

User and Reference Manual



Altova DiffDog 2016 User & Reference Manual

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Chapter 1

Altova DiffDog 2016

1 Altova DiffDog 2016

Altova DiffDog 2016 Enterprise Edition is a powerful XML differencing application that intelligently finds differences between pairs of directories and between pairs of files. In addition, you can also compare Microsoft Word documents, the structure of XML schemas or database schemas, as well as database data even if it is contained in databases of different types.

DiffDog is a 32/64-bit Windows application that runs on Windows 10, Windows 8, Windows 7, Windows Vista, Windows XP, and Windows Server 2003/2008/2012. 64-bit support is available for the Enterprise and Professional editions.

Directories and files (also Microsoft Word files) as well as database data can be compared on different bases and according to a variety of options that you can change quickly in the GUI.

The GUI also helps you to quickly spot and analyze differences, edit your documents directly within the interface, merge differences, and instantly re-compare edited documents. The directory comparison functionality is linked to the file comparison functionality, thus enabling you to compare directories instantly and then to directly open and compare file pairs from within the directory comparison. What is more, also database data comparisons can be opened from within database schema comparisons so that you can have a quick look on the contained data when comparing database schemas. DiffDog is available in 64-bit and 32-bit versions.



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Chapter 2

Introduction

2 Introduction

Altova® DiffDog® 2016 Enterprise Edition enables you to intelligently find differences between a pair of directories and between a pair of documents. Furthermore, you can also find structural differences between a pair of XML Schemas or database schemas, and compare also the data that is contained in selected tables of a pair of databases. Directories and files as well as XML Schemas, database schemas, and database data can be compared on different bases and according to a variety of options that you can change quickly in the GUI. In addition, DiffDog allows you to synchronize the content of two directories, generate XSLT stylesheets and MapForce® mappings for XML Schemas, merge the structure or data of database tables, and copy or delete changed files with a mouse click.

This User Manual describes the interface and the various features of DiffDog, and provides guidance on how to use DiffDog. It consists of the following parts:

- An **Introduction** (this section), which provides an overview of [DiffDog features](#) and a description of the available [comparison modes](#).
- An overview of the [DiffDog interface](#).
- Guidance on **how to use DiffDog**. These sections provide an overview of how to use the [file comparison](#), [directory comparison](#), [Microsoft Word document comparison](#), [XML Schema comparison](#), [database schema](#) as well as [database data comparison](#) features of DiffDog and also introduces you to various ways in which you can put these features to efficient use.
- Descriptions of how to [navigate](#), [merge](#), and [export](#) differences.
- A **User Reference**, which contains a description of all the [toolbar icons](#), menu commands, as well as [status and result messages](#) of DiffDog.
- An overview of the [command line options](#) in DiffDog and how to use DiffDog in [source control systems](#).

How to use this User Manual

We suggest that you read the sections titled Introduction as well as [Comparing Files](#), [Comparing Directories](#), [Comparing Microsoft Word Documents](#), [Comparing XML Schemas](#), [Comparing Database Schemas](#), and [Comparing Database Data](#) in order to get an overview of the features of DiffDog and to learn how to use DiffDog. These sections should give you all the information you need to get started using DiffDog. For subsequent reference, you should look up the [User Reference](#).

The User Manual is indexed so you can find topics quickly. Additionally, the onscreen Help provides full text search (**Help | Search**): Keying in a search term in the onscreen Help will pop up a list of topics in which the search term appears. This documentation is also available [online](#) and in [PDF format](#) at the [Altova website](#).

2.1 Product Features

DiffDog provides the following main features.

File Comparison

A [file comparison](#) in DiffDog is made in a File Comparison window. Files to be compared are opened in separate panes of a File Comparison window by browsing in Windows Explorer-type windows or from drop-down lists of previously opened files. DiffDog remembers file comparison pairs, and, when you select a file for comparison, can provide a list of files with which the selected file was [previously compared](#).

Files can be compared as text or as structured XML. You can also compare binary files, however DiffDog cannot—with the exception of Microsoft Word (*.doc or *.docx) documents—display the changes within binary files, it can only detect whether or not a pair of binary files is equal. A large range of [navigation controls](#) enables you to move easily among differences.

A wide range of [comparison options](#) are available, thus allowing you to define what aspects of files to compare and what aspects to ignore. Comparison options include settings for how whitespace and blank lines should be treated, whether case-sensitivity should be considered or not, whether differences should be indicated by line or character, whether certain node types, namespaces, and the order of attributes and/or elements should be ignored, whether entities should be resolved, etc.

If a file is modified outside DiffDog while it is open in a File Comparison window, DiffDog can watch for changes and reload the file if required.

Differences within files are indicated with background colors, and corresponding differences in the two panes are joined with lines, thus making visual analysis easier. Note that this does not apply to binary files! Vertical and horizontal scrolling of the two files in Comparison windows can be synchronized. This enables corresponding differences always to be displayed simultaneously.

File Editing and Merging in File Comparison Windows

After you have compared a file pair, files can be [edited](#) and [saved](#) directly within File Comparison windows and you can specify whether and how [backups of files](#) you edit should be kept. Comparisons can be done dynamically [as you edit](#).

DiffDog provides high-level find-and-replace functionality, which also includes support for regular expressions. Differences between files can be [merged](#), i.e. a different block in one file can be copied to replace the corresponding block in the other file. Editing and merging changes in either file can be undone an unlimited number of times.

Directory Comparison

A [directory comparison](#) in DiffDog is made in a Directory Comparison window. The directories to be compared are opened in separate panes of a Directory Comparison window. DiffDog provides a drop-down list of recently compared directories from which to select. Additionally, once a directory is selected to be opened in one pane, DiffDog can provide a list of directories with which that directory was [previously compared](#); as a result previously compared pairs can quickly be opened in a Directory Comparison window. You can [define filters](#) to specify what file types to compare and what file types to ignore in a directory comparison.

Directories can be compared on the basis of the sizes and timestamps of files within them (Quick

Comparison Mode), or on the basis of the contents of files. The compared directories are displayed as expandable/collapsible trees and show details such as file size and last modification date. The view of the compared directories can be [configured](#) on the basis of the comparison results. For example, equal directories and files can be hidden, and only non-equal folders and files shown. Differences between directories and files are [indicated](#) with color-coding and easy-to-identify icons.

If a directory is modified outside DiffDog while it is open in a Directory Comparison window, DiffDog can watch for changes and reload the directory if required. Non-equal directories and files can be copied from one pane (directory) to the other. You can also [synchronize](#) the directories, that is, copy all missing or updated files from one directory to the other or delete unneeded files. [File comparisons can be started](#) directly from within a Directory Comparison window by double-clicking a file in a directory.

Microsoft Word document comparison

A [comparison of Microsoft Word documents](#) is made in a Word Comparison window. Please note that Microsoft Word must be installed on your computer and that you cannot run a 64-bit version of DiffDog together with a 32-bit version of Microsoft Word, or vice versa, if you want to compare Microsoft Word documents in DiffDog. DiffDog opens two instances of Microsoft Word side by side and displays an empty document in both of them. Documents are opened separately in the left and right pane by clicking the **Open** button in the respective toolbar or choosing a previously compared document from the drop-down list box.

