

ODBC Driver Release Notes

The *Oracle ODBC Driver Release Notes* describes these topics.

- [Description](#)

The Oracle ODBC Driver enables applications to connect to Oracle database from a Windows client as well as from a UNIX client that use Microsoft Open Database Connectivity (ODBC) API to read from and write to Oracle databases.
- [New Features](#)

Oracle ODBC Driver new features are described for the following releases.
- [Functionality](#)

The Oracle ODBC Driver complies with Version 3.52 of the Microsoft ODBC specification.
- [Software Required](#)

Oracle ODBC driver was certified against the currently supported Windows and UNIX operating system versions, the most current release of Oracle Net Client and Oracle Universal Installer shipping with Oracle Database.
- [Server Software Requirements](#)

Oracle Database Server 10.2 or later is the server software required to support ODBC enabled applications through the Oracle ODBC Driver.
- [Hardware Required](#)

What are the requirements for Oracle ODBC Driver system configuration for Windows and UNIX platforms?
- [Testing Matrix](#)

The following table summarizes the Windows operating system versions on which ODBC driver was certified.
- [More Information](#)

To learn more about post-installation tasks, known software problems for Oracle ODBC Driver, information about ODBC Driver for UNIX platforms, software problems fixed, and the certification matrix on UNIX platforms, see the topics that follow.
- [Documentation Accessibility](#)

Description

The Oracle ODBC Driver enables applications to connect to Oracle database from a Windows client as well as from a UNIX client that use Microsoft Open Database Connectivity (ODBC) API to read from and write to Oracle databases.

The Oracle ODBC Driver distribution kit consists of Dynamic Link Libraries and shared libraries (for UNIX platforms), help file (on UNIX and Windows platforms), a copy of the license and this product description. To use an ODBC enabled application the following software is required in addition to the Oracle ODBC Driver:

- Oracle Client & Net version 12.2
- Oracle Database Server

Oracle ODBC Driver complies with ODBC 3.52 specifications.

New Features

Oracle ODBC Driver new features are described for the following releases.

- [ODBC Release 20c, Version 20.2](#)
Describes new features for release 20c, version 20.2.
- [ODBC Release 19c, Version 19.1.0.0.0](#)
Describes new features for release 19c, version 19.1.0.0.0
- [ODBC Release 18c, Version 18.1.0.0.0](#)
Describes new features for release 18c, version 18.1.0.0.0
- [ODBC 12.2.0.1.0](#)
Describes new features for release 12.2.0.1.0.
- [ODBC 12.1.0.2.0](#)
Describes new features for release 12.1.0.2.0.
- [ODBC 12.1.0.1.0](#)
Describes new features for release 12.1.0.1.0.
- [ODBC 11.2.0.1.0](#)
Describes new features for release 11.2.0.1.0.
- [ODBC 11.1.0.1.0](#)
Describes new features for release 11.1.0.1.0.
- [ODBC 10.2.0.1.0](#)
Describes new features for release 10.2.0.1.0.
- [ODBC 10.1.0.2.0](#)
Describes new features for release 10.1.0.2.0.

ODBC Release 20c, Version 20.2

Describes new features for release 20c, version 20.2.

There are no new features for the Oracle ODBC Driver release 20c, version 20.2.

ODBC Release 19c, Version 19.1.0.0.0

Describes new features for release 19c, version 19.1.0.0.0

There are no new features of the Oracle ODBC Driver release 19c, version 19.1.0.0.0 software for the Microsoft Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows 7, Windows 8, Windows 8.1, Windows 10, Linux X86-64 (32-bit, 64-bit), Sun Solaris SPARC64 (32-bit, 64-bit), IBM AIX 5L (32-bit, 64-bit), Sun Solaris X64 (32-bit, 64-bit), HPUX IA64 (32-bit, 64-bit), ZLinux (32-bit, 64-bit) operating systems.

ODBC Release 18c, Version 18.1.0.0.0

Describes new features for release 18c, version 18.1.0.0.0

Features of the Oracle ODBC Driver release 18c, version 18.1.0.0.0 software for the Microsoft Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows 7, Windows 8, Windows 8.1, Windows 10, Linux X86-64 (32-bit, 64-bit), Sun Solaris SPARC64 (32-bit, 64-bit), IBM AIX 5L (32-bit, 64-bit), Sun Solaris X64 (32-bit, 64-bit), HPUX IA64 (32-bit, 64-bit), ZLinux (32-bit, 64-bit) operating systems are described as follows:

- unixODBC ODBC Driver Manager is upgraded from unixODBC–2.3.2 to unixODBC–2.3.4.

ODBC 12.2.0.1.0

Describes new features for release 12.2.0.1.0.

Features of the Oracle ODBC Driver release 12.2.0.1.0 software for the Microsoft Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows 7, Windows 8, Windows 8.1, Windows 10, Linux X86-64 (32-bit, 64-bit), Sun Solaris SPARC64 (32-bit, 64-bit), IBM AIX 5L (32-bit, 64-bit), Sun Solaris X64 (32-bit, 64-bit), HPUX IA64 (32-bit, 64-bit), ZLinux (32-bit, 64-bit) operating systems are described as follows:

- Support is added for long identifiers up to 128 bytes.
- Support is added for time stamp with time zone and time stamp with local time zone.

