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Oracle database pl/sql language reference 12c release 2

Home » Articles » 12c » Here Oracle 12c includes a number of PL/SQL new features and enhancements, many of which have been covered in separate articles on this site. This article serves as a link to all of those, as well as introducing some of the more minor features listed in the Changes in Oracle Database 12c Release 1 section of the PL/SQL Language Reference manual. Topics covered in this article: Topics covered in separate articles on this site: Invoker Rights Functions Can Be Result-Cached The PL/SQL Function Result Cache was introduced in Oracle 11g Release 1. One of the restrictions on its use was that invoker rights functions could not be cached. This restriction has been removed in Oracle Database 12c Release 1. Libraries Defined Using Directory Objects and Credentials In previous versions of the database, libraries were defined with an explicit path and were run by extproc as the Oracle software owner. In Oracle 12c, the CREATE LIBRARY statement has been enhanced to allow libraries to be optionally defined using directory objects and credentials (DBMS_CREDENTIAL). -- Pre-12c : Still valid in 12c. CREATE OR REPLACE LIBRARY my_lib IS '/path/to/my_lib.so'; / -- 12c : Using Directory to specify path to object. CREATE OR REPLACE DIRECTORY my_dir AS '/path/to/'; CREATE LIBRARY my_lib AS 'my_lib.so' IN my_dir; / --12c : Using credential. BEGIN DBMS_CREDENTIAL.create_credential(credential_name => 'my_cred', username => 'me', password => 'my_password'); END; / CREATE OR REPLACE LIBRARY my_lib IS '/path/to/my_lib.so' CREDENTIAL my_cred; / New Predefined Inquiry Directives $$PLSQL_UNIT_OWNER, $$PLSQL_UNIT_TYPE, so the list now includes the following. $$PLSQL_LINE : The line number of the source code where this directive is located. $$PLSQL_UNIT : The name of the current PL/SQL program unit. $$PLSQL_UNIT_TYPE : The type (procedure, function, package etc.) of the current PL/SQL program unit. $$plsql_compilation_parameter : One of the PL/SQL compilation parameters (PLSCOPE_SETTINGS, PLSQL_CCFLAGS, PLSQL_CODE_TYPE, PLSQL_OPTIMIZE_LEVEL, PLSQL_WARNINGS, NLS_LENGTH_SEMANTICS, PERMIT_92_WRAP_FORMAT). PLSQL_DEBUG Compilation Parameter is Deprecated The compilation parameter PLSQL_DEBUG is now deprecated. Using PLSQL_OPTIMIZE_LEVEL is not listed in parameter documentation itself, but it is mentioned in the PL/SQL Compilation Parameters list. PL/SQL Packages and Types Reference Although not directly listed as PL/SQL new features, the PL/SQL Packages and Types Reference manual is always filled with lots of changes for each database release. It is worth spending some time looking at the changes that have been introduced with the new release. For more information see: Hope this helps. Regards Tim... Back to the Top. Oracle Database PL/SQL Language Reference, 12c Release 2 (12.2) E85773-04 Copyright © 1996, 2019, Oracle and/or its affiliates. All rights reserved. Primary Authors: Lavanya Jayapalan, Louise Morin Contributing Authors: Tulika Das, Patricia Huey, S. Moore Contributors: D. Alpern, E. Belden, S. Agrawal, H. Baer, S. Castledine, T. Chang, B. Cheng, R. Dani, R. Decker, C. Iyer, A. Kruglikov, N. Le, W. Li, Llewellyn, V. Moore, T. Raney, R. Rajagopalan, K. Rich, I. Stocks, C. 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It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners. Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle. 6/6 This chapter lists the books available online that document Oracle® Database 12c Release 1 (12.1). All books are available in electronic format. The following categories of documentation are available: Table 3-1 Data Mining Documentation Documentation Part Number Description Oracle Data Mining Concepts E17692 Discusses the basic concepts underlying Oracle Data Mining. Includes an overview of the features of Oracle Data Mining and information about mining functions and algorithms. Oracle Data Mining User's Guide E53115 Explains how to use the SQL interface to Oracle Data Mining to create models and score data. This Guide also addresses administrative issues such as security, import/export, and upgrade for Oracle Data Mining. Table 3-2 Gateways Documentation Documentation Part Number Description Oracle Database Gateway Installation and Configuration Guide for Microsoft Windows E17926 Describes how to install Oracle Database Gateway for Sybase, Informix, Teradata, SQL Server, ODBC, and DRDA on Microsoft Windows (32-bit) and Microsoft Windows (64-bit) platform. Oracle Database Gateway Installation and Configuration Guide for IBM AIX on POWER Systems (64-Bit), Linux x86-64, Oracle Solaris on SPARC (64-Bit), Oracle Solaris on x86-64 (64-Bit), and HP-UX Itanium E17927 Describes how to install and configure Oracle Database Gateway for Sybase, Informix, Teradata, SQL Server, ODBC, and DRDA on UNIX-based platforms. Oracle Database Gateway for APPC Installation and Configuration Guide for Microsoft Windows E17928 Provides Oracle applications with seamless access to IBM mainframe data