



Product Documentation

Embarcadero® DBArtisan™

Quick Start Guide

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Introducing DBArtisan

DBArtisan is an industry-leading database administration solution for managing Oracle, Microsoft SQL Server, Sybase, PostgreSQL, IBM DB2, and MySQL databases. Its cross-platform capability allows users to efficiently manage heterogeneous database platforms easily using a single front-end tool. Using DBArtisan, users boost their productivity by using a single tool for all their databases, regardless of the vendor.

About DBArtisan

Your new application 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.

Datasource and Server Management: 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: Your application 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.

Coding Environments/Editors: Fully-featured environments dedicated to SQL, DDL and Active Script development are provided. 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.

Schema and data utilities (DBArtisan only): Schema extraction, migration, and publication wizards let you quickly extract and move schema and data across environments and even across DBMS types. DBMS-specific import/export, load/unload, and backup/restore utilities are also available. 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, Version Control, and Script Library: 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. DBArtisan 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 DBArtisan environment, you have access to database and file search facilities, use the 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:

Introducing DBArtisan

- The DBArtisan Analyst Series includes advanced space, capacity, performance and backup management capabilities. They let you predict and prevent storage-related problems, trend data and object growth over time, and pinpoint performance bottlenecks.
- Debuggers, available for IBM DB2 for Linux, Unix, and Windows, Oracle, Sybase, and SQL Server, let you test functions and procedures. A Profiler is available for Oracle datasources.

Technical Requirements

Before using DBArtisan, please verify that your environment meets the requirements listed below:

Note: Users need full registry privileges during the installation and access to the keys under HKEY_CURRENT_USER in the registry after installation.

Browser Requirements

DBArtisan requires Microsoft Internet Explorer 11 or later.

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

DBArtisan supports the following operating systems:

- Windows XP SP" (32-bit and 64-bit)
- Windows Vista (32-bit and 64-bit)
- Windows 7 (32-bit and 64-bit)
- Windows 8 (32-bit and 64-bit)

XP Support Notes

Windows XP has two user security groups: Users and 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 to install and use Embarcadero Technologies applications. Because Restricted Users are members of the Users Group, they cannot install and run Embarcadero Technologies applications.

Use the **Group Membership** tab to determine your group and review the Microsoft security guidelines. On the **Control Panel**, open **User Accounts**. On the **Users** tab, select a user and then click the **Properties** button. Click the **Group Membership** tab.

Vista and Windows 7 Support Notes

Windows Vista UAC and Windows 7 provide two user types: Standard users and Administrators. DBArtisan can be installed or uninstalled by an administrator or by a standard user using an administrator token. Standard users can run DBArtisan. For the purpose of running DBArtisan, default standard user token privileges should not be modified. Modifying standard user token privileges can result in licensing issues that will prevent DBArtisan from operating correctly.

32-bit versus 64-bit Application Considerations and Restrictions

If you install the 64-bit version of DBArtisan, and you are using custom drivers, you must be using 64-bit versions of those drivers when using the 64-bit version of DBArtisan. Similarly, 32-bit versions of custom drivers must be used with the 32-bit DBArtisan installation.

For version control integration, if you install the 64-bit version of DBArtisan, you can work with either a 32-bit or 64-bit MSSCCI provider. The feature is controlled from the Options Editor's **Version Control** tab (**File > Options > General > Version Control**).

DBMS Support and Connectivity Options

Dedicated Support Connectivity Options

DBArtisan provides dedicated connectivity to a specific version range of IBM DB2 for Linux, Unix, and Windows, IBM DB2 for z/OS, Microsoft SQL Server, MySQL, PostgreSQL, Oracle, Sybase, and Teradata databases. The following connectivity options are provided:

- **Native Embarcadero drivers:** DBArtisan is packaged with a set of native drivers, each requiring a DBMS-specific client to be installed.
- **JDBC drivers:** DBArtisan can connect to a datasource more directly using one of the packaged, third-party JDBC drivers. No additional connectivity components need to be installed. One or more third-party drivers, tested against DBArtisan, are installed with DBArtisan.

The following table provides a summary of resources/requirements for connectivity to dedicated DBMS platforms. For each platform, it lists supported versions, the client software that must be installed if using native Embarcadero clients, and the third-party, Type 4 JDBC drivers packaged with DBArtisan.

DBMS Support and Connectivity Options

DBMS Platform	Supported Versions	Client Required for use with native Embarcadero drivers	Packaged JDBC Driver	Source & License
Apache Hive (Technical Preview)*	0.13.1	Simba Hive ODBC Driver (v1.4.13.1013) Hortonworks Hive ODBC Driver (v1.4.08.1008) Cloudera ODBC Driver for Apache Hive (v2.05.10.1003)	Apache Software Foundation - Apache Hive JDBC v0.13.1	license
IBM DB2 for z/OS	v8, v9, and v10	DB2 UDB Client for Windows 8.0 or later	IBM Data Server Driver for JDBC	-
IBM DB2 for LUW	Versions 9.0 - 10.0	IBM DB2 LUW Client for Windows 8.0 or later	IBM Data Server Driver for JDBC	-
Microsoft SQL Server	2005 (All editions including 2005 Express Edition for 32-bit x86 and 64-bit Itanium & x86-64) 2008 2012 2014	Microsoft SQL Server Client Library	JTDS Type 4 JDBC Driver for Microsoft SQL Server Microsoft SQL Server JDBC Driver	LGPL source , license
MySQL	4.x	MySQL Connector/ODBC Driver 5.2.x Driver - MySQL Connector/ODBC driver 3.51.x Driver	MySQL Connector/J JDBC Driver	GPL, source & license
Oracle	Oracle 9i, 10g, 11g, and 12c	Oracle SQL*Net Client	Oracle JDBC Thin Driver	-
PostgreSQL	9.3 minimum Specifically-supported PostgreSQL-based database products include Greenplum, Pivotal HAWQ, and BigSQL.	PostgreSQL ODBC Driver (latest version recommended)	PostgreSQL JDBC Driver	BSD, license
Sybase ASE	Sybase 15.7 - Sybase 16	Sybase Open Client	JTDS Type 4 JDBC Driver for Microsoft SQL Server Sybase jConnect JDBC Driver	LGPL, source , license
Sybase IQ	12.7, 15.4, 16	SQL Anywhere ODBC drivers for Sybase IQ 12.7 Sybase IQ 32-bit ODBC drivers	Sybase jConnect JDBC Driver for Sybase IQ	-

Teradata (Technical Preview)*	13.10, 14.0, 14.10, and 15.0	Teradata ODBC driver for Windows (version 15 recommended)	Teradata JDBC Driver	-
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* **About Technical Previews** - Technical previews are intended to introduce a new DBMS platform only. The available functionality is typically minimal. For example, command Line startup, standard datasource registration and connection features, limited Datasource Navigator/Explorer tree functionality, a minimal set of object actions, as well as SQL Editor execution and related, common SQL Editor functionality such as Query Options, Paste SQL Syntax, and Paste SQL Statement. Access may not be covered under SE or trial licenses. Contact Oz.Basarir@embarcadero.com to obtain a separate license for a platform designated as a Technical Preview.

Embarcadero Team Server 2016 Support

DBArtisan can make use of datasource definitions stored on an Embarcadero Team Server 2016.

Generic JDBC/ODBC Connectivity

Generic JDBC/ODBC connectivity to non-dedicated DBMS systems or non-database datasources is also provided. DBArtisan can connect to a datasource using a customer-provided, third-party JDBC version 4.0 or ODBC version 3.0 driver. Minimal DBArtisan 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, DBArtisan 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 DBArtisan 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.

Specifically-tested JDBC/ODBC Connectivity Products: Apache Hive/Hadoop

DBArtisan has been successfully tested against Apache Hive/Hadoop datasources using the Hortonworks ODBC driver. Similarly, Cloudera Impala datasources have been tested using the Cloudera JDBC driver. In both cases, SQL querying and a [Datasource Navigator/Explorer](#) tree are available.

DBMS Versions no Longer Supported

As of this release, DBArtisan is no longer being tested against Sybase ASE versions before 15.7.

Installing and Licensing DBArtisan

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 DBArtisan. After installation, you must license the application.

The following topics walk you through this process:

- [Technical Requirements](#)
- [DBMS Support and Connectivity Options](#)
- [Installing DBArtisan](#)
- [Licensing Your Product](#)

Installing DBArtisan

To install the application successfully, you must complete each panel of the installation wizard. 64-bit and 32-bit versions of DBArtisan are available with the trial version, which can be downloaded from <http://www.embarcadero.com/products>.

The DBArtisan installation wizard installs all corresponding files on your machine. The installer offers common options such as license agreement, file and folder selections, and shortcut options. An application-specific option lets you associate file suffixes of elements such as SQL scripts with DBArtisan.

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

The panels presented by the wizard vary depending on whether you are upgrading or performing an initial installation.

Caution: If you have not registered a license when you start a DBArtisan installation, you will be prompted to register a license. For more information, see [Licensing Your Product](#).

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

Licensing Your Product

Each Embarcadero client application requires one or more licenses to run. An Embarcadero product, such as DBArtisan, has a baseline license that provides basic feature support for that product. Also, 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](#)
- [DBArtisan License Modules, DBMS Support, and Feature Availability](#)
- [DBArtisan 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 license module currently registered.

Understanding Trial, Workstation, and Networked Licenses

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

Trial licenses 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.

Workstation licensing A license or set of licenses is tied to a particular workstation. The product can only be used on that workstation.

Networked licensing 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: *Concurrent* and *Networked Named User*. 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 [Online/Offline Mode and Concurrent License Checkout](#).

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

DBArtisan License Modules, DBMS Support, and Feature Availability

Individual license modules correspond to the DBMS platforms you are licensed to use. Also, 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** (DBArtisan): Standard Edition features plus SQL Debugger and SQL Profiler.
- **Workbench** (DBArtisan): Professional Edition features plus Performance Analyst, Space Analyst, and Capacity Analyst.

DBArtisan XE License Modules, DBMS Support, and Feature Availability

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

- **XE Pro** (DBArtisan): Provides baseline support including datasource management, object management, SQL editing and execution, and standard tools and utilities, SQL Debugger and SQL Profiler.
- **Analyst Pack** (DBArtisan): Provides access to Performance Analyst, Space Analyst, and Capacity 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 DBArtisan 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 the 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](#).

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](#) 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, and 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](#).

Registering By Phone

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

- o Developer Network credentials
- o The registration code displayed in the Embarcadero License Registration dialog that appears when you start an unlicensed application
- o The product base license serial number
- o 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 through 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 through 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 startup, if multiple concurrent license categories are available, you are prompted to select a category to use for this DBArtisan 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 the 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 on startup and checked back in on shutdown.

You can also use a license in offline mode. When you explicitly check out a license for offline use, you can use the license 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 the license 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 DBArtisan usage. The license is not actually checked in until you shut down DBArtisan.

DBArtisan Tutorial exercises

The exercises that follow walk you through DBArtisan's major functional areas. After completing these exercises, you will have the foundation you need to explore the many features and benefits of DBArtisan. You'll have learned how to competently manage the major database administration disciplines using DBArtisan's standard cross-platform console. Also, you will have a solid understanding of DBArtisan's more advanced Space, Performance, and Capacity management capabilities.

This guide is divided into 10 sessions:

- [Session 1: Getting Started with DBArtisan](#)
- [Session 2: Object and Schema Management](#)
- [Session 3: Database Security Management](#)
- [Session 4: Space Management](#)
- [Session 5: SQL Management](#)
- [Session 6: Job Management](#)
- [Session 7: Data Management](#)
- [Session 8: Performance Management](#)
- [Session 9: Capacity Management](#)
- [Session 10: General Utilities and Tools](#)
- [Session 11: Using Performance IQ](#)

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

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.

Session 1: Getting Started with DBArtisan

Your first tasks in getting familiar with DBArtisan are as follows:

- [Starting the DBArtisan Application](#)
- [Registering Cross-Platform Datasources to DBArtisan](#)
- [Setting up the Datasource Explorer](#)
- [Exploring General Usability Features](#)

Starting the DBArtisan Application

How you start DBArtisan 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 DBArtisan is always in the form **Programs > Embarcadero DBArtisan $version\ identifier$ > DBArtisan $version\ identifier$** , where *version identifier* reflects the version you are running.

