Quest Code Tester for Oracle 4.1

Installation and Configuration Guide

Code Tester Installation and Configuration Guide
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Contents

About this Guide

This guide describes how to install and use Code Tester for Oracle® administrative features.

Additional Information

In addition to this guide, there are a number of options available for quickly finding the information you need.

Online Help

There are several ways to access online help topics.

To...	Do This...
Display the table of contents for help topics	Select the content tab in an open help window.
Search for a specific help topic	Select the index tab in an open window.
Display the index for help topics	Select the index tab in an open help window.
Display help from a window or dialog	In the window or dialog, do one of the following: • Click Help button • Press F1

Release Notes

To access the latest release notes, go to:

support.quest.com/technical-documentation

About Code Tester for Oracle

Code Tester for Oracle automates the process of testing PL/SQL programs, making it possible for you to identify bugs and verify program correctness in a fraction of the time it has taken previously. Rather than write (and maintain) thousands of lines of test code, PL/SQL programmers describe the expected behavior of their programs through a graphical interface. Code Tester then generates the required test code, and runs it whenever you reCode Tester (either through the interface or via command line execution).

The following provides a summary of how Code Tester works:

- You describe the expected behavior of your program through the Test Builder interface. In some cases, you will provide some customization logic, but for the most part, you simply point and click.

- Code Tester stores your test definitions in a repository (Oracle backend) so that you can easily manage them over time. This same repository also provides a means of documenting and analyzing the state of your code testing.

- Code Tester generates a PL/SQL package that implements the tests you have described, automatically incorporating any customization logic you have provided.

- You run your test as needed (usually after each change you make to the program and in overnight builds) with the press of a button from the Test Dashboard. Code Tester performs all required initialization and clean up.

- Code Tester automatically verifies the results and displays them in an intuitive "red-light, green-light" Results Viewer.

- Create back ups of your test definitions and share them among developers and application groups through the import/export facility.

System Requirements

Before installing Code Tester for Oracle, ensure your system meets the minimum hardware and software requirements that are listed in the *Code Tester for Oracle Release Notes* that accompany this release.

4

Repository Placement and Access Options

Code Tester for Oracle uses a backend repository to store tests and testing results. Each database being tested must have its own repository.

When you install Code Tester, you must specify the Oracle schema into which the test repository will be placed. This repository (a set of tables) holds the definitions of the tests for your programs. This schema can be created specifically for the Code Tester repository, or those tables can be placed in an existing schema.

Before you install Code Tester, you should decide where the repository and the test code generated by Code Tester will be placed, in relation to the code being tested.

This section reviews the most common configurations and offers advice about how to install and use Code Tester to match those configurations. In each configuration we explain how to use Code Tester in these three different types of schemas:

Code Tester Schema	**The owner of the Code Tester repository**. When you install Code Tester, the database tables and packages that hold the repository are placed in this schema.
Test Schema	**The schema from which testing is performed.** In other words, you always connect to the Test Schema when you start up Code Tester. This schema owns the test objects created by Code Tester.
Code Schema	**The schema that owns the code (or has execute authority on the code) being tested**. To test this code, you must have execute authority from the Test Schema on the programs in the Code Schema.

Installation Options

You can install and use Code Tester in each of the following configurations.

- Shared repository
- Private repository
- Shared repository, Code Schema = Test Schema
- Single, shared test schema for all developers
- Separate test schema for each application

Installing a Shared Repository

There are two ways to create a shared repository:

- Public Synonyms
- Private Synonyms

Public Synonyms

Choose the "Create public synonyms..." option in the Installer.

Code Tester will then create public synonyms for the repository so that it can be accessed from any other schema in that database instance.

Private Synonyms

In Code Tester the Installer does not automatically create private synonyms. You must create them by running scripts manually in SQL*Plus or Toad or another execution environment.