and services through Remote Procedure Call (RPC) processing. Oracle Database Gateway for APPC Installation and Configuration Guide for IBM AIX on POWER Systems (64-Bit), Linux x86-64, Oracle Solaris on SPARC (64-Bit), and HP-UX Itanium E17929 Provides Oracle applications with seamless access to IBM mainframe data and services through Remote Procedure Call (RPC) processing. Oracle Database Gateway for WebSphere MQ Installation and User's Guide E17930 Provides access to WebSphere MQ services. This gateway requires a system that is capable of running 64-bit applications. Oracle Database Gateway for APPC User's Guide E17931 Provides Oracle applications seamless access to virtually any APPC-enabled system, including IBM mainframe data and services through Remote Procedure Call (RPC) processing. Oracle Database Gateway for Sybase User's Guide E17932 Describes the Oracle Database Gateway for Sybase, which enables Oracle client applications to access Sybase data through Structured Query Language (SQL). Oracle Database Gateway for Informix User's Guide E17933 Describes the Oracle Database Gateway for Informix, which enables Oracle client applications to access Informix data through Structured Query Language (SQL). Oracle Database Gateway for Teradata User's Guide E17934 Describes the Oracle Database Gateway for Teradata, which enables Oracle client applications to access Teradata data through Structured Query Language (SQL). Oracle Database Gateway for SQL Server User's Guide E17935 Describes the Oracle Database Gateway for SQL Server, which enables Oracle client applications to access SQL Server data through Structured Query Language (SQL). Oracle Database Gateway for ODBC User's Guide E17936 Describes the Oracle Database Gateway for ODBC, which enables Oracle client applications to access non-Oracle systems data through Structured Query Language (SQL). Oracle Database Gateway for DRDA User's Guide E17937 Provides users with transparent access to DB2. Table 3-3 Installation Documentation Documentation Part Number Description Oracle Database SQL Translation and Migration Guide E22508 Describes the installation, configuration, and administration tasks for all activities related to migrating applications to Oracle Database from other databases, including DB2, MySQL, and Sybase. Oracle Database Installation Guide for Linux E41491 Provides configuration information for network and system administrators, and database installation information for database administrators (DBAs) who install and configure Oracle Database and Oracle Grid Infrastructure for a standalone server on Linux. Oracle Database Migration Assistant for Unicode Guide E48475 Introduces you to the Oracle Database Migration Assistant for Unicode, discusses the database character set migration process, and verifies that there are no character set data problems in a current Unicode database. Oracle Grid Infrastructure Installation Guide for Linux E48914 Describes how to install Oracle Grid Infrastructure for a cluster software, which includes Oracle Clusterware and Oracle Automatic Storage Management (Oracle ASM), on systems running Linux. Oracle Database Client Installation Guide for Microsoft Windows E49462 Describes how to install and configure Oracle Database Client on Windows. Oracle Database Installation Guide for Oracle Solaris E50818 Provides configuration information for network and system administrators, and database installation information for database administrators (DBAs) who install and configure Oracle Database and Oracle Grid Infrastructure for a standalone server on Oracle Solaris. Oracle Grid Infrastructure Installation Guide for Oracle Solaris E51120 Describes how to install Oracle Grid Infrastructure for a cluster software, which includes Oracle Clusterware and Oracle Automatic Storage Management (Oracle ASM), on systems running Oracle Solaris. Oracle Database Quick Installation Guide for Linux x86-64 E54543 Describes how to quickly install Oracle Database on Linux x86-64 systems. Oracle Database Client Installation Guide for Linux E55009 Describes how to install and configure Oracle Database Client on Oracle Database. Oracle Database Quick Installation Guide for Oracle Database Client on Oracle Database Client Installation Guide for Oracle Solaris on SPARC (64-Bit) E55100 Describes how to quickly install Oracle Database on Oracle Solaris on SPARC (64-Bit). Oracle Database Client Quick Installation Guide for Oracle Solaris on SPARC (64-Bit) E55101 Describes how to quickly install Oracle Database Client on Oracle Solaris on SPARC (64-Bit). Oracle Database Quick Installation Guide for Oracle Solaris on x86-64 (64-Bit) E55102 Describes how to quickly install Oracle Database on Oracle Solaris on x86-64 (64-Bit). Oracle Database Client Quick Installation Guide for Oracle Solaris on x86-64 (64-Bit) E55103 Describes how to quickly install Oracle Database Client on Oracle Solaris on x86-64 (64-Bit). Oracle Database Examples Installation Guide E55464 Describes how to install and configure the products available on the Oracle Database Examples installation