To get started

1. Run DBArtisan.

The first time DBArtisan 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, DBArtisan can find any active datasources being used by those tools. Also, DBArtisan 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.

Proceed to [Registering Cross-Platform Datasources to DBArtisan](#).

Registering Cross-Platform Datasources to DBArtisan

The Datasource Registration Wizard walks you through the process of registering a datasource for use with DBArtisan.

1. On the **Datasource** menu, select **Register Datasource**. DBArtisan opens the wizard, initially prompting you for the DBMS type.
2. Select **Oracle** as the database type and then click **Next**. DBArtisan opens the next panel of the Datasource Registration Wizard.

3. Ensure that **User defined** is selected and provide the **Host** machine name associated with an Oracle datasource.
4. Type a **Port** number. The default is 1521, but you can change it to wherever the Oracle listener is set up.
5. Specify a **Type** of **SERVICE_NAME** or **SID** and enter the corresponding value in the **SID/Service** box.
6. In the **Datasource Name** text box, type **SAMPLE_DATASOURCE** for the purpose of this example.
7. Click **Next**. DBArtisan saves your selections and opens the next panel of the wizard. This is where you enter login credentials.
8. Provide a **User ID** and **Password**.
9. To save and encrypt your password so that you do not have to provide credentials each time you connect, select **Auto-Connect?**.
10. Click **Datasource Group** to display the last panel.

11. In the **Managed Datasources** tree, select the folder corresponding to the type of DBMS you are registering.
12. Click **Finish**. DBArtisan prompts you as to whether you want to connect to the datasource.
13. Click **Yes**.

The same easy-to-use Datasource Registration Wizard is available for directly-supported DBMS platforms as well as JDBC and ODBC datasources. Datasource information is stored in the registry, is editable, and datasources can be deleted. If you run multiple Embarcadero products on the same machine, they can share the same datasource catalog.

A number of datasource catalog storage options are available:

- A local, file-based alternative lets you easily move a datasource catalog between users.
- A remote, file-based alternative lets multiple users share a single catalog. Settings can be changed locally but are not propagated to other users or retained over shutdown/startup

Another way of centralizing datasource definition maintenance is available if you use Embarcadero Team Server 2016. Datasource definitions can be stored on Team Server 2016 and subsequently registered as local datasources. Local connection details for a datasource are synchronized with the Team Server 2016 version on each attempt to connect to a datasource.

For details on datasource options, refer to the DBArtisan online Help.

Proceed to [Setting up the Datasource Explorer](#).

Setting up the Datasource Explorer

The first time you start DBArtisan, the Datasource Navigator occupies the left side of the main window. It is a single pane window that lets you navigate the datasources that you register and initiate actions against databases and database objects.

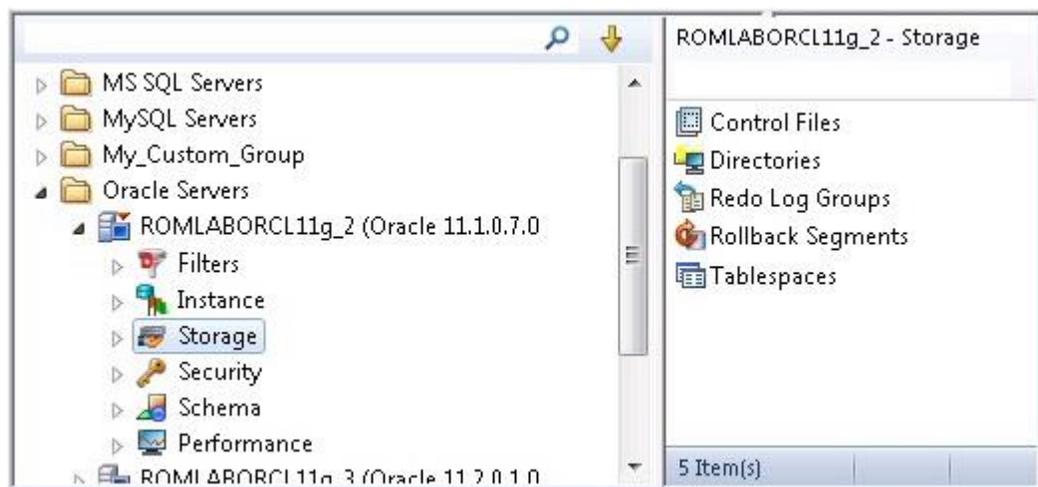


For the following set of exercises, you will be using a similar aid.

To prepare for subsequent exercises

1. Dismiss the Navigator by clicking the close button (X) at the top of the Navigator window.
2. Select **View > Activate Explorer**.

The Datasource Explorer is a two pane window that provides most of the same functions as the Navigator.



Setting up the Datasource Explorer

One key difference is the right pane of the window. It displays details for the node currently selected in the left pane. This might be individual database objects such as tables or primary keys, configuration parameters, and so on.

Before proceeding, familiarize yourself with the **View** menu commands for opening the Navigator and Explorer, and the ways to close those windows. As you proceed with DBArtisan, you will develop a preference for either the Navigator or Explorer, or find that each has benefits that are preferable in different situations.

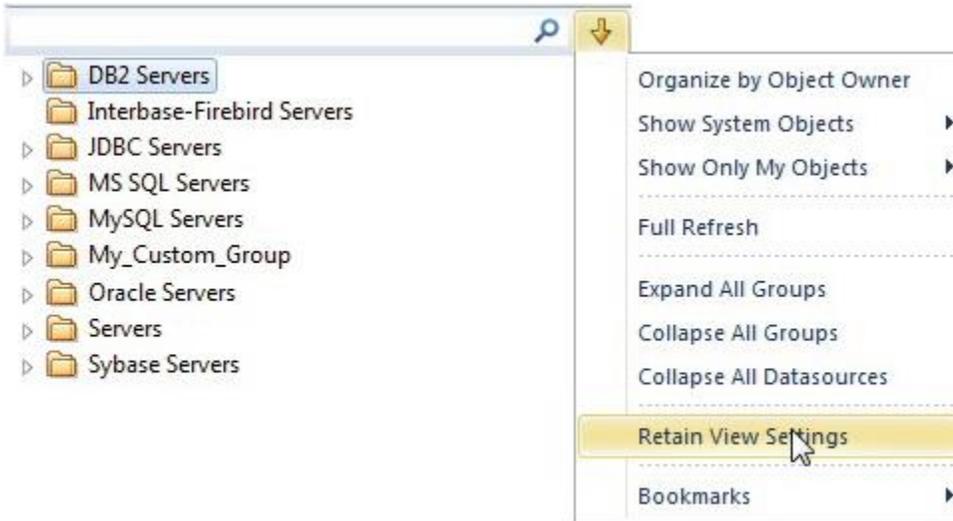
Proceed to [Exploring General Usability Features](#).

Exploring General Usability Features

DBArtisan provides many “user in mind” features that make the product configurable to meet individual needs and preferences. These features are designed to shave time off the tasks that you perform many times on any given working day.

Retaining Datasource Explorer View Settings

1. At the top of the Explorer tree, click to expand the drop-down menu.

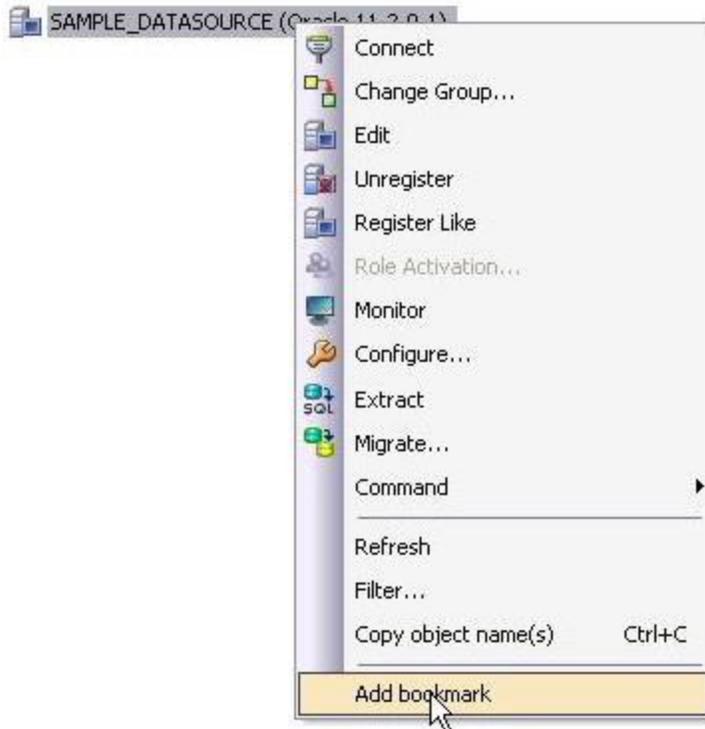


2. Select **Retain View Settings**.

The next time you open DBArtisan, the Explorer appears just as you left it.

Working with Datasource Explorer Bookmarks

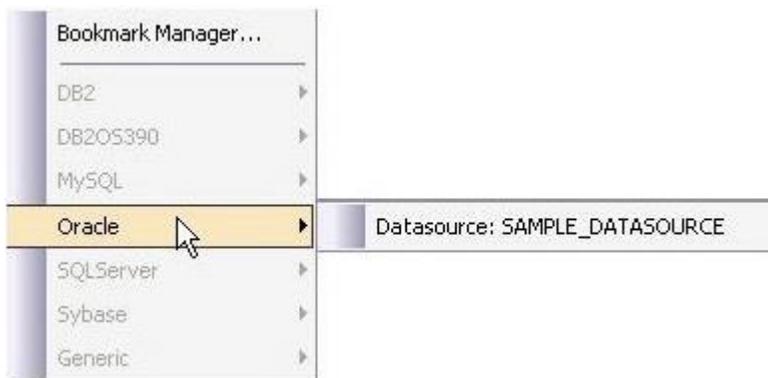
1. In the Explorer tree, right-click the datasource you registered and select **Add bookmark** from the context menu.



DBArtisan opens the **Add Friendly Bookmark Name** dialog.

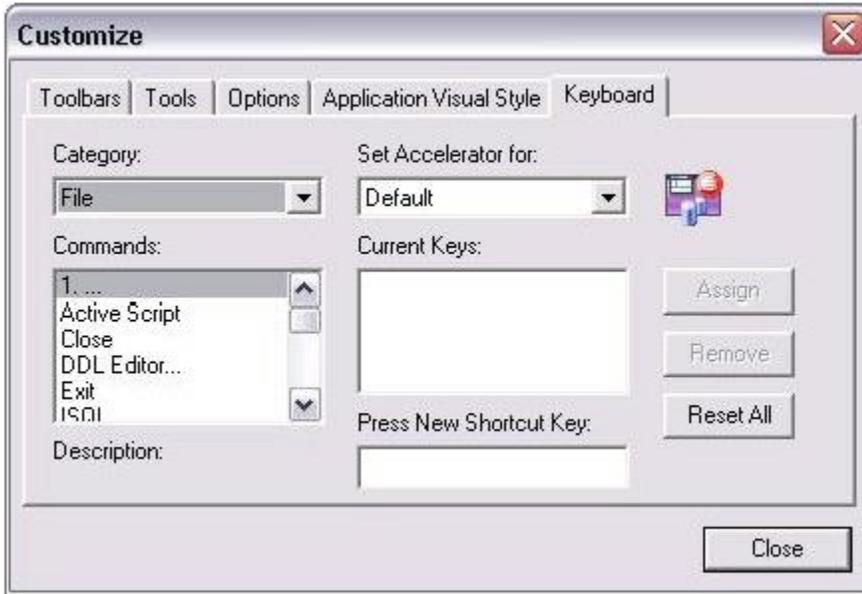
2. Click **OK**.

After Bookmarks are defined you can use them to easily navigate to commonly used datasource resources using the dropdown at the top of the Explorer and selecting the **Bookmarks** item.



Setting Keyboard Shortcuts and Hotkeys

1. From the **Tools** menu, select **Customize**. The **Customize** dialog opens.
2. In the **Customize** dialog, open the **Keyboard** tab.

