



Product Documentation

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# Embarcadero® Rapid SQL™

Quick Start Guide

Version XE4/8.5.1

1st Edition November, 2013

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# INTRODUCTION

Rapid SQL is an integrated development environment that enables developers to create, edit, version, tune, and deploy server-side objects residing on Microsoft SQL Server, Oracle, Sybase Adaptive Server, InterBase/Firebird, IBM DB2 for Linux, Unix, and Windows, and IBM DB2 for z/OS databases. Its unified database development environment provides extensive graphical facilities that simplify SQL scripting, object management, reverse engineering, database project management, version control and schema deployment. With Rapid SQL, programmers can develop and maintain high-quality, high-performance client/server and web-based applications in less time, and with greater accuracy.

## ABOUT RAPID SQL

Rapid SQL provides tools that can be used by a number of functions within an organization using DBMS from multiple vendors, in testing, development, or production environments.

### MAJOR FUNCTIONAL AREAS

**Datasource management tools** - Before use with Rapid SQL, datasources must be registered. Datasources can be registered manually or semi-automatically. Storage can be registry-based or file-based, and a network storage option facilitates shared use of datasource catalogs.

**Object management tools** - Rapid SQL supports a wide range of database objects and related elements for each DBMS. You can create new objects, edit existing objects, and use a range of object operations that support common, general or DBMS-specific actions.

**Scripting environments** - Rapid SQL offers fully-featured environments dedicated to SQL, DDL, Java and Active Script development. Execution options are available as appropriate, and environment-specific related features, such as rollback/commit and query plan options, are provided. Related coding aids include on-the-fly semantic and syntactic validation, text substitution shortcuts, and visual query building tools. Related execution tools include script and file execution facilities.

**Data Utilities** - A Data Editor lets you edit your tables in real-time, supports all editable datatypes, and provides unicode options. Table data can also be imported from formats such as spreadsheets.

**Project Management** - Rapid SQL database project management facilities help you organize, alter, and keep track of changes to database objects or SQL scripts. The project management facilities act as a repository to maintain all source code for a database project. Rapid SQL also incorporates version control functions and build management facilities to help you manage and build projects.

**Other Time-savers and Productivity Tools** - Working within the Rapid SQL environment, you have access to database and file search facilities, use visual difference to compare files or database objects, and access the Microsoft Windows task scheduler.

**License-specific Add-ons** - Depending on the licenses you purchased, you have access to the following tools:

- The Code Analyst helps you identify time-consuming lines of code. It lets you perform detailed response time analysis, benchmark the execution of one or more procedures or functions, save response time metrics, and perform intelligent comparisons against current execution times.
- Debuggers, available for IBM DB2 for Linux, Unix, and Windows, Oracle, Sybase, and SL Server, let you test functions and procedures. A Profiler is available for Oracle datasources.

## BENEFITS TO SPECIFIC USERS

Rapid SQL provides benefits to the following users:

<b>Database Administrators</b>	<p>Rapid SQL lets database administrators accomplish more with the limited time they have. It eliminates the tedious tasks associated with researching schema dependencies when making object changes. Also included are a host of utilities, which condense DBA tasks taking hours or days down to minutes.</p> <p>Rapid SQL provides an easy-to-use graphical user interface (GUI), which allows Database Developers to be immediately productive in a cross-platform environment without having platform specific knowledge. The GUI in general, and wizards and editors specifically, provide time-savings over traditional hand-coding or other manual methods.</p>
<b>Developers</b>	<p>In addition to a fully-featured scripting environment, Rapid SQL offers several cross-platform code-generation options, which help Developers build SQL code that is syntactically and functionally correct the first time.</p> <p>Complementing coding facilities, the object creation wizards and graphical object editors greatly reduce the time and effort to build an application database from the ground up.</p> <p>Rapid SQL facilitates moving applications and complete database systems between environments.</p>
<b>Project Managers</b>	<p>Project management facilities and Version Control System integration provide fundamental project management.</p>

## ABOUT THIS BOOK

This book has two major components:

- [Installing Rapid SQL](#) lists technical requirements, provides details on DBMS version support, summarizes the installation process, and includes licensing details.
- [Tutorial exercises](#) provides learning curve material on Rapid SQL. It walks you through the major areas of functionality, getting you ready for independent work.

# INSTALLING RAPID SQL

Before you can register any Embarcadero Technologies application, you must meet the minimum technical requirements. If you meet all the minimum technical requirements, you can install Rapid SQL. After installation, you must license the application.

The following topics walk you through this process:

- [Technical Requirements](#)
- [Database Support and Connectivity Options](#)
- [Installing Rapid SQL](#)
- [Licensing](#)

Lastly, for more information, see "[Additional Product Resources](#)" on page 17.

## TECHNICAL REQUIREMENTS

Rapid SQL is a 32-bit application that runs in a Microsoft Windows environment. Before using Rapid SQL, please verify that your environment meets the following requirements:

- [Hardware Requirements](#)
- [Operating System Requirements](#)

**NOTE:** Users need full registry privileges during the installation and access to the keys under HKEY\_CURRENT\_USER in the registry after installation.

## HARDWARE REQUIREMENTS

Embarcadero Technologies recommends the following minimum hardware requirements:

- Pentium 4-level processor
- 1 GB of memory
- 1 GB of disk space
- 1024 x 768 display

## OPERATING SYSTEM REQUIREMENTS

Rapid SQL supports the following operating systems:

- Windows XP SP2 (32-bit and 64-bit)
- Windows Vista (32-bit and 64-bit)
- Windows 7 (32-bit and 64-bit)

For more detailed information, see the following topics:

- [XP Support](#)
- [Vista and Windows 7 Support](#)
- [32-bit Versus 64-bit Operating System Support and Restrictions](#)

#### XP SUPPORT

Windows XP has two user security groups:

- Users
- Power Users

Microsoft intentionally does not grant members of the Users Group the authority to install applications or make global changes to the system. Restricted Users are members of the Users Group. Standard users belong to the Power Users Group. Microsoft grants members of the Power Users Group the authority to install programs. You must be a member of the Administrators Group in order to install and use Embarcadero Technologies applications.

Because Restricted Users are members of the Users Group, they cannot install and run Embarcadero Technologies applications.

**CAUTION:** You must be a member of the Administrators Group in order to install and use Embarcadero Technologies applications.

To open the Group Membership tab where you can determine your group and review the Microsoft security guidelines:

- 1 On the **Control Panel**, open **User Accounts**.
- 2 On the **Users** tab, select a user and then click the **Properties** button.
- 3 Click the **Group Membership** tab.

#### VISTA AND WINDOWS 7 SUPPORT

Windows Vista UAC and Windows 7 provide two user types:

- Standard user
- Administrator

Rapid SQL can be installed or uninstalled by an administrator or by a standard user using an administrator token. Standard users can run Rapid SQL.

**CAUTION:** For the purpose of running Rapid SQL, default standard user token privileges should not be modified. Modifying standard user token privileges can result in licensing issues which will prevent Rapid SQL from operating properly.



### 32-BIT VERSUS 64-BIT OPERATING SYSTEM SUPPORT AND RESTRICTIONS

Rapid SQL is a 32-bit application that runs emulated on 64-bit versions of Windows. The only requirement is that Rapid SQL supports only 32-bit versions of the client software that must be installed for connectivity to each DBMS that Rapid SQL will work against.

## DATABASE SUPPORT AND CONNECTIVITY OPTIONS

Rapid SQL provides dedicated DBMS platform support with the following connectivity options:

- For use with IBM DB2, SQL Server, MySQL, Oracle, and Sybase ASE datasources, Rapid SQL is packaged with a set of proprietary drivers that work in conjunction with a supported set of clients that must be installed.

InterBase requires both client and driver software to be installed. Firebird requires driver software.

For information on the DBMS clients or client/driver combinations that must be installed, see "[Packaged Embarcadero Drivers with Native Client Support](#)" on page 10.

- Alternatively, you can connect to a supported DBMS using a Type 4 JDBC driver packaged with Rapid SQL. For a listing of the third-party JDBC drivers, see "[Third-party JDBC drivers](#)" on page 10.

The following table lists the DBMS platform versions for which dedicated support is provided, and the connectivity options supported:

DBMS Version	Native Driver Support	Packaged Third-party JDBC Client Support
Firebird 2.0	✓	✓
IBM DB2 for z/OS 8 and 9	✓	✓
IBM DB2 LUW 9.0 - 9.7	✓	✓
InterBase 2007, InterBase 2009, and InterBase XE3	✓	✓
Microsoft SQL Server 2005, 2008, and 2012 For SQL Server 2005 and 2008, only object types like users, logins, roles, config parameters, etc., are supported. We do NOT support Microsoft .NET extensions at this time.	✓	✓
MySQL 4.x. (Rapid SQL is tolerant of 5.x but does not support Stored Procedures, Triggers, or Views)	✓	✓
Oracle 9i, 10g, and 11g	✓	✓
Sybase ASE 12.5 - 15.5	✓	✓
Sybase IQ 12.7 - 15.4	✓	✓

Lastly, generic JDBC and ODBC is provided for non-dedicated DBMS platforms and other datasources. For details, see "[Generic JDBC and ODBC Support](#)" on page 11.

## PACKAGED EMBARCADERO DRIVERS WITH NATIVE CLIENT SUPPORT

If you are using a native Embarcadero connectivity option to connect to supported DBMS platforms, ensure that the relevant client or driver/client combination is installed and configured:

DBMS	Client
Firebird	Firebird ODBC driver
IBM DB2 for z/OS	DB2 UDB Client for Windows 8 or later
IBM DB2 for Linux, Unix, and Windows	IBM DB2 LUW Client for Windows 8 or later
Microsoft SQL Server	Microsoft SQL Server Client Library
MySQL	MySQL Connector/ODBC Driver 5.2.x Driver - MySQL Connector/ODBC driver 3.51.x Driver
Oracle	Oracle SQL*Net Client
Sybase ASE	Sybase Open Client
Interbase	DataDirect ODBC driver for InterBase and the InterBase Client
Sybase IQ	SQL Anywhere ODBC drivers for Sybase IQ 12.7 Sybase IQ 32-bit ODBC drivers

**NOTE:** Since Rapid SQL is a 32-bit application that runs emulated on 64-bit versions of Windows, only 32-bit versions of the DBMS client software are supported.

## THIRD-PARTY JDBC DRIVERS

If policy or preference dictates use of Type 4 JDBC drivers, the following table includes the drivers supplied for each supported DBMS platform:

Platform	JDBC Driver
Firebird	Jaybird JDBC Driver
IBM DB2 for Linux, Unix and Windows IBM DB2 for z/OS	IBM Data Server Driver for JDBC
InterBase	InterBase JDBC driver
Microsoft SQL Server	jTDS Type 4 JDBC Driver for Microsoft SQL Server Microsoft SQL Server JDBC Driver
MySQL	MySQL Connector/J JDBC Driver
Oracle	Oracle JDBC Thin Driver
Sybase ASE	jTDS Type 4 JDBC Driver for Microsoft SQL Server Sybase jConnect JDBC Driver
Sybase IQ	Sybase jConnect JDBC Driver for Sybase IQ

## EMBARCADERO CONNECT SUPPORT

Rapid SQL can make use of datasource definitions stored on an Embarcadero Connect server. For details, see "[Working With Datasources from a Connect Repository](#)" on page 148.

## GENERIC JDBC AND ODBC SUPPORT

Generic JDBC/ODBC connectivity to non-dedicated DBMS systems or non-database datasources is also provided. Rapid SQL can connect to a datasource using a customer-provided, third-party JDBC version 3.0 or ODBC version 3.0 driver. Minimal Rapid SQL functionality is provided, including a basic Explorer tree and SQL querying.

## IBM DB2 FOR Z/OS STORED PROCEDURE REQUIREMENTS

When working against an IBM DB2 for z/OS data source, Rapid SQL relies on the following stored procedures, provided as an optional installation step in setting up the DB2 subsystem:

- DSNWZP
- DSNUTILS
- ADMIN\_COMMAND\_DSN
- ADMIN\_COMMAND\_DB2

Prior to using Rapid SQL against an IBM DB2 for z/OS data source, ensure that these components are installed on the server. See [IBM DB2 for z/OS documentation](#) for more information.

## INSTALLING RAPID SQL

To install Rapid SQL successfully, you must complete each panel of the installation wizard. For more information, see "[Installation Wizard](#)" on page 12.

After the installation is complete, we recommend that you reboot your machine before using Rapid SQL.

**CAUTION:** To install Rapid SQL from the command line, you should be sure to manually uninstall all prior versions of Rapid SQL.

## INSTALLATION WIZARD

The Rapid SQL Installation Wizard installs all corresponding files on your machine. The panels presented by the wizard vary depending on whether you are upgrading or performing an initial installation. To proceed to the next panel of the wizard, click **Next**. To cancel the installation process at any time, click **Cancel**.

**NOTE:** Before installing Rapid SQL from Embarcadero ToolCloud, see <http://docs.embarcadero.com/products/xs/> for additional requirements or revised instructions.

**CAUTION:** If you have not registered a license when you start a Rapid SQL installation, you will be prompted to register a license. For more information, see "[Licensing](#)" on page 12.