media. Oracle Database Client Quick Installation Guide for IBM AIX on POWER Systems (64-Bit) E56114 Describes how to quickly install Oracle Database Client on IBM AIX on POWER Systems (64-Bit). Oracle Database Quick Installation Guide for IBM AIX on POWER Systems (64-Bit) E56492 Describes how to install and configure Oracle Database Client on IBM AIX on POWER Systems (64-Bit). Oracle Database Quick Installation Guide for Microsoft Windows x64 (64-Bit) E56576 Describes how to quickly install Oracle Database on Microsoft Windows x64 systems. Oracle Database Client Quick Installation Guide for Microsoft Windows x64 (64-Bit) E56585 Describes how to quickly install Oracle Database Client on Windows x64 systems. Oracle Database Quick Installation Guide for IBM AIX on POWER Systems (64-Bit) E56891 Describes how to quickly install Oracle Database on IBM AIX on POWER Systems (64-Bit). Oracle Database Client Quick Installation Guide for HP-UX Itanium E56892 Describes how to quickly install Oracle Database on HP-UX Itanium systems. Oracle Database Client Quick Installation Guide for HP-UX Itanium E56894 Describes how to quickly install Oracle Database Client on HP-UX Itanium. Oracle Database Quick Installation Guide for IBM: Linux on System z E56893 Describes how to quickly install Oracle Database on z/Linux systems. Oracle Database Client Quick Installation Guide for IBM: Linux on System z E56896 Describes how to quickly install Oracle Database Client on z/Linux systems. Oracle Database Client Quick Installation Guide for Microsoft Windows (32-Bit) E56927 Describes how to quickly install Oracle Database Client on Windows 32-bit systems. Table 3-6 Microsoft Windows Documentation Documentation Part Number Description Oracle Database Platform Guide for Microsoft Windows E10714 Provides platform-specific information for configuring and using Oracle Database on the Windows platform. Topics discussed include: architecture, services, tools, configuration, administration, tuning, backup, accounts, passwords, user authentication, registry parameters, and application development. Oracle Data Provider for .NET Developer's Guide for Microsoft Windows E17732 Describes provider-specific features and properties of ODP.NET. Oracle Data Provider for .NET is an implementation of Microsoft's ADO.NET interface and provides access to Oracle databases. Oracle Providers for ASP.NET Developer's Guide for Microsoft Windows E17733 Provides introductory, installation, postinstallation configuration, and usage information for using these providers with ASP.NET services and controls. Oracle Services for Microsoft Transaction Server Developer's Guide for Microsoft Windows E18595 Describes Oracle Services for Microsoft Transaction Server, which allows Oracle databases to be used as resource managers in distributed transactions. The guide describes its usage and configuration in a Microsoft Distributed Transaction Coordinator environment. Oracle Database Extensions for .NET Developer's Guide for Microsoft Windows E18596 Provides introductory, installation, post-installation configuration, and usage information for Oracle Database Extensions for .NET, which makes it possible to build and run .NET stored procedures or functions with Oracle Database for Microsoft Windows. Table 3-7 Oracle® Multimedia Documentation Documentation Part Number Description Oracle Multimedia Reference E17696 Presents reference information about using Oracle Database to store, manage, and retrieve images, audio, video, DICOM format medical images and other objects, or other heterogeneous media data in an integrated fashion with other enterprise information. Oracle Multimedia User's Guide E17697 Presents information about using Oracle Database to store, manage, and retrieve images, audio, video, DICOM format medical images and other objects, or other heterogeneous media data in an integrated fashion with other enterprise information. Oracle Multimedia extends Oracle Database reliability, availability, and data management to multimedia content in Internet, electronic commerce, medical, financial, and other media-rich applications. Oracle Multimedia DICOM Developer's Guide E17698 Presents reference and other information about using Oracle Database to store, manage, and retrieve DICOM content such as single-frame and multiframe images, waveforms, slices of 3-D volumes, video segments, and structured reports in an integrated fashion with other enterprise information. Oracle Multimedia DICOM extends Oracle Database reliability, availability, and data management to media objects in medical applications. Oracle Multimedia DICOM supports Digital Imaging and Communications in Medicine, the standard for medical images. Oracle Multimedia Java API Reference E17699 Presents reference information about writing Java applications that manage media content within Oracle Database. Oracle Multimedia DICOM Java API Reference E17700 Presents reference information about writing Java applications using the Oracle Multimedia object designed to store Digital Imaging and Communications in Medicine (DICOM) data within