When you install Code Tester, do not check the "Create public synonyms..." option. Instead, install the repository into the specified schema without public synonyms. After the installation is complete, open your SQL execution environment and connect to the Code Tester schema. You will then run two scripts, each of which are located in the Code subdirectory of Code Tester's installation folder:

qu_grant_execute.sql: When running this SQL*Plus compatible script, you specify the name of the Test Schema from which you want to run Code Tester. The EXECUTE privilege is then granted to you schema for all Code Tester objects.

After running this script for each of the schemas from which you want to run Code Tester, you will need to connect to each of these schemas in turn and run the following script:

qu_private_synonyms.sql: When running this SQL*Plus compatible script, you specify the name of the Code Tester Schema (owner of the repository). Private synonyms are then created for all relevant Code Tester objects.

Code Tester can now be used from each of these individual Test Schemas.

Installing a Private Repository

This is the simplest installation. The schema in which the repository is installed is also the test schema and the code schema. You simply install Code Tester into the application code schema. The repository of test information is private to this schema and cannot be seen, used, or run by any other schema.
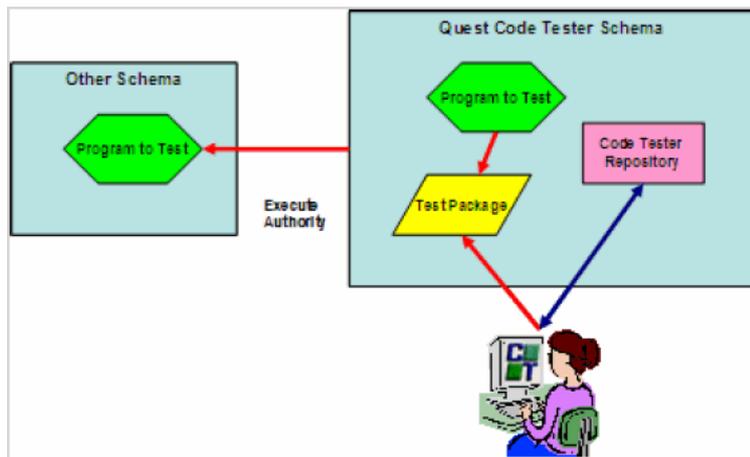
Good for: Small projects, evaluating Code Tester

How to do this: Install, but do not install public synonyms during the install and do not install any private synonyms afterwards.

To use Code Tester: Connect to the schema in which Code Tester was installed (and which also contains your code or has execute authority on the code you want to test).

Advantages

You don't need any special privileges to install the product (as long as your code schema has the privileges to create procedures, tables, etc.).

Disadvantages

- The repository is not shared, so other members of your development team cannot see, change or run your test definitions.

- Multiple, private repositories consume more database resources.

- Lots of different kinds of code (source code, test code, Code Tester repository) are all mixed in together, making it hard to manage your code base.

Installing a Shared Repository, Code Schema = Test Schema

You install Code Tester into its own schema and make the repository and test engine available to the various Code Schema through public or private synonyms. You run Code Tester from the Code Schema (owns the application code). In other words, the Test Schema is the same as the Code Schema.
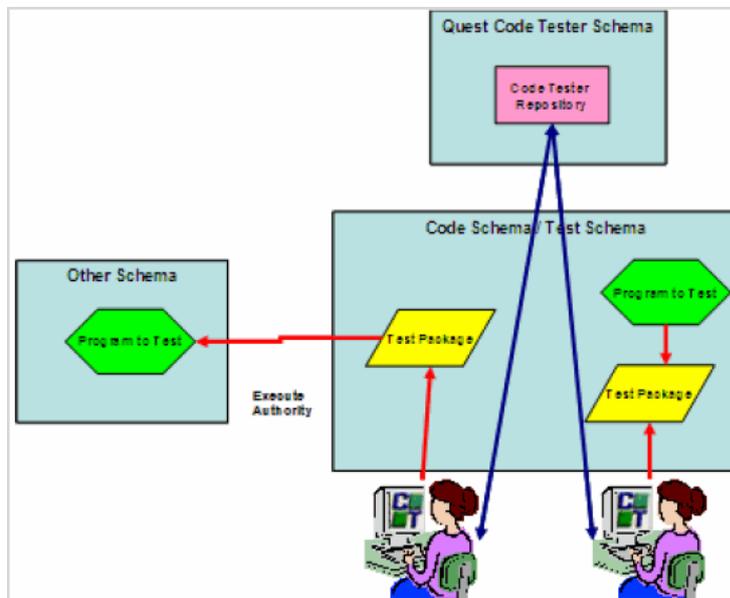
Good for: Team development, in which test definitions need to be shared.