Use the following table as a guide to understanding the panels you may encounter when installing Rapid SQL:

Panel	Description
Welcome...	The start of the install process.
License Agreement	This panel of the Installation Wizard displays the license agreement. To continue the installation, click <b>I accept the terms in the license agreement</b> . You cannot proceed to the next step in the installation if the <b>I DO NOT accept the terms in the license agreement</b> option is selected.
Destination Folder	Identify the folder where you want the program files to reside. The default directory is C:\Program Files\Embarcadero\RSQL<version identifier>\.
Start Menu	Lets you provide a Start menu group and optionally have an application icon created on the desktop.
Associate Files	Specify whether you want files with extensions of .sql or .eqb to be associated with the Rapid SQL application.
Ready to install the program	Review your settings and click <b>Install</b> to continue the installation process.
Installing...	Displays the installation progress.
Setup Complete	Finishes the installation process.

## LICENSING

Each Embarcadero client application requires one or more licenses in order to run. An Embarcadero product, such as Rapid SQL or ER/Studio, has a baseline license which provides basic feature support for that product. In addition, incremental licenses may be required to support specific DBMS platforms, product add-ons, or other functions.

For more information, see the following topics:

- [Licensing Overview](#)
- [Licensing Your Application](#)

- [Selecting a License Category During Startup](#)
- [Online/Offline Mode and Concurrent License Checkout](#)

## LICENSING OVERVIEW

The following topics provide a high-level discussion of key licensing topics and directs you to sources of more detailed information.

- [Viewing Your License Type and Modules](#)
- [Understanding Trial, Workstation, and Networked Licenses](#)
- [Rapid SQL License Modules, DBMS Support, and Feature Availability](#)
- [Rapid SQL XE License Modules, DBMS Support, and Feature Availability](#)
- [Directing Queries Regarding Licenses](#)

## VIEWING YOUR LICENSE TYPE AND MODULES

The **About...** dialog, available from the **Help** menu, displays your license type and each individual license module currently registered.

## UNDERSTANDING TRIAL, WORKSTATION, AND NETWORKED LICENSES

Three kinds of licenses are available: Trial, Workstation, and Networked.

<b>Trial licenses</b>	A license for a 14-day, full-featured trial version of the product. The trial license must be registered before you can use the product.
<b>Workstation licensing</b>	A license or set of licenses is tied to a particular workstation. The product can only be used on that workstation.
<b>Networked licensing</b>	Networked licenses are administered and distributed by a central License Server (Embarcadero License Center or Acresto FLEXnet Publisher). There are two types of networked licenses: <i>Concurrent</i> and <i>Networked Named User</i> . With Concurrent licensing, users on different machines take turns using licenses from a shared pool. With Networked Named User licensing, licenses are pre-assigned to specific users setup on the license server's user list. Those users are guaranteed to have licenses available any time.  NOTE: Concurrent licenses can be borrowed for use without a network connection. For details, see " <a href="#">Online/Offline Mode and Concurrent License Checkout</a> " on page 17.

For a detailed description of licensing options, see <http://www.embarcadero.com/software-licensing-solutions>.

## RAPID SQL LICENSE MODULES, DBMS SUPPORT, AND FEATURE AVAILABILITY

Individual license modules correspond to the DBMS platforms you are licensed to use. In addition, each DBMS license module corresponds to a product edition. Feature availability for each license module edition is as follows:

- **Standard** - Provides baseline support including datasource management, object management, SQL editing and execution, and standard tools and utilities.
- **Professional** - Standard edition features plus SQL Debugger, SQL Profiler, and Code Analyst.

### RAPID SQL XE LICENSE MODULES, DBMS SUPPORT, AND FEATURE AVAILABILITY

An XE license provides access to all supported DBMS platforms. XE module and feature availability is as follows:

- **XE Pro** - Provides baseline support including datasource management, object management, SQL editing and execution, and standard tools and utilities, SQL Debugger, SQL Profiler, and Code Analyst.

### DIRECTING QUERIES REGARDING LICENSES

Questions regarding license availability, feature availability, and client or server licensing, should be directed as follows:

- If you work in an organization that uses networked licensing, direct any questions to your site's Rapid SQL administrator.
- If you are using workstation licensing, direct licensing questions to your Embarcadero Technologies representative.

### LICENSING YOUR APPLICATION

See the following topics for details on registering your product:

- [Registering a Trial or Workstation License during Installation](#)
- [Registering a Workstation License After Application Startup](#)
- [Registering By Phone](#)
- [Registering a Networked License](#)

### REGISTERING A TRIAL OR WORKSTATION LICENSE DURING INSTALLATION

Shortly after initiating download of a trial version of an Embarcadero product, you should receive an email with a serial number you must register during installation. Similarly, if you purchase an Embarcadero product while no trial version is active, you will receive a serial number that must be registered during installation.

- 1 Start the installation. An **Embarcadero License Registration** dialog appears.
- 2 Copy the serial number from the email and paste it in the **Serial Number** field.

- 3 Enter your Embarcadero Developer Network account credentials in the **Login or Email** and **Password** fields. If you have not previously created an EDN account, or have forgotten your password, click **I need to create ...** or **I've lost my password**.
- 4 Click **Register**.

Your activation file should be downloaded and installed automatically. If this does not happen, click the **Trouble Connecting? Try Web Registration** link and follow the prompts. If you still have problems, see "[Registering By Phone](#)" on page 15.

#### REGISTERING A WORKSTATION LICENSE AFTER APPLICATION STARTUP

The following instructions assume that you have received a workstation license by email and that you currently have a valid trial license. If you did not install a trial version or the trial period has expired, follow the instructions in "[Registering a Trial or Workstation License during Installation](#)" on page 14 instead.

- 1 On the **Help** menu, select **About**, and then on the dialog that opens, click **Manage** to open a license manager dialog.
- 2 On the **Serial** menu, select **Add**.
- 3 Copy the serial number from the email and paste it in the **Add Serial Number** dialog, then click **OK**.
- 4 Right-click on the serial number you added, and then select **Register** from the context menu. A registration dialog opens.

**NOTE:** The **Registration Code** box shows a machine-specific identifier required with other registration methods.

- 5 Ensure that the **Register using Online Registration** radio box is selected.
- 6 Provide Developer Network credentials in the **DN Login name or Email** and **DN Password** boxes. If you have not previously created an EDN account, or have forgotten your password, click **I need to create ...** or **I've lost my password**.
- 7 Click **Register**.
- 8 If prompted to restart the application, click **Yes**.

Your activation file should be downloaded and installed automatically. If this does not happen, click the **Trouble Connecting? Try Web Registration** link and follow the prompts. If you still have problems, "[Registering By Phone](#)" on page 15.

#### REGISTERING BY PHONE

If you have problems with either of the above procedures, you can register licenses by phone. You will have to provide:

- Developer Network credentials

- The registration code displayed in the Embarcadero License Registration dialog that appears when you start an unlicensed application
- The product base license serial number
- The license serial numbers for any additional features you have purchased.

For North America, Latin America and Asia Pacific, call (415) 834-3131 option 2 and then follow the prompts. The hours are Monday to Friday, 6:00 A.M. to 6:00 P.M. Pacific time.

For Europe, Africa and the Middle East, call +44 (0)1628-684 494. The hours are Monday to Friday, 9 A.M. to 5:30 P.M. U.K. time.

Shortly after phoning in, you will receive an email containing an activation file. Then do the following:

- 1 Save the file to the desktop or a scratch directory such as `c:\temp`.
- 2 On the **Help** menu select **About** and then on the dialog that opens, click **Register**. A registration dialog opens.
- 3 Select the **I have received an activation file (\*.slip or reg\*.txt)** radio box.
- 4 Click the **Browse** button and use the **Select License Activation File** dialog to locate and select the activation file you installed.
- 5 Click the **Import** button to import the activation file and when complete, click the **Finish** button.
- 6 If prompted to restart the application, click **Yes**.

#### REGISTERING A NETWORKED LICENSE

If you work in an organization using Networked licensing, an administrator, department head, or someone performing a similar function will provide you with an activation file.

Once you receive the file, save it to the `license` subfolder of your product's main installation folder (typically `C:\Program Files\Embarcadero\<product><version>\license\`), then restart the application.

No additional steps are necessary.

#### SELECTING A LICENSE CATEGORY DURING STARTUP

During Rapid SQL startup, if multiple concurrent license categories are available, you are prompted to select a category to use for this Rapid SQL session. Multiple license categories can be set up to provide differing feature access or access to different DBMS versions. Feature and DBMS version access are typically distributed across multiple license categories to optimize use of a site's purchased licenses.

**NOTE:** This dialog also includes the option to remember your selection on subsequent startups. If you select that option, you can subsequently use the **Select Licenses** button on the **About...** dialog (**Help > About**) to select a different license.



Contact your License Administrator for details on individual license categories or requests for additional feature or DBMS support.

## ONLINE/OFFLINE MODE AND CONCURRENT LICENSE CHECKOUT

Concurrent licenses can be used in both online and offline modes. In online mode, you must have a continuous network connection to your License Center. Licenses are checked out when you start Rapid SQL and checked back in when you shut Rapid SQL down.

You can also use a license in offline mode. When you explicitly check out a license for offline use, you can use Rapid SQL without a connection to your License Center for a specified duration. This lets you work while travelling or commuting, work away from your primary work area, or use Rapid SQL when a network connection is unavailable or not required.

**NOTE:** Contact your site administrator for information on offline license availability, the maximum duration, offline license policy at your site, or any other issues arising from online license usage.

### To check out a license for offline use:

- 1 On the **Help** menu, select **Checkout License**. The **Check Out Licenses For Offline Use** dialog opens.
- 2 Select the check box associated with each individual license you want to check out.
- 3 In the **Checkout Duration** box, type the number of hours that you can use the offline license without a network connection to the License Center.
- 4 Click **OK**.

You can work offline for the specified duration. The duration period begins immediately.

If you subsequently establish a network connection to the License Center before the license duration expires, you can indicate to the License Center that the offline license is no longer required.

### To indicate that an offline license is no longer required:

- 1 On the **Help** menu, select **Checkin License**.

There is no interruption in Rapid SQL usage. The license is not actually checked in until you shut down Rapid SQL.

## ADDITIONAL PRODUCT RESOURCES

The Embarcadero Web site is an excellent source for product information and access to additional resources:

- Release notes and product documentation

## ADDITIONAL PRODUCT RESOURCES

- Information on other Embarcadero application and database development tools
- Embarcadero Development Network
- Product and technical support
- Educational and product expertise material in the form of online demos, white papers, and video presentations
- Access to sales staff and Embarcadero resellers

For access, direct your browser to [www.embarcadero.com](http://www.embarcadero.com).

# TUTORIAL EXERCISES

The exercises that follow walk you through the Rapid SQL's major functional areas. After completing these exercises, you will have the foundation you need to explore the many features and benefits of Rapid SQL. You'll have learned how to competently manage the major database administration and development tools provided.

This guide is divided into a set of sessions:

- [Session 1: Getting Started](#)
- [Session 2: Productivity Enhancers](#)
- [Session 3: Scripting](#)
- [Session 4: Working with Code Workbench](#)
- [Session 5: Building a Database Project](#)
- [Session 6: Visual Query Builder](#)
- [Session 7: Live Data Editor](#)
- [Session 8: Code Analyst](#)
- [Session 9: SQL Debugging and Profiling](#)

You can use this basic tutorial as a roadmap of product highlights, but also to help you find your own path to explore Rapid SQL.

Once you've started, you can select **Help Topics** from the **Help** menu to find many additional resources that complement and build on many of the activities shown in this tutorial.

**NOTE:** The tutorial exercises make use of the sample SQL Server database, **AdventureWorks**. Since this is not part of a typical install, you can obtain the files from installation CDs or online sources to install and attach that database. Alternatively, you can perform the tasks targeted for the **AdventureWorks** database against another available database. No destructive actions are initiated in the exercises.

## SESSION 1: GETTING STARTED

Before anything else, you must perform the following tasks:

- [Starting Rapid SQL](#)
- [Registering Cross-Platform Datasources](#)

### STARTING RAPID SQL

How you start Rapid SQL depends on the type of application you are evaluating:

- **InstantOn version** - start the application by double-clicking the file you downloaded.

- **Fully-installed version** - The **Start** menu sequence for Rapid SQL is always in the form **Programs > Embarcadero Rapid SQL *version identifier* > Embarcadero Rapid SQL *version identifier***, where *version identifier* reflects the version you are running.