This features does not require changes to the existing ODBC application where ODBC `TIMESTAMP` data type is used. If an existing application uses ODBC `TIMESTAMP` data type and the database column is `TIMESTAMP`, the current behavior is preserved.

For database column `TIMESTAMP WITH TIMEZONE` or `TIMESTAMP WITH LOCAL TIMEZONE`, the time component in the ODBC `TIMESTAMP_STRUCT` is in the user's session time zone. This behavior is transparent to the user's application, requiring no change to the ODBC application.

ODBC 12.1.0.2.0

Describes new features for release 12.1.0.2.0.

Features of the Oracle ODBC Driver release 12.1.0.2.0 software for the Microsoft Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows 7, Windows 8, Windows 10, Linux X86-64 (32-bit, 64-bit), Sun Solaris SPARC64 (32-bit, 64-bit), IBM AIX 5L (32-bit, 64-bit), Sun Solaris X64 (32-bit, 64-bit), HPUX IA64 (32-bit, 64-bit), ZLinux (32-bit, 64-bit) operating systems are described as follows:

- Microsoft Windows 10 platform is added.

ODBC 12.1.0.1.0

Describes new features for release 12.1.0.1.0.

Features of the Oracle ODBC Driver release 12.1.0.1.0 software for the Microsoft Windows Server 2008, Windows Server 2008 R2, Windows 7, Windows 8, Windows Server 2012, Linux X86-64 (32-bit, 64-bit), Sun Solaris SPARC64 (32-bit, 64-bit), IBM AIX 5L (32-bit, 64-bit), Sun Solaris X64 (32-bit, 64-bit), HPUX IA64 (32-bit, 64-bit), ZLinux (32-bit, 64-bit) operating systems are described as follows:

- Oracle ODBC Driver now supports 32 KB data columns with `VARCHAR2`, `NVARCHAR2`, and `RAW` data. See *Oracle Database PL/SQL Packages and Types Reference* and *Oracle Database SQL Language Reference* for information about creating 32 KB columns.
- ODBC driver supports the migration of third-party applications to Oracle Databases by using the SQL Translation Framework. This enables non-Oracle database SQL statements to run against Oracle Database. For using this feature with an ODBC application, you must specify the service name, which was created as part of SQL Translation Framework setup, as the `ServerName=` entry in the `odbc.ini` file. If you require support for translation of Oracle errors (ORA errors) to your the native database, once your application starts running against Oracle Database, then you must enable the `SQLTranslateErrors=T` entry in the `odbc.ini` file.

See *Oracle Database SQL Translation and Migration Guide* on "How to Use SQL Translation Framework" before migrating a third-party ODBC application to Oracle Database.

- Oracle ODBC driver now supports executing a stored procedure, which can return implicit results without using `RefCursor`. This support eases any third party ODBC application, which migrated to Oracle and wants to use this same functionality that was provided by their previous vendors.

See *Oracle Database SQL Translation and Migration Guide* for more information about implicit results support by Oracle Database.

- Extended support of `SQLColAttribute()` field identifiers to support Oracle Database auto increment feature. You can use this feature by including Oracle ODBC driver specific header file `sqora.h` in the application. See *Oracle Call Interface Programmer's Guide* for more information about auto increment:

- `SQL_COLUMN_AUTO_INCREMENT`

Starting from Oracle Database Release 12c Release 1 (12.1), Oracle supports auto increment columns so the Oracle ODBC Driver has extended the same

support through the existing `SQLColAttribute()` identifier

`SQL_COLUMN_AUTO_INCREMENT`. This property is read only and returns `SQL_TRUE` if the column is auto increment; otherwise, it returns `SQL_FALSE`.

– `SQL_ORCLATTR_COLUMN_PROP`

Starting from Oracle Database Release 12c Release 1 (12.1), Oracle ODBC Driver supports a new driver specific field identifier

`SQL_ORCLATTR_COLUMN_PROP`, which returns the attributes of the column. This identifier returns `SQLULEN` value, which has all the column properties, shown as follows:

```

+-----+
| 32 |...| 10 | 9 | 8 |.....| 3 | 2 | 1 |
+-----+
                                     | | |
                                     | | | -> Column is auto-increment?
                                     | | | -> Auto value is always generated?
                                     | | | -> If generated by default when null?

```

ODBC 11.2.0.1.0

Describes new features for release 11.2.0.1.0.

- Oracle ODBC driver has been enhanced to prefetch `LONG` and `LONG RAW` data to improve performance of ODBC applications. To do this, the maximum size of `LONG` data (`MaxLargeData`) has to be set in registry on Windows (also need to add the registry key `MaxLargeData=` in the DSN), and in `odbc.ini` file on UNIX platforms manually. This enhancement has improved the performance of Oracle ODBC driver up to 10 times, depending on the `MaxLargeData` size set by the user. The default value of `MaxLargeData` is 0. The maximum value for `MaxLargeData` that can be set by the user is 64 KB (65536 bytes). Even if the value of `MaxLargeData` is set to some value greater than 65536, the data fetched will be 65536 bytes only. If a user has `LONG` and `LONG RAW` data in database, which is greater than 65536 bytes, `MaxLargeData` should be set to 0 (the default value), which will result in single row fetch and the complete `LONG` data can be fetched. In case the user has passed the buffer less than `MaxLargeData` size in non-polling mode, the data truncation error will occur if `LONG` data size in the database is greater than the buffer size. (Enhancement Request 7006879).
- Oracle ODBC Driver is now made to support `OCIDescribeAny()` call (to get metadata) to improve performance when the application is making heavy calls to small packaged procedures that return `REF CURSORS` through the option called `UseOCIDescribeAny` in `odbc.ini`. To use `OCIDescribeAny()` on UNIX platforms, set `UseOCIDescribeAny` to `T (True)` in `odbc.ini` file, and on Windows through the registry in DSN. (Enhancement Request 7704827).