Oracle Database. Oracle Multimedia Mid-Tier Java API Reference E17701 Presents reference information about writing Java applications using the DICOM or in the middle tier. Oracle Multimedia Servlets and JSP Java API Reference E28184 Presents reference information about writing Java servlets and JavaServer Pages (JSP) to retrieve and upload multimedia data from and to Oracle Database. Table 3-8 OLAP Documentation Documentation Part Number Description Oracle OLAP DML Reference E17673 Contains a complete description of the OLAP Data Manipulation Language (OLAP DML) used to define and manipulate analytic workspace objects. Oracle OLAP Java API Developer's Guide E17707 Provides guidance for developing client applications using the Oracle OLAP Java API. Oracle OLAP Java API Reference E17708 Provides reference information for the Oracle OLAP Java API. Oracle OLAP Customizing Analytic Workspace Manager E17709 Describes the Analytic Workspace Manager XML and Java plug-in interfaces and provides simple examples of implementations of them. Oracle OLAP Expression Syntax Reference E23382 Describes the Oracle OLAP expression syntax used to generate information-rich content from the data stored in dimensional database objects such as cubes and cube dimensions. Oracle OLAP User's Guide E53237 Explains how SQL applications can extend their analytic processing capabilities and manage summary data by using the OLAP option of Oracle Database. Table 3-9 Release Notes Documentation Documentation Part Number Description Pro*COBOL Release Notes E18407 Contains important information not included in the Pro*COBOL Programmer's Guide. Pro*C/C++ Release Notes E18409 Contains important information not included in the Pro*C/C++ Programmer's Guide. Oracle Database Release Notes for Linux E51263 Contains important information not included in the Oracle Database documentation for Linux. Oracle Database Migration Assistant for Unicode Release Notes E51606 Contains late-breaking information for Oracle Database Migration Assistant for Unicode. Oracle Database Release Notes for Oracle Solaris E51863 Contains important information not included in the Oracle Database documentation for Oracle Solaris. Oracle Database ODBC Driver Release Notes E53668 Describes new features, functionality, platform support, software required, server requirements, hardware required, testing matrix, UNIX platform certification matrix, post-installation, known issues, and software problems fixed. Table 3-10 Server Documentation Documentation Part Number Description Oracle Database Administration, Concepts, and Reference Oracle Database Administrator's Reference for Linux and UNIX-Based Operating Systems E10638 Explains how to configure and manage Oracle Database on Linux and UNIX-based operating systems. Oracle Database XML C API Reference E18585 Describes Oracle XML Developer's Kits (XDK) and Oracle XML DB APIs for the C programming language. It primarily lists the syntax of functions, methods, and procedures associated with these APIs. Oracle Database XML C++ API Reference E15977 Describes Oracle XML Developer's Kits (XDK) and Oracle XML DB APIs for the C++ programming language. This manual primarily lists the syntax of functions, methods, and procedures associated with these APIs. Oracle Database Sample Schemas E15979 Describes the sample database schemas available with Oracle Database and used in some Oracle documentation and curriculum examples. Oracle Database Heterogeneous Connectivity User's Guide E17907 Describes Oracle's approach to information integration in a heterogeneous environment. Describes Oracle Database Gateways and is a user's guide for these Oracle products. Oracle Database Advanced Queuing User's Guide E17945 Describes features of application development and integration using Oracle Database and Oracle Messaging DICOM metadata outside of the database, either on the client or in the middle tier. Oracle Multimedia Servlets and JSP Java API Reference E28184 Presents reference information about specified. SQL*Plus Release Notes E18402 Contains important information not included in the SQL*Plus User's Guide and Reference. SQL*Plus Quick Reference E18403 Contains a complete list of SQL*Plus command syntax. SQL*Plus User's Guide and Reference E18404 Contains a complete description of the SQL*Plus command-line interface to Oracle Database, and a complete reference to SQL*Plus commands and syntax. Oracle Database Global Data Services Concepts and Administration Guide E22100 Provides dynamic load balancing, failover, and centralized service management for a set of replicated databases that offer common services. The set of databases can include Oracle Real Application Clusters (Oracle RAC) and noncluster Oracle databases interconnected through Oracle Data Guard, or any other replication technology. Oracle Database High Availability Best Practices E40808 Provides high availability best practices for configuring and maintaining your Oracle Database system and network components. Oracle Database VLDB and Partitioning Guide E41057 Contains an overview of very large