XML Schema comparison

An [XML schema comparison](#) is made in an XML Schema Comparison window. The XML schemas to be compared are opened in two components of the XML Schema Comparison window. Occasionally, you will have to [set a root element](#) for the comparison. The root elements on both sides are mapped and DiffDog tries to find and map corresponding (child) elements. The mappings can be changed manually at any time.

You can [save](#) the mapping and the settings of an XML Schema comparison in a file. If such an XML Schema comparison file is modified outside DiffDog while it is open in an XML Schema Comparison window, DiffDog can watch for changes and reload the file if required. DiffDog also allows you to generate [XSLT Stylesheets](#) and [MapForce Mappings](#) for the compared XML Schemas. The XSLT Stylesheet or MapForce Mapping, respectively, can then be saved or, for XSLT Stylesheets, opened in XMLSpy®.

Database schema comparison

A [comparison of database schemas](#) is made in a Database Schema Comparison window. The tables of the database schemas to be compared are opened in two components of the Database Schema Comparison window. DiffDog provides a selection dialog box which serves as a starting point for establishing the [connections to the database schemas](#) to be compared. Once a connection to a data source exists, the dialog box presents the schemas and tables of that database in a tree structure with several [layout](#) and [filter](#) options so that you can quickly [locate](#) the tables within the schema you want to compare.

When you start a comparison, tables are mapped automatically based on table and column names. If tables or columns cannot be mapped by name, DiffDog compares the structure of unmapped items and tries to find corresponding pairs.

You can [save](#) the mapping and the settings of a database schema comparison in a file. If such a database schema comparison file is modified outside DiffDog while it is open in a Database

Schema Comparison window, DiffDog can watch for changes and reload the file if required. DiffDog also allows you to [merge](#) the structure of the compared schemas, that is, the required change script is generated and executed automatically in the background.

Database data comparison

A [comparison of database tables](#) is made in a Database Data Comparison window. The tables to be compared are opened in two components of the Database Data Comparison window. DiffDog provides a selection dialog box which serves as a starting point for establishing the [connections to the databases](#) to be compared. Once a connection to a data source exists, the dialog box presents the tables of that database in a tree structure with several [layout](#) and [filter](#) options so that you can quickly [locate](#) the tables you want to compare.

Before you can start a comparison, tables have to be [mapped](#). This can be done automatically, based on column names and/or data types, or manually by drawing connection lines between the two components of the comparison. Tables can then be compared either with regard to the strings contained in them or natively, that is, based on their data types. When comparing columns of data type XML, a variety of options can be considered or ignored during comparison.

The result view of the compared tables can be [configured](#) on the basis of the comparison results. For example, equal rows and columns where no differences occur can be hidden, and only non-equal rows and columns shown. Differences between tables are [indicated](#) with color-coding and easy-to-identify icons.

You can [save](#) the mapping and the settings of a database data comparison in a file. If such a database data comparison file is modified outside DiffDog while it is open in a Database Data Comparison window, DiffDog can watch for changes and reload the file if required. DiffDog also allows you to [merge](#) the data of the compared tables, that is, the required change script is generated and executed automatically in the background.

Interface

Multiple comparison windows (directory, file, XML Schema, database schema, and database data) can be opened in DiffDog at a time. [Directory synchronization](#) is done in a dialog box that can be opened from the Directory Comparison window after you have run a directory comparison, and which allows you to customize the default synchronization settings according to your needs.

The GUI has user-friendly menu layouts, intuitive toolbar icons, right-click quick menus, and a status bar that summarizes the results of comparisons. You can customize the look of Directory Comparison windows, File Comparison windows, XML Schema Comparison windows, Database Schema Comparison windows, and Database Data Comparison windows, including the [background colors](#) that are used to highlight differences. Files can be viewed in [Text View](#) or Altova's [Grid View](#).

The Text View of documents in File Comparison windows provides line-numbering, source-folding (i.e. expandable and collapsible elements), indentation guides, bookmarking, syntax coloring, and whitespace and linefeed indicators. [Syntax coloring](#) can be adjusted according to file type.

Grid View displays structured documents, such as XML documents, in a tabular grid. This enables you to carry out large-scale changes easily (for example, inserting a column would insert the node represented by the column in all the nodes represented by the rows of the grid).

Command Line

DiffDog can be [called from the command line](#). The application can be integrated with any source

control system which provides the possibility to set up a path to the DiffDog executable.

System Requirements

Altova DiffDog runs on Windows XP, Windows Vista, Windows 7, Windows 8, and on Windows Server 2003, 2008, and 2012.

2.2 DiffDog Terminology

Terms used in this documentation are defined below.

Comparisons: DiffDog enables you to make five kinds of comparisons: File Comparisons, Directory Comparisons, Microsoft Word document Comparisons, XML Schema Comparisons, Database Schema Comparisons, and Database Data Comparisons (*see below*).

File comparison: A file comparison is the process of comparing two files. The term is also used to refer to the display of results of the comparison.

File Comparison window: Each file comparison is displayed in a File Comparison window. Multiple file comparisons can be open in DiffDog at a time, but only one may be active at any given time.

Microsoft Word document comparison: A Microsoft Word document comparison is the process of comparing two Microsoft Word (*.doc or *.docx) files. The term is also used to refer to the display of results of the comparison.

Word Comparison window: Each Microsoft Word document comparison is displayed in a Word Comparison window. Multiple Microsoft Word document comparisons can be open in DiffDog at a time, but only one may be active at any given time.

Directory comparison: A directory comparison is the process of comparing two directories. The term is also used to refer to the display of the results of the comparison.

Directory Comparison window: Each directory comparison is displayed in a Directory Comparison window. Multiple directory comparisons can be open in DiffDog at a time, but only one may be active at any given time.

Database Data comparison: A database data comparison is the process of comparing the content of tables contained in two databases.

Database Data Comparison window: Each database data comparison is displayed in a Database Data Comparison window. Multiple database data comparisons can be open in DiffDog at a time, but only one may be active at any given time.

Database Schema comparison: A database schema comparison is the process of comparing the structure of tables contained in two database schemas.

Database Schema Comparison window: Each database schema comparison is displayed in a Database Schema Comparison window. Multiple database schema comparisons can be open in DiffDog at a time, but only one may be active at any given time.

XML Schema comparison: An XML schema comparison is the process of comparing two XML schemas. The term is also used to refer to the display of results of the comparison.

XML Schema Comparison window: Each XML schema comparison is displayed in an XML Schema Comparison window. Multiple XML schema comparisons can be open in DiffDog at a time, but only one may be active at any given time.

Component: In Database Data comparisons, Database Structure comparisons, and XML Schema comparisons, the items to be compared are contained in two components within the

respective comparison window. The components are used to select and map the items of the comparison and provide several context menu options.

Data source: The database that hosts the tables compared in a database data or database schema comparison is referred to as data source. You need a connection to a data source in order to start a database data or database schema comparison in DiffDog.

Database Data Comparison Result window: In contrast to file and directory comparisons, the results of a database data comparison are not displayed directly in the Database Data Comparison window but in a separate window which is called the Database Data Comparison Result window. The Database Data Comparison window itself provides only a short overview stating whether or not the data in the two tables is equal and how many rows are different or exist only on one side of the comparison.

Directories and Folders: These two terms are used interchangeably.