ODBC 11.1.0.1.0

Describes new features for release 11.1.0.1.0.

- Added support for Disable `RULE` Hint. Oracle ODBC Driver now allows user to specify the option to select whether to use `RULE` Hint in catalog APIs. The change

has been done to increase the performance of ODBC driver for catalog APIs. The default value for the option is `TRUE` which means that `RULE Hint` will not be used in catalog APIs by default. (Bug4150034).

- Added support for Bind Number As `FLOAT`. By introducing Column Binding for `NUMBER` Column as `FLOAT` when the column contains `FLOAT` data speeds up the query execution that uses bind variables as `FLOAT`. (Bug4608183).
- Added support for OCI statement caching feature that provides and manages a cache of statements for each session. By implementing the support for OCI Statement Caching option, Oracle ODBC Driver will see the increase in performance where users have to parse the same statement multiple times in the same connection. The default value for the statement cache flag is `FALSE`.
- Changed the behavior of Result-set cache by saving the unnecessary memory calls to increase the ODBC Driver Performance.

ODBC 10.2.0.1.0

Describes new features for release 10.2.0.1.0.

- Added support for named parameter, binding parameters by name. Oracle ODBC Driver now allows application to specify the parameters to a stored procedure by name, in the procedure call. Named parameters are only to be used in calls to stored procedures, and not to be used in other SQL statements. (Bug3617324)
- Changed the behavior of describing metadata for stored procedures that exist in some package. The change has been done to increase the performance of ODBC Driver for stored procedure calls. Now if the stored procedure is in some package, then the metadata will be described using a PL/SQL procedure. (Bug4030664)
- The support for Oracle ODBC Driver for Linux and Solaris platforms is introduced in release 10.2.0.1. From release 10.2.0.4 ODBC Driver was made available for the AIX platform as well.

ODBC 10.1.0.2.0

Describes new features for release 10.1.0.2.0.

- Added support for `NCHAR` columns in `INSERT/UPDATE` statements with parameter markers, (Bug 2827132). Previously, the driver did not notice that the column was of `NCHAR` type and failed to set the proper attribute when binding at the OCI level. As a side effect, the `SQLDescribeParam` call now returns useful information for parameters in `INSERT/UPDATE` statements, though not in other statement types.
- Added support for LOBs larger than 4 GB. Requires the Oracle Client and Database to both be Oracle Database 10g (10.1) or later.
- Added support for the new `BINARY_FLOAT` and `BINARY_DOUBLE` data types in Oracle Database 10g and later servers.
- Added support for `MONTHNAME` and `DAYNAME` functions in SQL statements.

Functionality

The Oracle ODBC Driver complies with Version 3.52 of the Microsoft ODBC specification.

Software Required

Oracle ODBC driver was certified against the currently supported Windows and UNIX operating system versions, the most current release of Oracle Net Client and Oracle Universal Installer shipping with Oracle Database.

Oracle ODBC driver was certified against:

- Windows operating system versions: Windows Server 2008, Windows Server 2008 R2, Windows 7, Windows 8, and Windows Server 2012
- UNIX operating system versions: 32-bit and 64-bit ports of Linux X86-64, AIX5L, Solaris.Sparc64, Solaris X64, HPUX.IA64, and ZLinux

Oracle Net Client 12.2

Oracle Universal Installer shipping with Oracle Database 12.2

Server Software Requirements

Oracle Database Server 10.2 or later is the server software required to support ODBC enabled applications through the Oracle ODBC Driver.

Hardware Required

What are the requirements for Oracle ODBC Driver system configuration for Windows and UNIX platforms?

The Oracle ODBC Driver requires a system configuration supported by certified Windows platforms as mentioned in [Software Required](#) and on few UNIX platforms as documented in Oracle ODBC Driver for UNIX Platforms Readme.

Testing Matrix

The following table summarizes the Windows operating system versions on which ODBC driver was certified.

Table 1-1 Oracle ODBC Driver Is Certified on Windows Operating Systems

Driver Version	Database Version	Operating Systems
12.2.0.1	As Supported by OCI	See Software Required .

More Information

To learn more about post-installation tasks, known software problems for Oracle ODBC Driver, information about ODBC Driver for UNIX platforms, software problems fixed, and the certification matrix on UNIX platforms, see the topics that follow.

- [Post-Installation](#)
You must configure the data sources on Windows and on UNIX platforms.
- [Known Software Problems for Oracle ODBC Driver](#)
Learn about known software problems and unsupported usage.
- [ODBC Driver For UNIX Platforms](#)
Oracle ODBC Driver for UNIX platforms complies with ODBC 3.52 specifications. It is based on features of Oracle 12.2 client.
- [Software Problems Fixed](#)
Software problems fixed are shown by version.

Post-Installation

You must configure the data sources on Windows and on UNIX platforms.