How to do this: Install with public synonyms or create private synonyms after installation is finished.

To use Code Tester: Connect to your Code Schema and choose the programs in (or accessible from) that schema.

Advantages

- All test definitions are stored in a single, shared repository.

- You don't have to set up a separate Test Schema from which testing is performed.

Disadvantages

- You need to be able to connect to a schema that creates a new user in Oracle.

- Need ability to create public synonyms (if that approach is chosen)

- All test objects are defined in the Code Schema to which they apply. Test objects are, therefore, mixed in with application code, which can be confusing.

Installing a Single Shared Test Schema for all Developers Repository

In this configuration, you take the extra step of creating a schema in which test code will be created for all applications on which members of the team are working.
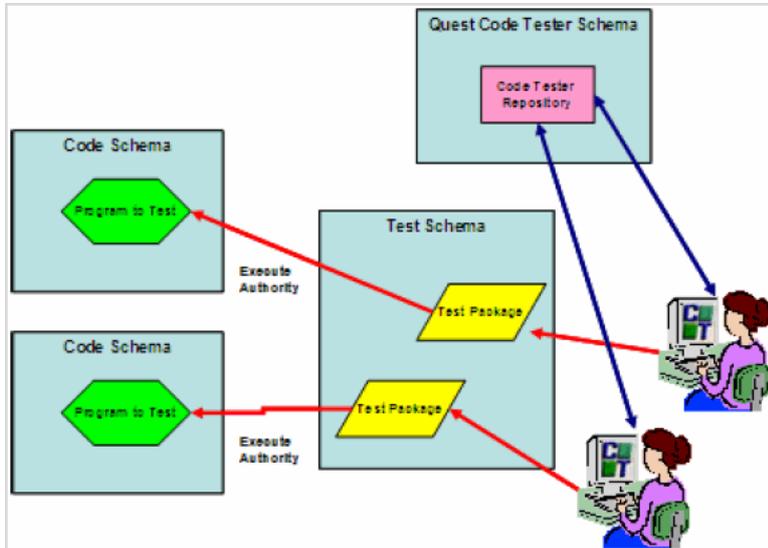
Code Tester does not create the Test Schema. You will need to do this yourself outside of the Code Tester install, but it does not have to be created before you install Code Tester.

Good for: Team development, in which the same team works on several different applications.

How to do this: Install with public or private synonyms, depending on whether you want the repository to be available to all schemas or a selected subset. Click here for more details.

To use Code Tester: Connect to the shared Test Schema and choose the programs to test from the relevant Code Schema.

Advantages

- All test definitions are stored in a single, shared repository.

- Test objects are kept separate from application code

- Developers can easily move between test definitions of various applications

Disadvantages

- Test code for multiple applications are mixed together, which can make it difficult to keep test code distinct and manageable in the Dashboard.

Installing a Separate Test Schema for Each Application Repository

In this configuration, you take the extra step of creating a separate schema in which test code will be created for each application on which members of the team are working.