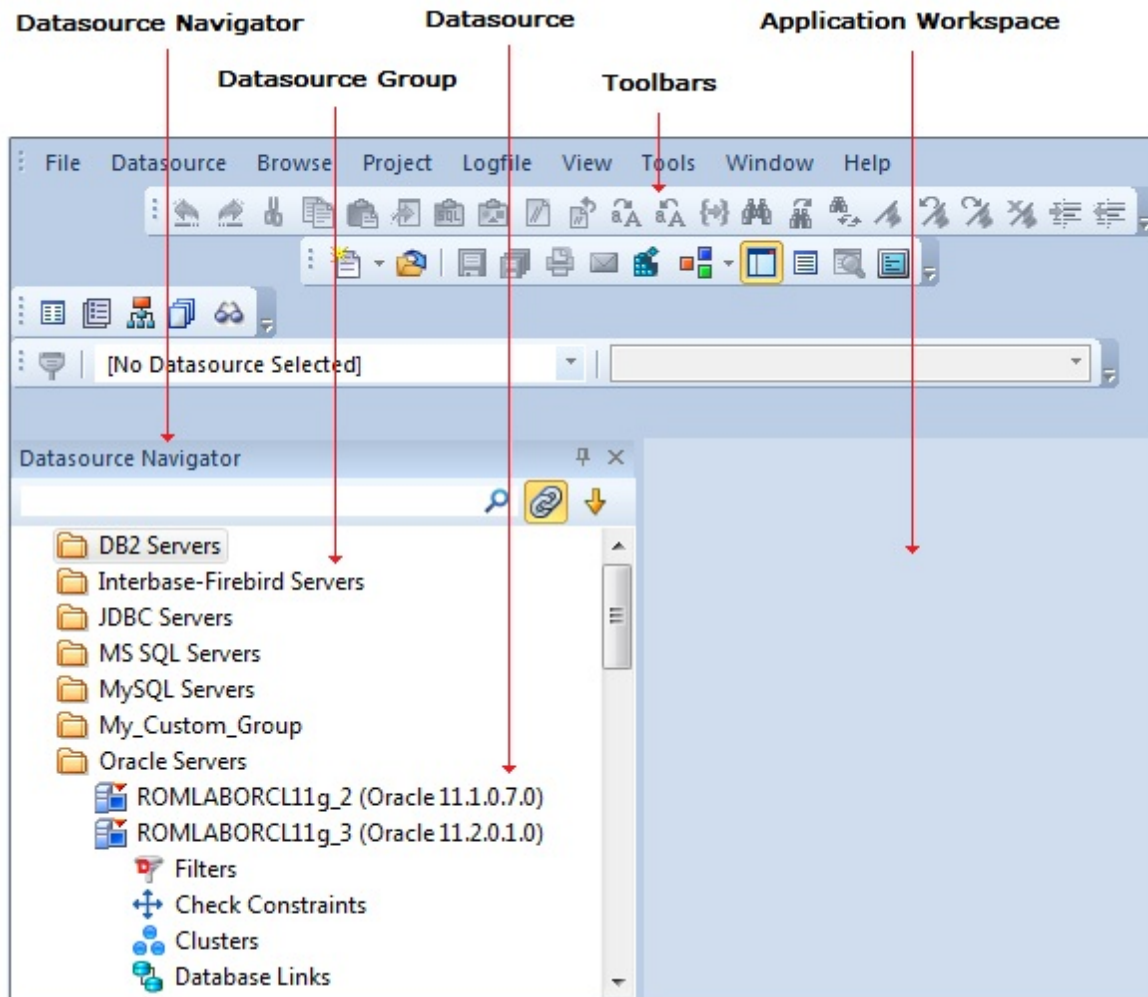
## To get started

- 1 Run Rapid SQL.

The first time Rapid SQL starts, a dialog opens, prompting you to set up datasources. In addition to letting you manually set up individual datasources, a number of more automated methods are available. If you have installed and used other Embarcadero tools, Rapid SQL can find any active datasources being used by those tools. In addition, Rapid SQL provides a Discover Datasources feature that automatically searches the DBMS configuration files on your system for datasources that are not currently registered. Since other Embarcadero tools let you export datasource definitions to file, you also have the option of importing these definitions.

- 2 For the purpose of this tutorial, click **Cancel**. You will be registering a datasource manually.

The main Rapid SQL window opens.



## REGISTERING CROSS-PLATFORM DATASOURCES

For now, you will register a datasource manually.

- 1 On the **Datasource** menu, select **Register Datasource**. A **Datasource Registration Wizard** opens.
- 2 Choose **Microsoft SQL Server** as the DBMS type and then click **Next**. The next panel opens.

The screenshot shows the 'Register Datasource' wizard. The 'Information' tab is selected, with the instruction: 'Please enter the connection information for the SQL Server.' The left-hand pane contains a tree view with 'Connection Information' selected. The main area contains the following fields and options:

- Registration type:** User defined (dropdown menu)
- Use Encryption
- Protocol:**  ICP/IP  Named Pipes
- Host:** [Empty text box]
- Port (optional):** [Empty text box]
- Default DB (optional):** [Empty text box]
- Datasource Name:** [Empty text box]

At the bottom, there are buttons for 'Test Connection', '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'.

- 3 Ensure that a **Registration type** of **User defined** is selected, specify the **Host** name of an SQL Server datasource on your network, override the **Datasource Name** with **SAMPLE\_DATASOURCE** and then click **Next**.
- 4 Provide valid credentials in the **User ID** and **Password** boxes, and then select the **Auto-Connect?** checkbox to eliminate having to provide credentials each time you connect to this datasource.
- 5 In the left-hand pane, select **Datasource Group**, select the **MS SQL Server** folder, and then click **Finish**.

**NOTE:** The **Datasource Group** panel also lets you assign a category to a datasource. This provides a means to visually distinguish between different server purposes, development vs. production, for example, in your enterprise. Categorization is a customizable feature.

- 6 Select **Yes** when prompted to connect to the new datasource.

Rapid SQL offers the same easy-to-use Datasource Registration Wizard for all supported DBMS platform connections. The connection information only needs to be set up one time for each platform and can be saved locally or in a common datasource catalog for use by other Embarcadero products.

By default, Rapid SQL stores datasource definitions in the Windows Registry. There is also a local, file-based option. Embarcadero products supporting these methods can share datasource catalogs on the same machine.

There is also a network-shared storage option. Lastly, datasource definitions can be stored centrally on an Embarcadero Connect server for use by Rapid SQL users.

Rapid SQL also offers the ability to import and export datasource definitions. This lets you share definitions among users and across datasource storage methods.

## SESSION 2: PRODUCTIVITY ENHANCERS

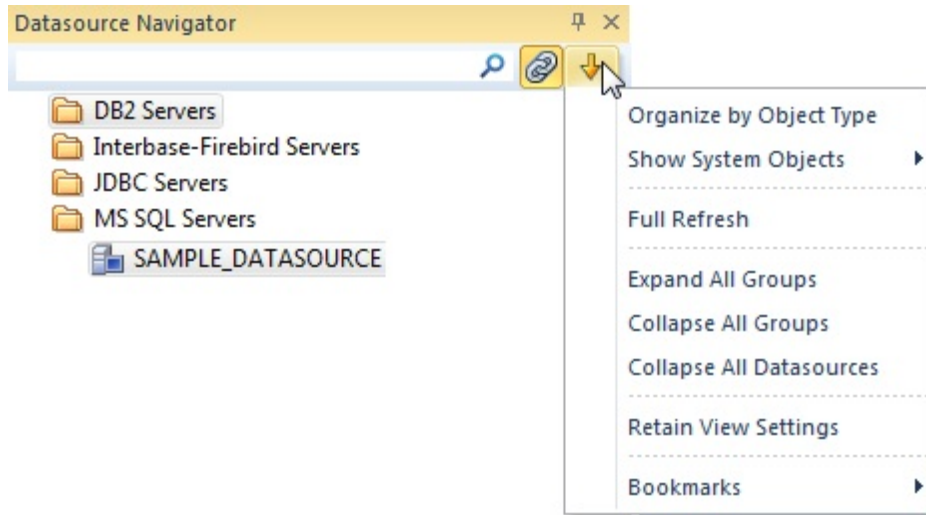
This session focuses on some commonly used time-saving features:

- [The Datasource Navigator Tree](#)
- [Creating an Object Using the Object Creation Wizard](#)
- [Working With an Existing Object Using the Object Editor](#)
- [Object Documentation and Reporting](#)
- [Working With Code, Files and Data](#)
- [Setting Environment Options](#)
- [Favorites Tab](#)
- [Working with Scripts and Files](#)
- [Viewing Data](#)
- [Retaining Datasource Navigator View Settings](#)
- [Datasource Navigator Bookmarks](#)
- [Setting Keyboard Shortcuts and Hotkeys](#)
- [Referencing Most Recently Used Datasources](#)

## THE DATASOURCE NAVIGATOR TREE

Rapid SQL makes it easy and intuitive to navigate between datasources and to drill-down into atomic database objects within the Datasource Navigator tree. The Datasource Navigator displays all registered datasources and serves as the entry-point for much of Rapid SQL's advanced functionality.

- 1 Click on the Navigator's dropdown and ensure that **Organize By Object Type** is selected.



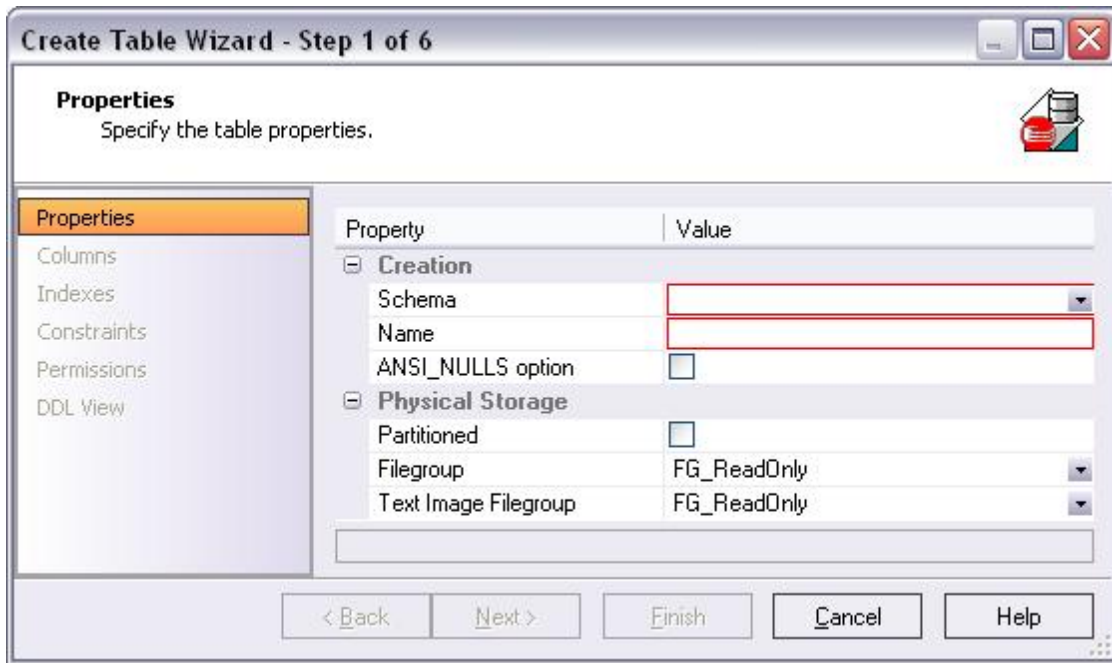
- 2 Select and expand the **SAMPLE\_DATASOURCE > Databases > AdventureWorks** node to display the database object sub-nodes.



## CREATING AN OBJECT USING THE OBJECT CREATION WIZARD

From within the Navigator tree you can create any database object using simple Object Creation Wizards. The following is an example of how to use the Table Object Creation Wizard. It is similar to the Object Creation Wizards available within Rapid SQL for all database objects and other supported elements.

- 1 Right-click on the **Tables** node and select **Create**. A **Create Table Wizard** opens.



- 2 Select a **Schema** and provide a **Name** of **SAMPLE\_TABLE**. Leave the remaining default settings and click **Next**.
- 3 Add a column, using a **Name** of **Sample\_Column1** and select a **Type** of char. Experiment with the **Add Column** and **Delete** buttons, and with selecting a column and modifying its attributes.
- 4 Click **Finish**. The **DDL View** panel opens showing the DDL that will be used to create the new table.
- 5 Deselect the **Launch Object Editor After Execute** and then click **Execute**.

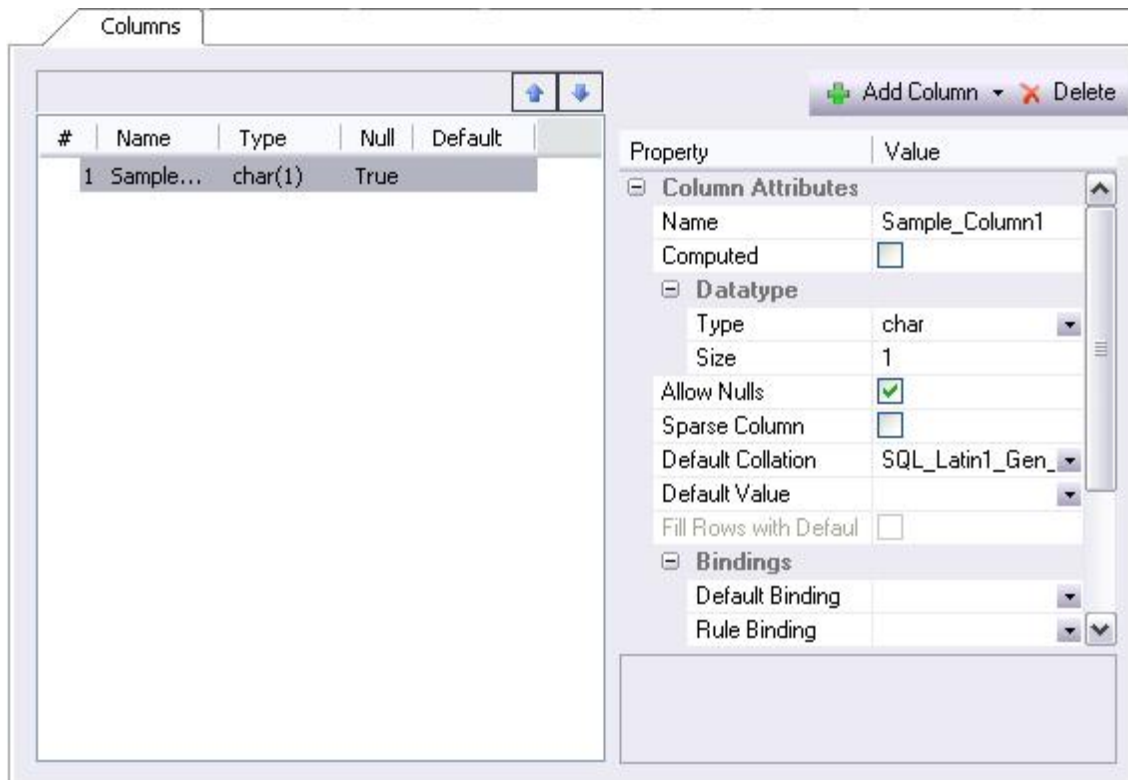
Rapid SQL builds the platform-specific SQL code, syntactically-correct and ready to run the first time. There is no SQL coding required in any of the Rapid SQL Object Creation Wizards.