Use the Microsoft ODBC Administrator to configure your Oracle ODBC Driver data sources on Windows. See the information about configuring the data source in *Oracle Database Development Guide* for more information.

For the UNIX Client, see [ODBC Driver For UNIX Platforms](#).

Known Software Problems for Oracle ODBC Driver

Learn about known software problems and unsupported usage.

- The `SQLSetStmtOption SQL_QUERY_TIMEOUT` does not work if the database server is running on Windows NT. As a workaround, setting `BREAK_POLL_SKIP=1` in the server's `sqlnet.ora` file solves the problem. By default, this is set to 100, and the database would not check for a time out set by the ODBC application.
- `SQLBindParameter` when used to bind a buffer as `SQL_PARAM_INPUT_OUTPUT` and having a PL/SQL procedure with `IN OUT` parameter and if the parameter is not changed in the procedure, then the driver will not return `SQL_NULL_DATA` in `StrLen_or_IndPtr`.
- Oracle ODBC driver does not support the usage of `Keyset` cursors with the `CASE` clause in a SQL `SELECT` query.

ODBC Driver For UNIX Platforms

Oracle ODBC Driver for UNIX platforms complies with ODBC 3.52 specifications. It is based on features of Oracle 12.2 client.

See the [Certification Matrix](#), to learn more about the platforms on which Oracle ODBC Driver 12.2 is supported.

This section describes the following topics.

- [Pre-installation Task – Install ODBC DM from unixODBC.org](#)
Complete this pre-installation task before installing the ODBC Driver for UNIX platforms.
- [Post-installation Task](#)
Complete these post-installation tasks.
- [Uninstalling ODBC Driver](#)
Complete these tasks to uninstall the Oracle ODBC Driver from UNIX platforms.
- [Bugs Fixed](#)
Follow the link to software problems fixed.
- [Certification Matrix](#)
Oracle has certified Oracle ODBC Driver for release 12.2 against DM 2.3.1 on the listed UNIX platforms.

Pre-installation Task – Install ODBC DM from unixODBC.org

Complete this pre-installation task before installing the ODBC Driver for UNIX platforms.

Please install ODBC Driver Manager after downloading .tar file from <http://www.unixodbc.org/>.

Post-installation Task

Complete these post-installation tasks.

- [Configure Oracle ODBC driver on UNIX platforms.](#)
You can configure Oracle ODBC Driver by running `install-home/odbc/utl/odbc_update_ini.sh`.
The utility `odbc_update_ini.sh` takes four command-line arguments:
 - `arg-1` : Complete path where unixODBC DM has been installed.
 - `arg-2` : Complete path of driver install location (optional); if this argument is not passed, the driver path is set to the directory from where the utility is run.
 - `arg-3` : Driver name (optional); if this argument is not passed, driver name is set to Oracle 12c ODBC driver.
 - `arg-4` : Data Source Name (optional); if no value is passed, DSN is set to OracleODBC-12c.
- [Update and verify values of environment variables such as: PATH, LD_LIBRARY_PATH, LIBPATH, and TNS_ADMIN.](#)

Uninstalling ODBC Driver

Complete these tasks to uninstall the Oracle ODBC Driver from UNIX platforms.

- [Update ~/.odbc.ini file:](#)

- Remove the DSN entry (for example, OracleODBC-12c) from [ODBC Data Sources].
- Remove the complete DSN information for the corresponding DSN.
- Update `ODBCDM_HOME/etc/odbcinst.ini` file:
 - Remove the driver information for Oracle 12c ODBC driver.
- Remove Oracle ODBC driver for UNIX platforms
 - Delete `libsqora.so.12.1`
- Reset environment variables such as: `PATH`, `LD_LIBRARY_PATH`, `LIBPATH`, and `TNS_ADMIN`.

Bugs Fixed

Follow the link to software problems fixed.

See [Software Problems Fixed](#).

Certification Matrix

Oracle has certified Oracle ODBC Driver for release 12.2 against DM 2.3.1 on the listed UNIX platforms.

These UNIX platforms are shown in [Table 1-2](#). On 64bit UNIX platforms, DM 2.3.1 is built with the `-DBUILD_REAL_64_BIT_MODE -DSIZEOF_LONG=8 -fshort-wchar` flags and then certified.

Table 1-2 Certification Matrix for Oracle ODBC Driver on UNIX Platforms

Platform	32-bit/64-bit	UnixODBC DM version
Linux x86-64	32-bit, 64-bit	2.3.1
Solaris SPARC64	32-bit, 64-bit	2.3.1
AIX5L	32-bit, 64-bit	2.3.1
Solaris x64	32-bit, 64-bit	2.3.1
HPUX.IA64	32-bit, 64-bit	2.3.1
ZLinux	32-bit, 64-bit	2.3.1

See the Installation guide of each platform to learn more about each operating system and Oracle Client software requirements.

Software Problems Fixed

Software problems fixed are shown by version.

Most of the software bug fixes are generic in nature though some may have been discovered on a particular platform. There could be a small number of platform specific software bug fixes as well. Software bug fixes are described for the following versions.

