

Oracle® Rdb Developer Tools for Visual Studio

Release Notes

Release 7.4.1.0.0

January 2022

Oracle Rdb Developer Tools for Visual Studio, Release 7.4.1.0.0.

Copyright © 2011, 2022 Oracle and/or its affiliates. All rights reserved.

Primary Author: Jim Murray.

Contributing Author:

Contributor:

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free.

If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software" or "commercial computer software documentation" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications.

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 Inside 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, Epyc, and the AMD 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.

Contents

Preface.....	5
Chapter 1 Installing and Configuring.....	7
1.1 System Requirements	7
1.2 De-install previous version of Oracle Rdb Developer Tools for Visual Studio.....	8
1.3 De-install previous Oracle Rdb Data Provider for .NET versions.....	8
1.4 Installing .NET Products	9
1.4.1 ORDT 64 Bit support.....	16
1.4.2 ORDP.NET Assembly Version in Release 7.4.0.0.0 and Above	17
1.5 File Locations	18
1.6 Post Installation Procedures.....	18
1.7 ORDT and NuGet.....	19
1.8 Locating the ORDP.NET unmanaged DLLs.....	22
Chapter 2 Enhancements Provided in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.0.....	24
2.1 Visual Studio 2019 Integration	24
Chapter 3 Problems Corrected	25
Chapter 4 Known Problems, Restrictions and Workarounds	26
4.1 Time Remaining during Uninstall.....	26
4.2 TableAdapter Limitations.	26
4.2.1 LIMIT TO	26
4.2.2 Parameter Prefix.....	27
4.3 EF6 and JDBC connectivity.....	27
4.4 Unsupported features.....	29
Chapter 5 New Features and Corrections in Previous Releases.....	30
5.1 New Features for Release 7.4.0.0.0	30
5.1.1 Windows 64 Bit support	30
5.2 Corrections in Release 7.4.0.0.0.....	30
5.3 New Features for Release 7.3.6.0.0	30

5.3.1 Visual Studio 2017 Integration	30
5.4 Corrections in Release 7.3.6.0.0.....	31
5.4.1 TRUN_STORE error in EF6	31
5.5 New Features for Release 7.3.5.0.0	32
5.5.1 Visual Studio 2015 Integration	32
5.6 Corrections in Release 7.3.5.0.0.....	32
5.6.1 FirstOrDefault() problem	32
5.7 New Features for Release 7.3.4.0.0	33
5.7.1 Visual Studio 2013 Integration	33
5.7.2 Entity Framework 6 Supported.	33
5.7.3 Entity Framework fluent API Supported.	33
5.8 Corrections in Release 7.3.4.0.0.....	34
5.9 New Features for Release 7.3.3.0.0	34
5.9.1 Visual Studio 2005 Integration no Longer Supported	34
5.9.2 Visual Studio 2012 Integration	34
5.10 Corrections in Release 7.3.3.0.0.....	34
5.11 New Features for Release 7.3.2.2.0	34
5.12 Corrections in Release 7.3.2.2.0.....	35
5.12.1 Entity Framework and SQL/Services connectivity.....	35
5.13 New Features for Release 7.3.2.1.0	35
5.13.1 Visual Studio 2010 Integration.	35
5.13.2 Oracle Rdb Entity Framework Provider.	36
5.14 Corrections in Release 7.3.2.1.0.....	36
5.14.1 ORDP Assembly not added to Visual Studio .NET References.....	36
5.14.2 Keyword Not Supported : “DATABASE” Problem.....	37
5.14.3 GridView using RdbDataReader returns Incorrect Data.	37
5.15 New Features for Release 7.3.2.0.0	39
5.16 Corrections in Release 7.3.2.0.0.....	39

Send Us Your Comments

Oracle Rdb Developer Tools for Visual Studio Release Notes, Release 7.4.1.0.x

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?

- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual?

If you find any errors or have any other suggestions for improvement, please indicate the title and part number of the documentation and the chapter, section, and page number (if available). You can send comments to us in the following ways:

- Electronic mail: nedc-doc_us@oracle.com
- FAX — 603-897-3825 Attn: Oracle Rdb
- Postal service:
Oracle Corporation
Oracle Rdb Documentation
One Oracle Drive
Nashua, NH 03062-2804
USA

If you would like a reply, please give your name, address, telephone number, and electronic mail address (optional).

If you have problems with the software, please contact your local Oracle Support Services.

Preface

This document is your primary source of release information for Oracle Rdb Developer Tools for Visual Studio.

This preface contains these topics:

- Audience
- Access to Oracle Support
- Organization
- Related Documentation
- Conventions

Audience

Oracle Rdb Developer Tools for Visual Studio Release Notes is intended for developers who are developing applications within Microsoft Visual Studio to access an Oracle Rdb database using Oracle Rdb Data Provider for .NET. This documentation is also valuable to systems analysts, project managers, and others interested in the development of database applications.

To use this document, you must be familiar with Microsoft .NET Framework classes and ADO.NET and have a working knowledge of application programming using Microsoft C#, Visual Basic, or C++.

Users should also be familiar with the use of Structured Query Language (SQL) to access information in relational database systems.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Organization

This document contains:

- **[Chapter 1, "Installing and Configuring"](#)**
Describes how to install Oracle Rdb Data Developer Tools for Visual Studio and provides system requirements. Read this chapter *before* installing or using Oracle Rdb Developer Tools for Visual Studio.
- **[Chapter 2, "Enhancements Provided in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x"](#)**
Describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x.
- **[Chapter 3, "Problems Corrected"](#)**
Describes problems corrected in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x.
- **[Chapter 4, "Known Problems, Restrictions and Workarounds"](#)**
Describes known problems, restrictions, and workarounds Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x.
- **[Chapter 5, "New Features and Corrections in Previous Releases"](#)**
Describes new and changed features and problems corrected in previous versions of Oracle Rdb Developer Tools for Visual Studio.

Related Documentation

For more information, see these Rdb resources:

- *Oracle Rdb Data Provider for .NET Release Notes*
- *Oracle Rdb Data Provider for .NET Developer's Guide*
- *Oracle Rdb Developer Tools for Visual Studio Developer's Guide.*

To download free release notes, installation documentation, white papers, or other collateral, please visit the Rdb web site:

<http://www.oracle.com/technetwork/database/rdb>

For additional information on .NET, see:

<http://msdn.microsoft.com/netframework>

Conventions

Oracle Rdb Developer Tools for Visual Studio is often referred to as ORDT.

Oracle Rdb Data Provider for .NET is often referred to as ORDP.NET or simply ORDP.

Hewlett-Packard Company is often referred to as HP.

The following conventions are used in this document:

word	A lowercase word in a format example indicates a syntax element that you supply.
[]	Brackets enclose optional clauses from which you can choose one or none.
{ }	Braces enclose clauses from which you must choose one alternative.
...	A horizontal ellipsis means you can repeat the previous item
• • •	A vertical ellipsis in an example means that information not directly related to the example has been omitted.