database (VLDB) topics, with emphasis on partitioning and parallel execution as a key component of the VLDB strategy. Oracle Automatic Storage Management Administrator's Guide E41058 Describes how to administer Oracle Automatic Storage Management. Oracle Database SQL Language Reference E41329 Contains a complete description of Oracle SQL, the language used to manage information in Oracle Database. Oracle Database Concepts E41396 Describes Oracle Database architecture and essential topics for database administrators and developers. Oracle Database Upgrade Guide E41397 Guides you through the process of planning and performing upgrades for Oracle Database. This book also provides information about compatibility, upgrading applications, and changes in the new release that affect upgrading Oracle Database. Oracle Database Administrator's Guide E41484 Describes how to create and administer Oracle Database. Includes sections on Oracle Scheduler, Oracle Database Resource Manager, Oracle Restart, Pluggable Databases, and distributed computing. Oracle Database Reference E41527 Provides reference information about database initialization parameters, static data dictionary views, and dynamic performance views that are part of Oracle Database. Oracle Database Utilities E41528 Describes how to use Oracle Database utilities to load data into a database, transfer data between databases, and maintain data. The topics discussed include Data Pump Export, Data Pump Import, SQL*Loader, external tables and associated access drivers, the Automatic Diagnostic Repository Command Interpreter (ADRCI), DBVERIFY, DBNEWID, LogMiner, the Metadata API, original Export, and original Import. Oracle Database Globalization Support Guide E41669 Describes Oracle globalization support for the database. Explains how to set up a globalization support environment, choose and migrate a character set, customize locale data, do linguistic sorting, program in a global environment, and program with Unicode. Oracle Database PL/SQL Packages and Types Reference E41829 Describes the PL/SQL packages provided with the Oracle database server that extend database functionality and provide PL/SQL access to SQL features. Oracle Database Quality of Service Management E40047 Describes the concepts of Oracle Database Quality of Service Management (Oracle Database QoS Management), and explains how to configure, administer, and troubleshoot Oracle Database QoS Management. Oracle Database Performance Tuning Guide E49058 Provides information about how to tune the performance of Oracle Database using the Oracle performance tools. Oracle Database High Availability Overview E40977 Introduces Oracle MAA solutions for deploying a highly available environment, helps you determine your availability requirements, and describes the database architectures that can help your business achieve high availability. Oracle Database Vault Administrator's Guide E49109 Explains how to configure an Oracle Database Vault, which enables users to restrict and monitor administrative user access. Oracle Database SQL Language Quick Reference E49206 Contains a high-level text description of the SQL syntax used to manage information in Oracle Database. Oracle Database Licensing Information E49208 Describes Oracle Database licensing. If you have a question about your licensing needs, contact your Oracle sales representative, or refer to the resources listed in "Related Documents" for more information. Oracle Database Readme E49321 Describes important last-minute features and changes not included in the Oracle Database Documentation Library for 12c Release 1 (12.1) Oracle Database New Features Guide E49322 Oracle Database New Features Guide is addressed to those of you familiar with previous releases of Oracle Database and who would like to become familiar with features, options, and enhancements that are new in this release of Oracle Database. Oracle Database Error Messages Reference E49325 Describes error messages that may appear while using products that are part of Oracle Database. Oracle Database JPublisher User's Guide E49873 Describes the JPublisher utility useful for Java programmers who want classes in their applications to correspond to SQL or PL/SQL entities or server-side Java classes. Oracle Database PL/SQL Language Reference E50727 Presents PL/SQL, the Oracle procedural extension of SQL, an advanced fourth-generation programming language. Explains the concepts behind PL/SQL and illustrates every facet of the language. Oracle Database 2 Day DBA E51671 Provides a single source reference for administering Oracle Database in a small-to-midsize environment, using the graphical user interface of Oracle Enterprise Manager Database Express. If you are familiar with computers, but unfamiliar with administering Oracle Database, and your computer has four CPUs or fewer, and you do not want to support more than 500 users, this book is appropriate for you. Oracle Database Testing Guide E55028 Provides information about how to assure the integrity of database changes and manage test data using Oracle Real Application