## WORKING WITH AN EXISTING OBJECT USING THE OBJECT EDITOR

While the wizard offered you the option to automatically open an editor on creating the table, you can also manually open an editor.

- 1 In the Navigator, ensure that the **Tables** node is expanded and then right-click on your new table and select **Open**.



Object Editor features are as follows:

- All Object Editors provide standardized, multi-tabbed windows for each database object type.
- All Object Editors provide fully-functional toolbars for easy object management.
- Rapid SQL has full knowledge of the underlying DBMS system catalog, syntax and alteration rules, so the user can concentrate on what needs to be done, not on how to do it.
- Drop-down boxes allow you to easily move between owners and objects.
- The Rapid SQL Object Editors easily perform operations that would normally require painstaking and error-prone scripting, such as deleting or inserting columns in a table while preserving data, dependencies and permissions. Rapid SQL analyzes the database catalog to determine its structure, and then automatically generates the SQL script required for the extended alteration. For instance, when a full table alteration is required, Rapid SQL automatically unloads and reloads the data, eliminating tedious work.

- 2 Close the Object Editor window.

## OBJECT DOCUMENTATION AND REPORTING

Rapid SQL provides rich, detailed HTML Reporting for all database objects. Building a browser-ready report for any object is only a few mouse-clicks away.

- 1 Expand the **Tables** node, right-click on any table and select **Report** from the menu. A **Report** dialog opens.
- 2 Enter a destination **Report Home Page File Name**. This can be a network web server directory.
- 3 Enter a **Report Title** and click **Execute**.

The HTML report will automatically be displayed in the Rapid SQL application workspace. For example:

dbo.SAMPLE_TABLE				
<b>Object Type</b>	Table			
<b>Datasource</b>	ROMLABSQLO5_1 ( SQL Server 09.00.3073 )			
<b>Login</b>	sa			
<b>Database</b>	AdventureWorks			
<b>Report Date</b>	7/23/2012 17:28:27.894			

Columns				
Name	Datatype	Null	Default	Default Binding
Sample_Column1	char(1)	Yes		

The HTML report can be saved to a new file or referenced in the file named above.

**NOTE:** All HTML reports are browser-ready and suitable for posting directly to the web.

## WORKING WITH CODE, FILES AND DATA

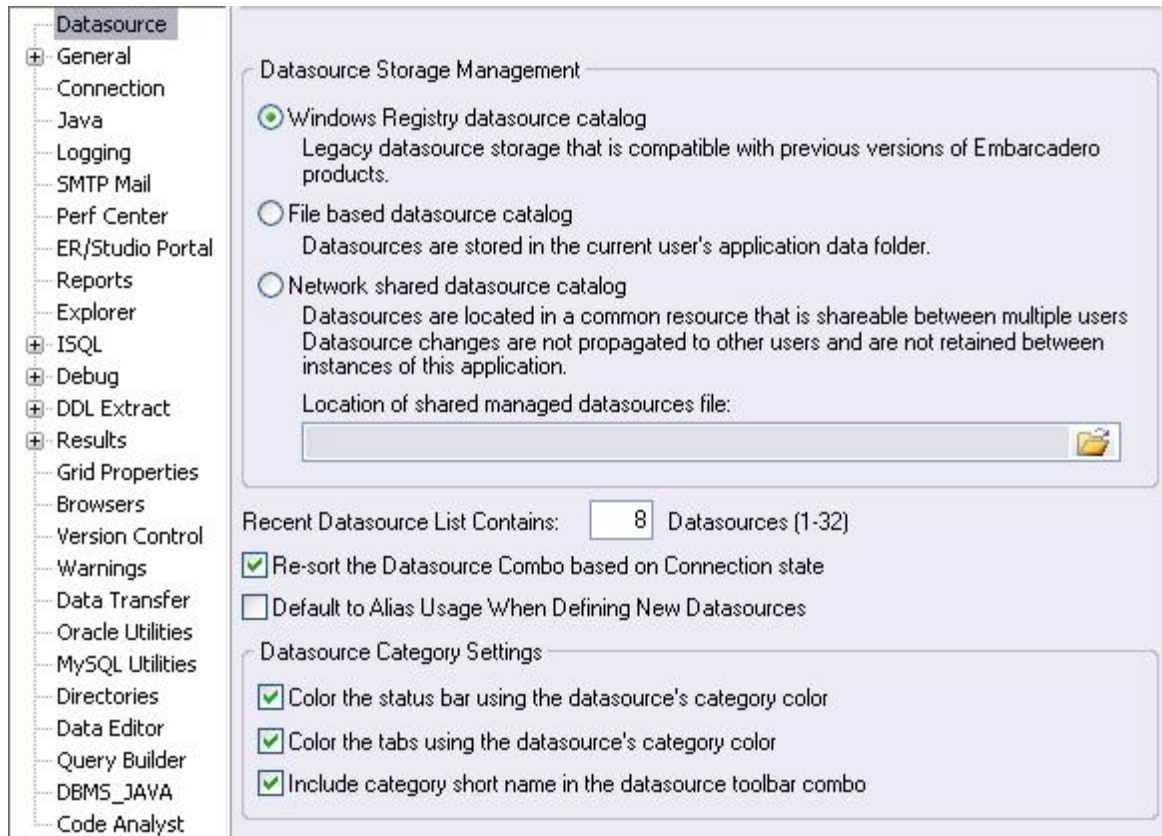
Rapid SQL provides many features and powerful development tools for creating and executing SQL code and working with data.

**NOTE:** For purposes of this exercise, we are only covering high-level functionality of the major features and tools within Rapid SQL.

## SETTING ENVIRONMENT OPTIONS

The **Options** dialog allows you to set the Rapid SQL development environment to meet your needs.

- 1 Select **File > Options** from the menu. The **Options** dialog opens.



The **Options** dialog has one page per option category. Select an option category in the left-hand pane and you can subsequently set options on that page. Options are applied when you click **OK**.

- 2 Close the **Options** dialog.

## FAVORITES TAB

The **Favorites** Explorer provides a drag-and-drop library interface of all supported DBMS syntax, SQL syntax, built-in functions, optimizer hints, and SQL-conditional syntax. Additionally, it provides the ability to create custom folders to store commonly-used code for quick and efficient access, as needed.

### To open the Favorites Explorer:

- 1 Select **View > Favorites**. The Favorites window opens.
- 2 Expand the **Microsoft** node and then expand the **Schema** sub-node.

- 3 Right-click the **Procedures** node and select **Open**. The selected code opens in the SQL Editor window and is ready for execution.
- 4 Right-click in the editor window and select **Close** from the context menu.

### To add a custom folder to the Favorites Explorer

- 1 Right-click the **Favorites > Schema** folder.
- 2 Select **New Folder** from the menu. A new folder is added to the bottom of the **Schema** folder.

### To close the Favorites Explorer:

- 1 Select **View > Favorites**.

## WORKING WITH SCRIPTS AND FILES

Rapid SQL extends the auto-generation of SQL code by allowing you to run your scripts across multiple databases at the same time.

### FILE EXECUTION FACILITY

Files containing SQL scripts can be added to the File Execution Facility and executed immediately or scheduled to run later.

- 1 On the **Tools** menu, select **File Execution Facility**. Rapid SQL opens the **File Execution Facility** dialog box.
- 2 To locate the file you want to execute, click **Add**. Use the **Add Files** dialog box to locate and select a file.
- 3 On the **Target** tab, select the datasources to run the script against.
- 4 On the **Output** tab, select the desired output option. For the purposes of this example, select **Graphical Output**.

**NOTE:** To enable the scheduling function for the script, you must select the **File Output** option.

- 5 If you want to send notification that the script has executed, on the **Notify** tab, complete the target information.
- 6 Click **Execute** if you want Rapid SQL to run the script against the target datasources. Otherwise, close the dialog without executing.

**NOTE:** Separate script output windows are created for each selected datasource.

## SCRIPT EXECUTION FACILITY

The **Tools** menu also offers a Script Execution Facility. Similar to the File Execution facility, it lets you type or paste the script to be executed.

## VIEWING DATA

Rapid SQL provides several options for browsing data. In addition, it gives you the ability to construct even the most complex SQL statements with point-and-click ease.

### SELECT \* BROWSING

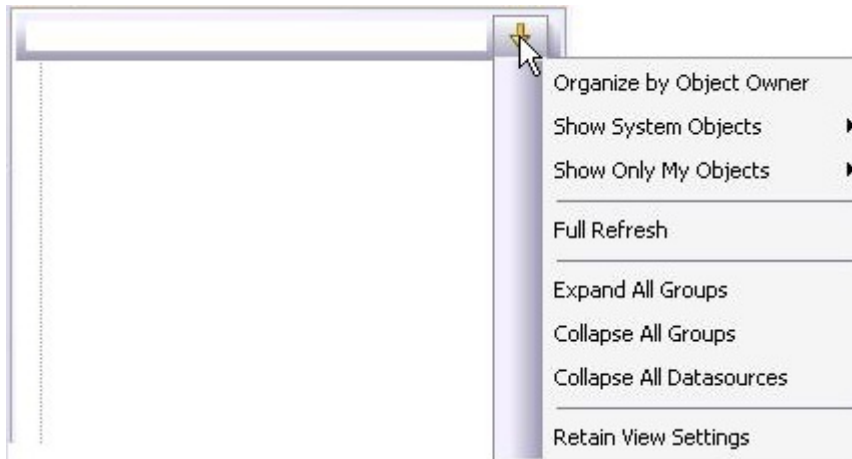
- 1 On the Datasource Navigator, expand the **MS SQL Servers** node.
- 2 Expand any database you know has table data, expand the **Tables** node, right-click a table, and then click **SELECT \* FROM**.

All columns and rows from the table are displayed in the active workspace.

- 3 Close the workspace window.

### RETAINING DATASOURCE NAVIGATOR VIEW SETTINGS

- 1 Click on the dropdown at the top of the Datasource Navigator.



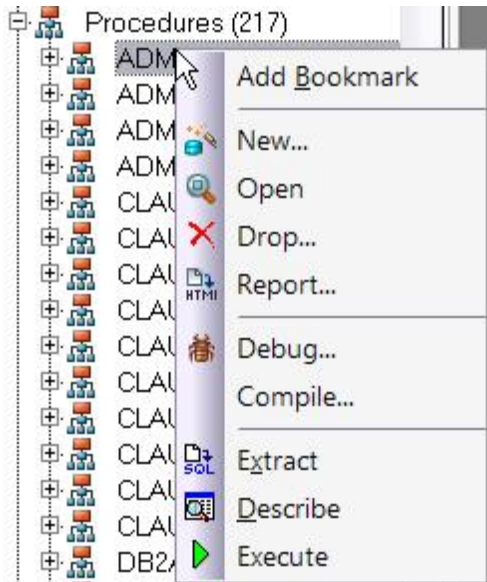
- 2 Select **Retain View Settings**.

The Navigator will open the next time just as you left it. All connections that were present when you closed Rapid SQL will be re-established.

## DATASOURCE NAVIGATOR BOOKMARKS

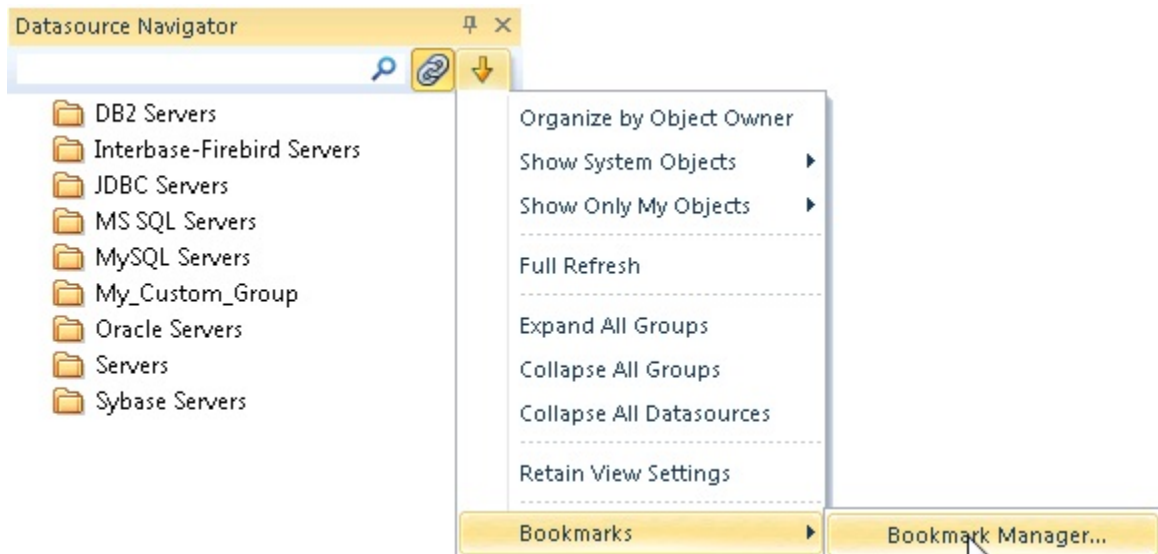
Rapid SQL allows you to set bookmarks for frequently visited database objects.

