

Oracle Database 12c

Install, Configure & Maintain Like a Professional

ORACLE® 12c
DATABASE

Learn Essential Oracle Database Skills

Ian Abramson
Michael Abbey
Michelle Malcher
Michael Corey

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Master the Fundamentals of Oracle Database 12c

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DATABASE

Filled with easy-to-follow tutorials, this Oracle Press guide provides detailed coverage of core database concepts, the role of the administrator, and enterprise database capabilities. *Oracle Database 12c: Install, Configure & Maintain Like a Professional* walks you through database configuration, administration, programming, backup and recovery, and high availability. You'll get in-depth introductions to SQL and PL/SQL as well as important information on managing large databases and using Oracle's engineered systems. This essential beginner's resource features:

- **Critical Skills**—Lists of specific skills covered in each chapter
- **Projects**—Practical exercises that show how to apply the critical skills learned in each chapter
- **Progress Checks**—Quick self-assessment sections to check your progress
- **Ask the Expert**—Q&A sections filled with helpful tips
- **Notes**—Extra information related to the topic being covered
- **Mastery Checks**—Chapter-ending quizzes to test your knowledge

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\$35.00 USD

ISBN 978-0-07-179933-1
MHID 0-07-179933-8

9 780071 799331

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Cataloging-in-Publication Data is on file with the Library of Congress

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1234567890 DOC DOC 109876543

ISBN 978-0-07-179933-1

MHID 0-07-179933-8

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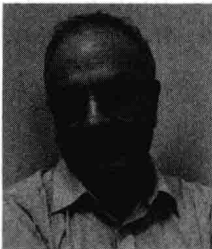
Oracle Database 12c

Install, Configure & Maintain Like a Professional

**We dedicate this book to all of our children who make us
so proud each and every day—Ann Marie, Baila, Ben, Emily,
Jillian, John, Jordan, Mandy, Michael Jr., Naomi, and Nathan.**

About the Authors

Ian Abramson (@iabramson) lives in Toronto, Canada, where he works for EPAM Systems as the Canadian Director of Enterprise Data, a global leader in software engineering. Ian is a graduate in Mathematics from Concordia University in Montreal. His involvement with implementing solutions using Oracle technology and data warehouses reaches back over 25 years, as a developer of creative and innovative solutions for clients around the globe. He is the past president of the IOUG (Independent Oracle Users Group) and continues to share his knowledge through his lively presentations and published technical articles and blog. In his spare time, Ian spends his free time golfing in the summer and playing hockey in the winter.



Michael S. Abbey (@MichaelAbbeyCAN) has done nothing but Oracle since V3 in 1986. He has been a frequent presenter at tech shows on four continents since the early 1990s and started writing for Oracle Press in 1994. He is a well-known tech in the Oracle space and has a voracious appetite for the CORE Oracle technology. Michael has been actively involved in the user group programs for over two decades and is an Oracle ACE.

Michelle Malcher (@malcherm) is the current president of the Independent Oracle Users Group (IOUG). She is an Oracle ACE Director with more than 15 years' experience in database development, security, design, and administration. Michelle is based in Chicago, USA, where she leads a team of database developers and administrators. She has contributed articles to the *IOUG Select Journal*, has written the *Oracle Database Administration for Microsoft SQL Server DBAs*, and has contributed to other Oracle Press books. She enjoys presenting and sharing ideas about Oracle database topics at conferences and user group meetings.



Michael Corey (@Michael_Corey) is Founder and Chief Executive Officer of Ntirety. Michael is a frequent speaker at technology and business conferences throughout the world, from Australia to Brazil. Michael is a VMware vExpert and Oracle ACE, and is on the Talkin' Cloud 200 Computing Executives and Experts List.

Michael is a past president of the Independent Oracle Users Group; he helped found the Professional Association of SQL Server, is a current board member of the IOUG Virtualization SIG,

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About the Contributing Authors

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Marc Fielding (@mfild) is a passionate and creative problem solver, drawing on a deep understanding of the full enterprise application stack to identify the root cause of problems. He has extensive experience implementing Oracle's engineered system portfolio, including leading one of the first reference Oracle Exadata implementations. When not working, he can be found on the trail or ski slope, or indulging his latest passion, scuba diving.