Testing, data masking, and data subsetting. Oracle Database 2 Day + Performance Tuning Guide E55047 Explains how to perform day-to-day database performance tuning tasks using features provided by Oracle Diagnostics Pack, Oracle Tuning Pack, and Oracle Enterprise Manager Cloud Control. Application Development Oracle Database Cartridge Developer's Guide E18882 Describes how to implement custom indexing and query operators services and how to package and use these as a server extension called a data cartridge. Oracle Database SecureFiles and Large Objects Developer's Guide E17605 Describes use of SecureFiles and large object data types BLOB, CLOB, NCLOB, and BFILE in application development. Presents APIs for working with LOBs in supported programmatic environments. Describes database file systems and the Oracle Database File System Hierarchical Store package. Oracle Database SQLJ Developer's Guide E17660 Provides guidance to developers on SQLJ programming. This document can be read by anyone with an interest in SQLJ programming, but assumes at least some prior knowledge of Java, SQL, PL/SQL, and Oracle database. Oracle Database 2 Day + PHP Developer's Guide E18554 Provides a tutorial on how to develop PHP scripts that use the database languages SQL and PL/SQL to access and manipulate Oracle data. Oracle SQL Developer User's Guide E35117 Provides conceptual and usage information about Oracle SQL Developer, a graphical tool that enables you to browse, create, edit, and delete (drop) database objects; run SQL statements and scripts; edit and debug PL/SQL code; manipulate and export data; migrate third-party databases to Oracle; view metadata and data in third-party databases; and view created reports.Note: This book is for an old release of SQL Developer. You are encouraged to use the latest available release. See for information about downloads and documentation. Oracle SQL Developer Oracle Database Development Guide E41452 This manual describes Oracle XML DB. It includes guidelines and examples for storing, generating, accessing, searching, validating, transforming, evolving, and indexing XML data in Oracle Database. Oracle Database Development Guide E41438 Explains how to develop applications for Oracle Database. Oracle Database 2 Day Developer's Guide E41443 Describes how to perform day-to-day database application development, including creating and managing schema objects, programming, packaging, and deploying applications in Oracle Database. Oracle Database 2 Day Developer's Guide E53088 Explains general concepts behind development with Oracle Database, introduces basic features of SQL and PL/SQL, provides references to the detailed information about these topics, and shows how to create a simple application. Oracle Database Object-Relational Developer's Guide E53277 Explains how to use the object-relational features of Oracle Database. Oracle XML Developer's Kit E26045 Provides information to application developers who need to use components of the Oracle XML Developer's Kit (XDK) to generate and store XML data in a database or in a document outside the database. Application Express Oracle Application Express Release Notes E17957 Contains important information not included in the documentation for Oracle Application Express. Oracle Application Express Installation Guide E17958 Provides an overview of installing Oracle Application Express and describes issues to consider before installing. Oracle Database 2 Day + Application Express Developer's Guide E17960 Introduces you to application development using Oracle Application Express. This manual shows you how to set up a development environment, provides a hosted demonstration environment. It then walks you through building an initial application, modifying it, and previewing it. Oracle Application Express Administration Guide E17961 Describes how to use the Oracle Application Express development environment and to deploy database-centric Web applications. Oracle Application Express Application Migration Guide E17962 Describes how to convert applications from either Microsoft Access or Oracle Forms to Oracle Application Express. Oracle Application Express End User Reference E17963 Describes the Application Programming Interfaces, referred to as APIs, available when programming in the Oracle Application Express E17965 Describes how to perform administration tasks for an Oracle Application Express workspace, application, or an entire development instance. Oracle Application Express End User Guide E17966 Explains common Oracle Application Express end user tasks. Backup and Recovery Oracle Database Backup and Recovery User's Guide E50658 Explains how to use Recovery Manager (RMAN) to back up, recover, and duplicate a database, and how to use Oracle Flashback Technology to restore all or a portion of your data to a previous state. Oracle Database Backup and Recovery Reference E50791 Provides detailed descriptions of the Recovery Manager (RMAN) commands and recovery catalog views. Data Warehousing Oracle Database Data Warehousing Guide E41670 Provides conceptual, reference, and