- [Version 19.1.0.0.0](#)
Lists the problems fixed for version 19.1.0.0.0
- [Version 18.1.0.0.0](#)
Lists the problems fixed for version 18.1.0.0.0
- [Version 12.2.0.1.0](#)
Lists the problems fixed for version 12.2.0.1.0.
- [Version 12.1.0.2.0](#)
Lists the problems fixed for version 12.1.0.2.0.
- [Version 12.1.0.1.0](#)
Lists the problems fixed for version 12.1.0.1.0.
- [Version 11.2.0.2.0](#)
Lists the problems fixed for version 11.2.0.2.0.
- [Version 11.2.0.1.0](#)
Lists the problems fixed for version 11.2.0.1.0.
- [Version 11.1.0.1.0](#)
Lists the problems fixed for version 11.1.0.1.0.

Version 19.1.0.0.0

Lists the problems fixed for version 19.1.0.0.0

- 12.2 UNIX ODBC Driver failed with HY003:1:-1:[ORACLE][ODBC][ORA]ORA-0001 error. (Bug 27684767)
- Row `SELECT` operation in Oracle ODBC Driver is slower than DataDirect ODBC Driver. (Bug 27641555)
- Oracle ODBC raised `ORA-3137 [KPOAL8CHECK-3]` error, when setting `BAM=AllSuccessful` and connecting to DB 12.2. (Bug 28250843)
- Oracle ODBC Driver in 12c failed at `TIMESTAMP` conversion. (Bug 27132192)
- Application crashed when executing PL/SQL with `LONG` literal by ODBC call. (Bug 27743516)

Version 18.1.0.0.0

Lists the problems fixed for version 18.1.0.0.0

- Upgrade `unixODBC` from 2.3.2 to 2.3.4. (Bug 19179407)
- `ODBC SQLColumns` no longer returns an error when passing in an empty string as a column name. (Bug 23637102)
- `ODBC Recordset.Update` no longer fails with error `ORA-00942` using 12c Oracle ODBC Driver. (Bug 24926081)
- Setting `DBA=R` in DSN now works when connecting to Exadata Express Cloud. (Bug 25376850)
- `OdbcConnection.GetSchema` no longer throws a `SYSTEM.ACCESSVIOLATIONEXCEPTION` error. (Bug 25597467)

- ODBC Driver no longer crashes when `SQL_DESC_BIND_OFFSET_PTR` is set. (Bug 25832115)
- ODBC `SQL_ATTR_QUERY_TIMEOUT` now works as expected. (Bug 26352452)
- Row insert operation in Oracle ODBC is no longer slower than the DataDirect ODBC Driver (Bug 23288642)
- After migrating an 11gR2 ADO/ODBC application, it no longer causes the wrong result on a recordset operation. (Bug 19000463)
- ODBC Driver API `SQLStatistics` now passes the `SCHEMANAME` value for filtering. (Bug 23259086)
- ODBC `SQLFetch` no longer fails with abort (core dumped) error. (Bug 23186348)
- ODBC `SQLFetch` no longer returns no data when binding a `TIMESTAMP` column with `SQL_C_CHAR`. (Bug 23120325)

Version 12.2.0.1.0

Lists the problems fixed for version 12.2.0.1.0.

- Oracle ODBC driver 12.1.0.2 had a performance degradation that was observed when using the `DBMS.DESCRIBE` procedure. (Bug 22566981)
- ODBC Driver now includes the version number in the driver name when `OCI_ATTR_DRIVER_NAME` is set, such as `ODBCCLNT : 12.2.0.1.0`. (Bug 21795969)
- Oracle ODBC driver truncated an output parameter of `SP` when run from 12.1.0.2. (Bug 21616079)
- Multi-threaded UNIX ODBC application hung on `SSLSSREGHDLR`. (Bug 21459317)
- Oracle ODBC driver now allows a Server name length to 1024 bytes long. (Bug 21379636)
- Oracle ODBC driver raised an error `[ORACLE][ODBC][ORA]ORA-00911 :INVALID CHARACTER(#911)`. (Bug 21372951)
- Oracle ODBC driver in 12.2 encountered an `ORA:01000` error when statement caching was enabled. (Bug 21255142)
- Oracle ODBC driver calling a procedure with two out parameters, `RAW` and `DATE` failed with an `ORA-01483` error. (Bug 20716320)
- Oracle ODBC driver returned an empty message string in the generated exception. (Bug 20517697)
- Oracle ODBC driver crashed during a call of Oracle functions with return type `REFCURSOR`. (Bug 20387007)
- Oracle ODBC driver corrupted data when inserting an image of `BLOB` type. (Bug 19720146)
- Oracle ODBC driver `SQLColumns()` API returned the wrong metadata for the `TSLTZ` column. (Bug 19573657)
- Oracle ODBC driver had different `TSLTZ` outputs when binding with `CHAR` types. (Bug 19545406)