Michael McKee has been working in the Oracle environment since 1994. He has multiple Oracle certifications and has been involved in all aspects of the Oracle database life cycle. He is currently living in Belfast, Northern Ireland, with his wife and three children.

About the Technical Editor

Albert Hui (@DataEconomist) is a BIDW, Big Data and Machine Learning, architect with over ten years of experience with Oracle products. Albert is a technology evangelist and researcher and has delivered a few multiterabyte data warehouses in Canada using Oracle. He frequently speaks at technology conferences around the world on topics of BIDW. He holds two master's degrees—one in engineering and one in business management.



Acknowledgments

Ian Abramson

The process of writing a book is long and arduous, yet it provides such a rewarding conclusion.

There are many people who have helped me to achieve so much during my time as a data professional. My parents, Lily and Joe, encouraged a love of learning and logic. They provided the foundation for the person I have become and their memory lives on through me and my family. To my wife, Susan, and children, Baila and Jillian, you are my rock. Together we form a team that can't be beat. I am so lucky to have you on my side and appreciate all the support and help you've given me, and I hope I've done the same for you. My children have come so far in such a short time and I could not be prouder of them. They have both graduated with Honors from McMaster University; I am so gratified to see who they have become. Of course, a thanks to all the Astroffs, Wesikopfs, and Abramsons in my life. You guys all add to the fun.

I also have so many people to thank who have contributed to my life with Oracle databases and data in general. You have all taught me something along the way and in many ways helped me to write this book. Of course, my thanks to my coauthors Michael Abbey, Michelle Malcher, and Mike Corey who have helped me so much in getting this done and allowing me to be part of a dynamic and amazing writing team. Thanks to our contributors and editors, Albert Hui, Marc Fielding, Fahd Mirza, and Michael McKee—you have all helped to make this book the best ever. To all my friends at the IOUG and to the rest of the Oracle community, thank you. In particular, I would like to thank Ari Kaplan, Rich Neimeic, David Teplow, Todd Sheetz, Andy Flower, Carol McGury and everyone at SmithBucklin, Carl Dudley, John Matelski, Mike Gangler, and Judi Dolittle. I want to thank the many people who make EPAM (previously Thoughtcorp) a company that nurtures greatness: Kirk Robinson, David Bercovitch, Arkadiy Dobkin, Anatoliy Chudnovskiy, Ilya Cantor, Alex Lyashok, Victor Dvorkin, Howard Bigelow, Sam Rehman, Andrei Dzianisau, Predrag Stegnajic, Art Gray, Bob Paquin, Mark Rechsteiner, Jason Lee, Valentina Hedow, Nicole Devlin, Gino Marckx, Derek Mitchell, Tom Klimovski, Dino Chronopoulos, and so many

others who have inspired me as part of these growing and thriving organizations. Finally, I want to thank my friends who impact me on a daily basis. You all are an important part of my life and make me strive to be a better person as well as a better golfer and hockey player. Thanks to Mark Kerzner and all the Kerznors (Arlene, Marissa, Amanda, Shane, and Dalia), Marc and Lydia Allaire, Gerry Belanger, Mike and Susie Brown, Jim Boutin, Terry and Sofie Butts, Chris Clarke and Noni Femby, Mark Davey, Ted Falcon, Moti Fishman, Pete Fortier, Judy and Roy Fricker, Ron and Ann Katz, Tim Haller, Rich and Ada Ljubecic, Marshall Lucatch, Ron and Jeff McIntosh, Doug Morgan, Al Murphy, Ken Sheppard, Lionel Silverman, Tom Tishler, and last but not least, Yak (Lawrie Yakabowsky). Thanks to everyone. In many ways it is because of all of you that I am here today and have this opportunity to help others. I thank you all for being part of my journey.

Michael Abbey

I would like to thank each and every one of you who has contributed to my lively career with the Oracle database software for the past 27 years. It has been a magic carpet ride from the beginning, way back in the 80s, to now. I've loved having you all along for the ride. Startup...

Michelle Malcher

It continues to be an awesome journey, and I want to thank all of you for being a part of it. Thank you to the coauthors of this book for your hard work and encouragement to make this a great project to be a part of. Thanks to my family, and especially my junior DBAs, Amanda and Emily, for their understanding and support. Thanks to all involved in the IOUG. Thank you for volunteering—keep sharing ideas and working with each other to sharpen each other's skills and grow careers.