Difference: Six types of differences are distinguished: (1) differences between two compared files, (2) differences between two compared directories, (3) differences between two compared Microsoft Word documents, (4) differences between the data in tables of two compared databases, (5) differences between the structure in schemas of two compared databases, and (6) differences between two compared XML Schemas.

(1) A difference between two files that are compared as text denotes a line of text in a file that is different from the corresponding line (if any) in the compared file. Note that the entire line is considered to be a single difference—even if the option to show differences within lines is selected. (This is significant when merging differences because the entire line will be merged; merges are not carried out at the character level.) A line of text is considered to be different from its corresponding line if one or more characters of text in it are different, if text is missing, or if a line is present for which there is no corresponding line in the compared file.

A difference between two files that are compared as XML denotes a node that is different from the corresponding node in the compared file. In general, nodes are considered different if the corresponding text values do not match. What constitutes a difference can be [further refined](#) in the **Comparison Options** dialog box.

(2) Differences between two compared directories are determined by comparing corresponding files within the two compared directories. In Quick Comparison Mode, the file sizes and timestamps of the corresponding files are compared. If one of these is different, the files are said to be different. Alternatively, corresponding files within directories are compared on the basis of their contents. Such comparisons are carried out as normal DiffDog file comparisons, and a difference causes the files to be flagged as different. *Also see the definition of [Equal Files](#) and [Non-Equal Files](#).*

(3) A difference between two Microsoft Word documents denotes a sentence or a paragraph (depending on the settings you have defined in the [Word comparison options](#)) that is different from the corresponding sentence/paragraph (if any) in the compared document. Note that the entire sentence/paragraph is considered to be a single difference—even if the option to show differences within lines is selected. (This is significant when merging differences because the entire sentence/paragraph will be merged; merges are not carried out at the character level.) A sentence/paragraph is considered to be different from its corresponding sentence/paragraph if one or more characters of text in it are different, if text is missing, or if a sentence/paragraph is present for which there is no corresponding line in the compared file.

(4) A difference between tables in two databases when strings are compared occurs when the string representation of the data contained in a field is different between the two tables.

A difference between tables in two databases when the content of a database is compared using the database's internal data types (native comparison) occurs when the content of a field itself (and not its string representation which might be different for the same content in different databases) in the first table does not match the content of the corresponding field in the second table.

(5) A difference between the structure of schemas in two compared databases occurs when the name or data type of a database item is different or when a database items exists in one schema that is missing in the other schema.

(6) A difference between two compared XML Schemas occurs when items exist in one XML Schema that are missing in the other XML Schema or when the names of items are different.

Equal Files: In directory comparisons, files that are identical according to the comparison options, are said to be equal.

Non-equal Files: In directory comparisons, there are two types of non-equal files: (1) a different file (see [definition of Difference](#) above), and (2) a file that is present in one directory but not in the other. Note that a non-equal file is not necessarily a different file.

Mapping: In database data, database schema, and XML Schema comparisons, each table, column, or item, respectively, in the left comparison component has to be assigned a table, column, or item, respectively, in the right comparison component to be compared with. This process is called mapping in DiffDog and can be done either automatically by the application based on column name and/or data type, or manually by the user using the mouse.

Merging: Differences found in a file, database data, or database schema comparison can be merged, that is, copied from one file or table, respectively, to the other. The block that is copied overwrites the corresponding block or space in the compared file/database. In file comparisons, merges are performed for the active (current) difference, and can be performed in either direction. In database comparisons, merges are performed either for all or for the selected items. Note that non-equal files in a Directory Comparison can also be copied from one pane (directory) to the other and that rows that exist only on one side of a database data comparison can be copied to the other side.

Synchronizing: Two directories that are different are synchronized by copying or deleting, respectively, all non-equal files and sub-folders from one directory to the other, or by deleting files that are present in one directory but not in the other. The default synchronization options are displayed in the **Synchronize directories** dialog box where they can be changed for the entire directory. Additionally, you can also edit the synchronization actions for individual files or sub-folders.

2.3 Comparison Mode

Files, directories, and database data can be compared in DiffDog in several ways. The comparison mode is indicated by the icons in the Comparison Mode and Database Data Comparison Mode toolbars. You can change the comparison mode either by clicking a different toolbar icon or by selecting the desired mode from the **Diff and Merge** menu.

The comparison mode you select is important. For example, identical files with different timestamps will be indicated as same in Text Comparison Mode but as different in Quick Comparison Mode. The available comparison modes are described below.

File comparison

When a [File Comparison](#) window is active, or when Quick Comparison Mode is toggled off in a Directory Comparison window, you can select from among the following four file comparison modes:



Text: Compares files as text files; compares directories with contents treated as text files.



XML: Compares files as XML files; compares directories with contents treated as XML files.



Binary: Compares files as binary files; compares directories with contents treated as binary files.



File extension: Compares files as text or XML according to settings for file extensions, which you can make in the [File Types](#) tab of the **DiffDog Options** dialog (**Tools | DiffDog Options**); compares directories with contents treated as text files, XML files, Microsoft Word files, or binary files according to file extension.

Directory comparison

When a [Directory Comparison](#) window is active, you can choose between Quick Comparison Mode and one of the four file comparison modes described in the File comparison section above.



Quick comparison: Compares files within directories and sub-directories by size and date modified. This mode is either toggled on or off. When toggled off, the four file comparison modes become available. Selecting one of the file comparison modes causes directories to be compared in terms of their contents as text, XML, or binary files.

Database data comparison

When a [Databases Data Comparison](#) window is active, you can select either string comparison or native comparison.



String: Compares the content of database tables as strings with no regard to how the content is stored in the database.



Native: Considers the data type of a database column when comparing tables. The same data, for example, can be considered different when it is stored in two columns using different data types.



XML Native: Treats the content of XML columns as XML files. This comparison mode is only available together with the Native comparison mode.

Current Comparison Mode

DiffDog uses the concept of the **current comparison mode**. This is the comparison mode that is current at any given time. For each *type* of comparison window (file, directory, and database data), a *separate* current comparison mode exists at all times. The current comparison mode for each type of comparison window is that comparison mode most recently selected by you in any of the open comparison windows of that type. When the application is started, the current comparison modes are the comparison modes that were current at the time the application was last closed.

Every File Comparison window, Directory Comparison window, and Database Data Comparison window has a comparison mode.

When new comparison windows (file, directory, or database data) are opened, they have the current comparison mode for that type of comparison window (file, directory, or database data). Note that the current comparison mode for file comparisons applies to new directory comparison windows if Quick Comparison Mode is not the current comparison mode for directory comparisons.