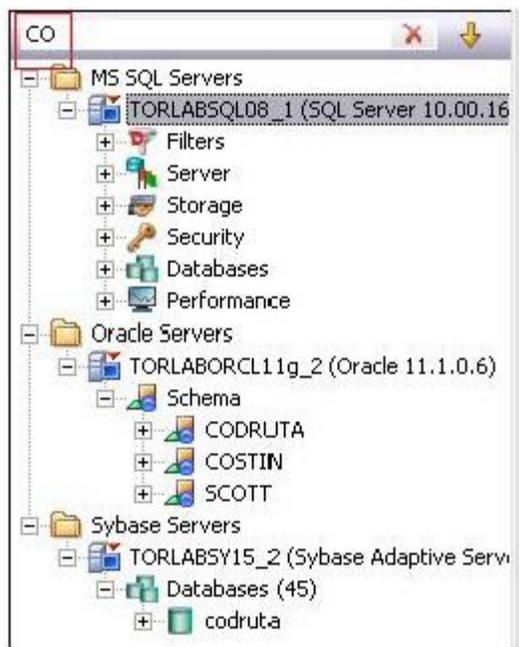


The **Keyboard** tab can be used to set keyboard shortcut hot keys for all areas of DBArtisan functionality.

3. Click **Close**.

Datasource Explorer tree filtering

DBArtisan provides a number of ways to filter the Datasource Explorer tree, easing navigation. During a DBArtisan session, you can use the **Filter** box at the top of the Datasource Explorer to display only those objects whose name contains characters typed in the **Filter** box.

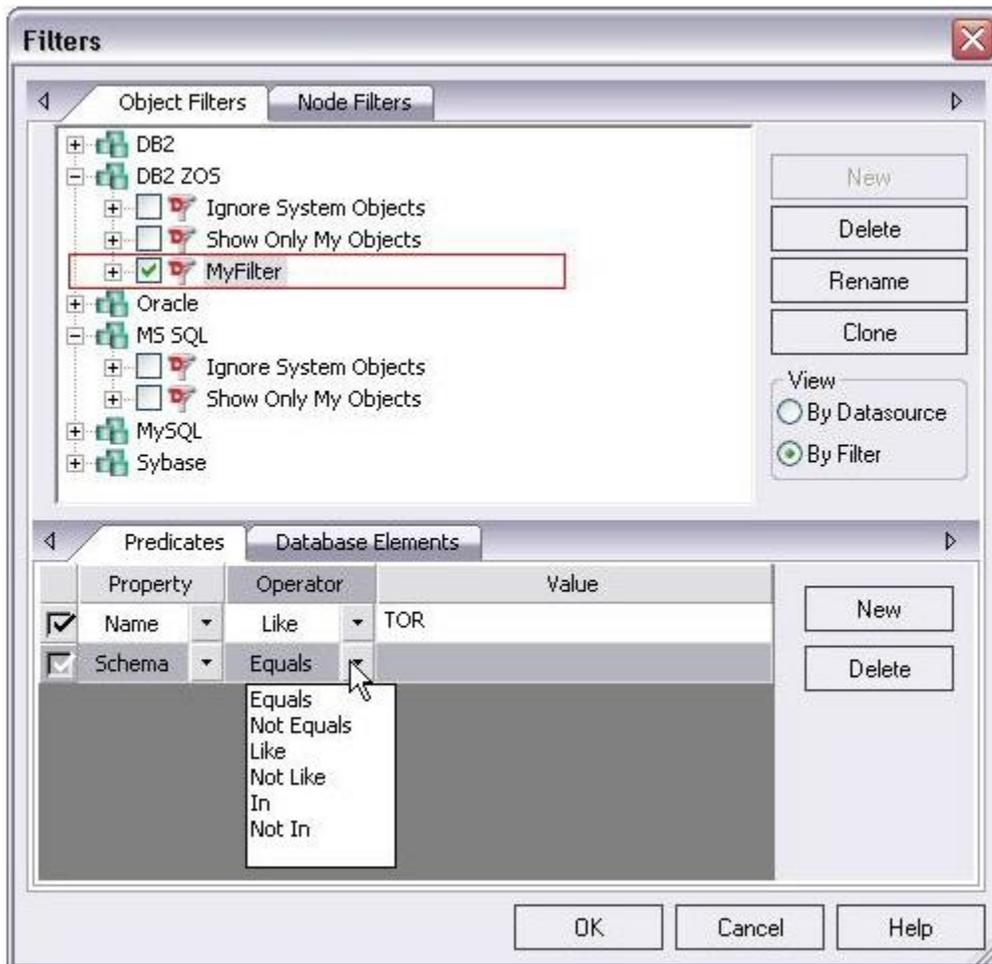


If you are interested in a more permanent filtering method, you can create filters at the DBMS or datasource level. Filters are available under the **Filters** node for each datasource.



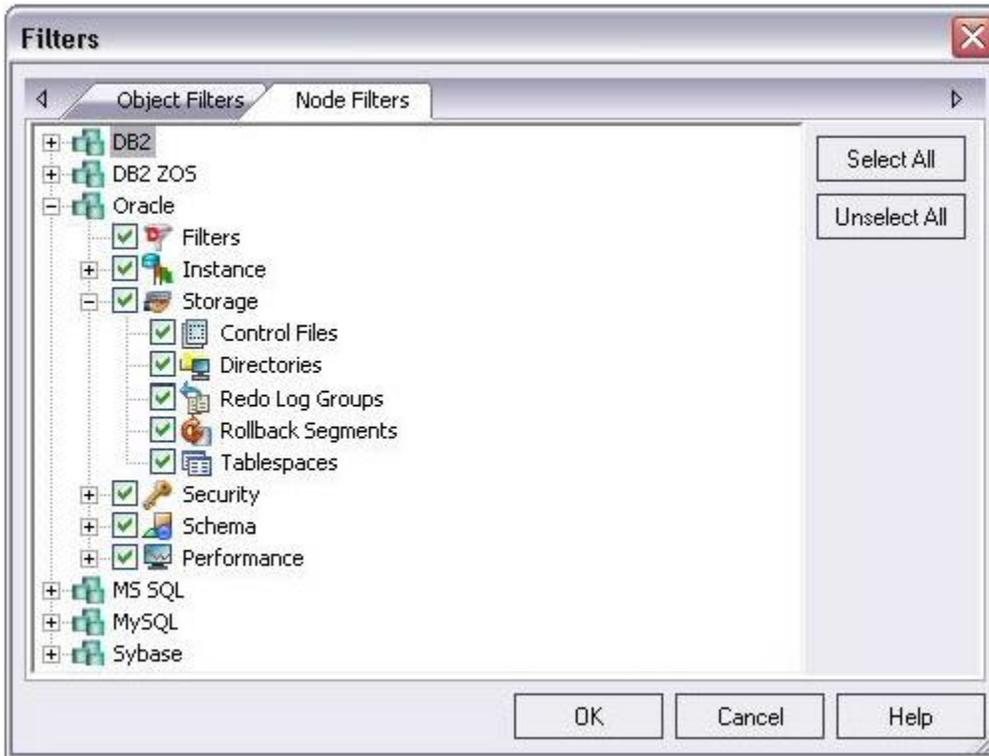
Right-clicking in the tree and selecting **Filter** opens the **Filters** dialog. It lets you filter out object types at the DBMS platform level. It also lets you create object filters.

Object filters can be object name-based, schema-based, or some combination thereof. A name-based or schema-based filter consists of one or more ANDed conditions. You also specify the object types to which the filter is to apply.



Object filters are created at the DBMS or datasource level and can be enabled and disabled for individual datasources.

The **Filters** dialog also lets you hide or display nodes based on object type. Node filtering lets you filter out object types for all datasources of the same DBMS type.



In addition to any custom object filters you create, the **Filters** node also provides access to two default filters: **Ignore System Objects** and **Show Only My Objects**. They can be applied at the datasource level and cannot be deleted or modified.

Proceed to [Session 2: Object and Schema Management](#).

Session 2: Object and Schema Management

DBArtisan provides unparalleled database object management capabilities. Its database platform-specific and version-specific graphical object editors and wizards enable you to easily create, drop or alter any of your accessible database objects.

Creating a Table Object

The following example walks you through creating a standard Oracle table object. This concept carries across all of the supported object types, across all of the supported platforms.

1. On the Datasource Explorer, expand the **Schema** node of an Oracle datasource.
2. Right-click the **Tables** node, and then select **Create**.
3. DBArtisan opens the Table wizard and leads you through the process of creating a table object.



4. Complete the wizard panels, and ensure that you create two or more columns in the table.
5. Click **Finish**.

DBArtisan lets you preview any and all generated scripts before you submit them to the database. This is standard for all object-related scripts.

Making changes to an existing table object

Changes to database tables, such as modifying column lengths, inserting new columns, or deleting unneeded ones, can require dropping off a table. This requires knowledge of the underlying object dependencies so that these dependent objects are rebuilt after the table has been recreated. DBArtisan provides the ability to perform “extended” table alterations by constructing an SQL script with the steps necessary to save off the original data, create the new table, and populate it with the original data. Once these steps are complete, all dependent objects are then rebuilt and permissions re-applied.

1. From the Explorer, **Tables** node, select the table you created in the previous example.
2. Double-click the table or from the **Command** menu, click **Open**.

DBArtisan opens the Table Editor. The Table Editor provides access to basic table properties, the list of table columns as well as any constraints, storage parameters, space allocation, partitioning, table dependencies, object privileges, table DDL and other attributes of the table.

3. Ensure that the **Columns** tab is selected and select one of the columns you created in this table you want to modify.

Details for the column are shown in the **Column Attributes** area on the right side of the pane.

4. In the **Width** or **Scale** text box, type a new value.
5. On the Table Editor toolbar, select the **Alter** button.

DBArtisan lets you preview the SQL script before you submit it to the database.

6. Close the Table Editor pane.

Working with Object DDL

DBArtisan allows you to easily extract DDL for single or multiple objects using several methods. The most straight-forward is described here:

1. On the Explorer, right-click the table you created earlier, and then select **Extract**.

The DDL for all highlighted objects is extracted directly in a DDL Editor where it can be altered, executed and saved to the database, with no intermediary steps required. For example:



The screenshot shows a PL/SQL Editor window with a toolbar at the top and a text area containing SQL code. The code is as follows:

```
1 CREATE TABLE ADINAF.AAAAAA
2 (
3   "a" NUMBER(6,0) NULL
4 )
5 ORGANIZATION HEAP
6 TABLESPACE SYSTEM
7 NOLOGGING
8 PCTFREE 10
9 PCTUSED 40
10 INITRANS 1
11 MAXTRANS 255
12 STORAGE(BUFFER_POOL DEFAULT)
13 NOPARALLEL
14 NOCACHE
15 NOROWDEPENDENCIES
16 /
```

The status bar at the bottom of the editor displays "Auto Commit Off", the current schema path "\ROMLABORCL11g_2\system", and the cursor position "Line 1 Col 1".

2. Close the PL/SQL Editor pane.

Proceed to [Session 3: Database Security Management](#).

Session 3: Database Security Management

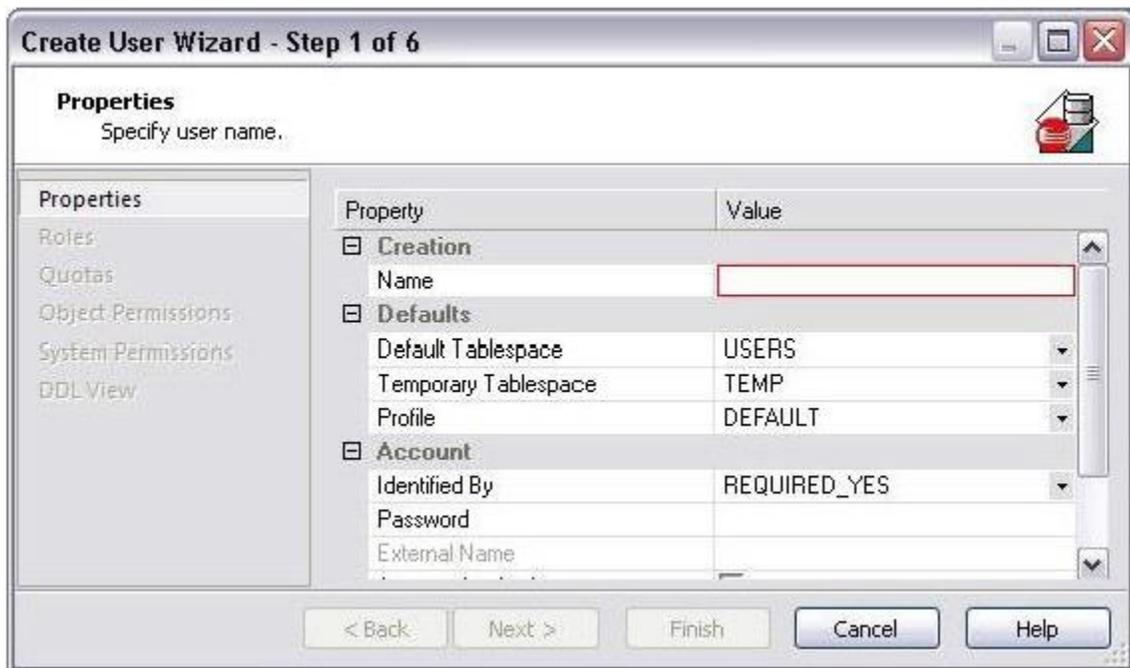
DBArtisan can help you efficiently establish and maintain database security. Whether you are managing an existing production database or setting up a new environment, you'll find consistent support across all of the supported platforms.