Code Tester does not create the Test Schemas. You will need to do this yourself outside of the Code Tester install, but it does not have to be created before you install Code Tester.
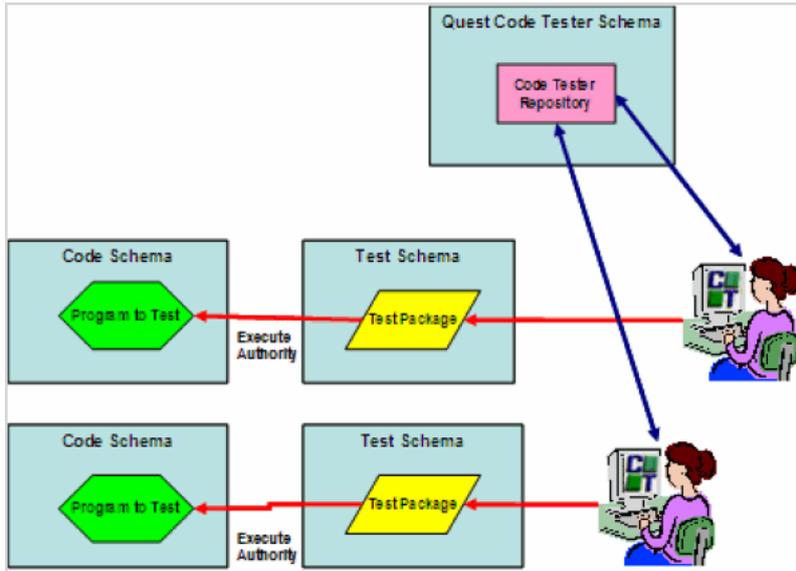
Good for: Team development, in which different members of the team work on different applications or subsystems.

How to do this: Install with public or private synonyms, depending on whether you want the repository to be available to all schemas or a selected subset.

To use Code Tester: Connect to the Test Schema for your application and choose the programs to test from the relevant Code Schema.

Advantages

- All test definitions are stored in a single, shared repository.
- Test objects are kept separate from application code
- Developers working on one application cannot see or run tests for another application.

Disadvantages

- Must create the largest number of new schemas (for three applications, you will have one Code Tester Schema and three Test Schemas). This results in more management effort and more database resources devoted to the schemas.

Schema Privileges

The schema in which you install Code Tester must have the following privileges:

ALTER SESSION

CREATE PROCEDURE

CREATE SEQUENCE

CREATE SESSION

CREATE SYNONYM

CREATE TABLE

CREATE TRIGGER

CREATE VIEW

CREATE TYPE

Note: Some tests will require the creation of an object type and nested table type, so you may need to add a CREATE TYPE privilege to an account.

Please note the following:

- If requested, Code Tester creates a schema with the necessary privileges as part of the installation process.

- We recommend that you install Code Tester into its own schema, and create public synonyms so that all developers will be able to use Code Tester and share their test definitions. This will also help you keep application code distinct from the Code Tester code base. To do this, your schema must also have CREATE and DROP PUBLIC SYNONYM privileges.

- You may need additional privileges to test certain kinds of objects, such as files and cursor variables. If such a schema is not yet available, you will need to ask your DBA to connect to a SYSDBA account to create that schema (this can all be done from within the Code Tester installer; see the release notes to get started).

Note: If you have not previously installed utPLSQL, then the qu_utplsql_api package will be marked invalid. Code Tester will not use this package unless utPLSQL has been installed and you want to run utPLSQL test packages.

Required Schema Packages for Code Tester Installation

The following Oracle packages are required to install Code Tester for Oracle:

SYS.DBMS_UTILITY

SYS.DBMS_DESCRIBE

SYS.DBMS_LOB

SYS.DBMS_RANDOM

SYS.DBMS_SQL

XDB.DBMS_XMLDOM

XDB.DBMS_XMLPARSER

XDB.DBMS_XSLPROCESSOR

When installing Code Tester where these packages not are accessible, you will receive the following message:

Code Tester for Oracle cannot be installed successfully because this schema does not have access to the following packages: xxx... Please contact your DBA to obtain access to these packages

Obtain the required permissions and continue with the installation procedures.