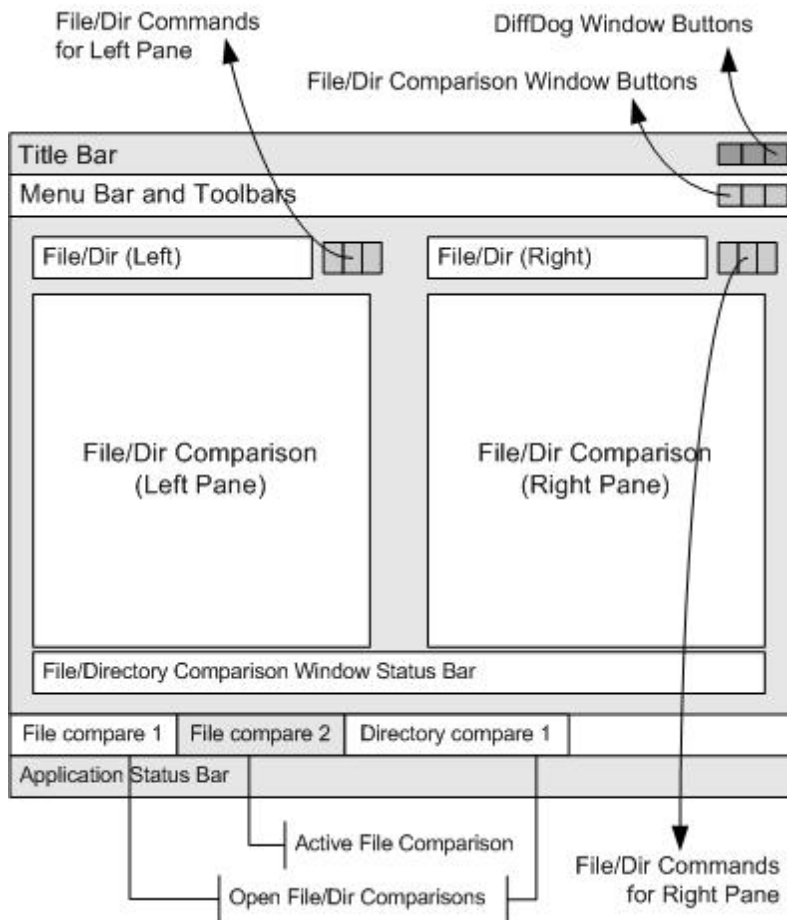
If you change the comparison mode of a comparison window, then that comparison mode applies to that particular comparison window. The comparison mode of other open comparison windows is not affected. However, the newly selected comparison mode becomes the current comparison mode and is applied to all comparison windows that are opened subsequently.

Chapter 3

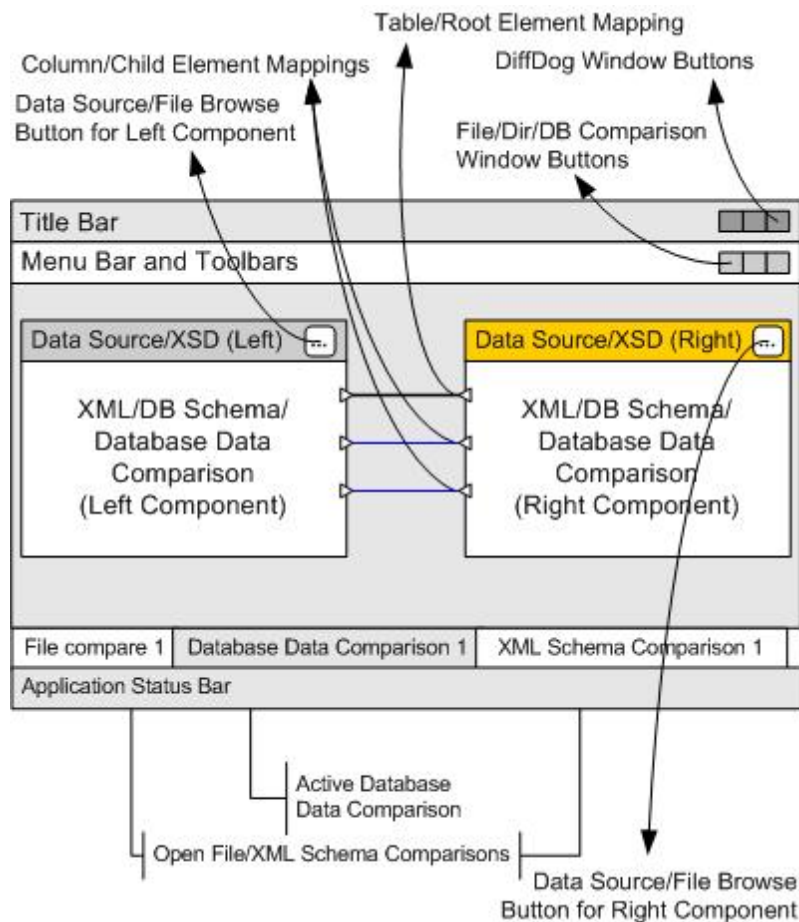
The DiffDog Interface

3 The DiffDog Interface

The DiffDog interface displays multiple File Comparison windows, Directory Comparison windows, Word Comparison Windows, Database Data Comparison windows, Database Schema Comparison windows, and XML Schema Comparison windows within the DiffDog application window. The schematic diagrams below illustrate the main parts of the interface. They are accompanied by a brief description of the various interface parts.



The Database Data, Database Schema, and XML Schema Comparison windows look slightly different than the File Comparison and Directory Comparison windows. They consist of only one pane which has a left and a right component that serve for the selection of the data sources and tables for the database or XML Schema comparison.



Title Bar

The Title Bar displays the application name (i.e., DiffDog) followed by the name of the active File Comparison window, Directory Comparison window, Word Comparison window, XML Schema Comparison window, Database Schema Comparison window, or Database Data Comparison window. At the right-hand side are buttons to minimize, reduce or maximize, and close the DiffDog application window.

Menu Bar and Toolbars

The Menu Bar displays the menus. Each toolbar displays a group of icons for DiffDog commands. You can reposition the menu bar and toolbars by dragging their handles to the desired locations. At the right-hand side are buttons to minimize, reduce or maximize, and close the active comparison window.

File/Directory/Microsoft Word/XML Schema/Database Schema/Database Data Comparison Window

Multiple File Comparison windows and/or Directory Comparison windows and/or Word Comparison windows and/or Database Data Comparison windows and/or Database Schema Comparison windows and/or XML Schema Comparison windows can be open at a time, but only one of them is active. The name of the active comparison window appears in the title bar and its name tab (at the bottom of the DiffDog application window) is highlighted and the name itself is displayed in bold; the name tabs of the other open comparison windows are grayed out and the names are displayed in normal font. To make another comparison window the active comparison window, click its name tab.

Each comparison window (file/Microsoft Word or directory) has two panes of equal width arranged side-by-side and a status bar for that comparison window below the two panes. Above each pane is a file/directory selection area. This consists of a combo box, where you can enter the name of the file/directory to be compared, or select a previously opened file or directory from the drop-down menu. The buttons to the right of this area allow you to browse for files or directories, and to open files, save files and refresh files. The file and directory that is opened in each pane can therefore be opened independently of the file or directory in the other pane. Once a file/directory has been opened in both panes of a comparison window, a comparison can be made.

In Directory Comparison windows, directories are displayed as trees, the levels of which can be expanded/collapsed by double-clicking on a directory-level. Additionally, the width of individual columns can be adjusted by dragging borders to the desired width. In File Comparison windows, the view of the document can be customized using commands in the **View** and **Text View** menus.

In XML Schema Comparison windows, XML Schemas are selected in two components that are displayed in one pane of the comparison window. Each component has a title bar displaying the file name of the XML Schema that is currently loaded into the component, and a browse button that opens the Windows **Open** dialog box where the XML Schemas for the left and right comparison component can be selected or changed. The width of a component can be adjusted by dragging the handle in the lower right corner of the component. The elements inside a component are displayed as trees. By double-clicking on an element or clicking the plus symbol next to an element name, the element can be expanded to show the child elements. Elements that are mapped to their respective counterparts in the other components are connected by connector lines. These mappings can be selected, deleted, or dragged to other tables/columns using the mouse.