Conventions in Code Examples

Code examples illustrate SQL or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT last_name FROM employees WHERE last_name = 'TOLIVER';
```

▲ [contents](#)

Chapter 1

Installing and Configuring

This chapter describes installation and configuration requirements for Oracle Rdb Developer Tools for Visual studio (ORDT).

This chapter contains:

- [System Requirements](#)
- [De-install previous version of Oracle Rdb Developer Tools for Visual Studio](#)
- [De-install previous Oracle Rdb Data Provider for .NET versions.](#)
- [Installing .NET Products](#)

1.1 System Requirements

Note:

Starting with Release 7.4.0.0.0, ORDT only supports Visual Studio 2017 and above.

ORDT requires the following products to be installed:

If you use Visual Studio 2017 or Visual Studio 2019:

Software	Minimum Version
Microsoft .NET Framework	V4.7.2
Microsoft Visual Studio 2017	Version 15.0
Microsoft Visual Studio 2019	Version 16.0
Windows Server 2012 and above, Windows 8 or Windows 10	As released

Note:

ORDP.NET will be installed as part of the ORDT installation process.

ORDP.NET has certain system requirements that must be met before you can successfully install and deploy ORDP.NET.

Refer to your Oracle Rdb Data Provider for .NET Release Notes for information on system requirements for ORDP.NET.

1.2 De-install previous version of Oracle Rdb Developer Tools for Visual Studio

If you have a previously installed version of ORDP.NET you must de-install this prior to installing Release 7.4.1.0.x of ORDT.

If this is the first version of ORDT you will be installing on your system then see the following section.

1.3 De-install previous Oracle Rdb Data Provider for .NET versions.

Note:

The following section is only relevant if this is the very first version of ORDT you will be installing on your system.

If you have a previously installed version of ORDP.NET that is earlier than Release 7.3.2.0.0 you must de-install this prior to installing later releases of ORDT.

In addition, if you have changed your `machine.config` to add references to ORDP.NET then you should remove these changes prior to installing the new version of ORDP.NET.

In particular, if the following sections exist in your current `machine.config`, they should be removed:

```
<system.data>
  <DbProviderFactories>
    <add name="Oracle Rdb Data Provider" . . .
```

and