- 1 Right-click on any node in the Datasource Navigator.



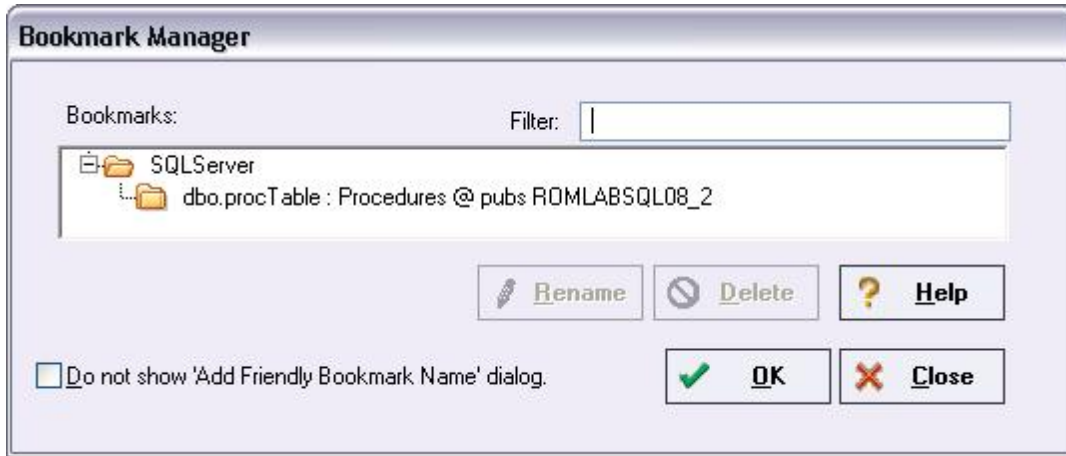
- 2 Select **Add Bookmark** and use the **Add Friendly Bookmark Name** dialog to optionally provide a new name, and create the bookmark.

After Bookmarks are defined you can use them to easily navigate to commonly used datasource resources. In this case, you would select the dropdown at the top of the Datasource Navigator, selecting **Bookmarks > SQLServer** and then selecting the bookmark you just created.



The **Bookmark Manager** handles maintenance of Bookmarks.

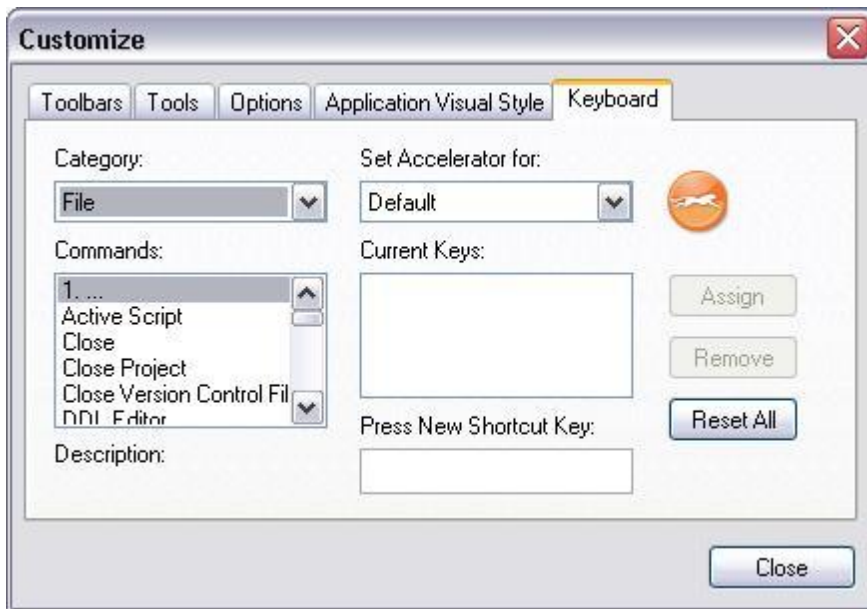
- 3 Select the dropdown at the top of the Datasource Navigator and then select **Bookmarks > Bookmark Manager**.



- 4 Close the **Bookmark Manager** dialog.

## SETTING KEYBOARD SHORTCUTS AND HOTKEYS

- 1 On the **Tools** menu, select **Customize**.
- 2 In the **Customize** dialog, go to the **Keyboard** tab.

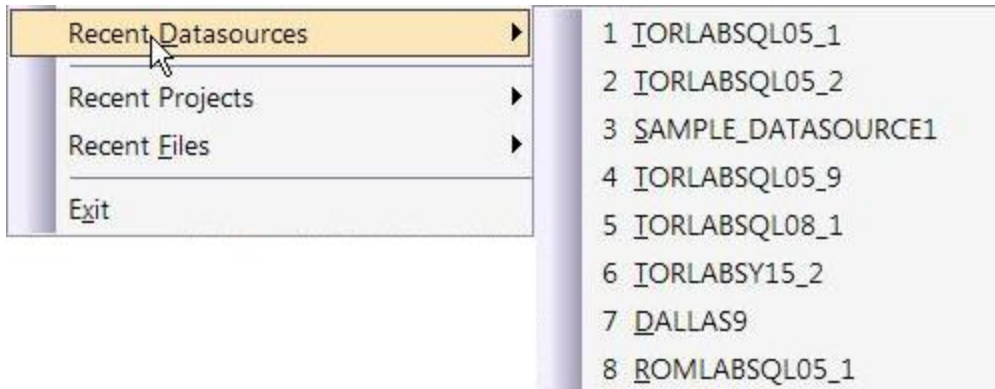


The **Keyboard** tab can be used to set keyboard shortcut hotkeys for all areas of Rapid SQL functionality.

- 3 Close the **Customize** dialog.

## REFERENCING MOST RECENTLY USED DATASOURCES

- 1 Select **File > Recent Datasources** and then select a datasource.



This will automatically place you on the datasource within the Navigator, ready to work with active connection.

## SESSION 3: SCRIPTING

This session looks at Rapid SQL's development environment:

- [Generating Code](#)
- [Right-click feature](#)
- [Automated error detection and coding assistance](#)
- [Other coding aids](#)

## GENERATING CODE

By providing several code generation and assistance options, Rapid SQL makes cross-platform development easy for developers of all experience levels.

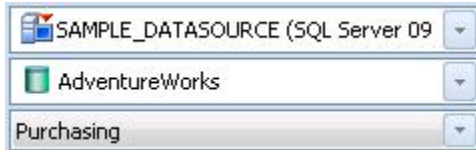
**NOTE:** The following examples build on the SAMPLE\_DATASOURCE registered earlier in this Evaluation Guide. These examples can be applied to any registered datasource for any of the supported platforms.

### CODE GENERATION FACILITY

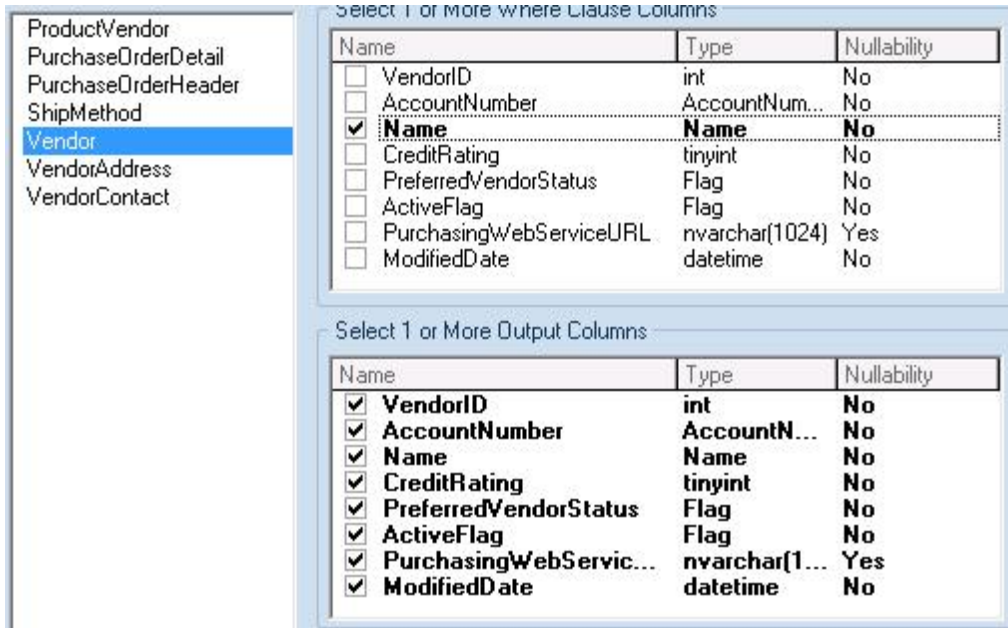
The Code Generation Facility can be used to create complete procedures, functions or packages revolving around views or tables.

- 1 From the menu, open **Tools > Code Generation Facility**.
- 2 Select the **SAMPLE\_DATASOURCE** datasource, the **AdventureWorks** database, and the **Purchasing** schema from the dropdown list boxes.





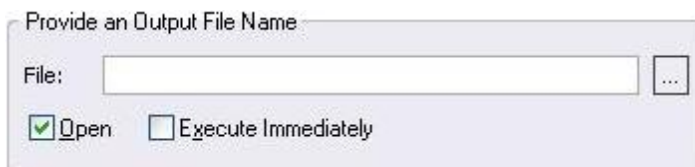
- 3 Select the **Vendor** table, **Name** as the input column and all columns for output.



- 4 Select **Select** as the code option.



- 5 Select a file to save the generated script and check **Open**.



- 6 Click **OK** and the DDL to create the procedure will be generated and displayed in an editable window, called the DDL Editor. You can edit the name of the new procedure and any of the generated code at this time. Name the new procedure **sample\_select\_vendors**.

- Click on the Execute button to submit the DDL and create the procedure.



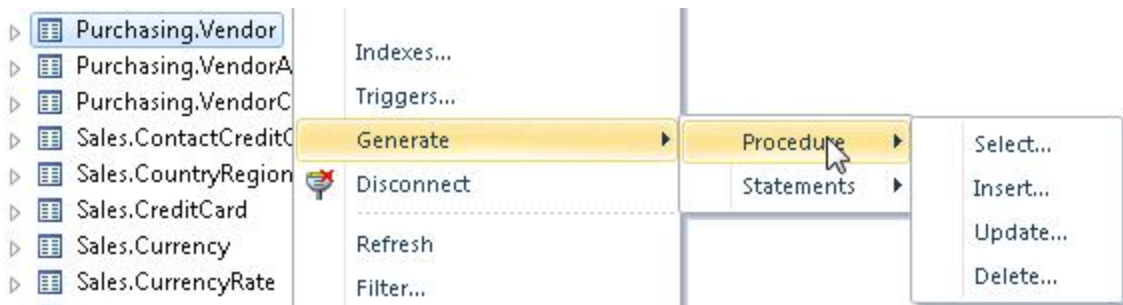
The indicated file will be saved on the selected directory.

**NOTE:** No SQL statement coding is required to generate complete stored procedures and packages. If applicable, Rapid SQL allows all generated code to be previewed and edited to fit any development need.

## RIGHT-CLICK FEATURE

Similar to the Code Generation Facility, the “right-click” code generation feature can be used to create complete procedures, functions or packages revolving around views or tables.

- From the Datasource Navigator tree, expand the **SAMPLE\_DATASOURCE > AdventureWorks > Tables** sub-node.
- Right-click on the **Vendors** table.



- Select **Generate > Procedure > Select**.
- Select **Name** as the input column, and leave all output columns selected.
- Click **OK** and the DDL to create the procedure will be generated and displayed in the DDL Editor. You can edit the name of the new procedure and any of the generated code. Name the new procedure **sample\_select\_vendors2**.
- Click on the **Execute** or **Step Execute** button to submit the DDL and create the procedure.



## AUTOMATED ERROR DETECTION AND CODING ASSISTANCE

Rapid SQL provides a range of features that detect or help you avoid errors and save keystrokes in developing your scripts.

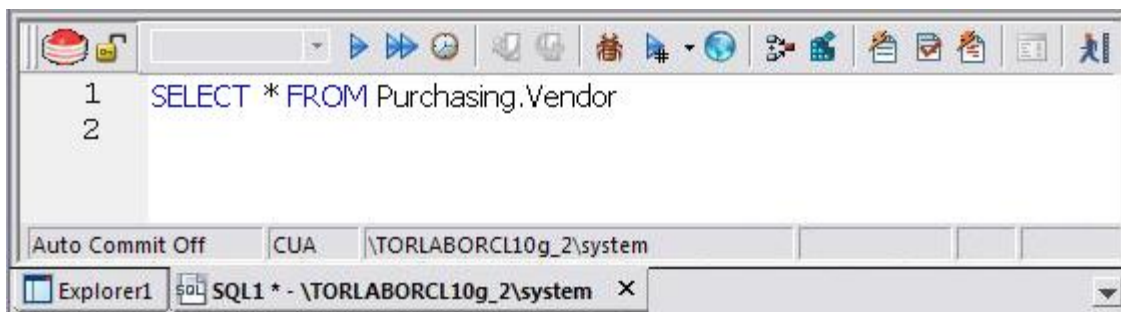
**To enable these features:**

- 1 On the **File** menu, select **Options**. The **Options** dialog opens.
- 2 In the left-hand pane, expand the **ISQL** node and then select **Code Assist**.
- 3 On the **Code Assist** panel:
  - Ensure that **Enable Code Complete** is selected.
  - Ensure that **Severity levels for semantic validation problems** has **Warning** selected.
  - Ensure that **Enable Real-time syntax checking** is selected.
- 4 Click **OK**.