- Oracle ODBC driver quit at `SQLFETCH()` with cursor type `SQL_CURSOR_KEYSET_DRIVEN`. (Bug 19531841)
- Oracle ODBC driver quit while fetching from a procedure that returns a REF cursor. (Bug 19530596)
- Oracle ODBC driver during a `SQLFETCH()` gave an undefined symbol: `M_FMEMALLOC` with `SQL_C_WCHAR`. (Bug 19529966)
- Oracle ODBC driver during a `SQLFETCH()` quit when bound with `SQL_C_CHAR` or `SQL_C_BINARY`. (Bug 19529718)
- Oracle ODBC driver crashed when passing more than 4093 characters. (Bug 19524047)
- Oracle ODBC driver using a stored procedure with `NCHAR` data type did not execute correctly with ODBC 12.1.0.1. (Bug 19158940)
- Oracle ODBC driver 12.1.0.1 using a procedure returned `NULL`. (Bug 19026257)
- Migrating an Oracle Database 11g Release 2 (11.2) ADO/ODBC application caused the wrong result on a recordset operation. (Bug 19000463)
- Oracle ODBC driver could not retrieve a `CLOB` containing `CHR(0)`. (Bug 18749178)
- Oracle ODBC driver raised a database exception with an `INSERT` statement with 11.2.0.3 + P30. (Bug 18681683)
- Oracle ODBC driver got an access violation in Japanese environment when inserting over 64K data into a `LONG RAW` column. (Bug 18606539)
- Oracle ODBC driver reported an `ORA-01461` error while inserting into `NVARCHAR2` columns with the Chinese language. (Bug 18232462)
- ODBC 12.1 application using a query with comments embedded in them failed with an `ORA-24374` error. (Bug 18024745)
- Oracle ODBC driver did not free a temporary LOB after fetching data from it. (Bug 17928169)
- A Microsoft Access client hung trying to link a table over a database link. (Bug 17925209)
- ODBC connection hung in Japanese environment when the `CLOB` type contained the data of `CHR(0)`. (Bug 17901129)
- Oracle ODBC driver crashed on `ORANLS12`. (Bug 17896495)
- Oracle ODBC driver reported an `ORA-1410` error when fetching data from an index organized table using `KEYSET_DRIVEN` cursor. (Bug 17583959)
- Oracle ODBC driver using a query returned a truncated value. (Bug 16959397)
- ODBC application with a `SQLFETCH` after `SQLCOLUMNS` resulted in a `SUCCESS_WITH_INFO` message for an invalid view. (Bug 16324625)
- ODBC application with an array insert of LOBs resulted in the last LOB only being inserted multiple times. (Bug 16235055)
- Oracle ODBC driver with an ODBC idle connection to Microsoft Access resulted in an ODBC call failed error. (Bug 16181438)

- Oracle ODBC driver gave an access violation at `SQLEXECUTE` when setting incorrect binding at `TIMESTAMP`. (Bug 16009315)
- Oracle ODBC driver after upgrade to 11.2, `SQLSETPARAM` and `SQL_WCHAR` (NCHAR) resulted in corruption. (Bug 14623077)
- Oracle ODBC driver reported an `ORA-1843` or `ORA-1830` error when inserting a `DATE` type data the second time. (Bug 14308740)
- Oracle ODBC driver reported an `ORA-22275` error after an error `ORA-1`, `ORA-14400` error during insertion. (Bug 13518550)
- ODBC application rarely returned an `S1004` for a `SQLFETCH` call in a multithreaded application. (Bug 13044472)
- Oracle ODBC driver reported an error `ORA-00918` for a query with inner join and `KEYSET_DRIVEN` cursor. (Bug 9642938)
- Oracle ODBC driver now supports `TIMESTAMP WITH LOCAL TIME ZONE` data type. (Bug 7533808)
- Oracle ODBC driver quit when using `SQLPREPARE` with an invalid SQL statement. (Bug 7325015)

Version 12.1.0.2.0

Lists the problems fixed for version 12.1.0.2.0.

- Array insert of type LOB resulted in inserting the last element into all the rows. (Bug 16491814)
- ODBC application use to throw `ORA-00918: column ambiguously defined` error when join and multiple tables were used in a query with a `KEYSET_DRIVEN` cursor. (Bug 9642938)
- Oracle ODBC driver use to result in ODBC call failed error when the ODBC driver tried to reconnect to Oracle Database after Microsoft Access connection timed out. (Bug 16181438)
- Oracle ODBC driver use to give access violation at `SQLExecute` when setting an incorrect bind parameter value for `TIMESTAMP` database column. (Bug 16009315)
- Oracle ODBC driver use to return string truncation error `S1004` when a multithreaded application having common ENV handle across all threads uses `SQL_C_TCHAR` C data type as the buffer type in `SQLBindCol` when `NLS_LANG` is `JA16SJISTILDE`. (Bug 13044472)
- Data truncation with `MSADSQL` and `ATL` library where applications rely on precision and scale field in `SQL_NUMERIC_STRUCT`. (Bug 16959397)
- Crash is due to array bind when the array bind is done a number of times. (Bug 17896495)
- Temporary lob not free after data is fetched. (Bug 17928169)
- When fetching data from index organized table using `KEYSET-DRIVEN` cursor, it results in `ORA-01410` error. (Bug 17583959)

Version 12.1.0.1.0

Lists the problems fixed for version 12.1.0.1.0.