Adding a new database user

While this example focuses on creating a new Oracle user, the same wizard-driven principle applies to all security objects (groups, roles, etc.).

1. On the Datasource Explorer, expand an Oracle datasource, and then the **Security** node.
2. On the **Security** node, right-click **Users**, and then click **Create**.

DBArtisan opens the **Create User Wizard** and leads you through the process of adding a user.



3. Provide the information on each panel of the **Create User Wizard** until you reach the **DDL View** panel.

DBArtisan allows you to preview any and all generated scripts before they are submitted to the database. This is standard for all object-related scripts.

4. Click **Execute** to create the new user.

DBArtisan automatically opens the User Editor for the new user. The standard User Editor can be used to manage existing database users as shown below.

Granting and Editing User Privileges

Privileges can be easily granted, revoked, or viewed from within either of two editors within DBArtisan; the User Editor, or the individual object editor (Table, Procedure, etc.). The User Editor provides a tabbed interface, which can be used to view and modify individual attributes of the user.

1. In the User Editor, open the **Object Permissions** tab.
2. Use the **Object Type** dropdown to select a set of objects such as tables or views.
3. Right-click a cell (corresponding to a specific object and a specific permission, such as DELETE), and then click **Grant**.

A distinctive icon is shown in the cell, indicating that this permission is granted. You use a similar process to revoke privileges and perform other permission-based activities.

4. On the Object Editor toolbar, click **Alter** to implement the changes.

Proceed to [Session 4: Space Management](#).

Session 4: Space Management

Managing space is vital to ensure the availability and performance of your databases. DBArtisan incorporates many built-in space features that let you smartly manage and exploit all aspects of your database storage. The following examples walk you through a review of DBArtisan's built-in support for reporting Oracle tablespace storage and space data.

- [Built-in Space Management](#)
- [Advanced Space Management \(Oracle and SQL Server only\)](#)

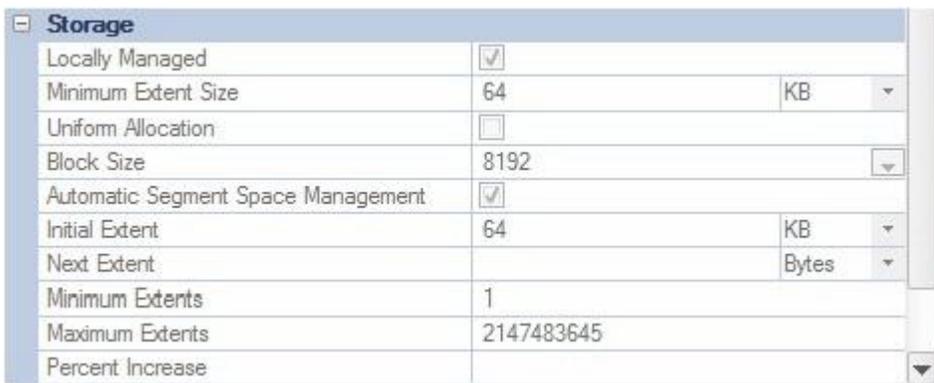
Built-in Space Management

While this example is specific to Oracle tablespaces, the same concept applies to all of the supported platforms.

1. On the Datasource Explorer, expand any Oracle datasource.
2. On the Oracle datasource, expand the **Storage** node, and then select **Tablespaces**.
3. Right-click any tablespace listed in the right pane of the Explorer window, and then click **Open**.

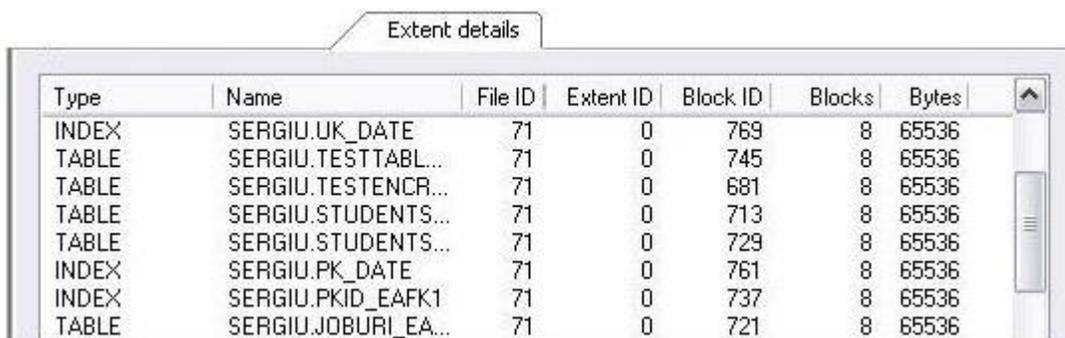
Embarcadero DBArtisan opens the Tablespaces Editor.

4. Select the **Properties** tab. The **Storage** group on that tab provides a summary of the space settings for the tablespace.



Storage		
Locally Managed	<input checked="" type="checkbox"/>	
Minimum Extent Size	64	KB
Uniform Allocation	<input type="checkbox"/>	
Block Size	8192	
Automatic Segment Space Management	<input checked="" type="checkbox"/>	
Initial Extent	64	KB
Next Extent		Bytes
Minimum Extents	1	
Maximum Extents	2147483645	
Percent Increase		

5. Select the **Extent Details** tab. It provides more detail on an extent-by-extent basis.

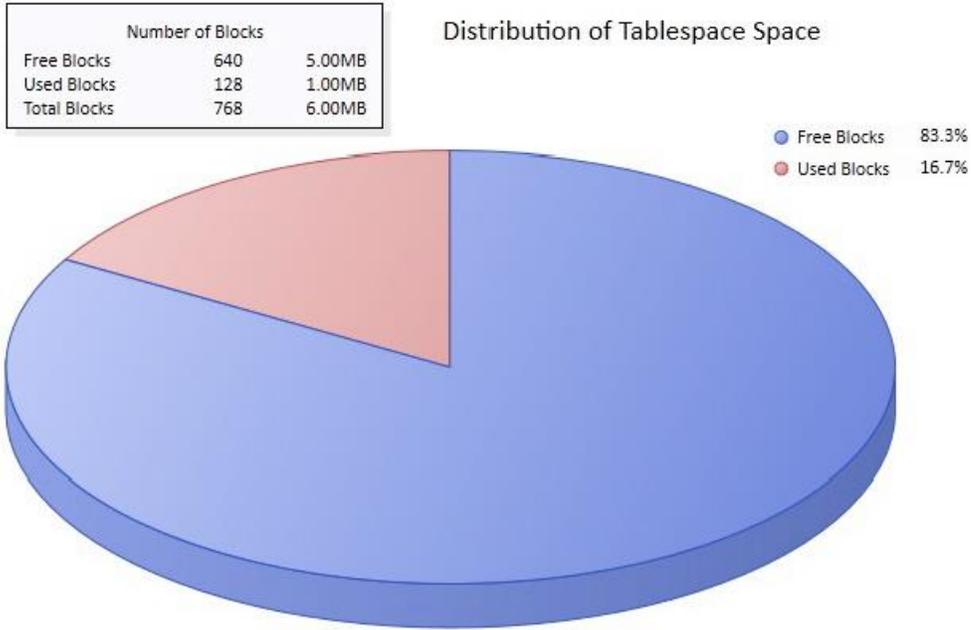


Extent details						
Type	Name	File ID	Extent ID	Block ID	Blocks	Bytes
INDEX	SERGIU.UK_DATE	71	0	769	8	65536
TABLE	SERGIU.TESTTABL...	71	0	745	8	65536
TABLE	SERGIU.TESTENCR...	71	0	681	8	65536
TABLE	SERGIU.STUDENTS...	71	0	713	8	65536
TABLE	SERGIU.STUDENTS...	71	0	729	8	65536
INDEX	SERGIU.PK_DATE	71	0	761	8	65536
INDEX	SERGIU.PKID_EAFK1	71	0	737	8	65536
TABLE	SERGIU.JOBURI_EA...	71	0	721	8	65536

6. On the Tablespace Editor, click the **Space** tab.

The **Space** tab displays a graphical view of the free and used blocks for the target tablespace.

Built-in Space Management



7. Finally, on the Tablespace Editor, click the **Map** tab.

The **Map** tab displays a color-coded map of the objects contained on the tablespace. The map segments are proportional to the actual size of the objects on the tablespace.

Map

Space Info
Total: 200.00 MB Free: 168.88 MB
Used: 31.13 MB % Free: 84.44

Reorganize... Legend... Display...
Fit In Window Full Screen

Map

Object Demographics

	Name	Extents	Blocks
1	HR.VN	1	8
2	COSTIN.SYS_LOB0000347492C00003\$\$	1	8
3	COSTIN.SYS_C0086136	21	768
4	COSTIN.SYS_C0086135	1	8
5	COSTIN.SYS_I10000347492C00003\$\$	1	8

Note the additional **Reorganize** and display options.

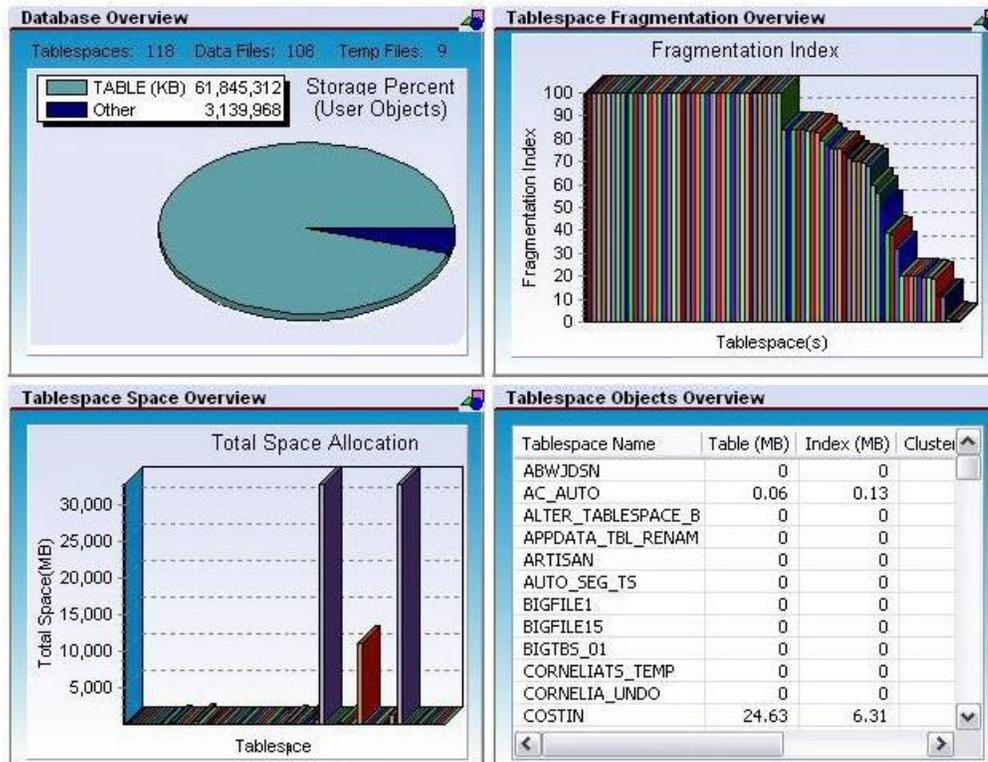
8. Close the Tablespaces Editor pane.

Built-in Space Management

Proceed to [Advanced Space Management \(Oracle and SQL Server only\)](#).