**To see these features in action:**

- 1 On the **File** menu, click **New**, and then **SQL**.

Rapid SQL opens the SQL Editor window. You can add SQL code via your method of choice (free-form typing, retrieve from a file, paste copied code, etc.).



- 2 Type **SELECT \* FROM** and stop typing.

Note the error condition.

```
1 [X] SELECT * FROM
```

Rapid SQL can run a syntax check any time there is an interval of 1.5 seconds between keystrokes. You can also disable automatic syntax checking and only run a check when you manually initiate it. Syntax error annotation persists until you correct the problem.

- 3 This time type a fragment that includes the name of a nonexistent object, **SELECT \* FROM NON.OBJECT**, for example. For now, ignore any popups. The warning condition is a result of on-the-fly semantic validation.

```
1 [W] SELECT * FROM NON.OBJECT|
```

Rapid SQL notifies you when a script contains a reference to an object that Rapid SQL cannot resolve.

- 4 Type **SELECT \* FROM** followed by a space and then stop typing. If no popup appears, press CTRL+SPACE. The Code Complete suggestion box lets you select from objects or object name components such as databases or schema. This feature saves keystrokes and minimizes typing errors. See the online Help for full descriptions of these features.
- 5 Close the current SQL Editor window.

**To restore Rapid SQL settings:**

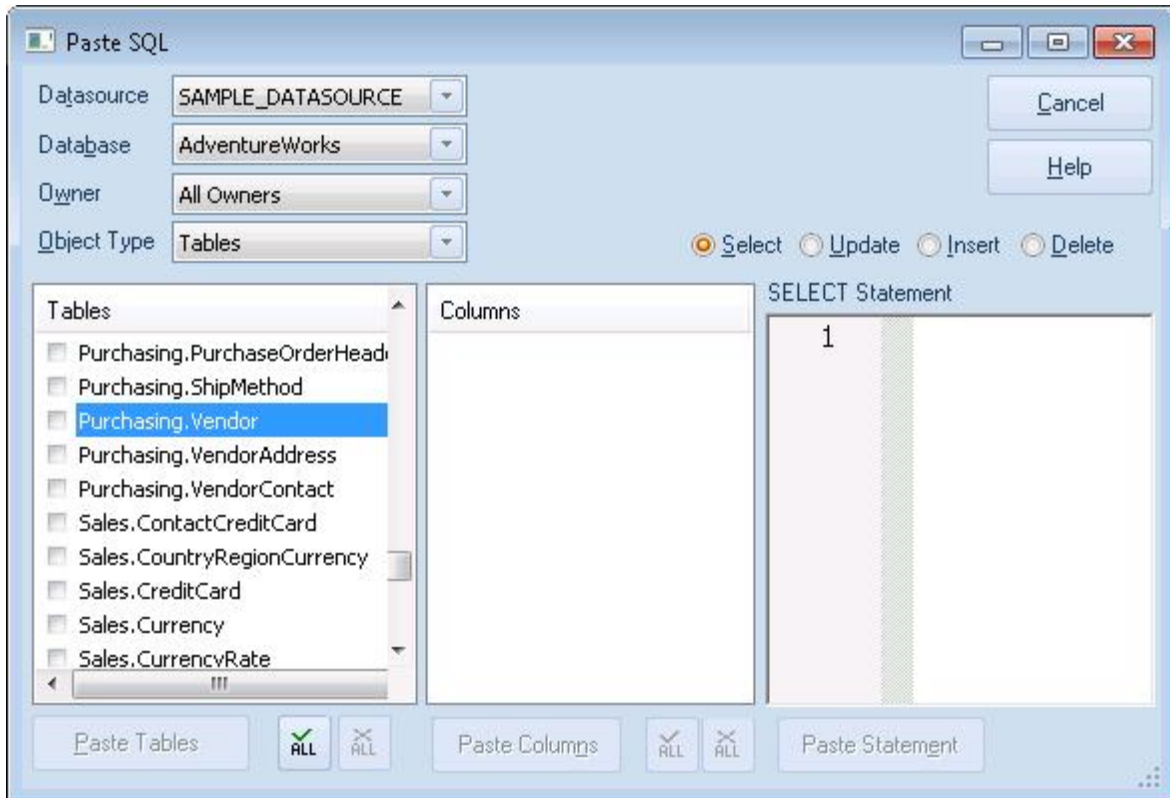
- 1 On the **File** menu, select **Options**. The **Options** dialog opens.
- 2 On the **Code Assist** panel, click the **Restore defaults** button.
- 3 Click **OK**.

## OTHER CODING AIDS

Rapid SQL provides extensive, easy-to-use coding aids for all of the supported DBMS platforms, throughout the application. Aids are provided in the form of ready-to-use code templates and blocks of syntactically correct code.

## PASTE SQL

- 1 From the Datasource Navigator tree, expand the **SAMPLE\_DATASOURCE > AdventureWorks** sub-node.
- 2 Select **File > New > SQL** to open an SQL Editor window.
- 3 Select **Edit > Paste SQL Statement** to open the **Paste SQL** window.
- 4 On the **Paste SQL** dialog, select **Sample\_Datasource** from the **Datasource** dropdown, **AdventureWorks** from **Database**, **All Owners** from **Owner**, and an **Object Type** of **Tables**.

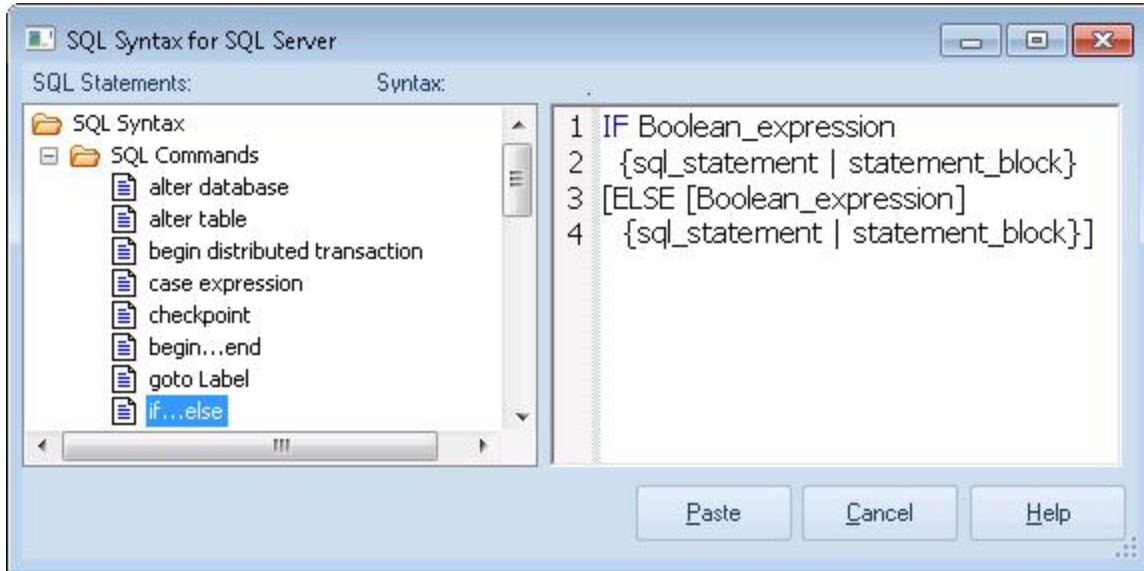


- 5 In the **Tables** list, select **Purchasing.Vendor**.
- 6 Under the **Columns** list, click **ALL**.
- 7 Click the **Select** radio button.
- 8 Click **Paste Statement** to copy the generated code to the SQL Editor window.

You can use the statement as is, or modify the code as needed.

#### PASTE SQL SYNTAX

- 1 Select **File > New > SQL** to open a fresh SQL Editor window.
- 2 Select **Edit > Paste SQL Syntax** to open the **SQL Syntax for SQL Server** window.



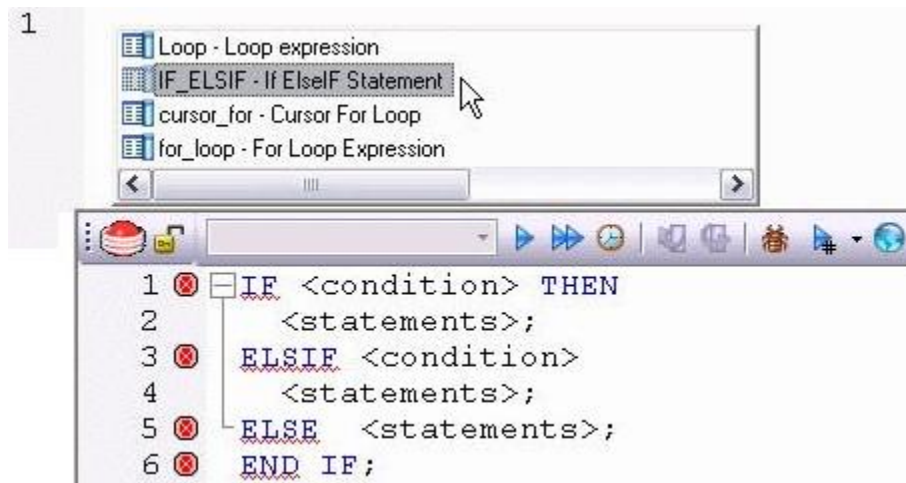
- 3 Select a template and click **Paste** to copy the code template into the SQL Editor window.
- 4 Add your own code to complete the needed operation.

## SESSION 4: WORKING WITH CODE WORKBENCH

The Code Workbench lets you configure resources for two SQL Editor features:

- Code Templates
- Auto Replace

Code templates are complete code blocks that can be easily added to open windows or scripts with a few keystrokes. When you type CTRL+SPACE, the Code Assist menu opens, letting you select a code template for insertion in the editor window.



Auto Replace lets you define shortcuts consisting of a few characters that represent longer character strings. Instances of these Auto Replace expressions are automatically replaced by the replacement string on activation events such as typing SPACE, TAB, or RETURN. This feature is useful for creating shortcuts for one-line commands or SQL statement subsets, or even to detect and fix common typographical errors such as **teh** for **the**.

For example, consider an Auto Replace definition with an expression of **sel** to represent **Select \* From**:



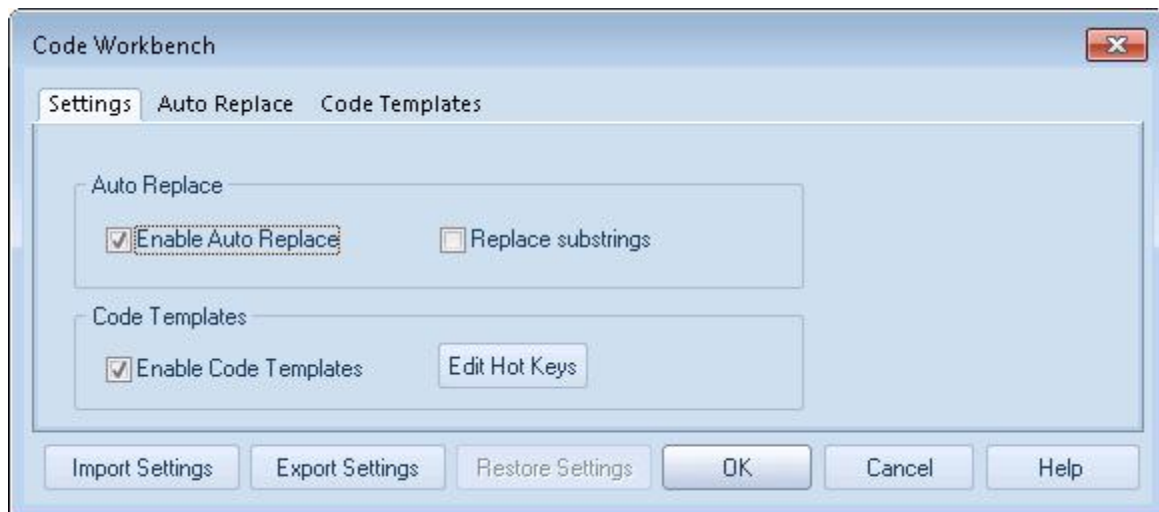
If the associated activation event includes a SPACE, then on typing **sel** followed by pressing SPACE, the following replacement occurs.



Rapid SQL loads a default set of Auto Replace and Code template definitions at startup, but you can also add, edit, and delete definitions. In addition, you can save sets of definitions to file and subsequently load specific sets of definitions, allowing you to customize your templates to different platforms or development projects.

#### To invoke Code Workbench settings:

- 1 Select **Tools > Code Workbench**.



The **Settings** tab lets you enable the Auto Replace and Code Template features.

- 2 Inspect the **Code Templates** and **Auto Replace** tabs.
- 3 Click **OK**.