implementation material for using Oracle Database in data warehousing. It covers the full range of data warehousing activities, from physical database design to advanced calculation techniques. Oracle Data Guard Broker E48241 Describes the Oracle Data Guard Broker, a management and monitoring interface that automates many of the tasks involved in configuring and monitoring standby databases in an Oracle Data Guard configuration. Oracle Data Guard Concepts and Administration E48552 Provides a comprehensive overview of Oracle Data Guard concepts and describes how to configure and implement standby databases that can take over production operations if your production database becomes unusable. This guide includes several database scenarios such as creating, recovering, failing over, switching over, configuring, and backing up standby primary databases. Language and Interface Pro*FORTRAN Supplement to the Oracle Precompilers Guide E13811 Supplements the Oracle Database Programmer's Guide to the Oracle precompilers and shows how to develop FORTRAN programs that use the database languages SQL and PL/SQL to access and manipulate Oracle data. Oracle C++ Call Interface Programmer's Guide E48221 Presents the Oracle C++ Call Interface, an application program interface that enables applications written in C++ to interact with one or more Oracle databases. To extend the functionality of code generated by the Object Type Translator, programmers may want to add code in the OTT-generated file. The OTT can distinguish between OTT-generated code and user-generated code by looking for some predefined markers (tags). Oracle Call Interface Programmer's Guide E49886 Describes the Oracle Call Interface (OCI) which is an application programming interface (API) that allows applications written in C or C++ to interact with Oracle Database. Pro*COBOL Programmer's Guide E53282 Describes how to develop COBOL programs that use the database languages SQL and PL/SQL to access and manipulate Oracle data. Oracle Database Programmer's Guide to the Oracle Precompilers E53283 Describes how to develop applications using the Oracle precompilers and the SQL and PL/SQL, database languages to access and manipulate Oracle data. Pro*C/C++ Programmer's Guide E53432 Describes how to develop C++ programs that use the SQL and PL/SQL, database languages to access and manipulate Oracle data. Networking and Security Oracle Database 2 Day + Security Guide E17609 Provides an introduction to securing an Oracle database using the default security features, such as how to secure the database installation and configuration or manage encryption. It includes beginning level tutorials for creating secure application roles, Oracle Database Vault policies, Oracle Virtual Private Database policies, Oracle Data Redaction policies, Oracle Label Security policies, and unified auditing policies. Oracle Database Net Services Administrator's Guide E17610 Explains how to plan, configure, and manage enterprise-wide connectivity with Oracle Net Services. Oracle Database Net Services Reference E17611 Contains complete listing with descriptions of the control utility commands and configuration file parameters available for managing components of Oracle Net Services. Oracle Database Enterprise User Security Administrator's Guide E17731 Explains how to configure and use enterprise users, which are users defined in a directory. The guide also covers administrative tasks related to enterprise user security. Oracle Database Security Guide E48135 Explains how to configure an Oracle database to use the default security features. Oracle Database Real Application Security Administrator's and Developer's Guide E48189 Describes how to implement Real Application Security on the database. Real Application Security is a database authorization model that enables end-to-end security for multitier applications. Is provided in integrated solution to securing the database and application user communities. Also, it advances the security architecture of Oracle Database to meet existing and emerging demands of applications developed for the Internet. Oracle Database Real Application Security Java API Reference E48191 Documents two Java packages: - oracle.security.xs contains the APIs for using lightweight user sessions - oracle.security.xs.admin contains the APIs for administering lightweight user session Oracle Label Security Administrator's Guide E48437 Explains how to configure and use Oracle Label Security, which provides row-level access control based on the virtual private database technology of Oracle Database Enterprise Edition. Oracle Database Advanced Security Guide E50333 Explains how to configure and use Oracle Database Advanced Security Transparent Data Encryption (TDE) and Oracle Data Redaction. Oracle Database Real Application Security Session Service Java API Reference E51179 Documents one Java package: - oracle.security.xs.session contains the APIs for using an application session service. Oracle Database Real Application Security Administration E61899 Provides a graphical user interface (RASADM) that security administrators and developers using Real Application Security can use to develop end-to-end security for mid-tier applications. The RASADM application allows users to conditionally enforce access control requirements at the database layer to protect data at both the row and column levels. This approach allows developers to control application user access to data in Oracle database throughout all components of an Oracle enterprise in a common manner. Oracle Real Application Clusters Oracle Database 2 Day + Real Application Clusters Guide E17616 Explains how to install, configure, and administer Oracle Clusterware and Oracle Real Application Clusters (Oracle RAC) on a two-node system using the Oracle Linux operating system. Oracle Clusterware Administration and Deployment Guide E48819 Describes the administration and provides an overview of this product. This book also describes administrative and deployment topics for Oracle Clusterware. Oracle Real Application Clusters Administration and Deployment Guide E48838 Describes the Oracle Real Application Clusters (Oracle RAC) architecture and provides an overview of this product. This book also describes administrative and deployment topics for Oracle RAC. Oracle Real Application Clusters Installation Guide for Linux and UNIX E48917 Describes how to install and configure Oracle Real Application Clusters (Oracle RAC) on systems running Linux and UNIX. Oracle Text Oracle Text Application Developer's Guide E41298 Provides information to install the applications with Oracle Text. Oracle Text Reference E41399 Provides reference information for Oracle Text. Oracle Text R Enterprise Oracle R Enterprise User's Guide and Oracle R Enterprise which provides an environment for statistical computing. Oracle R Enterprise Release Notes E35159 Contains important information that was not included in the documentation for Oracle R Enterprise 1.2. Streams and Replication Oracle Streams Extended Examples E17912 Contains extended examples that configure various types of Oracle Streams environments. Oracle Database Advanced Replication Management API Reference E18896 Contains reference information and step-by-step instructions for using the replication management API, which is a set of PL/SQL packages for setting up and managing an Advanced Replication environment. It also includes reference information about data dictionary views that are important for Advanced Replication and security considerations for an Advanced Replication environment. Oracle Streams Concepts and Administration E53116 Contains conceptual information about Oracle Streams and information about administering, monitoring, and troubleshooting an Oracle Streams environment. It also contains conceptual information and detailed instructions for using Oracle Streams for database upgrades and database maintenance operations. Oracle Database Advanced Replication E53117 Contains conceptual information about Oracle Database and Oracle Advanced Replication. It also includes information about planning an Advanced Replication environment and information about troubleshooting Advanced Replication problems. Oracle Streams Replication Administrator's Guide E53118 Contains instructions for configuring and managing an Oracle Streams replication environment. It also includes best practices for Oracle Streams replication environments and instructions for migrating from Advanced Replication to Oracle Streams replication. Oracle XStream Guide E53119 Contains conceptual information about XStream. Also contains instructions for configuring and using XStream. Table 3-11 Spatial Documentation Documentation Part Number Description Oracle Spatial and Graph GeoRaster Developer's Guide E49118 Provides usage and reference information for the GeoRaster feature of Oracle Spatial and Graph, which lets you store, index, query, analyze, and deliver raster data (raster image and gridded data and its associated metadata). Oracle Spatial and Graph Developer's Guide E47787 Provides usage and reference information for indexing and storing spatial data and for developing spatial applications using Oracle Spatial and Graph and Oracle Locator. Oracle Spatial and Graph Java API Reference E50601 Provides javadoc-generated information about interfaces and classes that support features available with Oracle Spatial and Graph, including GeoRaster and the Topology Data Model and Network Data Model graph features, and with MapViewer, which is packaged with Oracle Fusion Middleware. Oracle Spatial and Graph RDF Semantic Graph Developer's Guide E51611 Provides usage and reference information about Oracle Database support for semantic technologies, including storage, inference, and query capabilities for data and ontologies based on Resource Description Framework (RDF), RDF Schema (RDFS), and Web Ontology Language (OWL). Oracle Spatial and Graph Topology Data Model and Network Data Model Graph Developer's Guide E53120 Provides usage and reference information about the Topology Data Model and Network Data Model Graph features of Oracle Spatial and Graph.