Installing Code Tester for Oracle®

These instructions install Code Tester and, optionally install the required database repository. You can install the repository now or at any time after the installation by running the **Install or Upgrade Repository wizard**. For more information, see Installing a New Repository on page 17.

To install the repository while you install Code Tester, have the following ready:

- Connection information for the database

- Login credentials of a user who can create new users (if you want to install into a new schema) and the credentials you want to use for the new user.

To install Code Tester

1. Double-click the Code Tester for Oracle installer. The Code Tester for Oracle setup wizard displays.

2. Click **Next**. The licenses agreement displays.

3. Read the licenses agreement and click the **I accept the terms in the license agreement** radio button.

4. Click **Next**. The Destination Folder dialog displays. Accept the default location or change it, then click **Next**. The Install Database Respository dialog displays.

5. By default the installer will run the repository wizard after it installs Code Tester. This gives you the opportunity to install the required repository immediately (or upgrade an existing one). If you do not want to install or upgrade the repository at this time, deselect **Install or Upgrade Code Tester database repository**.

6. Click **Next.** The Ready to Install dialog displays.

7. Click **Install**. The Installing Code Tester for Oracle dialog displays.

8. After installation completes, one of the following is shown, depending on whether or not you are installing the repository:

   - Launch Code Tester and exit the installer. Select your options on this page, then click **Finish**.

   - The Repository Installation wizard is launched. To install the repository, continue to To install the repository.

To install the repository

1. On the Repository installation dialog, select the options as desired:

   - **Install into or upgrade existing user schema**: Installs the repository into an existing schema.

   - **Create new user and install into new user schema**: Creates a new database user and then installs the repository into that schema.

   - **Uninstall existing Quest Code Tester repository first**: This is active only if you selected an existing schema. Select this option if you want to uninstall the existing repository before installing the new one.

   - **Create public synonyms after installation**: Select this option to provide access to Code Tester from any schema in this instance. If you do not create synonyms, then you can only access this installation of Code Tester from within the Code Tester schema (usually the same schema as the application code).

2. Click **Next**. One of two possible connection dialogs is displayed.

3. Provide one of the following:

   - If you are installing into an *existing* schema, provide the user name and password for the existing schema, then select the database and connection method.

   - If you are installing into a *new* schema, provide the user name and password of a user that has the privileges to create the new user and schema, then select the database and connection method.

4. Click **Next**.

5. (If you are installing into an existing schema, skip this step.) If you are installing into a *new* schema, the Provide New Schema Information dialog is displayed. Provide the name and password of the new user and (optional) select storage attributes.

6. Click **Install**. The installation completes and you are notified of the results.

IMPORTANT: If you did not install the repository, you can do so at any time by running the **Install or Upgrade Repository** wizard in the **Administration** folder of your Code Tester installation. You must install a repository to use Code Tester. For more information, see Installing a New Repository on page 17.

Silent Installation

For Windows 7 and 2008, you must open the "command prompt" as the administrator to get permission to run the install.

Code Tester for Oracle provides silent installation for frontend client only installs.

The following provides procedures for command line silent installation:

The command line for silent installation is:

```
msiexec /i Code TesterCodeTesterOracle_3.0.0.XXX.msi/qn
INSTALLDIR="<Installation Directory>"
```

If option INSTALLDIR="<Installation Directory>" is ommited then QCTO will be installed in the default directory:

<Install Directory> is a destination directory for QCTO installation.

Examples:

```
msiexec /i Code TesterCodeTesterOracle_3.0.0.XXX.msi /qn
```

The Code TesterCodeTesterOracle_3.0.0.XXX.msi located in the current directory will be installed in the default directory: c:\Program Files\Code Tester Software\Code Tester for Oracle.

> msiexec /i "c:\My Files\Code TesterCodeTesterOracle_3.0.0.XXX.msi " /qn
> INSTALLDIR="c:\TEMP\MyWork

The c:\My Files\Code TesterCodeTesterOracle_3.0.0.XXX.msi will be installed in the directory "c:\TEMP\My Work".