Advanced Space Management (Oracle and SQL Server only)

For advanced space analysis and management, DBArtisan's optional Space Analyst component contains sophisticated diagnostics to help you pinpoint all space-related problems in your database, as well as an intelligent reorganization wizard that can reorganize all or selected parts of your database.



Note: Space Analyst is a separately-licensed component. If you are not working with an evaluation copy of DBArtisan or do not have a specific license, proceed to [Session 5: SQL Management](#). Contact your license administrator or your Embarcadero representative about obtaining a license.

To see the sort of information provided by the Space Analyst

1. On the **Analyst** menu, select **Space Analyst**.

Note: If prompted to install components on the server, allow DBArtisan to install the components.

The Space Analyst launches in the DBArtisan workspace.

Embarcadero's Space Analyst provides sophisticated diagnostic capabilities to troubleshoot bottlenecks and performance inefficiencies that result in poor space management. See the DBArtisan online help for a detailed walkthrough of all available features and functionality.

Advanced Space Management (Oracle and SQL Server only)

2. Select the **Data Files**, **Tablespace Map**, **Tables**, and **Indexes** tabs available at the bottom of the Space Analyst pane.
3. Close the Space Analyst pane.

Proceed to [Session 5: SQL Management](#).

Session 5: SQL Management

DBArtisan provides powerful visual tools for creating and analyzing complex SQL statements and server-side code objects. The following examples walk you through DBArtisan's Visual Query Builder, feature-rich ISQL facility and some of the advanced analysis and debugging capabilities provided by the Embarcadero SQL Debugger and SQL Profiler:

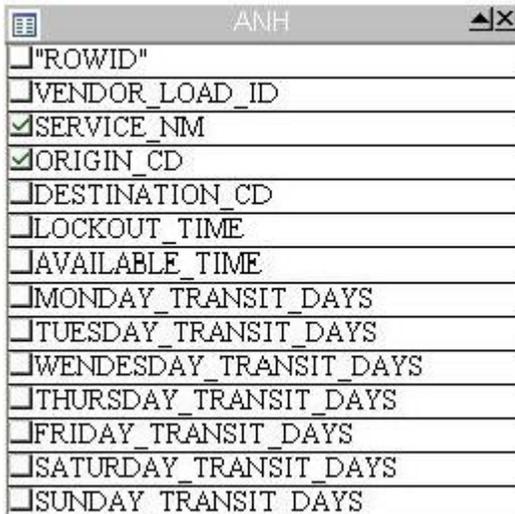
- [Working with Query Builder](#)
- [ISQL Window](#)
- [SQL Debugging, Analysis and Tuning.](#)

Working with Query Builder

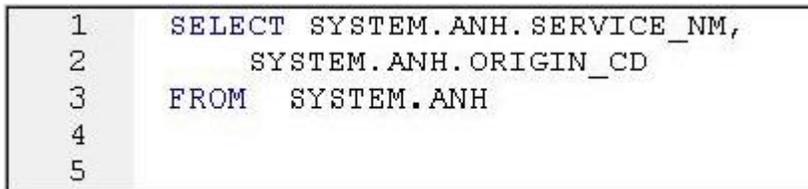
1. From the **Tools** menu, select **Query Builder**.

DBArtisan opens the Query Builder.

2. In the **Tables/Views** tab, right-click a table or view and select **Add**.
3. In the window that opens, select the columns to return the result. For example:



Query Builder generates the query text in the lower SQL window.



You can build advanced queries using the options supplied on the **DML** tab. You choose the type of query (SELECT, INSERT, and so on) using the dropdown on the Query Builder toolbar.

4. After the query is built, click the **Execute** button (green arrow) on the Query Builder toolbar.

Query Builder displays results in the lower SQL window.

5. Close the Query Builder pane.

Proceed to [ISQL Window](#).

ISQL Window

DBArtisan offers a fully-featured SQL editor. In addition to basic text processing features, the editor environment offers testing/debugging and execution facilities. In combination with supporting features, the ISQL editor eases and speeds up the process of developing working scripts.



Automated error detection and coding assistance

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

To enable these features:

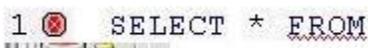
1. On the **File** menu select **Options**. The **Options** dialog opens.
2. In the left-hand pane, expand the **ISQL** node and then select **Code Assist**.
3. On the **Code Assist** panel:
 - Ensure that **Enable Code Complete** is selected.
 - Ensure that **Enable Real-time syntax checking** is selected.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

To see these features in action:

1. On the **File** menu, select **New > ISQL**.

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

2. Experiment with the automated error detection and coding assistance as follows:
 - Type `SELECT * FROM` and stop typing. Note the error condition.



By default, DBArtisan runs 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.

- 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. DBArtisan notifies you when a script contains a reference to an object that DBArtisan cannot resolve.
 - 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.
3. If you want to disable the automated error detection and coding assistance features, select **File > Options** and on the **Code Assist** page, click **Restore defaults**.

Feature Summary

The ISQL Editor window includes the following features and options:

- The ISQL window highlights all platform-specific and general keywords, and provides options for SQL code formatting and analysis.
- Once the code is executed, you have control over whether your transaction is committed or rolled back from the database.
- For all open ISQL windows, there are also options for connection locking, scheduling, executing your code across multiple datasources, explain plan generation, and SQL Tuning.

Setting environment options

DBArtisan lets you set platform-specific query options to immediately determine if your code is optimized.

1. Press F8.

DBArtisan opens the **Query Option** dialog.

Option	Value
Query Analysis	
Network Activity	<input type="checkbox"/>
Execution Information	<input type="checkbox"/>
I/O Activity	<input type="checkbox"/>
Sort Activity	<input type="checkbox"/>
Index Activity	<input type="checkbox"/>
Parse Activity	<input type="checkbox"/>
Table Activity	<input type="checkbox"/>
OS Activity	<input type="checkbox"/>
Wait Activity	<input type="checkbox"/>
Miscellaneous	
Batch Delimiter	/
Row Count	0
LONG Size (bytes)	8192
Max Errors Before Aborting (0 = off)	0
Check syntax when executing	<input type="checkbox"/>
Run script with batch execution	<input checked="" type="checkbox"/>

2. Either close the **Query Options** dialog and then the SQL Editor window or enter a valid query in the ISQL editor and then execute your query by clicking the **Execute** button.



3. When complete, ensure that only the Datasource Explorer window is open.

Proceed to [SQL Debugging, Analysis and Tuning](#).

SQL Debugging, Analysis and Tuning

While this example is specific to Oracle PL/SQL Debugging, the same interface and functionality applies to all of the supported platforms.

To see debugging in action

1. On the Datasource Explorer, expand any Oracle datasource node.
2. On the Oracle datasource, select the **Procedures** node.
3. In the right pane of the Explorer, right-click any stored procedure, and then select **Debug**.
4. If prompted, enter any input parameters and then click **Continue**.

After the SQL Debugger interface is displayed you can step through code, step into dependencies, set and watch variables, and even perform basic code profiling for each line of executed code. See the DBArtisan online help for a detailed listing of all available SQL features.

5. Experiment with debugging features and then close the debugger window.

Proceed to [Session 6: Job Management](#).

Session 6: Job Management

DBArtisan freely integrates with the Microsoft Windows Task Scheduler, which allows you to virtually schedule any task to run on your own computer whenever and how often you'd like. While this example is specific to an Oracle table redefinition, the same concept applies to any job or script that can be scheduled.

To schedule a job, do the following:

1. On the Explorer, expand any Oracle datasource.
2. On the Oracle datasource, expand the **Tables** node, right-click any table, and select **Extract**. DBArtisan extracts the DDL that defines the selected table and opens an ISQL Editor window on the DDL.
3. From the ISQL window toolbar, click the **Schedule** button.



The **Schedule Action** dialog opens. You can provide a name, set notifications, and specify an output directory for the new job.

4. After you have completed the dialog, click **OK**. The **Job Scheduler** dialog opens.
5. Proceed as prompted to schedule your job. When finished, close the ISQL window.

You can use the **Oracle Job Queue** explorer node to monitor your job.

Proceed to [Session 7: Data Management](#).

Session 7: Data Management

DBArtisan provides comprehensive facilities to help you manage the data in all of your databases. A visual data editor helps you add, change and delete data from your tables with all referential integrity enforced. You can create INSERT statements for tables using current data and also extract data as XML documents for certain databases. Rounding out its rich Schema Management capabilities, DBArtisan also allows you to migrate schema objects and associated table data from one database server to another, across the same or different platforms.

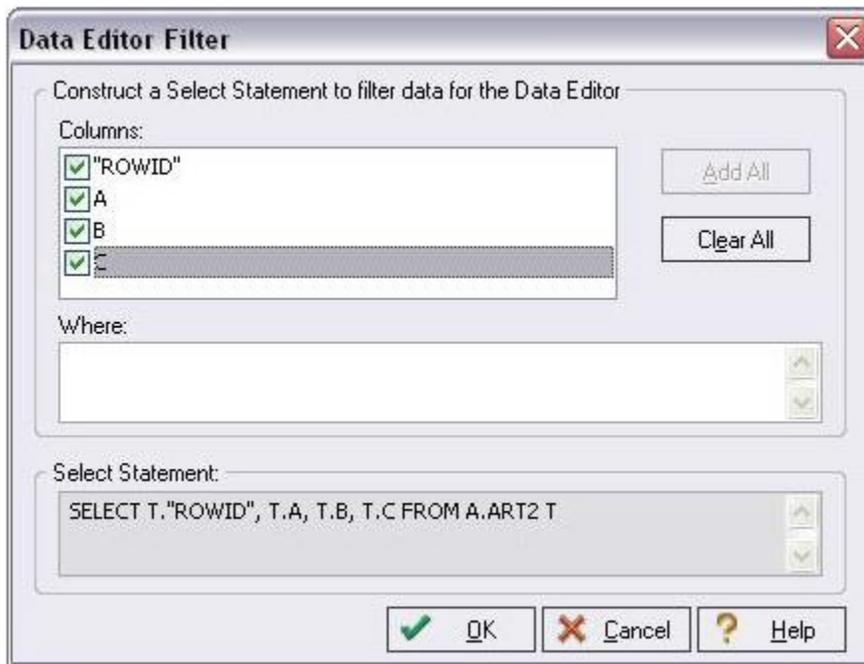
The following topics walk you through some of the data management features:

- [Visual Data Editing](#)
- [Working with Table Data - Create Insert Statements](#)
- [Working with Table Data - Extract Data as XML](#)
- [Advanced Data Management - Schema and Data Migration](#)

Visual Data Editing

To start the Visual Data Editor, do the following:

1. In the Datasource Explorer, right-click any table and select **Edit Data**. DBArtisan opens the **Data Editor Filter** dialog.
2. In **Columns**, select the columns that are to be included in the editable data.



You can also filter the editable rows by including your SELECT statement.

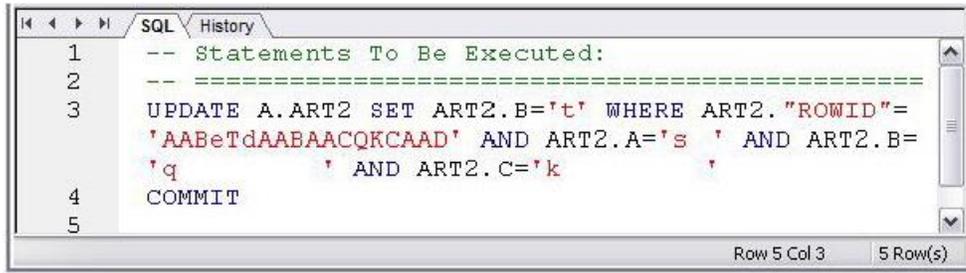
3. Click **OK**.

In Live mode, all changes are applied to the database when you move off of an updated or inserted row. Deleted rows are immediately removed from the database. Batch mode allows you to make changes and then save all when all are complete. The mode is controlled by a dropdown in the Data Editor toolbar.

4. Experiment with editing your data, and when complete, on the Data Editor toolbar, click the **Execute** (blue arrow) button.

DBArtisan commits your changes. Regardless of mode, all of the generated DML statements are viewable in the lower SQL window.