- Oracle ODBC driver use to give `ORA-1410` followed by access violation with `SELECT` statement where the table is created and values are inserted with database character set as `AL32UTF8`. (Bug 10132342)
- Oracle ODBC driver use to return `ORA-1002` when the ODBC application executes and fetches a huge number of rows the second time, but does not reprepare and bind the column the second time. (Bug 10131881)
- Oracle ODBC driver use to throw `ORA-932` on inserting a record view MFC Recordset. (Bug 9952132)
- Oracle ODBC driver use to return `ORA-1461` or access violation when used with `SQL_RESET_PARAMS` in `SQLFreeStmt()` API. (Bug 9903704)
- Oracle ODBC function `SQLSetPos()` use to overwrite 2 bytes after the row status buffer is called with the `SQL_UPDATE` parameter. (Bug 9764806)
- Oracle ODBC driver never use to time out when `SQL_ATTR_QUERY_TIMEOUT` statement option is set to a non-zero value on UNIX platforms. (Bug 9714490)
- Oracle ODBC driver use to return `ORA-1406` when an application with client side character set as `AL32UTF8` was trying to read data from single byte character set database. (Bug 8927110)
- Oracle ODBC driver use to return `ORA-1410` after applying the 11.2.0.1 Patch 7 against a `UTF8` Oracle database. (Bug 10422748)
- ODBC data Source Administrator never use to show the fully qualified service name in the drop down box. (Bug 10236704)
- Oracle ODBC driver use to fail when the `CREATE PROCEDURE` statement has the wide character `\r`. (Bug 14458246)
- Oracle ODBC driver use to throw pop up window of change-password repeatedly when database password expired. (Bug 10353128)
- ODBC driver use to hang and/or crash under a multithreaded environment and when there was a memory leak during multiple connects and disconnects. (Bug 9850419)
- `SQLGetData()` API of Oracle ODBC driver use to consume more time during scalability of threads versus processes. The threaded version of the application use to take more time than the process version. (Bug 9835629)
- Oracle ODBC driver use to fail with access violation in `SQLFetchScroll()` API with the `SQL_FETCH_NEXT` option. (Bug 9578533)
- Oracle ODBC driver use to return wrong `columns_size` and `buffer_length` values through `SQLColumns()` APIs for `CHAR` columns. (Bug 9414079)
- Oracle ODBC driver use to return `SQL_NO_DATA_FOUND` when `SQL_ROWSET_SIZE` was set to more than the remaining rows. (Bug 9264668)
- Oracle ODBC driver use to hang when transferring Microsoft Access table data to Oracle table. (Bug 8984021)

- Oracle ODBC driver use to truncate returned data when there were more characters with multibyte in a selected row, with `NLS_LENGTH_SEMANTICS=CHAR` and `AL32UTF8` database character set. (Bug 8771556)

Version 11.2.0.2.0

Lists the problems fixed for version 11.2.0.2.0.

- ODBC driver use to abort when a SQL Server `EXEC` statement containing procedure without parameters is passed and `EXECSyntax=T`. (Bug 8393140)
- ODBC driver use to return wrong suffix and prefix lengths on 64-bit environment. (Bug 8429289)
- ODBC driver use to fail during `SQLConnect` on AIX environment when DM version is set to `SQL_OV_ODBC2`. (Bug 8639577)
- ODBC application use to fail on UNIX 64-bit environment when `SQLFetchScroll()` with bind type `SQL_C_SLONG`. (Bug 8735155)
- ODBC driver use to truncate the data when there is multi-byte data in a selected row with combination of `NLS_LENGTH_SEMANTICS=CHAR` and `AL32UTF8` character set. (Bug 8771556)
- ODBC driver use to crash on Solaris sparc64 while executing the statement. (Bug 8775499)
- ODBC driver use to crash on HPUXIA64 while fetching `FLOAT/DOUBLE` data. (Bug 8974909)
- ODBC Driver use to hang during transfer of Microsoft Access table data to Oracle table. (Bug 8984021)
- ODBC driver use to fail on Windows 64-bit while adding data source using `SQLConfigDataSource()` API. (Bug 9023338)
- ODBC driver use to crash on Solaris while dealing with `FLOAT/DOUBLE`. Bug 9058381)
- ODBC driver used return incorrect data on big endian environment when application binds date field to `SQL_C_WCHAR`. (Bug 9070694)
- ODBC driver use to crash on UNIX 64-bit environment when `SQLGetConnectAttr()` is used with pointer to `UNSIGNED INT`. (Bug 9105601)
- ODBC driver use to map incorrect size for `SQL_C_ULONG`, `SQL_C_SLONG`, and `SQL_C_LONG` types on UNIX 64-bit environment. (Bug 9463231)
- Unicode ODBC application use to fail while SQL execution. (Bug 9743383)
- ODBC Driver Configuration of "ODBC Data Source Administrator" use to show garbage values in the drop down list for `TNS Service Name` when `TNS_ADMIN` value is set in registry and not as environment variable. (Bug 8796983)
- ODBC Driver use to return no-data-found in case of `SQLROWSET_SIZE` is more than remaining rows application returns no-data-found when `SQLROWSET_SIZE` is set more than the remaining rows after first fetch. (Bug 9264668)

Version 11.2.0.1.0

Lists the problems fixed for version 11.2.0.1.0.