In database comparison windows (schema or data), data sources and tables are selected in two components that are displayed in one pane of the comparison window. Each component has a title bar displaying the data source the component is currently connected to, and a browse button that opens the **Select Tables for Data Comparison** dialog box where the data sources and tables for the left and right comparison component can be selected or changed. The width of a component can be adjusted by dragging the handle in the lower right corner of the component. The tables and columns inside a component are displayed as trees. By double-clicking on a table or clicking the plus symbol next to a table name, the table can be expanded to show the table columns. Tables and columns that are mapped to their respective counterparts in the other components are connected by connector lines. These mappings can be selected, deleted, or dragged to other tables/columns using the mouse.

Comparison Window Status Bar

The status bar of a file/Microsoft Word or directory comparison window indicates the status of that comparison. If files or directories have not been opened, this is indicated. If a comparison has been made, the type of comparison is reported along with the result of the comparison. The comparison window status bar is not available in XML Schema comparison windows, database data comparison windows, and database data comparison windows, and should not be confused with the application status bar.

Application Status Bar

The application status bar appears at the bottom of the application window, and shows application-level information. The most useful of this information are the tooltips that are displayed here when you mouseover a toolbar icon. The application status bar should not be confused with the comparison window status bar. If you are using the 64-bit version of DiffDog, this is indicated

in the status bar with the suffix (x64) after the application name. There is no suffix for the 32-bit version.

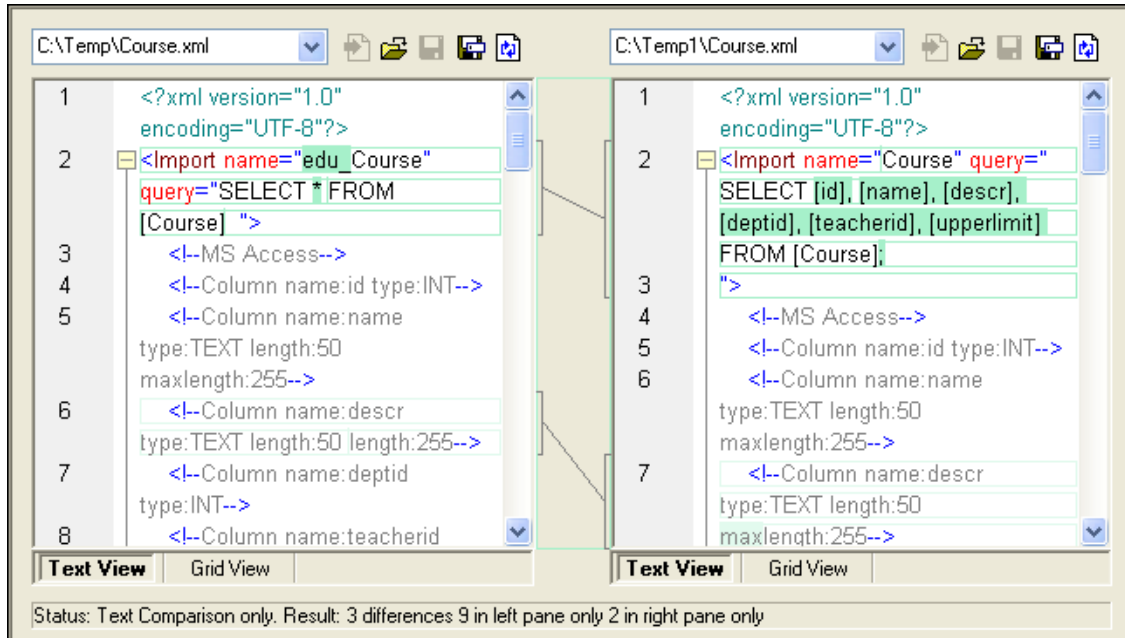
Chapter 4

Comparing Files

4 Comparing Files

Altova web site:  [file diff tool](#)

File comparison in DiffDog is done in a File Comparison window, which provides several features for [comparing](#), [editing](#), and [merging](#) files. For well-formed, XML-based files, you have the additional option to change between [Text View](#) and [Grid View](#).



To start a file comparison in DiffDog, you can either [directly choose two files to compare](#) or first open an empty File Comparison window and then [select the files to be compared](#). Alternatively, you can also [select two files in Windows Explorer](#), right-click and select **Compare with Altova DiffDog** from the context menu. This will open a new instance of DiffDog and display the selected files in a Comparison Window.

The comparison will start automatically unless you have deactivated the **Autostart Comparison** option in the **Diff and Merge** menu. You can change the [comparison mode](#) as desired and restart the comparison. In addition, to eliminate differences, DiffDog allows you to [edit the content](#) of the files directly in the comparison window and [copy content from one pane to the other](#).

When comparing [ZIP-conformant files and Office Open XML \(OOXML\) files](#) in DiffDog, please note that these comparisons initially have to be started as a [directory comparison](#) since ZIP and OOXML files contain multiple files.

Altova web site:  [ooxml diff](#), [zip diff](#)

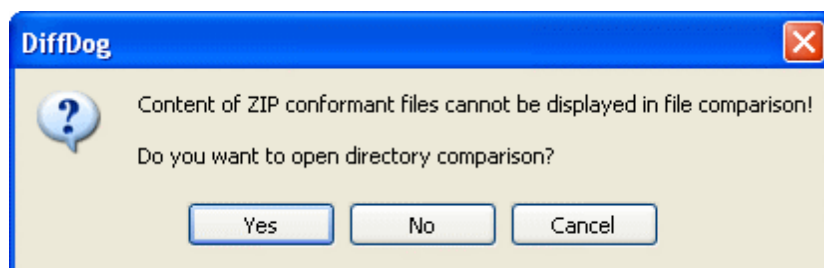
To open a file comparison window:

Do one of the following:

- Select the menu option **File | Open** or press **Ctrl+O** and select **Compare files** in the **Open comparison** dialog box. Then choose the files to be compared in the Content group box and click **OK**. A new File Comparison window containing the selected files is

opened.