Visual Data Editing



The screenshot shows a SQL editor window with a tab labeled 'SQL' and a sub-tab 'History'. The editor contains the following SQL code:

```
1  -- Statements To Be Executed:  
2  -----  
3  UPDATE A.ART2 SET ART2.B='t' WHERE ART2."ROWID"=  
   'AABeTdAABAACQKCAAD' AND ART2.A='s ' AND ART2.B=  
   'q ' AND ART2.C='k '  
4  COMMIT  
5
```

The status bar at the bottom right of the editor indicates 'Row 5 Col 3' and '5 Row(s)'.

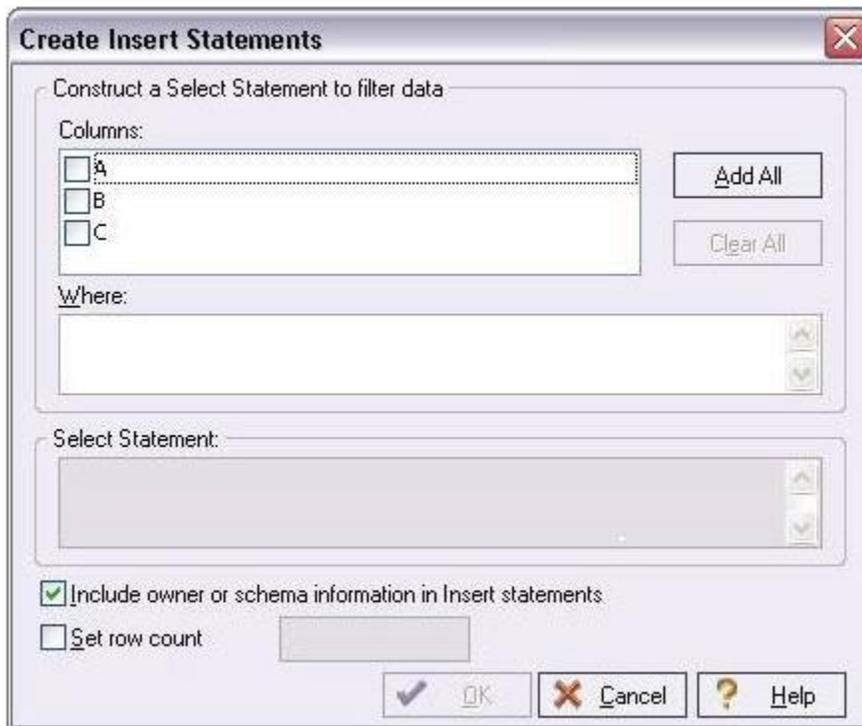
5. Close the Data Editor pane.

Proceed to [Working with Table Data - Create Insert Statements](#).

Working with Table Data - Create Insert Statements

DBArtisan lets you generate a set of INSERT statements based on rows of an existing table.

1. On the Datasource Explorer, select any Oracle datasource.
2. On the Oracle datasource, expand the **Tables** node.
3. In the right pane of the Explorer window, right-click any table, and then select **Create Insert Statements**. DBArtisan opens the **Create Insert Statements** dialog. For example:



4. In **Columns**, select the columns you want to include in the INSERT statement.
5. You can also filter what rows are included by adding your WHERE clause.
6. Click **OK**.

The resulting INSERT statements are created and presented in an active ISQL window. At this point, they can be executed immediately, scheduled to execute later, or saved. Note that all extracted INSERT statements can be run against the same or different databases containing a similar schema.

```
--  
-- TABLE INSERT STATEMENTS  
--  
INSERT INTO HR.JOB_HISTORY ( JOB_HISTORY.EMPLOYEE_ID,  
JOB_HISTORY.START_DATE, JOB_HISTORY.END_DATE,  
JOB_HISTORY.JOB_ID,    JOB_HISTORY.DEPARTMENT_ID )  
      VALUES ( 113, TO_DATE('11/04/2006 12:43:24 PM',  
'MM/DD/YYYY HH12:MI:SS AM'),  
TO_DATE('01/15/2007 12:43:24 PM',  
'MM/DD/YYYY HH12:MI:SS AM'), 'PU_MAN', 270 )  
/  
INSERT INTO HR.JOB_HISTORY ( JOB_HISTORY.EMPLOYEE_ID,  
JOB_HISTORY.START_DATE, JOB_HISTORY.END_DATE,  
JOB_HISTORY.JOB_ID,    JOB_HISTORY.DEPARTMENT_ID )  
      VALUES ( 102, TO_DATE('01/13/1993 12:00:00 AM',  
'MM/DD/YYYY HH12:MI:SS AM'),  
TO_DATE('07/24/1998 12:00:00 AM',  
'MM/DD/YYYY HH12:MI:SS AM'), 'IT_PROG', 60 )  
/
```

7. Close the editor pane.

Proceed to [Working with Table Data - Extract Data as XML](#).

Working with Table Data - Extract Data as XML

DBArtisan lets you generate an XML representation of table data.

To extract data as XML

1. On the Datasource Explorer, expand any Oracle datasource.
2. On the Oracle datasource, expand the **Tables** node.
3. In the right pane of the Explorer window, right-click any table listed, and then select **Extract Data as XML**.
4. Select the columns to include in the SELECT statement.
5. You can also filter what rows are included by adding a WHERE clause in the **Select Statement** box.
6. Click **OK**.

The resulting XML document is created and presented in an active XML Editor. At this point the document can be saved in XML format.

```

1  <?xml version="1.0"?>
2  <ROWSET>
3  <ROW>
4      <ROWID>AAAHM/AAF AAAABsAAA</ROWID>
5      <EMPLOYEE_ID>113</EMPLOYEE_ID>
6      <START_DATE>11/04/2006 12:43:24 PM</START_DATE>
7      <END_DATE>01/15/2007 12:43:24 PM</END_DATE>
8      <JOB_ID>PU_MAN</JOB_ID>
9      <DEPARTMENT_ID>270</DEPARTMENT_ID>
10 </ROW>
11 <ROW>
12 <ROWID>AAAHM/AAF AAAABuAAA</ROWID>
13 <EMPLOYEE_ID>102</EMPLOYEE_ID>
14 <START_DATE>01/13/1993 12:00:00 AM</START_DATE>
15 <END_DATE>07/24/1998 12:00:00 AM</END_DATE>
16 <JOB_ID>IT_PROG</JOB_ID>
17 <DEPARTMENT_ID>60</DEPARTMENT_ID>
18 </ROW>

```

7. Close the editor pane.

Proceed to [Advanced Data Management - Schema and Data Migration](#).

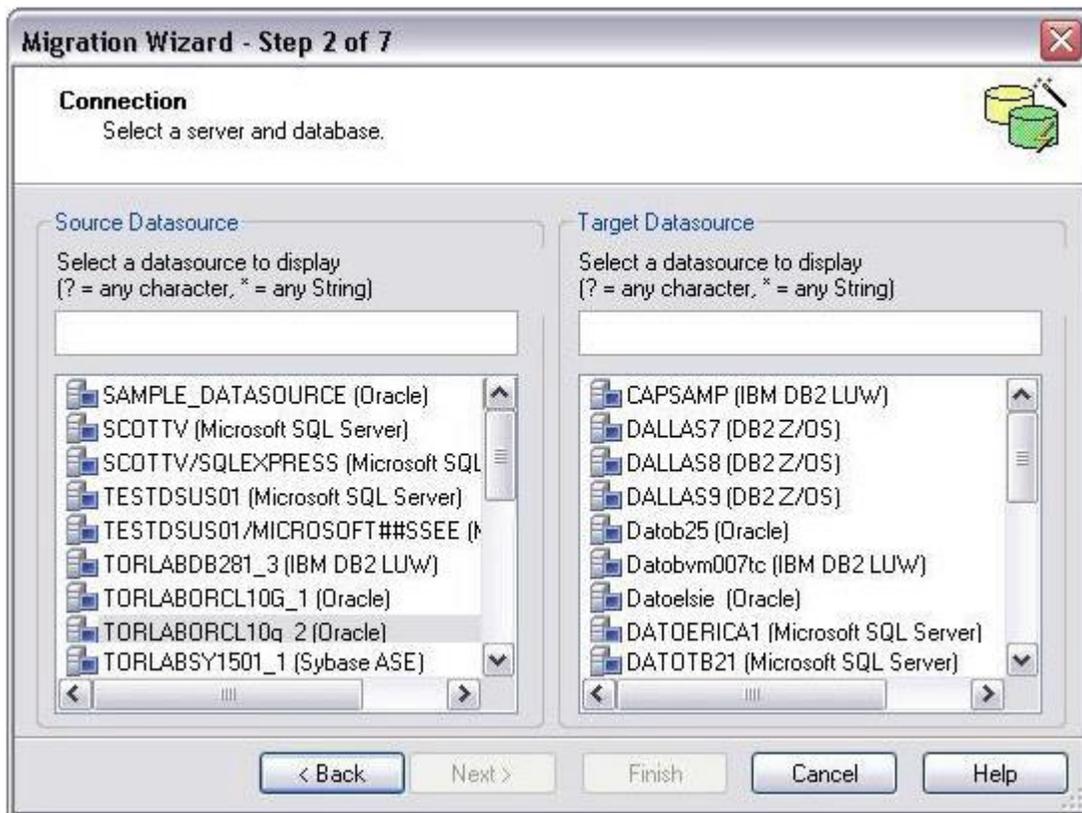
Advanced Data Management - Schema and Data Migration

DBArtisan provides advanced data management tools that help you to move schema and corresponding table data across the same or different platforms. You can copy a single database object, all objects owned by a specific user, or an entire database, all guided by a wizard-driven process.

While this example is specific to an Oracle to SQL Server schema and data migration, the same concept applies to any migration involving any combination of the supported platforms.

To open the Schema Migration Wizard:

1. On the **Utilities** menu, select **Schema Migration**. DBArtisan opens the Migration Wizard.
2. Select the **Perform new migration** option.
3. Click **Next**. DBArtisan opens the next panel of the Migration Wizard. For example:



4. Select an Oracle datasource from the **Source Datasource** list and a Microsoft SQL Server datasource from the **Target Datasource** list.

- Click **Next** and provide login credentials if prompted. DBArtisan opens the next panel of the Migration Wizard.

Since Microsoft SQL Server supports multiple databases per datasource, you must choose a database.

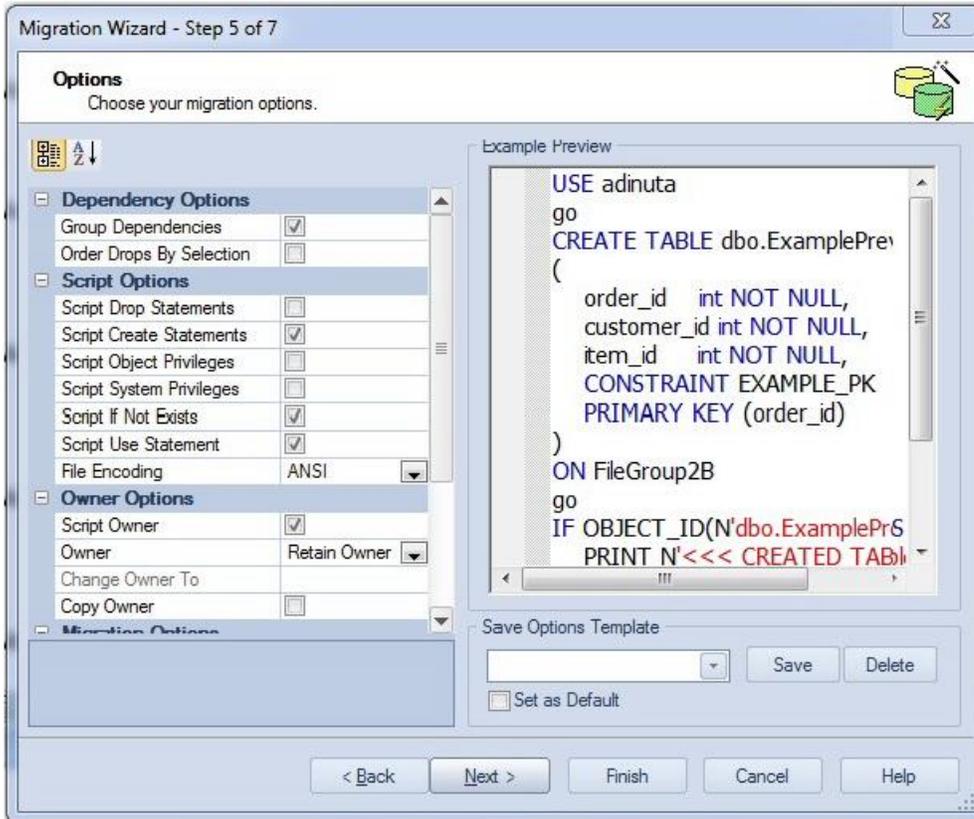
- Select an entry from the **Target Database** list and then click **Next**. DBArtisan opens the next panel of the Migration Wizard.