- ODBC Driver use to return the wrong length for `SQLBindCol` on Solaris (port specific). (Bug 7660125)
- Memory leak was reported in the ODBC driver while returning a result set from a stored procedure. (Bug 7586197)
- ODBC was failing to update the `LONG RAW` when the size was more than 65536 bytes. (Bug 7585970)
- ODBC application use to fail with a `NULL` password error when MTS was enabled. (Bug 7509964)
- ODBC Driver use to return an access violation on executing a stored procedure. (Bug 7458976)
- ODBC application use to hang when more connections were created. (Bug 7388606)
- ODBC application use to crash when `SQLSetParm()` was called with a string that is non `NULL` terminated. (Bug 7011807)
- ODBC Driver use to report an `ORA-24817` error on querying a bulk operation. (Bug 6908070)
- ODBC Driver use to return the wrong length and data for a `SQLGetData()` call when using NLS character in literal and with NLS settings as `NLS_LENGTH_SEMANTICS=CHAR, NLS_CHARACTERSET = AL32UTF8`. (Bug 6801797)
- ODBC driver use to crash on 64-bit environments while fetching data. (Bug 6801211)
- ODBC Driver use to show the wrong types when using calls `SQLDescribeParam()`, `SQLDescribeCol()`, `SQLColumns()`, `SQLGetTypeInfo()`. (Bug 6598695)
- ODBC driver use to crash with `SQLGetStmtAttr()` call. (Bug 6416638)
- ODBC driver use to report `SIGBUS` on Solaris SPARC as memory for cache blocks was not aligned. (Bug 6411945)
- ODBC Driver use to return an `[ORACLE][ODBC]Memory Allocation Error`, while describing metadata for a procedure. (Bug 6085754)
- ODBC Driver use to report an error on executing a procedure after execution of the `INSERT` statement. (Bug 5961436)
- ODBC Driver use to report an `ORA-24374` error whenever a SQL Statement was preceded by any valid tokens that did not give the SQL Statement type. (Bug 5383456)
- ODBC Driver use to return the same error message twice with a `SQLExecute()` call. (Bug 5222165)
- ODBC Driver use to return an `ORA-24374` error when executing a query that included a line comment. (Bug 4743995)

Version 11.1.0.1.0

Lists the problems fixed for version 11.1.0.1.0.

- ODBC driver use to fail in updating the output parameter of a stored procedure when it contained a large CLOB parameter as the input parameter. (Bug 5365475)
- ODBC Driver use to do an improper round off for DOUBLE data if connecting to a 10 GB database. (Bug 5389003)
- ODBC driver use to fail in updating the output parameter of a stored procedure when it contained a large CLOB parameter as an input parameter. (Bug 5365475)
- ODBC driver use to truncate CLOB data for a client UNICODE character set. (Bug 5220440)
- ODBC driver use to return old data on requesting the data for a read-only connection. (Bug 5202103)
- ODBC driver use to report an ORA-1008 error, when an MFC application requeries the database. (Bug 5147229)
- ODBC driver use to return the wrong value on fetching a NUMBER value that is converted to SQL_C_CHAR. (Bug 5128512)
- ODBC driver use to return the wrong information for few column types. (Bug 5015342)
- ODBC driver use to report an ORA-12704 error on the second invocation of a SQLExecute() call for NCLOB columns. (Bug 4965677)
- ODBC Driver use to report a crash on exit from an ADO and Excel applications. (Bug 4893583)
- ODBC Driver use to return 0 as the data type on calling SQLBindCol() after SQLColumns(). This problem appears only on the Solaris platform, but the software fix is generic. (Bug 4880062)
- ODBC Administrator use to show ODBC entries even after uninstalling the ODBC. (Bug 4761792)
- ODBC driver use to truncate the data retrieved with the SQLFetchScroll() call. (Bug 4735799)
- ODBC driver use to result in an application crash while executing a stored procedure having a large number of parameters. (Bug 4727495)
- DM from UNIXODBC.ORG reports error: Driver does not support SQLSETSTMTATTR(). This is a port specific (Linux and Solaris) bug. (Bug 4710548)
- ODBC driver use to report an undefined symbol SLEEP when fail over happened. (Bug 4698310)
- ODBC Driver use to report a crash on inserting NULL data using bind offsets. (Bug 4694220)
- ODBC Driver use to set the value corresponding to attribute SQL_ATTR_PARAMS_PROCESSED_PTR improperly when the stored procedure execution was with array binds. (Bug 4690201)
- ODBC Driver use to report a crash when returning an array of VARCHARs from a stored procedure. (Bug 4690147)
- ODBC Driver use to give an incomplete result set when the stored procedure contained REF CURSOR arguments. (Bug 4624776)

- ODBC driver use to report an error on executing a stored procedure containing `REF CURSOR` parameters. (Bug 4622561)
- ODBC Driver use to take more time fetching data from a `NUMBER` column containing `FLOAT` data. (Bug 4608183)
- ODBC driver use to return duplicate results for a `SQLProcedures()` call. (Bug 4565416)
- ODBC Driver use to report a memory leak for a stored procedure containing `REF CURSORS`. (Bug 4551675)
- ODBC Driver use to return an `ORA-1406` error when selecting a calculated number with a large precision from a view. (Bug 4546618)
- ODBC driver use to report a crash for executing queries in a multithreaded application. (Bug 4519067)
- ODBC administrator use to invoke English ODBC help in the Japanese environment. (Bug 4506552)
- ODBC driver use to report the error `Input string too long, limit 4096`, when the long string contained `CRLF` code (`\n\r`) and contained more than 4096 characters after the `CRLF` characters. (Bug 4371966)
- ODBC administrator use to fail while opening the help file under an Instant Client environment. (Bug 4309867)
- ODBC Driver use to return the wrong data for stored procedures having `NCLOB` as the `OUT` Param. (Bug 4235212)
- ODBC catalogue functions use to take more time to complete. (Bug 4150034)

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