages to write database functions Tune your queries to run as fast as your hardware will allow Query external and variegated data sources with foreign data wrappers Learn how to use built-in replication to replicate data

Master the capabilities of PostgreSQL 10 to efficiently manage and maintain your database Key Features Your one-stop guide to mastering advanced concepts in PostgreSQL 10 with ease Master query optimization, replication, and high availability with PostgreSQL Extend the functionalities of your PostgreSQL instance to suit your organizational needs with minimal effort Book Description PostgreSQL is an open source database used for handling large datasets (big data) and as a JSON document database. This book highlights the newly introduced features in PostgreSQL 10, and shows you how you can build better PostgreSQL applications, and administer your PostgreSQL database more efficiently. We begin by explaining advanced database design concepts in PostgreSQL 10, along with indexing and query optimization. You will also see how to work with event triggers and perform concurrent transactions and table partitioning, along with exploring SQL and server tuning. We will walk you through implementing advanced administrative tasks such as server maintenance and monitoring, replication, recovery, high availability, and much more. You will understand common and not-so-common troubleshooting problems and how you can overcome them. By the end of this book, you will have an expert-level command of advanced database functionalities and will be able to implement advanced administrative tasks with PostgreSQL 10. What you will learn Get to grips with the advanced features of PostgreSQL 10 and handle advanced SQL Make use of the indexing features in PostgreSQL and fine-tune the performance of your queries Work with stored procedures and manage backup and recovery Master replication and failover techniques Troubleshoot your PostgreSQL instance for solutions to common and not-so-common problems Learn how to migrate your database from MySQL and Oracle to PostgreSQL without any hassle Who this book is for If you are a PostgreSQL data architect or an administrator and want to understand how to implement advanced functionalities and master complex administrative tasks with PostgreSQL 10, then this book is perfect for you. Prior

experience of administrating a PostgreSQL database and a working knowledge of SQL are required to make the best use of this book.

Pro Git (Second Edition) is your fully-updated guide to Git and its usage in the modern world. Git has come a long way since it was first developed by Linus Torvalds for Linux kernel development. It has taken the open source world by storm since its inception in 2005, and this book teaches you how to use it like a pro. Effective and well-implemented version control is a necessity for successful web projects, whether large or small. With this book you'll learn how to master the world of distributed version workflow, use the distributed features of Git to the full, and extend Git to meet your every need. Written by Git pros Scott Chacon and Ben Straub, Pro Git (Second Edition) builds on the hugely successful first edition, and is now fully updated for Git version 2.0, as well as including an indispensable chapter on GitHub. It's the best book for all your Git needs.

Intermittent Rivers and Ephemeral Streams

Veinbook

QGIS By Example

International Conference on Innovative Computing and Communications

A Self-Study Guide with Computer Exercises

The Illustrated Network

A Practical Guide to Advanced Networking, Third Edition takes a pragmatic, hands-on approach to teaching advanced modern networking concepts from the network administrator's point of view. Thoroughly updated for the latest networking technologies and applications, the book guides you through designing, configuring, and managing campus networks, connecting networks to the Internet, and using the latest networking technologies. The authors first show how to solve key network design challenges, including data flow, selection of network media, IP allocation, subnetting, and configuration of both VLANs and Layer 3 routed networks. Next, they illuminate advanced routing techniques using RIP/RIPv2, OSPF, IS-IS, EIGRP, and other protocols, and show how to address common requirements such as static routing and route redistribution. You'll find thorough coverage of configuring IP-based network infrastructure, and using powerful WireShark and NetFlow tools to analyze and troubleshoot traffic. A full chapter on security introduces best practices for preventing DoS attacks, configuring access lists, and protecting routers, switches, VPNs, and wireless networks. This book's coverage also includes IPv6, Linux-based networking, Juniper routers, BGP Internet routing, and Voice over IP (VoIP).

Every topic is introduced in clear, easy-to-understand language; key ideas are reinforced with working examples, and hands-on exercises based on powerful network simulation software. Key Pedagogical Features NET-CHALLENGE SIMULATION SOFTWARE provides hands-on experience with advanced router and switch commands, interface configuration, and protocols—now including RIPv2 and IS-IS WIRESHARK NETWORK PROTOCOL ANALYZER TECHNIQUES and EXAMPLES of advanced data traffic analysis throughout PROVEN TOOLS FOR MORE EFFECTIVE LEARNING, including chapter outlines and summaries WORKING EXAMPLES IN EVERY CHAPTER to reinforce key concepts and promote mastery KEY TERMS DEFINITIONS, LISTINGS, and EXTENSIVE GLOSSARY to help you master the language of networking QUESTIONS, PROBLEMS, and CRITICAL THINKING QUESTIONS to help you deepen your understanding CD-ROM includes Net-Challenge Simulation Software and the Wireshark Network Protocol Analyzer Software examples.