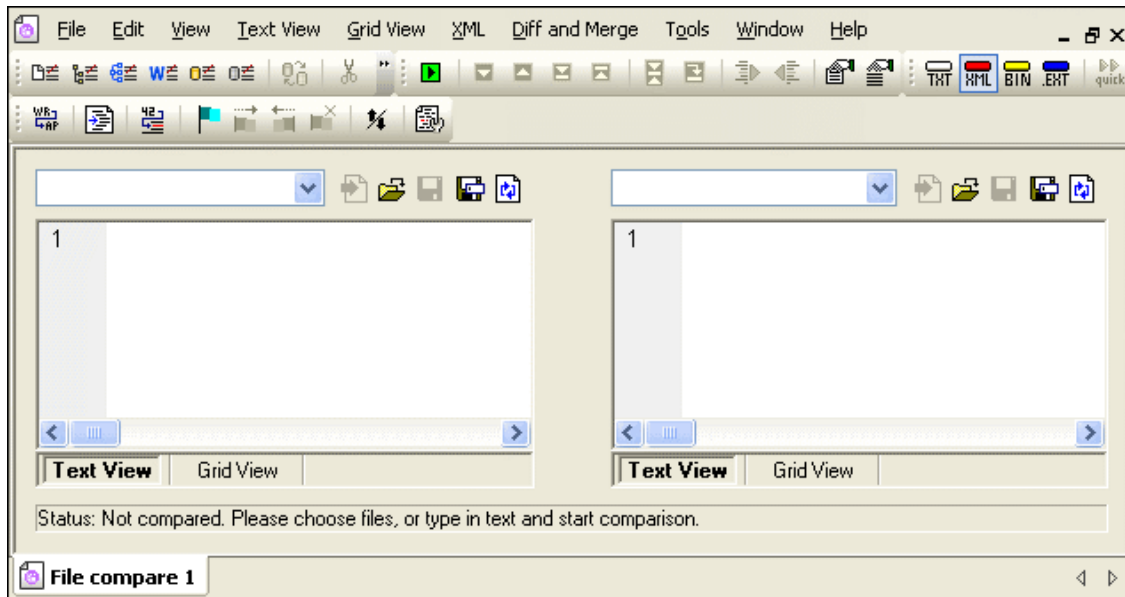
If you choose a ZIP-conformant or OOXML file, a dialog box is displayed and you can choose to open a directory comparison instead.



- Select the menu option **File | Compare Files** or click the **Compare files**  icon in the Standard toolbar. An empty File Comparison window is opened.
- To [compare Microsoft Word \(*.doc or *.docx\) documents](#), click the **Compare Microsoft Word**  icon in the Standard toolbar.

4.1 Opening a File Comparison Window

When opening a new File Comparison window, the file comparison is given a name of the form **File compare X**, where X is an integer indicating that file comparison's position in the sequence of file comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



Note that the **Compare Files** command opens only the File Comparison window; it does not open any file within the window. The two files to be compared must be [opened](#) subsequently in the panes of the comparison window, one in each pane.

To open an empty File Comparison window:

- Select the menu option **File | Compare Files** or click the **Compare files**  button in the Standard toolbar.

4.2 Selecting Files for Comparison

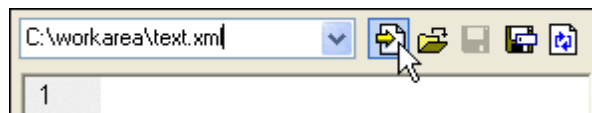
Files can be selected for comparison in various ways. You can open the files in a new File Comparison window, [re-open a previous comparison](#), or change the files in the currently open File Comparison window. In addition, you can also drag and drop files from the Windows Explorer into the respective panes of a File Comparison window or select a file pair in Windows Explorer and use a context menu option to start a comparison in DiffDog.

To open files in a new File Comparison window:

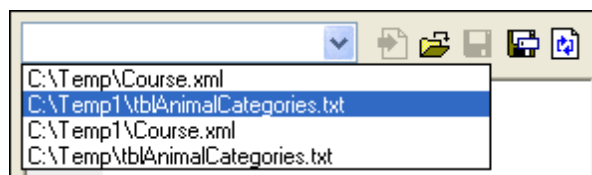
1. Select the menu option **File | Open** or press **Ctrl+O**.
2. In the **Open Comparison** dialog box, select **Compare files** in the Mode group box.
3. In the Content group box, for the first and the second file, do one of the following:
 - Enter the path of the files.
 - Select previously compared files from the drop-down list.
 - Click the **Browse...** button. In the Open dialog that pops up, you can either select a file from the file system (click **Open** after selecting it) or you can select a file via its URL. To access the Open URL dialog, click **Switch to URL**. Accessing a file via a URL enables you to open files via FTP and HTTP/HTTPS. How to select files via URLs is [explained below](#).
4. Click **OK**. The selected files are opened in a new File Comparison window.

To select files in the active File Comparison window:

1. In the left pane of an existing File Comparison window, do one of the following:
 - Click the **Open**  icon and select a file in the Windows **Open** dialog box.
 - Enter the full path to a file and click the **Apply**  button.



- Drag a file from the Windows Explorer into the pane.
- Select a previously compared file from the drop-down list.



2. Repeat any of the steps described in step 1 for the right pane.

To start a file comparison from Windows Explorer:

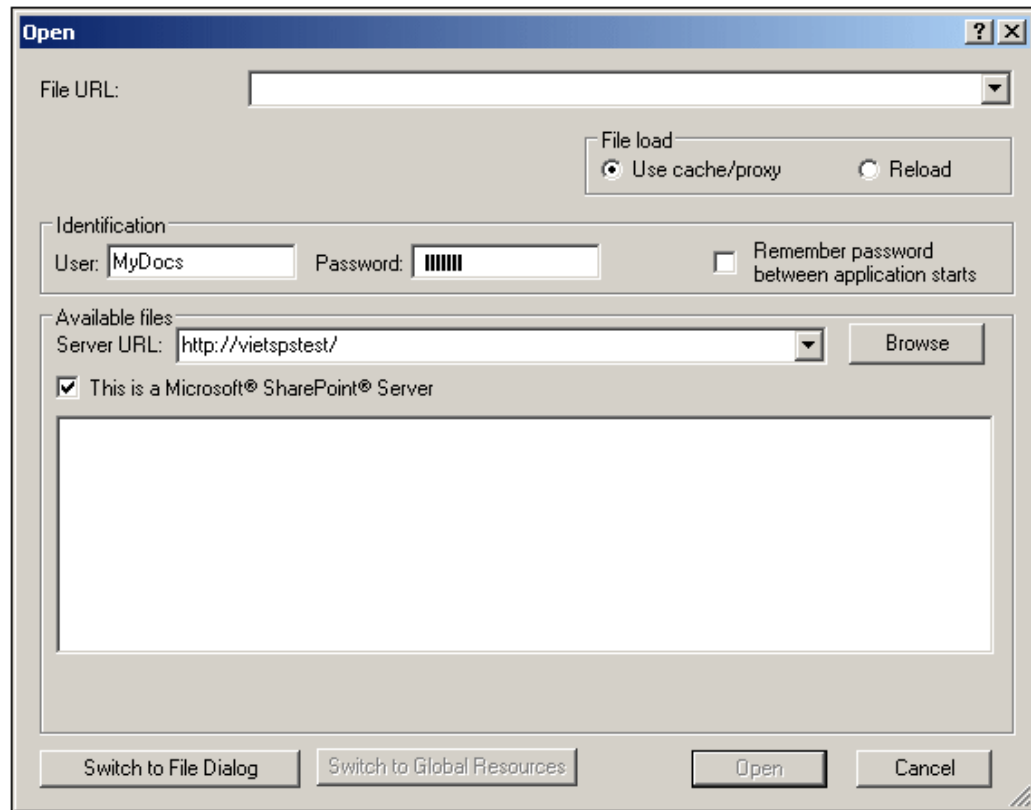
1. Select two files in Windows Explorer.
2. Right-click and choose **Compare with Altova DiffDog** from the context menu.

A new instance to DiffDog is opened, the selected files are displayed in a File Comparison window, and the comparison is started automatically.