- In the **Object Types** list, select the object types to be migrated to the target datasource.

As you select object types, the **Objects** list is updated to let you select specific objects to migrate. The **Expand/Collapse** icons let you drill down through dependencies/containment.

- Use the **Objects** list to select the specific objects to migrate.
- Click **Next**. DBArtisan opens the next panel of the Migration Wizard.



10. Examine the migration options offered but leave the default settings for now.

11. Click **Next**. DBArtisan opens the next panel of the Migration Wizard.

Clicking **Finish** executes the migration and lets you view the progress of the job.

Proceed to [Session 8: Performance Management](#).

Session 8: Performance Management

DBArtisan offers a number of different options to help you manage the performance of your databases. First, DBArtisan ships with a built-in process monitor that helps you understand who is connected to your database along with each user's current activity and session-related data. For more robust performance details, DBArtisan's Performance Analyst add-on is a powerful client-side database monitor that runs fully contained in the DBArtisan console.

The following topics walk you through some of the performance management features:

- [Monitoring Sessions](#)
- [Advanced Client-Side Performance Monitoring](#)

Monitoring Sessions

While this example is specific to Oracle the Process Monitor is available for all of the supported platforms.

To start the DBArtisan Process Monitor:

1. On the Datasource Explorer, select any Oracle datasource.
2. From the **Utilities** menu, select **Database Monitor**.

SID	Status	O.S.	Serial #	Type	DB User	Client Us	Logon Time	Serv
170	ACTIVE	3828	1	BACKGROUND	PMON	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
158	ACTIVE	736	4	BACKGROUND		SYSTEM	9/3/2010 11:03:07.000 AM	DEDIC
168	ACTIVE	3856	1	BACKGROUND	MMAN	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
167	ACTIVE	3900	1	BACKGROUND	DBW0	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
166	ACTIVE	3816	1	BACKGROUND	LGWR	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
165	ACTIVE	3812	1	BACKGROUND	CKPT	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
164	ACTIVE	316	1	BACKGROUND	SMON	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
163	ACTIVE	340	1	BACKGROUND	RECO	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
162	ACTIVE	392	1	BACKGROUND	CJQ0	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
154	ACTIVE	708	1	BACKGROUND	QMNC	SYSTEM	9/3/2010 11:02:57.000 AM	DEDIC
161	ACTIVE	432	1	BACKGROUND	MMON	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
160	ACTIVE	3932	1	BACKGROUND	MMNL	SYSTEM	9/3/2010 11:02:43.000 AM	DEDIC
139	ACTIVE	9548	8331	USER	SYS	dawidt	9/22/2010 2:11:42.000 AM	DEDIC
144	ACTIVE	9332	16254	USER		SYSTEM	9/22/2010 2:17:31.000 AM	DEDIC

The Database Monitor includes the following options and features:

- Highlight any session and any currently running SQL is displayed in the lower pane.
- You can drill-down into a specific session to display session-level statistical details, historical and current wait events along with a working copy of the currently running SQL that can be copied to an ISQL for Explain Plan generation.
- By using the **Monitor** dropdown options you can display more advanced database-level monitoring data such as locks, blocking locks, hit ratio by user, Top 20 SQL, etc.



3. Close the Database Monitor pane.

Proceed to [Advanced Client-Side Performance Monitoring](#).

Advanced Client-Side Performance Monitoring

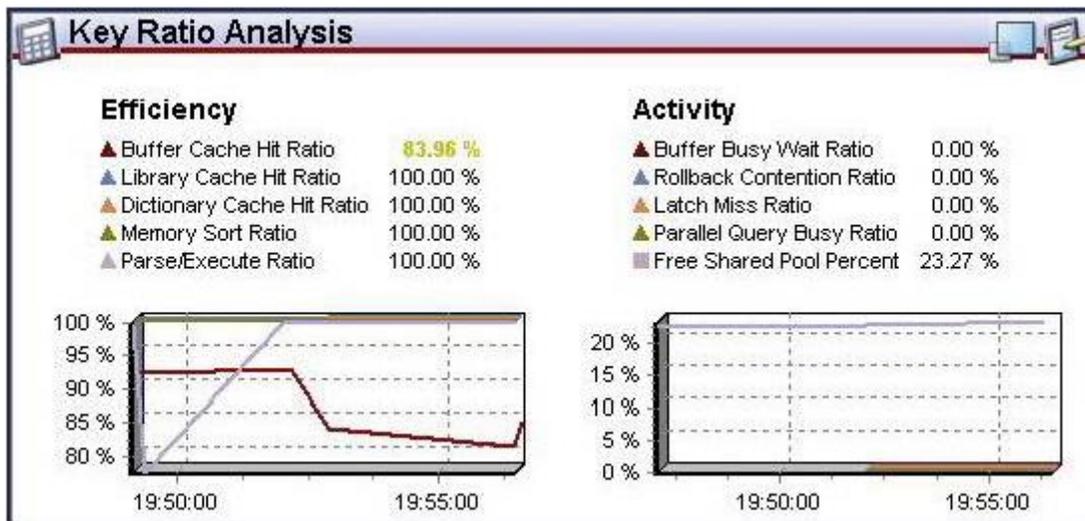
For advanced performance monitoring and management, DBArtisan's optional Performance Analyst provides intelligent diagnostic information and strong drill-down details to help you get to the heart of any episode of performance degradation. Performance Analyst integrates completely with DBArtisan so that you can fix any performance problems with a few clicks of the mouse.

Note: Performance Analyst is available for Oracle, SQL Server, Sybase ASE and DB2 for Unix, Windows, and Linux.

Note: Performance Analyst is a separately-licensed component. If you are not working with an evaluation copy of DBArtisan or do not have a specific license, proceed to [Session 10: General Utilities and Tools](#). Contact your license administrator or your Embarcadero representative about obtaining a license.

1. On the Datasource Explorer, select any Oracle datasource.
2. On the **Analyst** menu, select **Performance Analyst**. The Performance Analyst opens in the DBArtisan workspace for the target datasource.

In addition to the **Home** page displayed initially, Performance Analyst presents several pages of statistics. Page categories include **Memory**, **I/O**, **Space**, **Objects**, **Users**, and **OS**. Each page contains several panes of related statistics, the **Home** page's **Key Ratio Analysis** pane, for example:



Note the toolbar at the top of the Performance Analyst. It lets you navigate among the Performance Analyst statistics pages.



3. Experiment with displaying the various pages available from the toolbar dropdowns.

See the DBArtisan online help Performance Analyst topics for a detailed walkthrough of all available features and functionality.

Proceed to [Session 9: Capacity Management](#).

Session 9: Capacity Management

Planning for the future of your critical databases used to be a difficult task. However, DBArtisan's optional Capacity Analyst tool makes it easy to understand where your databases are today and where they are headed in the future. Capacity Analyst lets you track key database metadata and performance metrics over time so you can perform trend analysis on key areas like growth, object fragmentation, I/O and session load. Like all of the Analyst Series products, Capacity Analyst runs fully contained within DBArtisan so you have access to smart, built-in forecasting mechanisms that allow you to predict when your databases run out of space and the ability to proactively manage your storage assets, all from the same console.

Performance Analyst is available for DB2 for Unix, Windows, and Linux, Sybase ASE, Oracle, and SQL Server.

1. On the Datasource Explorer, select any Oracle datasource.
2. From the **Analyst** menu, select **Capacity Analyst**.

Note: Capacity Analyst is a separately-licensed component. If you are not working with an evaluation copy of DBArtisan or do not have a specific license, proceed to [Session 10: General Utilities and Tools](#). Contact your license administrator or your Embarcadero representative about obtaining a license.

The Capacity Analyst opens in the DBArtisan workspace for the target Oracle datasource.

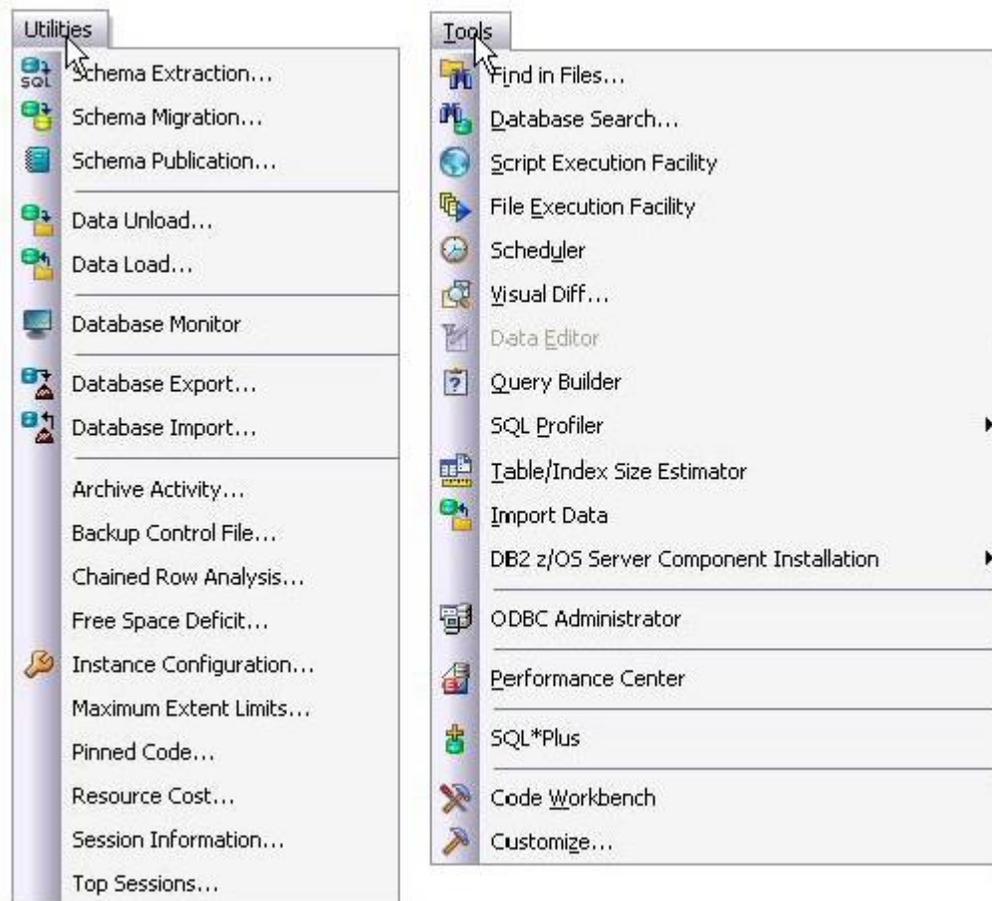


See the relevant DBArtisan online help topics for a detailed walkthrough of all available features and functionality.

Proceed to [Session 10: General Utilities and Tools](#).

Session 10: General Utilities and Tools

No evaluation of DBArtisan would be complete without a mention of the general utilities and tools that are available across all of the supported platforms. The **Utilities** menu offers primarily DBMS-specific operations while those offered on the **Tools** menu are more generic.



The **Utilities** menu contains the more advanced DBArtisan features. The available menu items are context-sensitive and version-specific for the selected datasource DBMS platform. This example above shows the **Utilities** menu features that are available for Oracle.

The **Tools** menu contains those features that are common across all DBMS platforms. The example above shows the **Tools** menu features that are available for all supported DBMS platforms. Note that if any other Embarcadero products are installed on your client they will be available on the **Tools** menu.

All DBArtisan utilities and tools provide a common interface that walks you through all input and execution requirements. All results are consistently presented so you can easily move between features without effort or confusion.

Proceed to [Session 11: Using Performance IQ](#).

Session 11: Using Performance IQ

These query examples show the benefits and possibilities that [Performance IQ](#) provides for identifying bottlenecks in a database. [Performance IQ](#) helps you to take corrective actions and see the results of the taken actions.

