



Oracle Database 12c: Architecture & Internals



ora12c210-ver2

Learning Resources Available From The Sideris Training Portal

2-3 Days

General Description

This is a core curriculum textbook applicable to most learning paths within the Sideris Oracle textbook series. We begin with a discussion of the broad systems infrastructure where one finds Oracle database installations, and we outline how the database fits with other systems in a multi-tiered architecture, including web servers, application servers and engineered systems such as the Oracle Exadata database computing platform. We then explore the intricacies of a single database installation, including memory, process and storage structures. Periodically we delve into the internals of the database, probing into such areas internal locking mechanisms, kernel module calls and database failures.

This textbook initially presents the Oracle database architecture from the perspective of a traditional, single-tenant database configuration as it exists within an on-premise systems infrastructure. We then draw comparisons between such a traditional environment and the new Oracle 12c multi-tenant architecture, used in both traditional and cloud-based computing models.

We present this information in a form that goes beyond a discussion of theoretical concepts. In many cases the Enterprise Manager interface is used to explore the components under consideration. Therefore one of the secondary objectives of this textbook is to acquaint you with the built-in Enterprise Manager Database Express interface and sometimes with its EM Cloud Control (CC) companion. In particular our focus is to discover the capabilities of the Enterprise Manager Database Express interface newly introduced with the Oracle 12 database release.

The architecture of different Oracle database installations are not all uniform, as there is considerable flexibility regarding the way a particular installation is configured. Such configuration options exist largely in the form of database parameter settings. So this textbook will devote considerable time to identifying these parameters and how these settings can be used to configure a database installation to suit local requirements.

The information contained within this textbook is critical to the success of most Oracle technology professionals, whether they are database administrators, security specialists, tuning experts or cloud computing administrators.

The target audience for this textbook is all Oracle professionals. Among the specific groups for whom this textbook will be helpful are:

- Database administrators
- Application designers and developers
- Web server administrators
- System administrators
- Implementation specialists
- Data center support engineers

Target Audience

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Prerequisites

- Chief Information Officers (CIO) and other information technology (IT) management professionals

These are recommended prerequisites for this textbook:

- ORACLE DATABASE 12C: SQL FUNDAMENTALS (LEVELS I & II)
- ORACLE DATABASE 12C: INSTALL & UPGRADE WORKSHOP

The successful completion of this textbook requires that one have access to an Oracle Database 12c Enterprise Edition (EE) installation. The textbook entitled ORACLE DATABASE 12C: INSTALL & UPGRADE WORKSHOP will assist you in performing such an installation and it is for this reason that it is listed above as a mandatory prerequisite. The textbook that you are now reading is therefore intended to help you to explore the architecture and the internals of the new database installation that you may have just created using that prerequisite as a guide.

Certification

This textbook considers subjects helpful for multiple certifications, including such certifications as an Oracle Database 12c Administrator Certified Associate (OCA) for "Exam: 1Z0-062: Oracle Database 12c: Installation And Administration" as well as an Oracle Database 12c Administrator Certified Professional (OCP), Oracle Database 12c Administrator Certified Master (OCM), and an Oracle Database 12c Performance Tuning Certified Expert.

Content Summary

Volumes: 1
Pages: 400

Suggested Next Book

Because this is such a fundamental textbook to the entirety of the Sideris textbook learning series, there are a number of learning paths that one could follow after this textbook. You will note liberal references to other textbooks available within the Sideris Oracle database series so that you can choose the next step most suitable for your requirements.

Training Suggestions

When delivered as an instructor-led training (ILT) or live virtual training session, the suggested length of this textbook is anywhere from 1 to 3 days, depending upon whether or not all of the topics and demonstrations are needed by the audience. This textbook is most often combined with the textbook ORACLE DATABASE 12C: INSTALL & UPGRADE WORKSHOP in a single 4 or 5 day presentation.

This textbook should be considered as a foundation for any of the advanced Oracle professional textbook series found within the Sideris curriculum. For example, this textbook is a mandatory prerequisite for other training paths as well, such as those for an Oracle senior database developer, an Oracle certified performance tuning expert and, as mentioned above, an Oracle certified database administrator. A learning session based upon this textbook is often customized, with one picking and choosing those topics most applicable to the specific audience and learning path being pursued.

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