## SESSION 5: BUILDING A DATABASE PROJECT

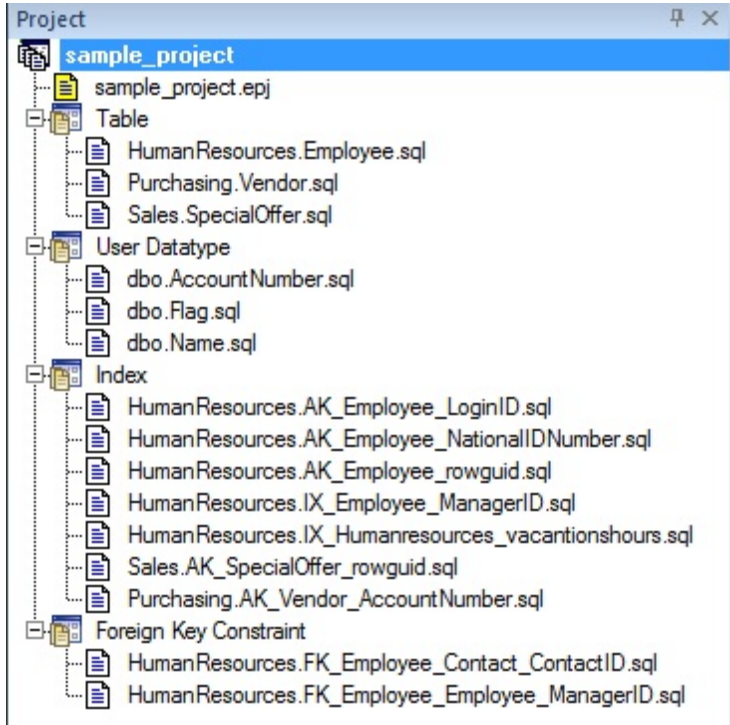
### CREATING A NEW RAPID SQL PROJECT

Rapid SQL provides an excellent team development environment by allowing you to reverse engineer live database objects into off-line SQL source code files. You can subsequently perform tasks such as distribute the files or add them to a Version Control System (VCS). This example will reverse engineer the table objects from the Microsoft SQL Server **AdventureWorks** database into a Rapid SQL project

- 1 Select **File > New > Project** to open the wizard.
- 2 Enter **sample\_project** as the name, and accept the default target directory. Select **From Database** and click **OK**.
- 3 On the **Connection** page, select **SAMPLE\_DATASOURCE** and click **Next**.
- 4 On the **Catalogs** page, select **AdventureWorks** and click **Next**.
- 5 Click **Schemas** to open the **Schema Selection** dialog. Select **Human Resources**, **Purchasing**, and **Sales**, and then click **OK**. The **Object Selection** page opens.
- 6 Under **Object Types**, select **Tables**. Then, under **Objects**, expand the **Tables** node and select the **Purchasing.Vendor**, **Sales.SpecialOffer**, and **HumanResources.Employee** tables. Click **Next**.
- 7 On the **Options** page, leave the default selections and click **Finish**.
- 8 When the **Execute** page shows that reverse engineering is complete, click **Continue**.

The **Project** tab displays the results of the reverse engineering.





Before closing the **Project** tab, investigate the individual project elements. In addition, check the **File** and **Project** menus for project and version control options.

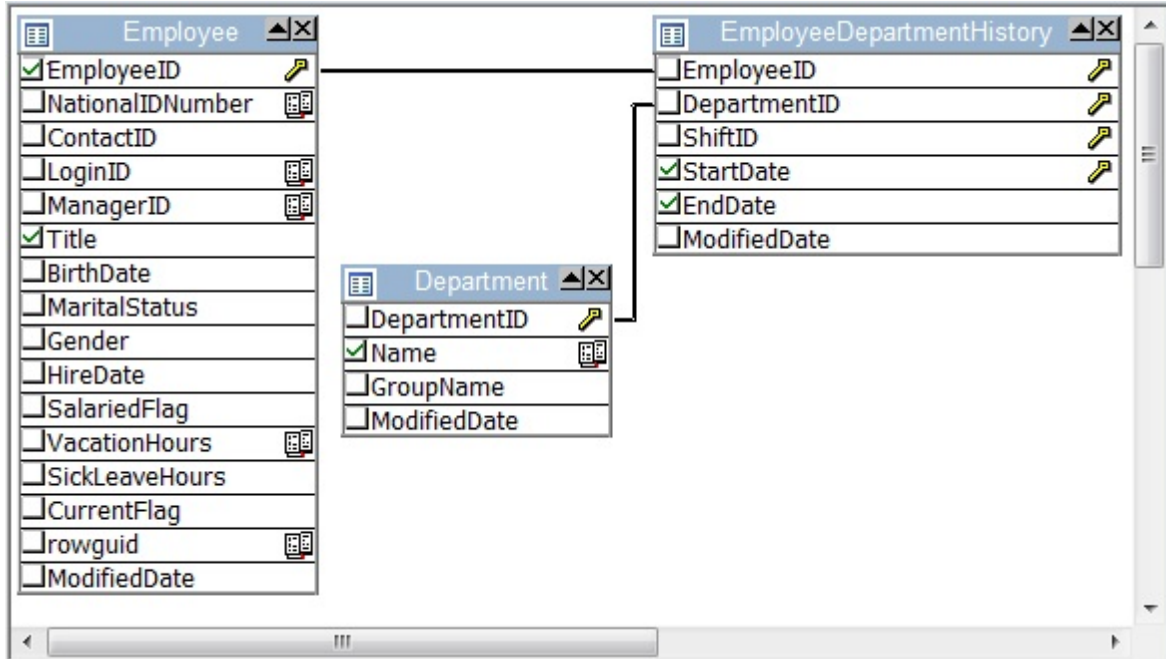
## SESSION 6: VISUAL QUERY BUILDER

Rapid SQL gives you the ability to construct complex SQL statements with point-and-click ease using the Visual Query Builder.

- 1 From the Navigator tree, right-click on the **HumanResources.Employee** table and select **Build Query**.

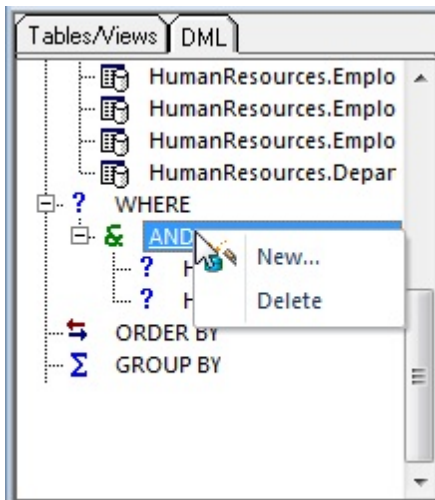
The table is automatically added to the Query Builder workspace.

- 2 On the **Tables/Views** tab, right-click on the **Department** table and select **Add**.
- 3 Similarly, on the **Tables/Views** tab, right-click on the **EmployeeDepartmentHistory** table and select **Add**.
- 4 Rearrange the contents of the window to look like the following graphic.
- 5 Select the columns indicated in the graphic.



Note that the tables are automatically identified as being joined by any columns with the same name and datatype. Also, note that the query is being built in the lower pane.

- 6 Click on the **DML** tab to expose the visual query building clauses and options. You can right-click on any clause to easily add the code to the query.



- 7 Experiment with adding, deleting, and modifying clauses.
- 8 Click the **Execute** button to execute the query.



The results will display in the lower window.

Before closing the Query Builder, experiment with additional options. Try selecting a different statement type, such as **Insert** or **Update**, from the dropdown at the top of the Query Builder window. Use the different clauses on the **DML** tab.

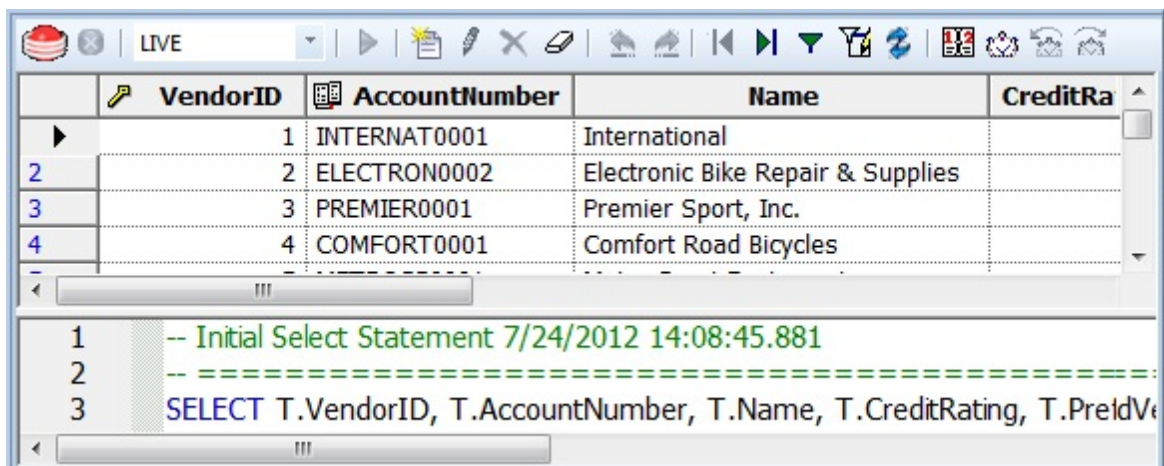
**NOTE:** Any visual query builder session can easily be saved to a file for later use.

## SESSION 7: LIVE DATA EDITOR

- 1 From the Navigator, right-click on the **Purchasing.Vendor** table and select **Edit Data**.
- 2 In the **Data Editor Filter** dialog, click **Add All** to add all columns to the editing session.

At this point, you can add a WHERE clause that will filter for only the desired data. Note that Rapid SQL builds the SQL to retrieve the data to be edited in the **Select Statement** area.

- 3 Click **OK**. A Data Editor opens.



Note the dropdown at the left of the toolbar. The editing window has **LIVE** and **BATCH** modes:

- **LIVE** mode commits your changes each time you move to a new row.
- **BATCH** mode will allow you to move within the window and commit your changes when ready. Changes made in **BATCH** mode can be cancelled by selecting the **Reload Data** icon.



At any time during the session, you can change the filter parameters by selecting the **Filter Data** icon.



## SESSION 8: CODE ANALYST

The Code Analyst allows you to capture run-time statistics on executable database objects, including stored procedures and functions. Not only can you capture statistics for single objects, but you can group more than one object.

### To get started

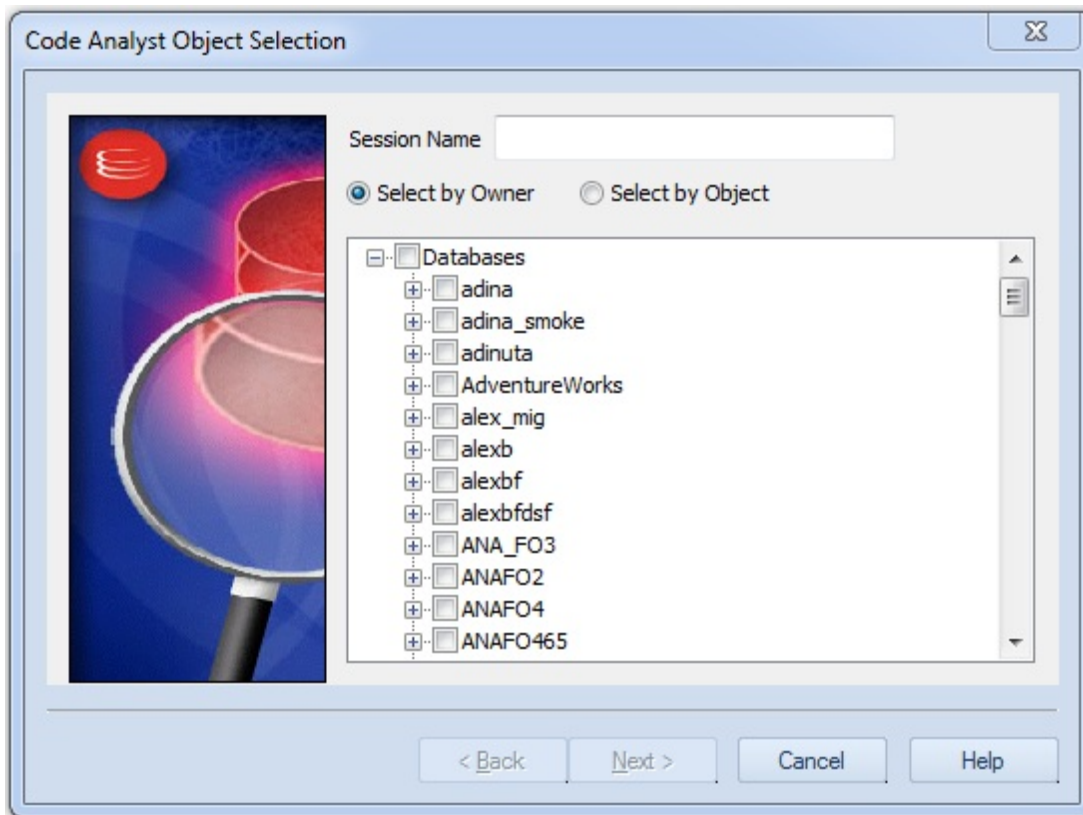
- 1 Select **Tools > Code Analyst**.

**NOTE:** In order for Code Analyst to run, 5 repository tables will be created on the database. Select the database you would like the tables to be installed on and press **OK**. Once the tables are installed, you're ready to start defining a session.

- 2 On the Code Analyst toolbar, click the **Create New Collection** button.