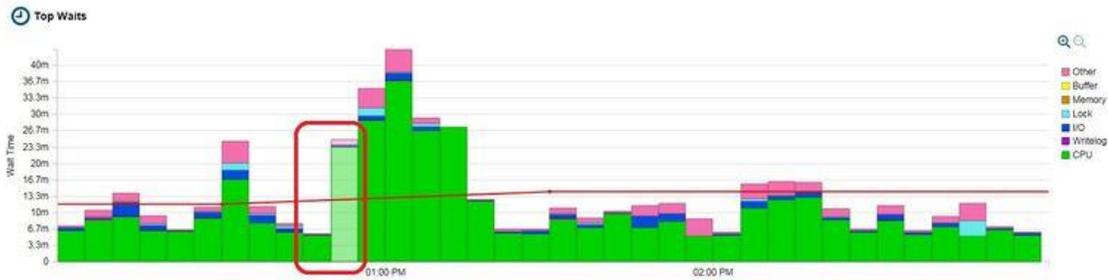
As an example, different queries are presented for showing how [Performance IQ](#) works.

SQL Server

CPU Waits query

This query should be run against the target data source where we want to generate load. The script takes 1-2 minutes and shows CPU waits consumption in the [Top Waits Window](#).

```
DECLARE @big AS BIGINT
SELECT @big = 0
WHILE @big < 300000000
    SELECT @big = @big + 1
```



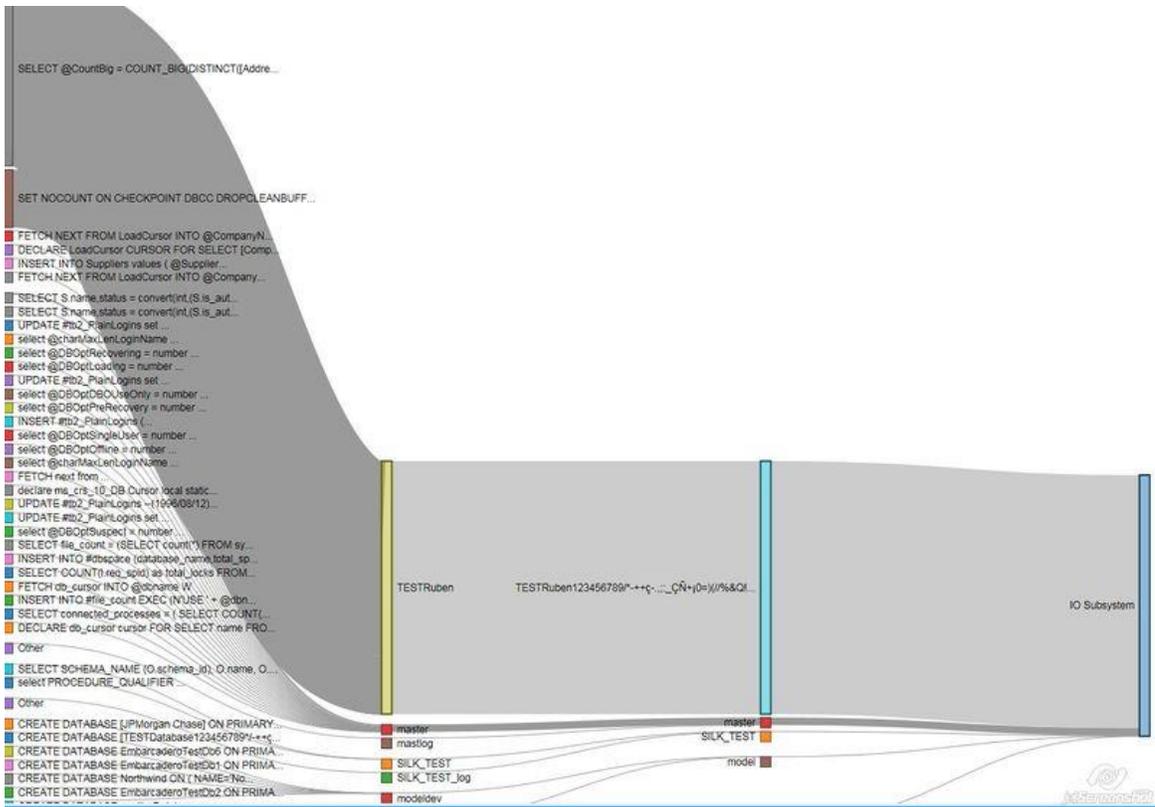
Statement	Executions	Avg. Elapsed (sec)	Wait Time vs. History (sec)
DECLARE @big AS BIGINT SELECT @big = 0 WHILE @big < 300000000 SELECT @big = @big + 1	0	0.000	1900.200
SELECT getutcdate() INTERVAL_TIME, CONVERT(NVARCHAR(64), r.sql_handle, 1) + ' ' + CONVERT(NVARCHAR(10), COALESCE(q.statement_start_offset, 0)) SQL_ID, CC	435	0.239	394.278
SELECT S.name, status = convert(int, S.is_auto_close_on * 1) + (case S.state when 1 then 32 when 2 then 128 when 5 then 32768+256 when 6 then 512 else 0 end) + (case S.is_reac	76	2.545	80.412
SELECT SCHEMA_NAME(O.schema_id), O.name, ISNULL((SELECT SUM(spart.rows) FROM sys.partitions spart WHERE spart.object_id = O.object_id AND spart.index_id < 2), 0)	1	0.291	7.460
SELECT O.name as SystemTables FROM sys.all_objects O WHERE (O.type = 'S' OR (O.type IN ('U', 'TT') AND O.is_ms_shipped <<= 0))	0	0.000	3.643
SELECT c.name FROM sys.symmetric_keys AS c WHERE (c.symmetric_key_id <<= 101) ORDER BY c.name ASC	0	0.000	2.933

IO Scan

The [IO Scans.sql](#) script included in the .zip you can find below, runs IO scans against the largest tables in a database. It needs some large tables to show some relevant IO wait times and cleans out the buffer cache beforehand to ensure that the scans are always done from disk.

In case you do not have any large tables, you can use the Northwind database (shipped with SQL Server - it can also be downloaded). Once you have the Northwind database, use the script [Load suppliers Table For IO Scans.sql](#) included in the .zip file below. This script makes special copies from Northwind to create a juicy big table to scan.

[File:IoScan.zip](#)



Blocking waits

In case you are not sure if the blocking waits are showing correctly the 2 scripts below will give an accurate representation:

Run this script first:

```
IF (SELECT COUNT(*) FROM tempdb..sysobjects WHERE name = N'##BlockingTable') =
0
    CREATE TABLE ##BlockingTable (
        [SupplierID] [INT] NOT NULL
    ) ON [PRIMARY]
GO
BEGIN TRANSACTION
SELECT COUNT(*) FROM ##BlockingTable (TABLOCKX)
WAITFOR DELAY '00:03:02'
COMMIT TRANSACTION
```

2-3 seconds after that script **starts running** you can start to run the script below in another query window (or job). This second script will be blocked for almost 3 minutes by the first script. This should show up on [Top Waits Window](#) as a 3 minutes block wait.

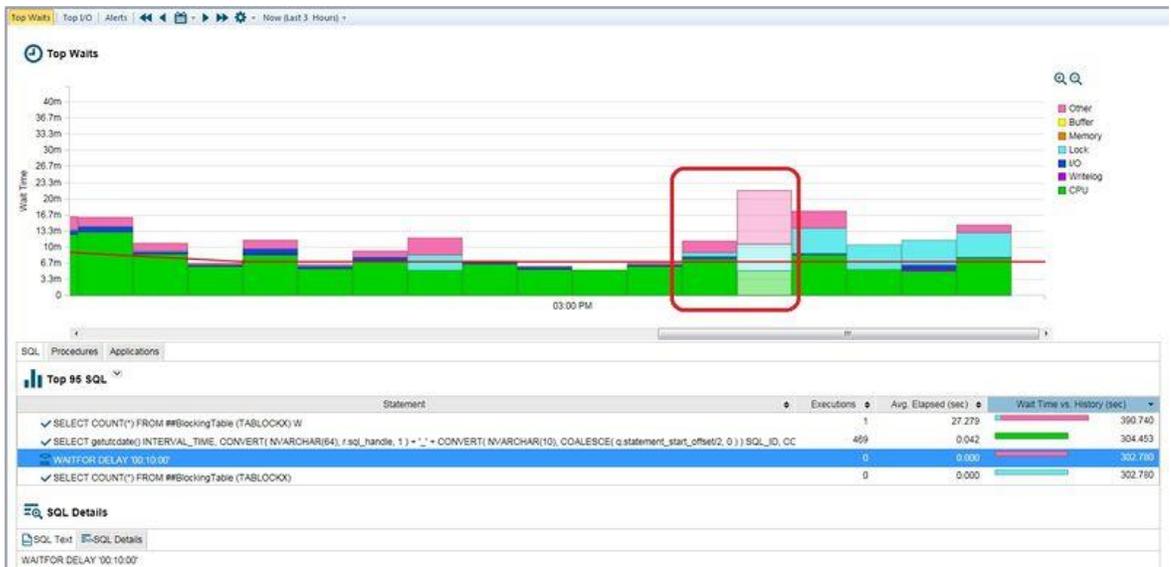
```
SELECT COUNT(*) FROM ##BlockingTable (TABLOCKX)
```



Other Wait Types

This simple statement runs for 10 minutes and shows a 10 minutes **WAITFOR** type wait.

```
WAITFOR DELAY '00:10:00'
```



Quantity of statements

The SQL below creates 10,000 different SQL Statements in a very short period.

On a "clean" monitored DBMS server, they should show up as different statements.

What this SQL is designed to do is create a huge amount of background **noise** on a DBMS.

Session 11: Using Performance IQ

```

SET NOCOUNT ON
DECLARE @SQL nvarchar(1024)
DECLARE @COUNT INT
SELECT @COUNT = 1
WHILE @COUNT < 10000
    BEGIN
        SELECT @COUNT = @COUNT + 1
        SELECT @SQL = N'WAITFOR DELAY ''00:00:00.007'' DECLARE @Counter int
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE ' +
CONVERT(VARCHAR(20), RAND()*1000000) + N' <> ' + CONVERT(VARCHAR(20),
RAND()*2000000)
        EXEC (@SQL)
    END

```

SQL	Wait Time (s)	Wait Type	Wait Resource	Wait Object	Wait Object ID	Wait Object Name
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 893773 <-> 273553	0	0.000				4.533
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 731893 <-> 603197	0	0.000				4.493
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 919778 <-> 878174	0	0.000				4.426
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 402225 <-> 1.02468e+006	0	0.000				4.337
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 273315 <-> 1.96968e+006	0	0.000				4.287
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 833668 <-> 659030	0	0.000				4.217
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 174711 <-> 988682	0	0.000				4.217
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 233015 <-> 1.33833e+006	0	0.000				4.210
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 577277 <-> 1.16707e+006	0	0.000				4.190
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 950610 <-> 670414	0	0.000				4.170
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 671823 <-> 653815	0	0.000				4.143
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 520999 <-> 853630	0	0.000				4.107
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 722263 <-> 977.729	0	0.000				4.107
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 577277 <-> 1.16707e+006	0	0.000				4.077
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 478702 <-> 967205	0	0.000				4.050
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 605102 <-> 1.33734e+006	0	0.000				4.033
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 489318 <-> 315863	0	0.000				4.010
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 212412 <-> 102092	0	0.000				4.003
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 921565 <-> 796774	0	0.000				4.003
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 886647 <-> 1.3442e+006	0	0.000				3.990
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 210116 <-> 65001.4	0	0.000				3.967
SELECT SC name, O name, I name, DS name FROM sys.objects O JOIN sys.schemas SC ON O.schema_id = SC.schema_id JOIN sys.indexes I ON O.object_id = I.object_id AND I.is...	0	0.000				3.943
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 617253 <-> 642954	0	0.000				3.943
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 468756 <-> 1.55015e+006	0	0.000				3.903
WAITFOR DELAY '00:00:00.007' DECLARE @Counter int SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 623586 <-> 1.02228e+006	0	0.000				3.884
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 588469 <-> 1.46902e+006	0	0.000				3.880
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 198252 <-> 319545	0	0.000				3.853
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 278796 <-> 1.04854e+006	0	0.000				3.817
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 330807 <-> 1.19378e+006	0	0.000				3.797
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 937338 <-> 152817	0	0.000				3.787
SELECT @Counter = COUNT(*) FROM master..sysprocesses WHERE 825845 <-> 929994	0	0.000				3.780