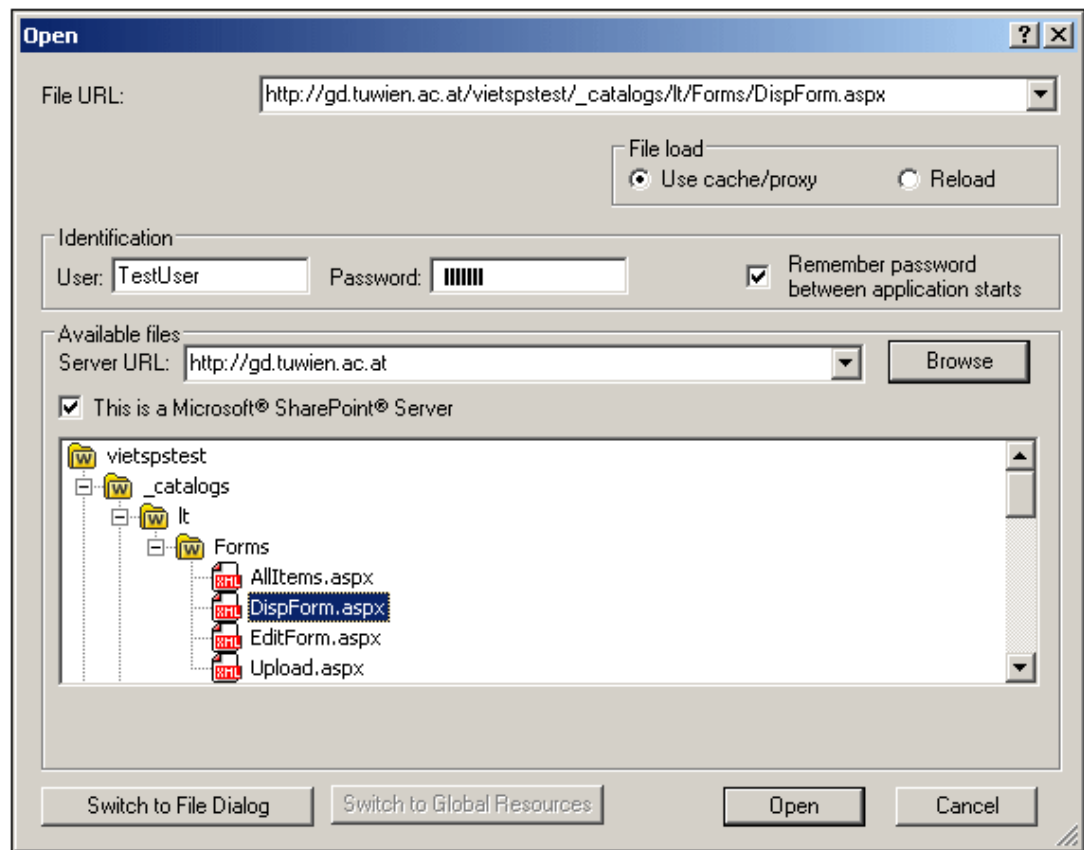
Selecting files via URLs

To select a file via a URL, do the following:

1. Click the **Switch to URL** button. This switches to the URL mode of the Open dialog (screenshot below).



2. Enter the URL of the file you want to access in the *Server URL* field (screenshot above). If the server is a Microsoft® SharePoint® Server, check the *Microsoft® SharePoint® Server* check box. See the Microsoft® SharePoint® Server Notes below for further information about working with files on this type of server.
3. If the server is password protected, enter your User-ID and password in the *User* and *Password* fields.
4. Click **Browse** to view and navigate the directory structure of the server.
5. In the folder tree, browse for the file you want to load and click it.



The file URL appears in the File URL field (screenshot above). The **Open** button only becomes active at this point.

6. Click the **Open** button to load the file into DiffDog.

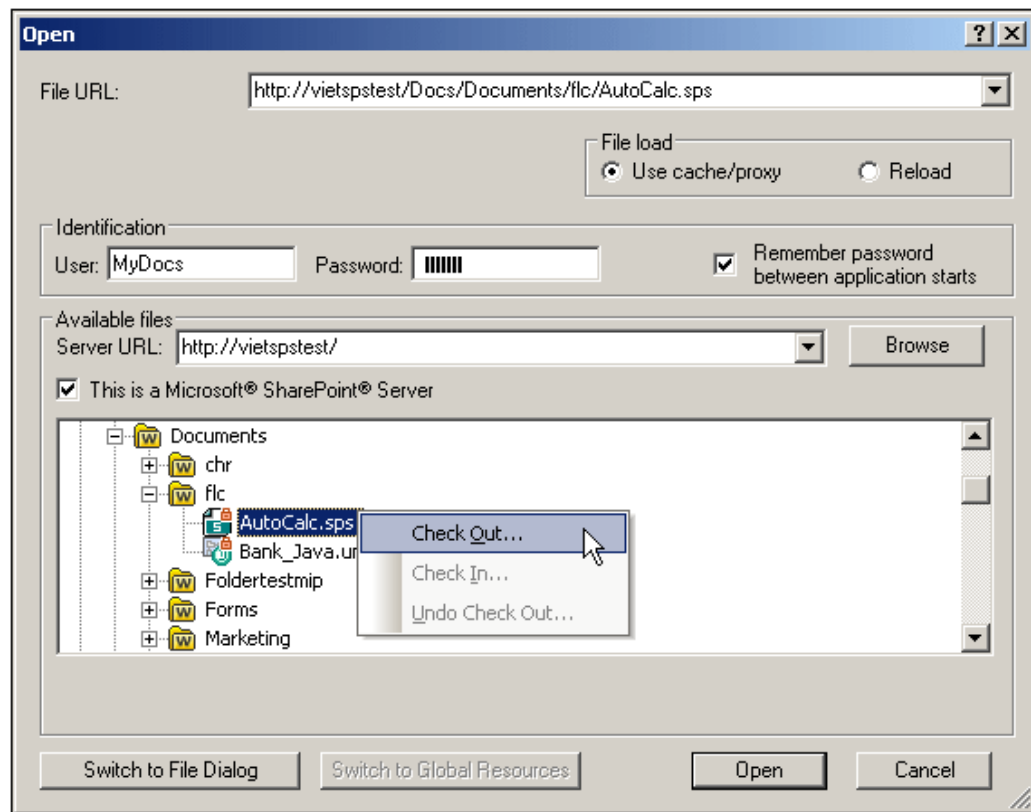
Note: The Browse function is only available on servers which support WebDAV and on Microsoft SharePoint Servers. The supported protocols are FTP, HTTP, and HTTPS.

Note: To give you more control over the loading process, you can choose to load the file through the local cache or a proxy server (which considerably speeds up the process if the file has been loaded before). Alternatively, you may want to reload the file if you are working, say, with an electronic publishing or database system; select the **Reload** option in this case

Microsoft® SharePoint® Server Notes

Note the following points about files on Microsoft® SharePoint® Servers:

- In the directory structure that appears in the Available Files pane (screenshot below), file icons have symbols that indicate the check-in/check-out status of files.



Right-clicking a file pops up a context menu containing commands available for that file (*screenshot above*).

- The various file icons are shown below:

	Checked in. Available for check-out.
	Checked out by another user. Not available for check-out.
	Checked out locally. Can be edited and checked-in.