- 3 On the **Code Analyst Object Selection** dialog, provide a **Session Name**, locate and select the objects to be executed, and click **Next**.



- 4 Use the **Code Analyst Object Initialization** dialog to initiate providing input parameters as required, change the order of execution, and when ready, click **Finish**.

Once the session has been run, the total time for the execution is displayed in the **Run Summary** tab.

- 5 Select the other tabs to view the tabular and graphical representation of the execution details on your selected objects. For example:
  - The **Run Detail** tab shows a breakdown of the different objects that make up the session.
  - The **Unit Detail** tab contains the specific time measurements for individual SQL statements.
- 6 Close the **Code Analyst** window.

## SESSION 9: SQL DEBUGGING AND PROFILING

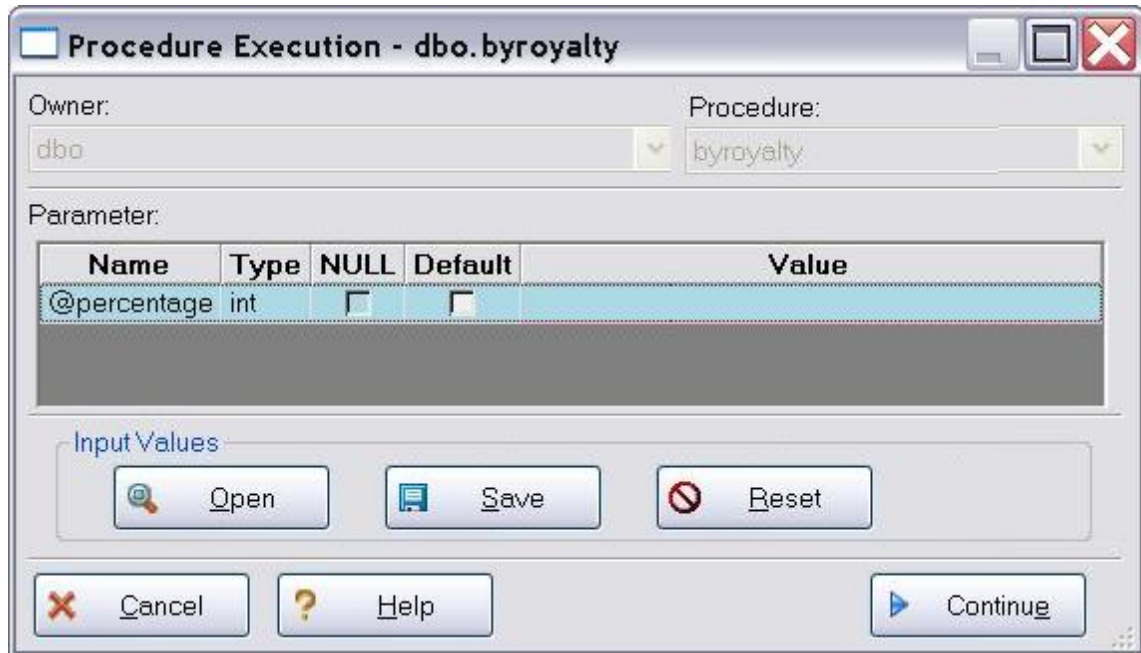
Rapid SQL offers the following facilities that help you test and optimize code:

- [SQL Debugging](#)
- [SQL Profiling- Oracle Only](#)

### SQL DEBUGGING

The SQL Debugger is another database productivity tool that lets you debug SQL Server, Oracle, Sybase ASE or DB2 stored procedures, as well as Oracle functions. SQL Debugger simplifies the task of finding coding errors.

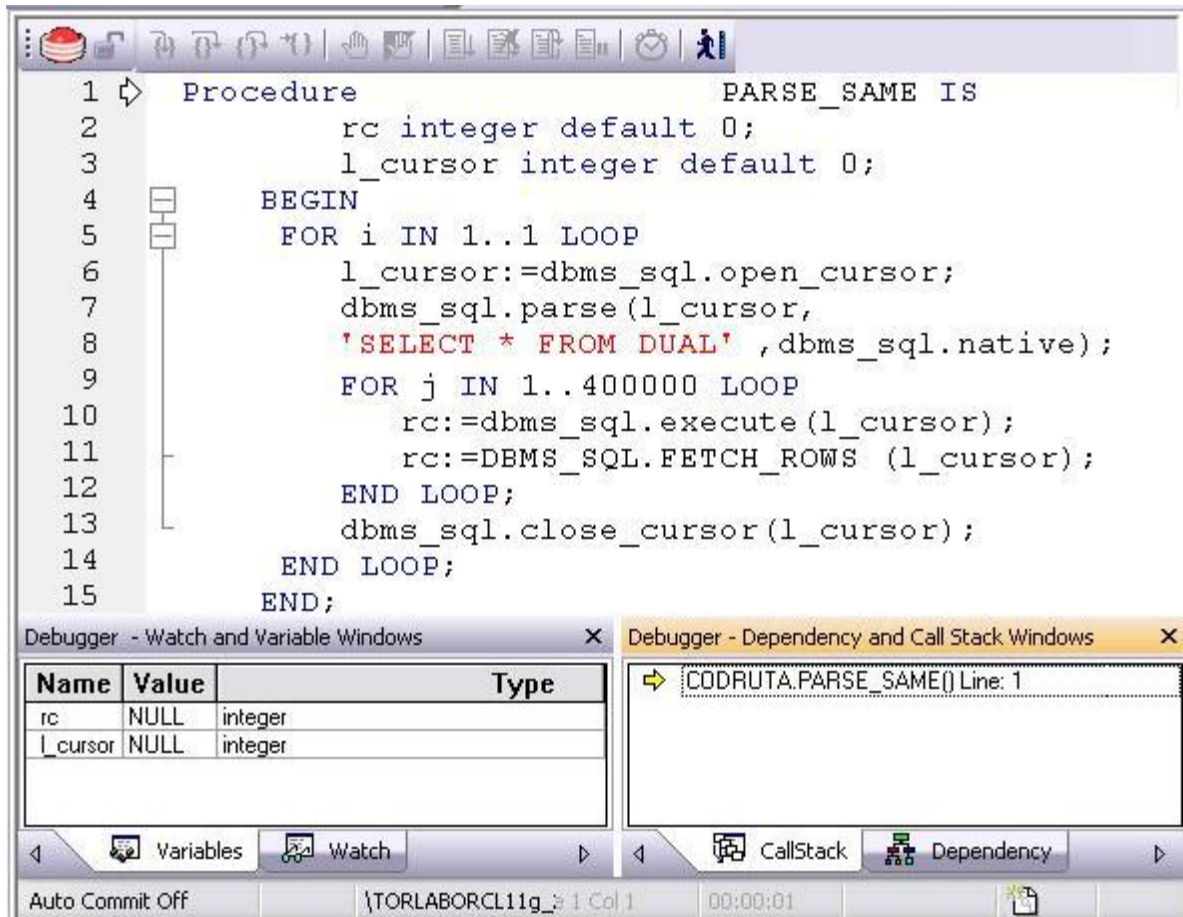
- 1 In the Navigator, expand the **Procedure** or **Function** node.
- 2 Right-click the object and select **Debug** from the context menu.
- 3 If the procedure or function takes input parameters, the **Procedure Execution** window prompts you to enter values.



- 4 Enter input values and press **Continue**.

**TIP:** Rapid SQL allows the user to save the input variable values to a file for later use. This is very helpful for procedures/functions with many input variables that need to be run repeatedly.

The application opens the SQL Debugger Interface.



The Debugger features basic execution, line-by-line execution, breakpoint support, and other common debugging features. For details, refer to the relevant online Help topics.

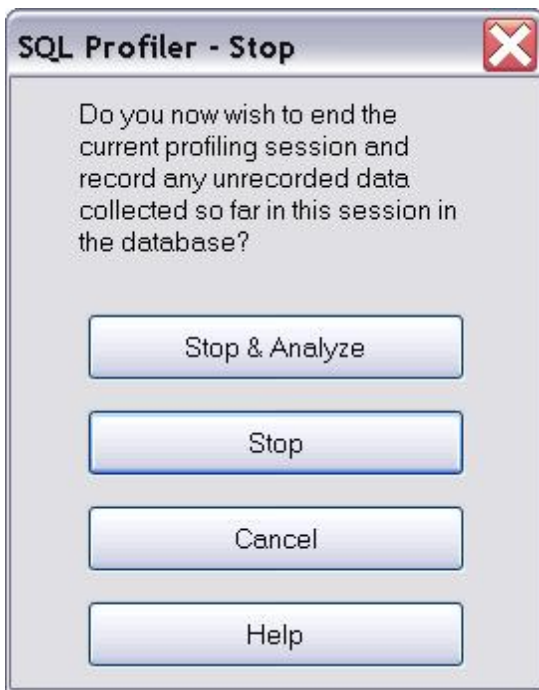
## SQL PROFILING- ORACLE ONLY

The SQL Profiler within Rapid SQL provides the ability to capture the metrics of various PL/SQL programmable objects as they are executed in the database. It quickly identifies performance bottlenecks by first calculating the overall runtimes of objects like Oracle packages, and then computing the amount of time each line of PL/SQL code spends executing. Information is presented in an easily viewed, drill-down format.

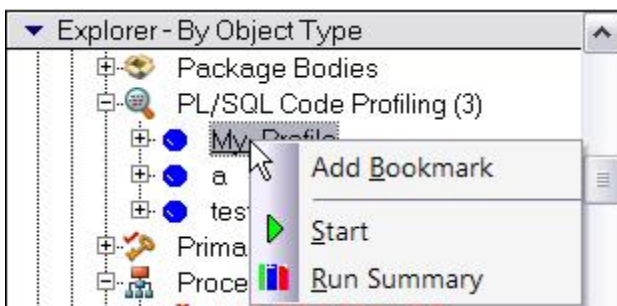
- 1 To start a profiling session, use the **Tools** menu option and select **SQL Profiler > Start**.
- 2 Enter a name for the profiling session or select an existing name from the dropdown. Press **OK**. The Profile session is now active.



- 3 Execute the programmable object (i.e. Stored Procedure) you wish to capture metrics on.
- 4 When finished, select **Tools > SQL Profiler > Stop**. The **SQL Profiler – Stop** dialog window prompts you to select an option.



- 5 Press **Stop**.
- 6 On the Navigator, expand the **PL/SQL Code Profiling** node.

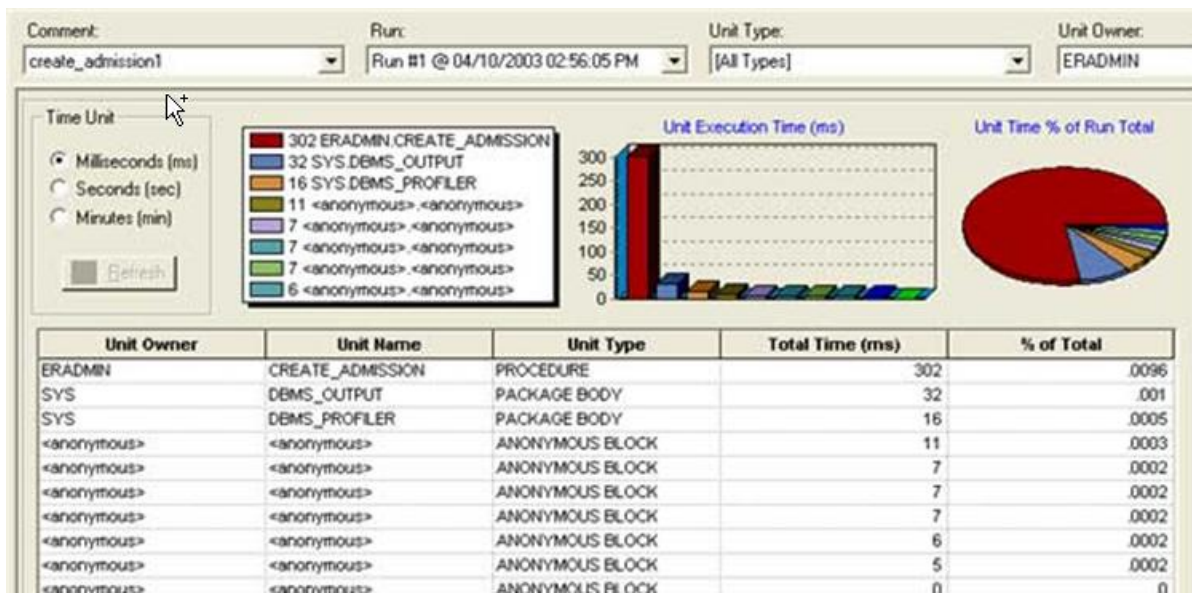




- 7 Right-click on the profile session and select **Run Summary**. The **Run Summary** window opens.

Run Summary			
Comment	Run ID	Run Date	Total Time (ms)
My_Profile	60	01/09/2009 12:00:43 PM	47261
My_Profile	61	01/09/2009 12:01:52 PM	5484

- 8 Select a session and select **Run Detail** from the right-click menu. The **Run Detail** screen appears allowing you to view the metrics for this execution in both a graphical and text format.



- 9 To drill down further into the data, highlight a unit and select **Unit Detail** from the right-click menu. Scroll through the Source window to view the times for each statement.
- 10 To compare 2 cases, select the 2 cases you wish to compare (shift-click to select the second case) from the **Run Summary** screen and select **Compare** from the right-click menu. The **SQL Profiler Run Comparison** screen appears.

See the relevant online Help topics for more information on profiling.