Silent Uninstall

The following command performs the silent uninstall for Code Tester for Oracle.

```
msiexec /x Code TesterCodeTesterOracle_3.0.0.XXX.msi /qn
```

Installing a New Repository

Toad provides a wizard for creating a new repository if you did not create one when you installed Code Tester. This wizard can be run at any time after Code Tester is installed.

1. Select **All Programs | Quest Software | Code Tester for Oracle** *version* | **Administration | Install or Upgrade Repository**. The Code Tester Repository Wizard displays.

2. Select **Install new Quest Code Tester repository**, then click **Next**.

3. On the Repository installation dialog, select the options as desired:

   - **Install into existing user schema**: Installs the repository into an existing schema.

   - **Create new user and install into new user schema**: Creates a new database user and then installs the repository into that schema.

   - **Uninstall existing Quest Code Tester repository first**: This is active only if you selected an existing schema. Select this option if you want to uninstall the existing repository before installing the new one.

   - **Create public synonyms after installation**: Select this option to provide access to Code Tester from any schema in this instance. If you do not create synonyms, then you can only access this installation of Code Tester from within the Code Tester schema (usually the same schema as the application code).

4. Click **Next**. The connection dialog is displayed.

5. Provide one of the following:

   - If you are installing into an existing schema, provide the user name and password for the existing schema, then select the database and connection method.

   - If you are installing into a new schema, provide the user name and password of a user that has the privileges to create the new user and schema, then select the database and connection method.

6. Click **Next**.

7. (If you are installing into an existing schema, skip this step.) If you are installing into a *new* schema, the Provide New Schema Information dialog is displayed. Provide the name and password of the new user and (optional) select storage attributes.

8. Click **Install**. The installation completes and you are notified of the results.

When all of the installation scripts have been run, Code Tester will validate your installation and notify you of any problems.

Upgrading a Repository

You can upgrade a repository to a newer version by running the installation script and selecting an *existing* schema. You will do this by choosing the upgrade path offered in the installer. The installer will then automatically apply any necessary changes to your current installation to bring it up to the new version.

IMPORTANT! Only a user with the CTO_ADMIN_ROLE role can perform an upgrade to the repository.

To upgrade a repository

1. Select **All Programs | Quest Software | Code Tester for Oracle *version* | Administration | Install or Upgrade Test Repository**. The Code Tester Repository Wizard displays.

2. Select **Upgrade existing Code Tester repository**.

3. Click **Next**. The directory and login dialog information displays.

4. Enter the required parameters.

5. Click **Next**. The Upgrade Code Tester Repository dialog displays.

6. Click **Next**. The repository upgrades. When the upgrade completes, the Finished dialog displays.

7. Click **Finish**.

Removing a Repository

You can remove a repository from Code Tester if required.

IMPORTANT!

- **Removing a repository removes all test definitions that are stored in that repository.**

- **Only a user with the CTO_ADMIN_ROLE role can remove a repository.**

To remove a repository

1. Select **All Programs | Quest Software | Code Tester for Oracle** *version* | **Administration | Remove Repository**. The Uninstall Repositories dialog displays.

2. This window displays the names of any schemas into which Code Tester repository was installed from this workstation. If you do not see the schema from which you wish to uninstall Code Tester, do the following:

   a. Click **Add New Schema**. The Provide schema information dialog displays.

   b. Provide the schema name, password, and database name.

   c. Press **Next** to add this schema to the grid.

   d. Repeat as many times as necessary.

3. In the **Password** column of the grid, type the password and then verify the repository version.

   NOTE:Delete Schema deletes the schema from the grid but does not delete the schema from the database.