```
<configuration>
  <configSections>
    <section name="oracle.dataaccess.rdbclient" . . .
```

1.4 Installing .NET Products

These steps demonstrate how to install Oracle Rdb Developer Tools for Visual Studio once Visual Studio is installed.

As well as integrating ORDP.NET into Visual Studio, the ORDT installation will also install ORDP.NET if you select the default (**Typical**) installation options.

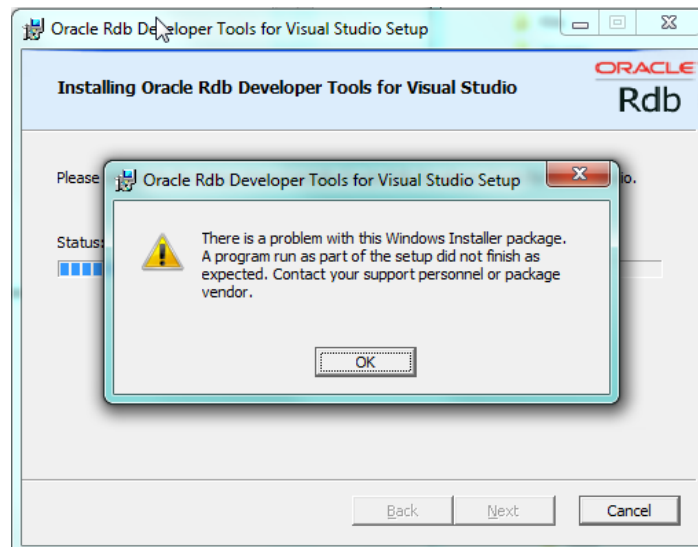
You may choose to customize the installation to only install ORDP.NET if you do not require the Visual Studio integration features of ORDT.

Note:

As new versions of Oracle Rdb .NET products are released, the installation process may change slightly from what is shown in this guide. The screenshots are based on Oracle Rdb Developer Tools for Visual Studio Release 7.4.0.0.0.

IMPORTANT NOTE:

Due to problems in Visual Studio 2017, the ORDT installation may fail during the Visual Studio 2017 integration phase.



If the ORDT installation fails, you may be required to manually remove the *privateregistry.bin* file used by Visual Studio 2017 before attempting to reinstall.

In addition, if a re-installation is required you should run the ORDT installation procedure and chose the REMOVE option, to remove the current version of ORDT. Then you may run the installation procedure again to install ORDT as detailed below.

Refer to step **9. Optionally Remove PrivateRegistry.bin** below for more details.

To install:

1. Download the Oracle Rdb Developer Tools for Visual Studio installation kit:

- 1) Connect to MyOracleSupport <http://support.oracle.com/>.
- 2) Navigate to **Patches and Updates**, and locate the Oracle Rdb Developer Tools for Visual Studio, **Release 7.4.1.0.x** kit.
- 3) Download the .ZIP file. The **ORDT74100.ZIP** file contains the following files:
 - The README file.
 - The ORDT Release Notes containing the installation guide.
 - The ORDP Release Notes.

The ORDT Developers Guide.
The ORDP Developers Guide.
The OracleRdbDeveloperTool3274100.msi file
The OracleRdbDeveloperTool6474100.msi file
The Setup32.exe file.
The Setup64.exe file.

4) Unzip **ORDT74100.ZIP** into a temporary directory.

Note that the zip file provides both 32 bit and 64 bit installation files. You should choose which version of the installation is appropriate for your system.