Michael Corey

Thanks to a great group of authors who made this book possible. Thank you to the many people behind the scenes that supported everyone in this effort.



Introduction

This book provides the reader with an introduction to Oracle Database 12c and some of the state-of-the-art offerings of Oracle. It has been a long journey for technicians who have focused their careers on Oracle's technology all the way back to the late 1970s. Many skills acquired along the way are portable, and are upwardly compatible to the latest release. This is true for Database 12c. A large portion of what some readers may already know is applicable to this new release. What this book will do for the reader is

- Provide a foundation for people just getting started with the software
- Enhance existing skill sets with an idea of what is new with this latest release
- Pinpoint the highlights of what is important to get to know in the database, development, and engineered machine areas of 12c
- Introduce SQL*Plus and PL/SQL, the original and omni-powerful query languages with which one creates and manipulates data in the data repository

What's in This Book

The following chapter-by-chapter outline will guide you through the plethora of information presented in *Oracle Database 12c: Install, Configure & Maintain Like a Professional*.

Chapter 1: The Database: The Foundations of 12c

You are introduced to the volume of information and how it can be stored in the database. The chapter gives a brief introduction to data types and highlights concepts related to managing that data. It closes with an overview of some of the most important new features of the 12c offering.

Chapter 2: Installing Oracle

We show how the database software is installed and guide the reader through the network of screens and suggested answers to the many questions posed by the GUI installer. Many different types of configurations are available for the database, and this chapter follows one of the most common.

Chapter 3: SQL: Accessing and Retrieving Data

SQL*Plus is the heart of this chapter, which introduces fundamentals and covers syntax that will allow you to get started writing queries. We cover a number of ways to work with the data and familiarize the reader with how to go about creating, manipulating, and deleting data.

Chapter 4: Programming in the Database

Here we cover Oracle's procedural programming language called PL/SQL. Once you start programming with SQL*Plus, a more procedural approach is required to be able to process data sets in a sequential manner, similar to how aging developers may have used third-generation languages in the '80s and '90s.

Chapter 5: The Database Administrator

The database administrator plays the role of the technical gatekeeper of the database. The DBA manages the day-to-day operations of the database and serves the technology and end-user requirements to carry on a company's business. We cover some of the most common ongoing activities played by this all-important person, thereby giving the reader a taste of this role from the start.

Chapter 6: Backup and Recovery

We delve into the ever-popular and strong Recovery Manager (RMAN) tool and highlight its strengths and syntax. We include discussions on the types of backups you can write using RMAN and delve into the important topics of restore and recovery.

Chapter 7: High Availability: RAC, ASM, and Data Guard

This chapter is dedicated to the functionality embedded in Oracle Database 12c that keeps your applications running 24/7. One of the earliest questions new DBAs and managers ask is how one ensures that the database is always available. This chapter introduces the reader to a handful of the most important ways to bring that desire to fruition.

Chapter 8: Using and Managing Large Databases

One cannot listen to any form of media on the Internet or traditional airwaves without hearing about the ever-expanding size of data stores and the need to store larger and large volumes of data. Many new buzzwords have surfaced over the past few years, of which “big data” may be the most commonly heard. With the need to store and retrieve more and more unstructured data, the size of many databases has become overwhelming. This chapter dives into some of what Oracle has put together to manage this explosion of data.

Chapter 9: Oracle’s Engineered Systems: From the Database Appliance to Exadata

Given the complexities of managing hardware and software, many corporations have thirsted for off-the-shelf solutions that can deliver an out-of-the-box solution for their business requirements. In this chapter, we discuss the heart of the solutions offered by Oracle in this very competitive arena.

Intended Audience

This book is suitable for the following readers:

- Database administrators and their managers who are just getting started with using the Oracle database product suite
- Developers who are looking for some knowledge of the database offering and how it could affect their day-to-day work
- Non-technical persons looking for a quick-start introduction to Oracle Database 12c
- Technical personnel looking for a broader understanding of state-of-the-art offerings from Oracle

No prior knowledge of the Oracle database, SQL, or PL/SQL is assumed. Everything you need to know to get started with Oracle database technology is covered in this book.