The book includes high-quality research papers presented at the International Conference on Innovative Computing and Communication (ICICC 2018), which was held at the Guru Nanak Institute of Management (GNIM), Delhi, India on 5–6 May 2018. Introducing the innovative works of scientists, professors, research scholars, students and industrial experts in the field of computing and communication, the book promotes the transformation of fundamental research into institutional and industrialized research and the conversion of applied exploration into real-time applications.

Explore the latest Long Term Release (LTR) of QGIS with Discover QGIS 3.x, a comprehensive up-to-date workbook built for both the classroom and professionals looking to build their skills. Designed to take advantage of the latest QGIS features, this book will guide you in improving your maps and analysis. Discover QGIS 3.x is an update of the original title, using QGIS 3.6, covering Spatial analysis, Data management, and Cartography. What's new in this edition: Fifteen new exercises A new section, Advanced Data Visualization, covering: Blending modes Live layer effects Geometry generators Rendering Points Time Manager Native 3D Mesh data Appendices covering: Keyboard shortcuts Useful Plugins Getting involved The book is a complete resource and includes: Lab exercises Challenge exercises All data, discussion questions, and solutions The quantity, diversity and availability of transport data is increasing rapidly, requiring new skills in the management and interrogation of data and databases. Recent years have seen a new wave of 'big data', 'Data Science', and 'smart cities' changing the world, with the Harvard Business Review describing Data Science as the "sexiest job of the 21st century". Transportation professionals and researchers need to be able to use data and databases in order to establish quantitative, empirical facts, and to validate and challenge their

mathematical models, whose axioms have traditionally often been assumed rather than rigorously tested against data. This book takes a highly practical approach to learning about Data Science tools and their application to investigating transport issues. The focus is principally on practical, professional work with real data and tools, including business and ethical issues. "Transport modeling practice was developed in a data poor world, and many of our current techniques and skills are building on that sparsity. In a new data rich world, the required tools are different and the ethical questions around data and privacy are definitely different. I am not sure whether current professionals have these skills; and I am certainly not convinced that our current transport modeling tools will survive in a data rich environment. This is an exciting time to be a data scientist in the transport field. We are trying to get to grips with the opportunities that big data sources offer; but at the same time such data skills need to be fused with an understanding of transport, and of transport modeling. Those with these combined skills can be instrumental at providing better, faster, cheaper data for transport decision- making; and ultimately contribute to innovative, efficient, data driven modeling techniques of the future. It is not surprising that this course, this book, has been authored by the Institute for Transport Studies. To do this well, you need a blend of academic rigor and practical pragmatism. There are few educational or research establishments better equipped to do that than ITS Leeds". - Tom van Vuren, Divisional Director, Mott MacDonald "WSP is proud to be a thought leader in the world of transport modelling, planning and economics, and has a wide range of opportunities for people with skills in these areas. The evidence base and forecasts we deliver to effectively implement strategies and schemes are ever more data and technology focused a trend we have helped shape since the 1970's, but with particular disruption and opportunity in recent years. As a result of these trends, and to suitably skill the next generation of transport modellers, we asked the world-leading Institute for Transport Studies, to boost skills in these areas, and they have responded with a new MSc programme which you too can now study via this book." - Leighton Cardwell, Technical Director, WSP. "From processing and analysing large datasets, to automation of modelling tasks sometimes requiring different software packages to "talk" to each other, to data visualization, SYSTRA employs a range of techniques and tools to provide our clients with deeper insights and effective solutions. This book does an excellent job in giving you the skills to manage, interrogate and analyse databases, and develop powerful presentations. Another important publication from ITS Leeds." - Fitsum Teklu, Associate Director (Modelling & Appraisal) SYSTRA Ltd "Urban planning has relied for decades on statistical and computational practices that have little to do with mainstream data science. Information is still often used as evidence on the impact of new infrastructure

even when it hardly contains any valid evidence. This book is an extremely welcome effort to provide young professionals with the skills needed to analyse how cities and transport networks actually work. The book is also highly relevant to anyone who will later want to build digital solutions to optimise urban travel based on emerging data sources". - Yaron Hollander, author of "Transport Modelling for a Complete Beginner"

Expert techniques on PostgreSQL 10 development and administration

The PyQGIS Programmer's Guide

PostGIS Cookbook

Global Register of Migratory Species

Welcome to the world of PyQGIS, the blending of QGIS and Python to extend and enhance your open source GIS toolbox. With PyQGIS you can write scripts and plugins to implement new features and perform automated tasks. This book covers version 3.0 of the QGIS application programming interface (API), featuring Python 3.