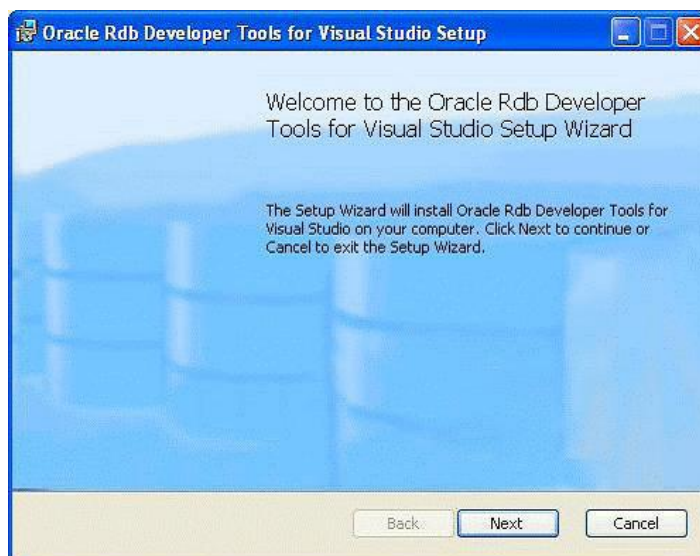
Choose either OracleRdbDeveloperTool3274100.msi or Setup32.exe if you only wish to install the 32 bit version of ORDT.

Choose either OracleRdbDeveloperTool6474100.msi or Setup64.exe if you only wish to install the 64 bit version of ORDT.

See [ORDT 64 Bit support](#) for more details.

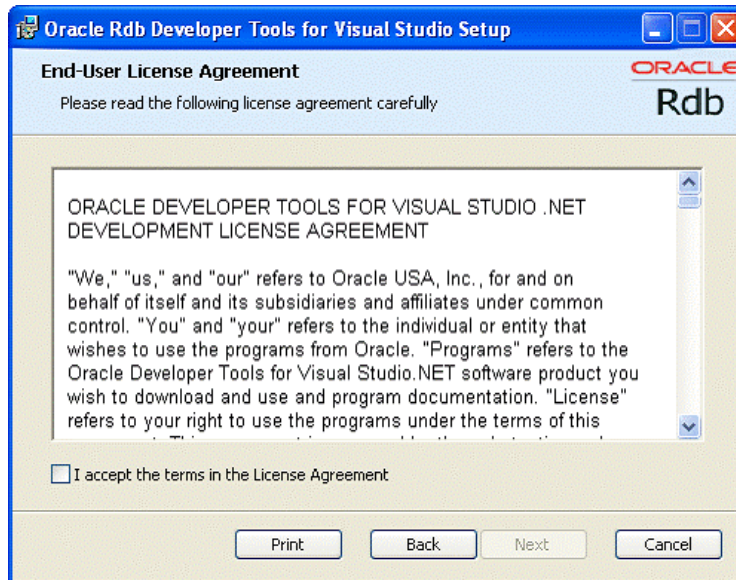
2. Double-click Setup[32 or 64].exe (or you may double-click the appropriate msi file instead).

Windows Installer launches and the Welcome screen appears.



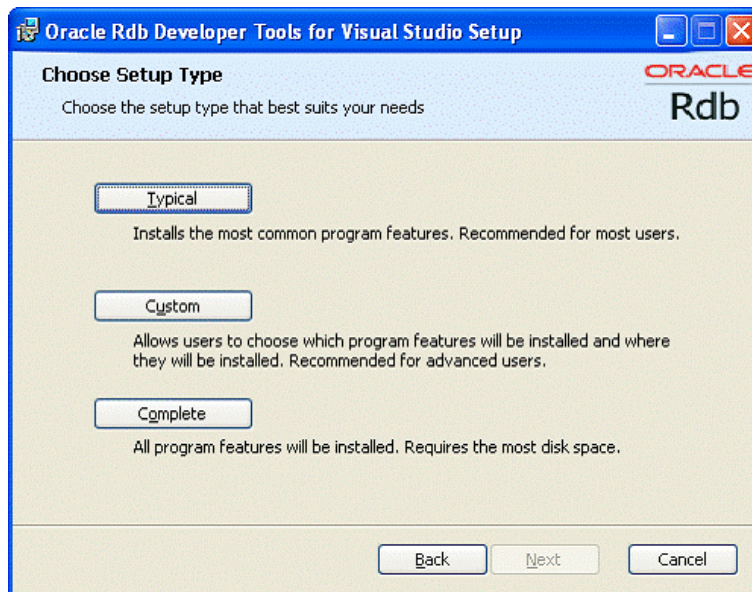
Click **Next**.

An End-User License Agreement will be displayed. If you agree with the license conditions tick the acceptance box.



3. Click **Next**.

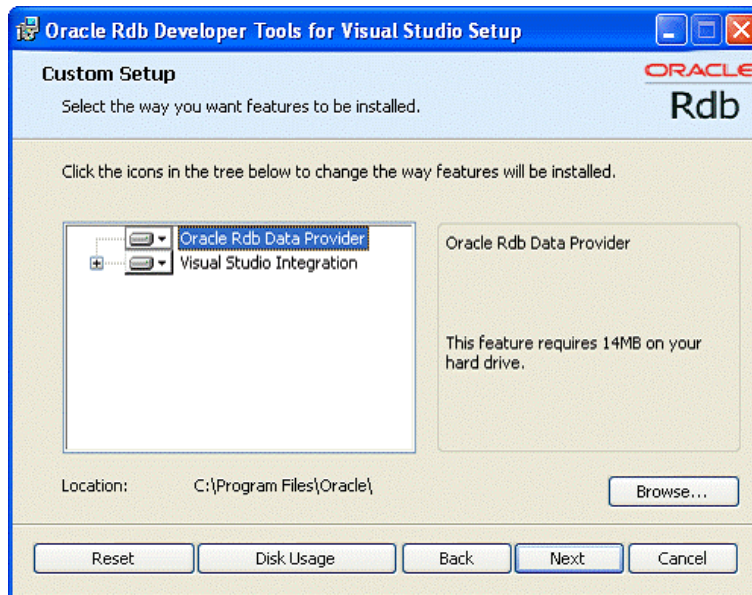
The Choose setup type window appears, allows you to install the different ORDT components.



For the purposes of this guide, we will do a Custom installation but accept all the components.

5. Click Custom.

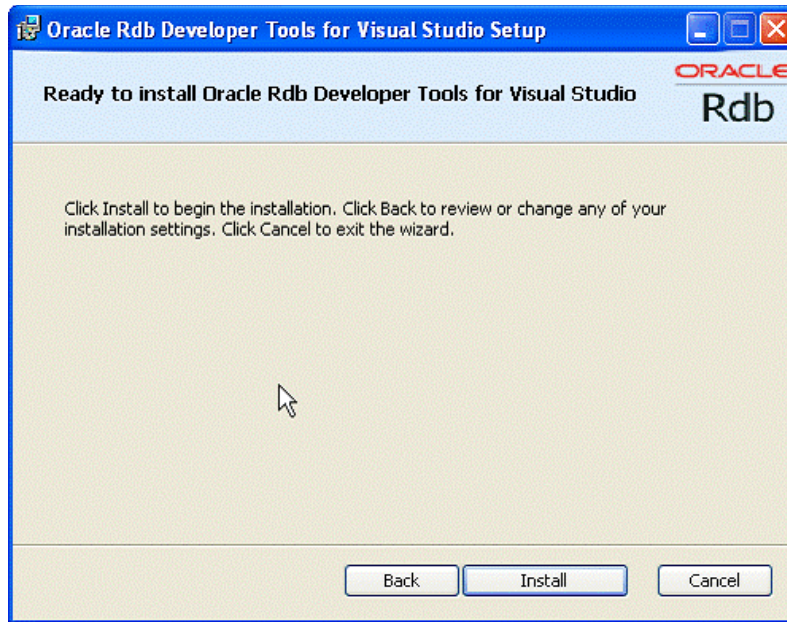
The Custom Setup screen appears.



Browse allows you to choose the installation location. For the purposes of this guide, accept the default.

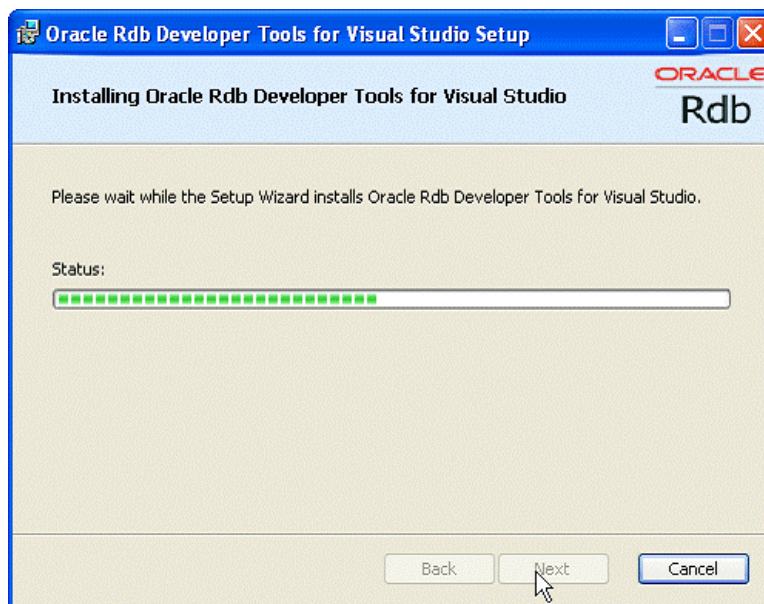
6. Click Next.

A confirmation screen is displayed allowing you to proceed with the installation or cancel or go to back to change the installation directory.



7. **Click** Install.

The installation will proceed.



The final steps of the installation merge the ORDT Visual Studio extension into your Visual Studio environments.

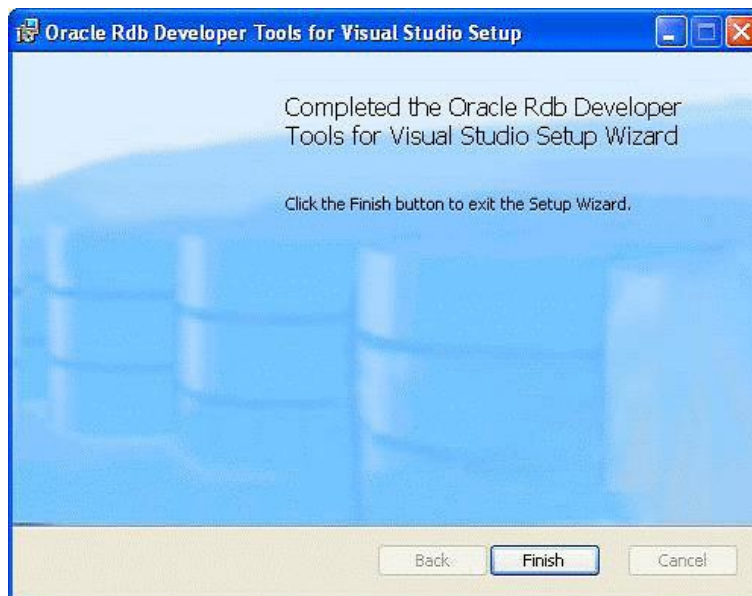
Note:

The re-configuration of Visual Studio that occurs at the end of the installation and de-installation may take some time to complete, as it

must merge all the VSPackages present within the Visual Studio environment.

Please do not interrupt the installation/de-installation during this process as it may leave your Visual Studio environment in an unstable state.

Once complete the finish screen will appear.



8. Click Finish.

9. Optionally Remove PrivateRegistry.bin.

Due to some problems currently found in Visual Studio 2017, it may be required for you to remove the user PrivateRegistry file.

This is typically:

```
%LocalAppData%\Microsoft\VisualStudio\15.0_[UniqueID]\privateregistry.bin
```

If Visual Studio 2017 fails to execute properly after this installation, you may be required to delete the ***privateregistry.bin*** file before attempting to invoke Visual Studio 2017 again.

See your Visual Studio 2017 documentation for information about the changes in Registry usage introduced in Visual Studio 2017.

If removing this file does not prevent the above problem, rebooting your system prior to attempting to reinstall ORDT may resolve the issue.

10. Optional Reboot.

If this is the first time that you have installed ORDP.NET on your system, you may be required to reboot.

On a new installation, if you do not reboot after installing ORDP.NET (as part of the ORDT installation), it is possible that an exception will be raised when trying to access the ORDP.NET libraries:

```
"Rdbnet.dll" not found
```

Rebooting your system should prevent this exception from being raised.

1.4.1 ORDT 64 Bit support

Starting with ORDT Release 7.4.0.0.0, the ORDT installation Zip file provides both a 32 Bit and a 64 Bit version of the ORDT installations files:

- Setup32.exe and OracleRdbDeveloperTool3274100.msi
- Setup64.exe and OracleRdbDeveloperTool6474100.msi

Both versions of the installation will install similar .NET assemblies and configuration files, the main difference between the installation variants being the files installed for ORDP.NET.

ORDP.NET requires unmanaged DLLs to be installed on your system to allow ORDP.NET to use SQL/Services to access Oracle Rdb databases.

Both 32 Bit and 64 Bit versions of these unmanaged DLLs are provided.

If you do not wish to create 64 Bit ORDP.NET SQL/Services connectivity applications, or you are installing on a 32 bit Windows system you should choose the 32 Bit variant of the installation.

If you wish to create 64 Bit applications to access Oracle Rdb then you should install the 64 Bit variant of the installation.

To allow you to create either 32 Bit or 64 Bit applications, the 64 Bit variant of the installation will install both 32 Bit and 64 Bit assemblies to your system.

1.4.2 ORDP.NET Assembly Version in Release 7.4.0.0.0 and Above

Starting with ORDP.NET Release 7.4.0.0.0, the ORDT installation procedure will install only one version of the ORDP.NET assembly file Oracle.DataAccess.Rdb.dll onto your system.

Note that the ORDP.NET assemblies retains the same PublicKeyToken as previous versions of ORDP.NET.

The ORDP for .NET framework version 4.0 assembly will have the following specifications:

- Name =Oracle.DataAccess.Rdb,
- Version=7.4.0.0
- Culture=neutral
- PublicKeyToken= 24caf6849861f483

References made to prior version ORDP.NET strongly named assemblies in your configuration and system registry files may need to be changed to reflect the new assembly information to ensure that applications on your system will use the new version of ORDP.NET from the System Assembly Cache.

Note:

The ORDT installation procedure will automatically update the standard .NET machine.config file and Visual Studio registration files to reference the correct version of the ORDP.NET assembly.

However there may be optional features within Visual Studio or third party products that may require changes to the referenced ORDP.NET assembly version in order to function properly. Please refer to your Visual Studio or third party product documentation for further details.

1.5 File Locations

The installation files will be placed in the directory chosen during the installation procedure. The default directory is:

`<system program files>\Oracle\`

The ORDP-specific installation files will be copied to the ORDP sub-directory under the installation directory which, by default, will be:

`<system program files>\Oracle\ORDP`

ORDT documentation files will be copied to the ORDT\docs sub-directory within the installation directory which, by default, will be:

`<system program files>\Oracle\ORDT\docs\`

Where **<system program files>** will depend on your windows system:

Typically:

- On 32 Bit Windows machines –
C:\Program Files\
- On 64 Bit Windows machines using the 32 Bit installation –
C:\Program Files (x86)\
- On 64 Bit Windows machines using the 64 Bit installation –
C:\Program Files\

Note:

The 64 Bit installation will also install the 32 bit ORDP assemblies to
C:\Program Files (x86)\Oracle\ORDP

Note:

If you choose to install ORDT to a directory other than the default, you may be required to provide more information to your applications that are using ORDT or ORDP.NET to help them determine where to find the ORDP.NET unmanaged DLL files.

See [Locating the ORDP.NET unmanaged DLLs](#) for more details.

In addition, the ORDP.NET assembly will be added to your Global Assembly Cache.

1.6 Post Installation Procedures

ORDT installation will update your system PATH variable to include the ORDP.NET installation directory, so this no longer has to be done as a post-installation step.

The ORDT installation will also update your `machine.config` file to register ORDP.NET correctly for use with Visual Studio and other .NET applications.

However, there are still some manual post-installation steps that have to be carried out.

If specific SQL/Services configuration settings are required, the template `SQSAPI32.INI` file provided with the ORDP.NET kit must be modified to reflect the required settings and moved to the windows sub-directory of your system directory. See your SQL/Services documentation for more information.

The actual post-installation steps you will have to carry out will depend on how the DLL files will be used and may require changes to your development environment to either include this new directory path or to move the provided DLL files to the appropriate third-party directory.

Please refer to the documentation provided with your development software to determine what steps may be involved in order to use the ORDP.NET classes and libraries.

You may also be required to upgrade your version of the Oracle Rdb Entity Framework Provider. See [ORDT and NuGet](#) for more details.

1.7 ORDT and NuGet

Microsoft NuGet is the software development package manager for Microsoft .NET. The NuGet client tools produce and consume these packages, including non-Microsoft software, such as ORDP.NET.

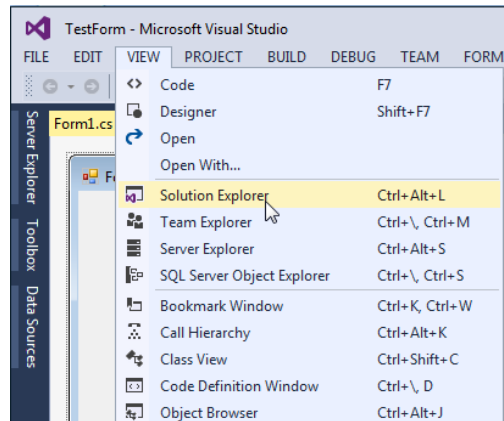
The NuGet Gallery is the central repository for hosting and consuming packages.

Starting with release 7.3.4.0.0 ORDT, you can use the Oracle Rdb Entity NuGet package to configure your Microsoft Projects to use ORDT in conjunction with Entity Framework release 6 (EF6) .

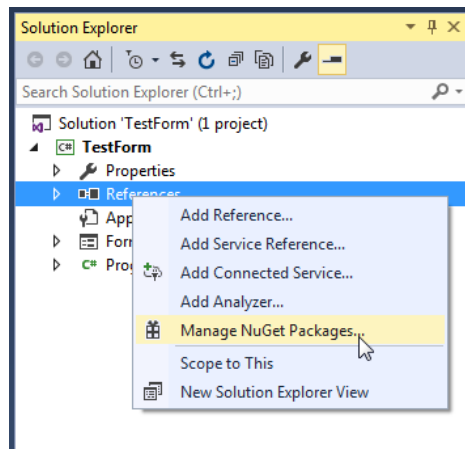
Note: Currently the Oracle Rdb Entity NuGet package only configures your projects for use with EF6, you still must manually download and install ORDT 7.4.0.0.x. This may change in future releases of ORDT.

The following steps show how to use NuGet to help configure your project to use ORDT with EF6.

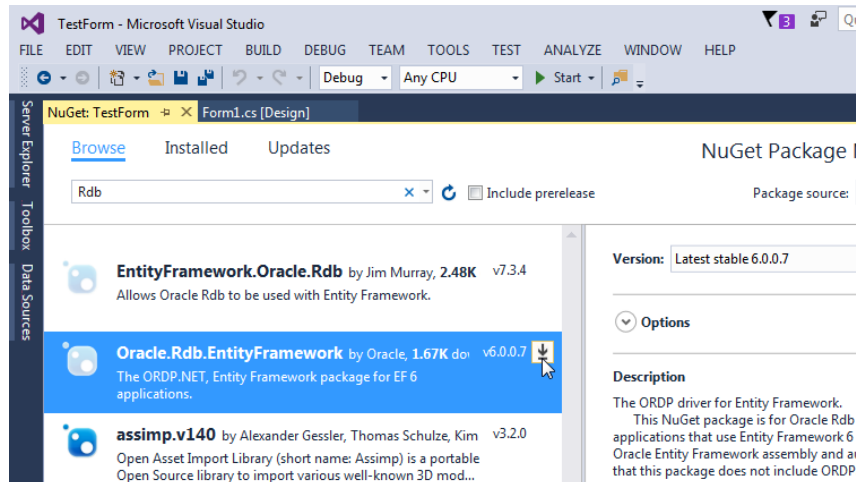
1. Select **View > Solution Explorer**.



2. Right-click **References** in the Solution Explorer and choose **Manage NuGet Packages**.



3. In the **NuGet Package Manager** window, select the *Browse* option and ensure that you have selected **nuget.org** in the *Package Source*, under the **Online** tab. Search for **Oracle Rdb**.
4. Select **Oracle.Rdb.Entity Framework** in the search results and click **the download button**.

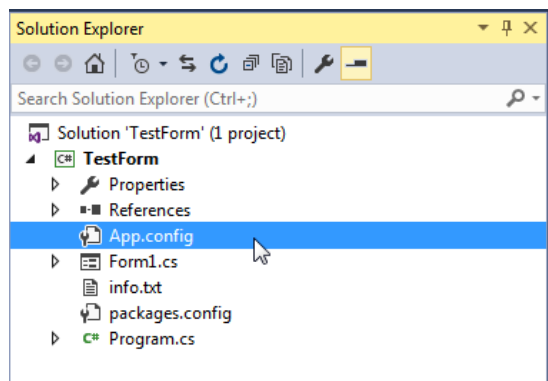


You may be asked to confirm your selection, click **OK** to proceed.

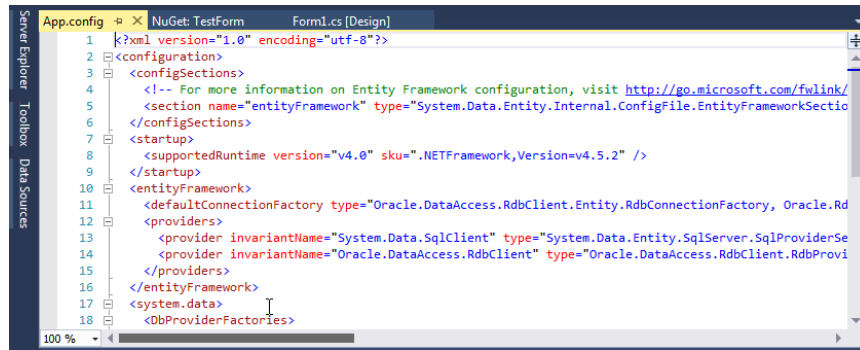
You will also be asked to accept the Oracle license terms, and if you accept these conditions, the package will be installed to your application.

The package installation will download the **Oracle.Rdb.EntityFramework.dll** required for EF6 integration. It will also setup your environment so that you may use the NuGet package to configure your projects. Once the package has been installed, a green tick mark will be placed against the product name.

5. To confirm that ORDP.NET and Entity Framework have been automatically configured, from the Solution Explorer window, open **App.config**.



You will see that ORDP.NET and Entity Framework configuration information has been added to the project.



1.8 Locating the ORDP.NET unmanaged DLLs

By default, ORDP will attempt to load the correct ORDP.NET DLL files from the default ORDP installation directory, typically:

- On 32 Bit Windows machines –
C:\Program Files\ORACLE\ORDP\NETv4.0\
- On 64 Bit Windows machines running a 32 application –
C:\Program Files (x86)\ORACLE\ORDP\NETv4.0\
- On 64 Bit Windows machines running a 64 application –
C:\Program Files\ORACLE\ORDP\NETv4.0\

If you have chosen to install ORDP to a directory other than the default installation directory, or if .NET cannot locate the ORDP assemblies in these directories, .NET will carry out its standard search protocol to locate the DLLs. (See your Microsoft .NET documentation for more information).

If the DLLs still cannot be found, your application will fail to execute correctly.

You may choose to redirect where .NET first tries to locate the DLLs by setting up the correct path to the DLLs in the "appSettings" section of your applications configuration file (<app>.config) using the following two keys:

- dllImport32
- dllImport64

For Example:

```

<?xml version="1.0" encoding="utf-8"?>
<configuration>
  <appSettings>
    <add key="dllImport32" value="E:\MYDIR\Win32\bin\Debug\" />
    <add key="dllImport64" value="E:\MYDIR\x64\bin\Debug\" />
  </appSettings>
</configuration>

```

The "dllImport[32 or 64]" key redirects ORDP to look in the provided path for the appropriate ORDP unmanaged DLLs.

If .NET fails to locate the DLL files it will then try the standard DLL search paths.

See your Microsoft .NET documentation for more information on DLL search paths and **app.config** files.

▲ [contents](#)

Chapter 2

Enhancements Provided in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.0

This chapter describes new and changed features in Oracle Rdb Developer Tools for Visual Studio release 7.4.1.0.x.

2.1 Visual Studio 2019 Integration

ORDT release 7.4.1.0.x will automatically integrate with Visual Studio 2017 and 2019 when installed.

Integration into Visual 2017 and 2019 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

Note:

Starting with Release 7.4.0.0.0, ORDP.NET no longer supports Visual Studio releases prior to Visual Studio 2017.

▲ [contents](#)

Chapter 3

Problems Corrected

This chapter describes problems corrected in Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x.

See also:

Oracle Rdb Data Provider for .NET Release Notes.

None.

▲ [contents](#)

Chapter 4

Known Problems, Restrictions and Workarounds

This chapter describes known problems, restrictions, and workarounds for Oracle Rdb Developer Tools for Visual Studio Release 7.4.1.0.x.

This chapter contains:

- [Time Remaining during Uninstall](#)
- [TableAdapter Limitations](#)
- [Unsupported features.](#)

4.1 Time Remaining during Uninstall

When you choose ORDT uninstall option from the Programs Menu or use uninstall from the Programs and Features in the Control Panel, the Microsoft Uninstaller application does not correctly determine the amount of time remaining until the operation completes.

It is possible the progress popup may remain on the screen for several minutes displaying: `1 Seconds Remaining.`

Although it would appear that the uninstall has hung, it is still working in the background to remove the ORDT package from Visual Studio, an operation that may take several minutes to complete.

4.2 TableAdapter Limitations.

4.2.1 LIMIT TO

The `LIMIT TO` clause may be used in the SQL text of statements executed within the Rdb data provider to limit the number of records returned by the query.

However `LIMIT TO` is not valid TSQL syntax and may not be accepted by various SQL Text parsers found within the Microsoft Visual Studio environment.

Currently Microsoft does not provide a mechanism for third-part data providers to extend the query parsing of components within Visual Studio such as the `TableAdapter` wizards used when configuring `DataSets`. Until an appropriate mechanism is provided by Microsoft to do this, these wizards may raise an exception when `LIMIT TO` is used in the SQL text of the statement.

For example, the `TableAdapter` wizard allows you to create or modify the SQL text used to retrieve data from the Rdb database to use in a dataset. The addition of a `LIMIT TO` clause to the query text will cause the wizard to raise a query parsing exception.

You can safely choose to ignore the exception dialog raised by pressing the `OK` button. The SQL text will be saved with the `LIMIT TO` clause and will be executed by the Rdb Data Provider to carry out the data retrieval.

The number of records returned will be limited to the value you have specified.

4.2.2 Parameter Prefix

The Rdb Data Provider allows the use of both the "@" and the ":" characters as valid parameter prefix characters in SQL text.

However a data provider may only register a single prefix character within a Visual Studio DDEX provider.

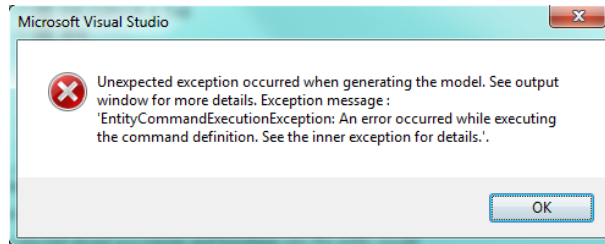
In keeping with standard Rdb SQL syntax, ORDT registers the ":" character as the valid parameter prefix used within SQL text within the DDEX provider.

If you use the "@" as a parameter prefix in SQL text associated with wizards such as the `TableAdapter` wizards, Visual Studio may raise an parsing error.

If you choose to ignore this error by pressing `OK`, the query text will be saved as-is. However, Visual Studio will not recognize the existence of parameters in the statement and will not prompt for their input in wizards such as the Preview Data wizard.

4.3 EF6 and JDBC connectivity.

Due to changes made in Oracle JDBC for Rdb servers in release 7.3.5.1.0 when using JDBC connectivity, some entity framework internal queries may fail with the error:



And the output log for the “Entity Data Model” will show an error similar to:

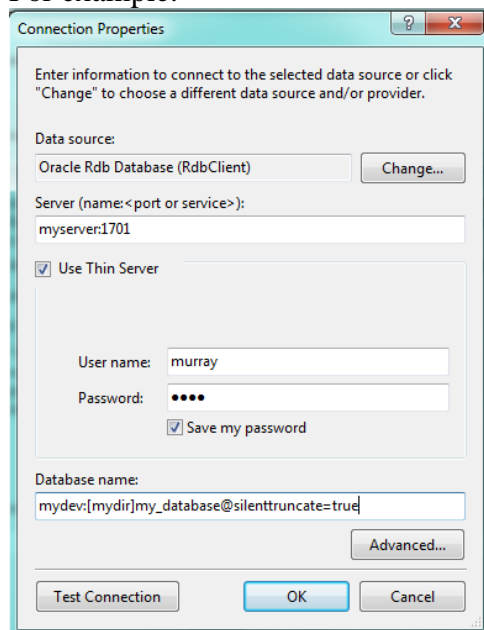
```
Unable to generate the model because of the following exception:  
'System.Data.Entity.Core.EntityCommandExecutionException: An error occurred  
while executing the command definition. See the inner exception for details.  
---> Oracle.DataAccess.RdbClient.RdbException: in <rdbjdbcsrv:open_cursor>  
%SQL-E-TRUN_STORE, String truncated during assignment to a column
```

This problem may be fixed by upgrading the Oracle Rdb Entity Framework Provider used to at least 6.0.1.1. See [ORDT and NuGet](#) for more information.

If it is not possible to update the version of Oracle Rdb Entity Framework Provider to at least 6.0.1.1, a work-around for this is to add the following connection option to the connection string used for the model creation:

“@silenttruncate=true”

For example:



4.4 Unsupported features.

The following Visual Studio features are not available in this version of ORDT.

- Foreign Key support
- Open Table definition
- Alter Procedure
- Data View Designer
- Import/export table data as XML.

▲ [contents](#)

Chapter 5

New Features and Corrections in Previous Releases

5.1 New Features for Release 7.4.0.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.4.0.0.0.

5.1.1 Windows 64 Bit support

ORDT release 7.4.0.0.0 now provides support for Windows 64 Bit applications.

ORDT release 7.4.0.0.0 will automatically integrate with Visual Studio 2017 when installed. Integration into Visual Studio 2017 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

Note:

Starting with Release 7.4.0.0.0, ORDP.NET no longer supports Visual Studio releases prior to Visual Studio 2017.

5.2 Corrections in Release 7.4.0.0.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.4.0.0.0.

None.

5.3 New Features for Release 7.3.6.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.6.0.0.

5.3.1 Visual Studio 2017 Integration

ORDT release 7.3.6.0.x will automatically integrate with Visual Studio 2012, 2013, 2015 and 2017 when installed.

Integration into Visual Studio 2012, 2013, 2015 and 2017 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

Note:

Starting with Release 7.3.6.0.0, ORDP.NET no longer supports Visual Studio releases prior to Visual Studio 2012.

5.4 Corrections in Release 7.3.6.0.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.3.6.0.0.

5.4.1 TRUN_STORE error in EF6

Fixed in release 7.3.6.0.0.

Execution of some EntityFramework6 internal SQL queries may raise the following error:

```
%SQL-E-TRUN_STORE, String truncated during assignment to a column
```

This problem may be seen during EF6 operations such as trying to build an ADO.NET Entity Data Model when using JDBC connectivity and the JDBC server attached is running JDBC release 7.3.5.1.0 or later.

This problem is caused by a change in JDBC behaviour which now establish full “SQL92” string truncation semantics.

Internal Entity Framework queries have now been modified to prevent this exception being raised. To ensure that ORDT invokes the updated queries you must update your release of the Oracle Rdb Entity Framework provider by using NuGet package manager to upgrade the **Oracle.Rdb.EntityFramework** package to at least version 6.0.1.1.

See [ORDT and NuGet](#) for more information.

If you are using earlier versions of ORDT, a workaround for this problem is to use the “silenttruncate” connection option on the JDBC connection string. See [EF6 and JDBC connectivity](#) in *Chapter 4, Known Problems, Restrictions and Workarounds* for more details.

5.5 New Features for Release 7.3.5.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.5.0.0.

5.5.1 Visual Studio 2015 Integration

ORDT release 7.3.5.0.x will automatically integrate with Visual Studio 2008, 2010, 2012, 2013 and 2015 when installed.

Integration into Visual Studio 2008, 2010, 2012, 2013 and 2015 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

5.6 Corrections in Release 7.3.5.0.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.3.5.0.0.

5.6.1 FirstOrDefault() problem

Fixed in 7.3.5.0.0.

Also Fixed in release 7.3.4.0.8.

Execution of FirstOrDefault on an Rdb dataset may throw a `NullReferenceException`:

```
System.NullReferenceException: Object reference not set to an
instance of an object.
    at
Oracle.DataAccess.RdbClient.Entity.SelectStatement.GetDefaultColumnsForTable(TableFragment table)
```

The following is a code fragment of the type of operation that may raise this problem:

```
using (var db = new PersonnelModel("PersonnelRDB"))
{
    var emps = db.EMPLOYEES.Take(2);
    var emp = emps.FirstOrDefault();
}
```

A possible workaround is to instantiate the resultset as a list prior to executing FirstOrDefault:

```
using (var db = new PersonnelModel("PersonnelRDB"))
```



```
{  
    var emps = db.EMPLOYEES.Take(2).ToList();  
    var emp = emps.FirstOrDefault();  
}
```

This has now been fixed.

5.7 New Features for Release 7.3.4.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.4.0.0.

5.7.1 Visual Studio 2013 Integration

ORDT release 7.3.4.0.x will automatically integrate with Visual Studio 2008, 2010, 2012 and 2013 when installed.

Integration into Visual Studio 2008, 2010, 2012 and 2013 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

5.7.2 Entity Framework 6 Supported.

ORDT release 7.3.4.0.x supports Entity Framework 6.

5.7.3 Entity Framework fluent API Supported.

ORDT release 7.3.4.0.x supports Entity Framework (EF) fluent API.

The default conventions used when Entity Framework Code First maps POCO classes to tables may be changed by using either [annotations](#) or EFs fluent API. The ability to use annotations has been available in prior versions of ORDT, however the fluent API was not supported.

ORDT now supports the use of the fluent API to update Oracle Rdb database object definitions, and to create or drop databases.

Note: Create or drop database is only supported when using JDBC connectivity with ORDP. See the ORDT Developer's guide for more information.

The ORDT Developer's guide provides examples on you may use fluent API to manage Oracle Rdb tables automatically from your Code First applications.

5.8 Corrections in Release 7.3.4.0.0

None.

5.9 New Features for Release 7.3.3.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.3.0.0.

5.9.1 Visual Studio 2005 Integration no Longer Supported

ORDT release 7.3.3.0.0 will now no longer integrate with Visual Studio 2005 when installed.

5.9.2 Visual Studio 2012 Integration

ORDT release 7.3.3.0 will now automatically integrate with Visual Studio 2008, 2010 and 2012 when installed.

Integration into Visual Studio 2008, 2010 and 2012 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

5.10 Corrections in Release 7.3.3.0.0

None.

5.11 New Features for Release 7.3.2.2.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.2.2.0.

None.

5.12 Corrections in Release 7.3.2.2.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.3.2.2.0.

5.12.1 Entity Framework and SQL/Services connectivity.

The use of SQL/Services connectivity in conjunction with Entity Framework (EF) may raise internal exceptions if EF generated INSERT code is executed.

The code built by EF for inserting data into the Rdb database, contains a `RETURNING` clause to return the primary key value of the newly inserted record.

Unfortunately SQL/Services limits the use of the returning clause in the `INSERT` statement to only allow DBKEY values to be returned. This limitation means that the primary key value is not returned to EF and may cause problems in later operations.

Changes have been made in ORDP Release 7.3.2.2.0 to work around this limitation.

Another workaround is to use JDBC connectivity instead.

5.13 New Features for Release 7.3.2.1.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.2.1.0.

5.13.1 Visual Studio 2010 Integration.

ORDT Release 7.3.2.1.0 integrates into Visual Studio 2010 by providing a Visual Studio 2010 compatible DDEX provider.

Integration into Visual studio 2005, 2008 and 2010 is automatically enabled during ORDT installation. This may be turned off using the [Custom installation](#) feature.

5.13.2 Oracle Rdb Entity Framework Provider.

Additional classes and templates have been added to ORDT and ORDP to allow the Oracle Rdb Data Provider to carry out the appropriate operations required of an Entity Framework Provider within .NET framework 3.5 and .NET 4.0.

Please refer to your .NET framework documentation for information on Entity Framework.

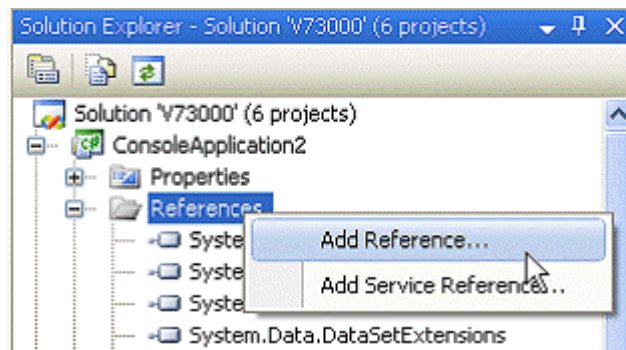
Examples on how use the Rdb Entity Framework Provider may be found in the *Oracle Rdb Developer Tools for Visual Studio Developer's Guide*.

5.14 Corrections in Release 7.3.2.1.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.3.2.1.0.

5.14.1 ORDP Assembly not added to Visual Studio .NET References.

Installation of ORDT Release 7.3.2.0.0 failed to add the appropriate registry entry to enable the discovery of the ORDP assembly by Visual Studio when **Add Reference...** is invoked from the project **References** elements within the **Solution Explorer**.



A work-around for this problem is to manually add the following entry to your system registry:

```
[SOFTWARE\Microsoft\.NETFramework\AssemblyFolders\ORDP]  
]@="[installation dir]Oracle\ORDP"
```

into either:

- [HKEY_LOCAL_MACHINE] or
- [HKEY_CURRENT_USER]

For example, the following will add the ORDP reference directory for access by all users of the system (assuming that you have installed ORDT to the default installation directory):

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ .NETFramework\AssemblyFolders\ORDP]@="C:\\Program Files\\Oracle\\ORDP"
```

5.14.2 Keyword Not Supported : “DATABASE” Problem.

Bug 9804702.

When trying to create a new Database Connection in the Visual Studio Server Explorer using a SQS connection to a dedicated Database Service, the following exception was raised:

```
Keyword Not Supported : "DATABASE"
```

A work-around for this problem is to connect to your database using a SQS type connection but use SQL/Services Universal service and provide the database filename instead of a specifying a SQL/Services database service.

5.14.3 GridView using RdbDataReader returns Incorrect Data.

Using an RdbDataReader object as a DataSource for a GridView component of a web application fails to deliver the correct data rows to the grid.

Instead of the data rows from the underlying RdbDataReader, the grid contains a dataset composed of the various Property fields for the RdbDataReader object.

The problem only occurs if you explicitly add data access code to the Page_Load method of the GridView and the code binds to an RdbDataReader.

The following example code shows the problem:

```
//C#
using Oracle.DataAccess.RdbClient;
using System;
using System.Data;
using System.Configuration;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;
```

```

public partial class Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
        try
        {
            RdbConnection conn = new RdbConnection();
            conn.ConnectionString =
                "User Id=xxxx;Password=yyyy;" +
                "Server=myserver";
            conn.Open();
            RdbCommand cmd = new RdbCommand(
                " select * from employees ", conn);
            RdbDataReader reader = cmd.ExecuteReader();
            GridView1.DataSource = reader;
            GridView1.DataBind();
        }
        catch (RdbException ex)
        {
            // add your exception code
        }
    }
}

```

Instead of displaying the expected employees data, a table containing a column for each of the property fields of the RdbDataReader object is displayed.

Two suggested workarounds are:

- 1/. Use an implicit SQLDataSource targeting an Oracle.DataAccess.RdbClient connection when building the GridView rather than adding explicit Page_load code, or
- 2/. Bind to a DataSet instead of the DataReader, for example change the DataSource bind in the code above to the following:

```

// C#
// RdbDataReader reader = cmd.ExecuteReader();
// GridView1.DataSource = reader;

DataSet ds = new DataSet();
RdbDataAdapter adapter = new RdbDataAdapter();
adapter.SelectCommand = cmd;
adapter.Fill(ds, "Rdb");
GridView1.DataSource = ds;

```

See your Microsoft ADO.NET documentation on the use and coding of GridView in web applications.

This problem has now been fixed.

▲ [contents](#)

5.15 New Features for Release 7.3.2.0.0

This section describes new and changed features in the Oracle Rdb Data Provider for .NET Release 7.3.2.0.0.

This was the first release of ORDT.

5.16 Corrections in Release 7.3.2.0.0

This section describes new and changed features in Oracle Rdb Developer Tools for Visual Studio Release 7.3.2.0.0.

This was the first release of ORDT.

▲ [contents](#)