4. Click **Next**. The Confirm deinstallation dialog displays.

5. Select **Yes, I want to remove the selected repositories** check box.

6. Click **Next**. The repository uninstalls and the Finished dialog displays.

Managing the repository

From Code Tester for Oracle Repository Manager, you can:

- Rebuild the Code Tester backend
- Provide instance-wide access to Code Tester
- Restrict access to Code Tester to a single schema

To access the Repository Manager

1. Click the Start button from the Windows task bar.
2. Select **All Programs | Quest Software | Code Tester for Oracle** *version* **| Administration | Repository Manager**. The Code Tester Repository Wizard displays. The following options are provided:
   - Rebuild Code Tester Backend
   - Provide instance-wide access to Code Tester
   - Restrict access to Code Tester to single schema

Note: The following three procedures require that you begin from the Code Tester Repository Wizard dialog.

Rebuilding the Code Tester Backend

This option reinstalls all Code Tester backend packages from disk.

To rebuild the Code Tester backend

1. Click the Rebuild Code Tester backend radio button.
2. Click **Next**. The directory and login information dialog displays.
3. Enter the User Name.
4. Enter the Password.
5. From the Database drop-down, select the desired database.

6. Click **Next**. The backend rebuilds. This will take several minutes. When the rebuilding process completes, the Finished dialog displays.

7. Click **Finish**.

Providing Instance-wide Access to Code Tester

This option creates public synonyms for Code Tester objects in the connected schema.

To provide Instance-wide access to Code Tester

1. Click the Provide instance-wide access to Code Tester radio button.

2. Click **Next**. The directory and login information dialog displays.

3. Enter the User Name.

4. Enter the Password.

5. From the Database drop-down, select the desired database.

6. Click **Next**.

   - If no installation issues are detected, instance-wide access will be granted.

   - If installation issues are detected, the Repository installation issues dialog displays. Review the issues displayed and click Back to select another schema, or fix the issue presented. Or, click **Ignore missing privileges** and continue by clicking **Next**.

7. Click **Finish** when the processing completes.

Restricting Access to a Single Schema

This option removes public synonyms for Code Tester objects from the connected schema.

To restrict access to Code Tester

1. Click the Restrict access to Code Tester to single schema radio button.

2. Click **Next**. The Provide directory and login information dialog displays.

3. Enter the User Name.

4. Enter the Password.

5. From the Database drop-down, select the desired database.

6. Click **Next**. The restrictions are applied.

7. When the processing completes, click **Finish**.

Uninstalling Code Tester for Oracle

To remove Code Tester for Oracle, use the **Programs and Features** option of the Windows Control Panel.

1. Click the **Start** button from the Windows task bar, then select **Control Panel**.

2. In the Control Panel, select **Programs and Features**.

3. Right click **Code Tester for Oracle** *version*, then select **Change**.

4. Click **Next** on the first page of the wizard.

5. Select **Remove**.

6. To remove the repository at this time, select **Remove Code Tester database repository.**

7. This window displays the names of any schemas into which Code Tester repository was installed from this workstation. If you do not see the schema from which you wish to uninstall Code Tester, do the following:

   a. Click **Add New Schema**. The Provide schema information dialog displays.

   b. Provide the schema name, password, and database name.

   c. Press **Next** to add this schema to the grid.

   d. Repeat as many times as necessary.

8. In the **Password** column of the grid, type the password and then verify the repository version.
   NOTE:Delete Schema deletes the schema from the grid but does not delete the schema from the database.

9. Click **Next**. The Confirm deinstallation dialog displays.

10. Select **Yes, I want to remove the selected repositories** check box.

11. Click **Next**. The repository uninstalls and the Finished dialog displays.

About us

We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece — you — to the community, to the new Quest.

Contacting Quest

For sales or other inquiries, visit www.quest.com/contact.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at https://support.quest.com.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request
- View Knowledge Base articles
- Sign up for product notifications
- Download software and technical documentation
- View how-to-videos
- Engage in community discussions
- Chat with support engineers online
- View services to assist you with your product