- After you check out a file, you can carry out DiffDog differencing operations on it.
- You can check-in the file via the context menu in the Open URL dialog (*see screenshot above*).
- When a file is checked out by another user, it is not available for check out.
- When a file is checked out locally by you, you can undo the check-out with the Undo Check-Out command in the context menu (*see screenshot above*). This has the effect of returning the file to the server.
- If you check out a file in one Altova application, you cannot check it out in another Altova application. The file is considered to be already checked out to you. The available commands at this point in any Altova application supporting Microsoft® SharePoint® Server will be: **Check In** and **Undo Check Out**.

4.3 Modifying the File Comparison Options

The options of a file comparison can be changed in the **Comparison Options** dialog box. This dialog box provides separate tabs for [text](#) and [XML](#) comparison. In addition, the **Diff and Merge** menu offers several toggle commands which can be switched on or off via the menu:

- [Show Options Before Comparison](#)
- [Autostart Comparison](#)
- [Compare while Editing](#)
- [Support Recently Compared Pairs](#)

General options for the comparison of files are furthermore available in the [File comparison](#) tab of the **DiffDog Options** dialog box.

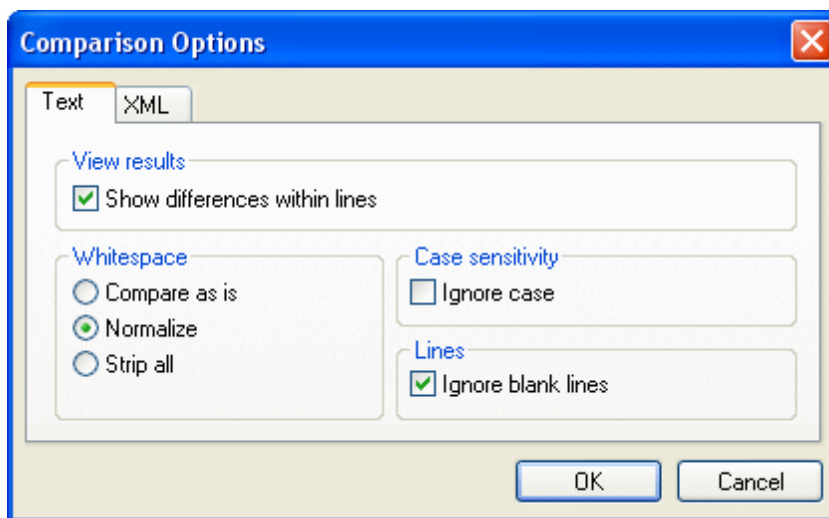
To modify the file comparison options:

Do one or more of the following:

- Select the menu option **Tools | Comparison Options...** and change the settings in the [Text](#) and [XML](#) tabs as required.
- Activate or deactivate the desired [comparison management](#) options in the **Diff and Merge** menu.

4.3.1 Options for Text Comparison

The Text tab of the **Comparison Options** dialog box displays the options that are used for text comparison.



View results

By activating the Show differences within lines check box, you can display the differences on character level. Note that the **Compare as Text**  button must be active in order to display differences within lines.

<Covering>Leather</Covering>	7	<Covering>Leather</Covering>
<SatNav>Saqua</SatNav>	8	<SatNav>Global Inc.</SatNav>

If the check box is deactivated, differences are displayed only on line level, that is, character level differences are not highlighted. Only the line, as a whole, is indicated as being different.

<Covering>Leather</Covering>	7	<Covering>Leather</Covering>
<SatNav>Saqua</SatNav>	8	<SatNav>Global Inc.</SatNav>

Whitespace

Whitespace characters are space, tab, carriage return, and line feed. The three options here compare files with whitespace unchanged; with whitespace normalized (i.e., all consecutive whitespace characters are reduced to one whitespace character); and with all whitespace stripped (i.e., not considered for comparison).

Case sensitivity

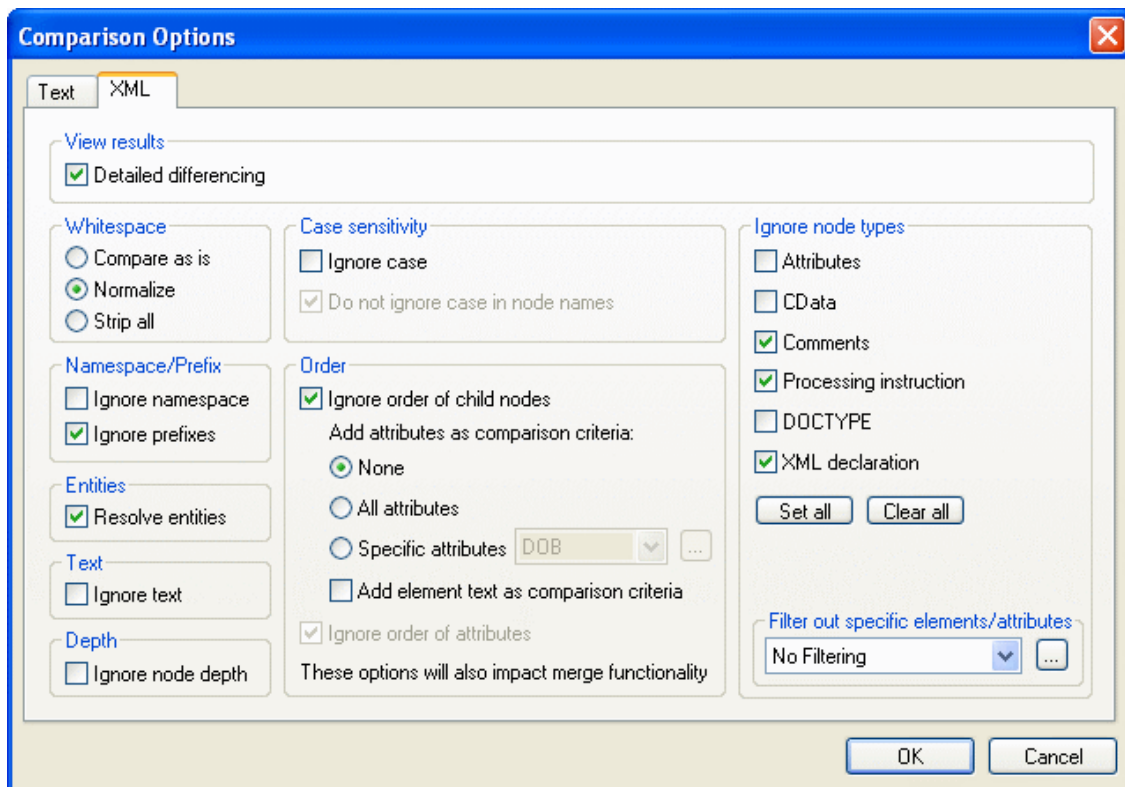
Activate the Ignore case check box if upper and lower casing should be ignored when checking for differences.

Lines

Here you define whether blank lines should be ignored.

4.3.2 Options for XML Comparison

The XML tab of the **Comparison Options** dialog box displays the options that are used for XML-based comparison.



View results

The Detailed differencing option enables you to show differences in detail or reduce the number of differences (so that navigation is faster). With detailed differencing toggled off,

consecutive nodes that are different are displayed as a single node. This applies also to consecutive nodes on different hierarchical levels, such as an element node and its child attribute node. Please note that detailed differencing must be checked to enable merging and exporting differences.

Whitespace

Whitespace characters are space, tab, carriage return, and line feed. The three options here compare files with whitespace unchanged; with whitespace normalized (i.e., all consecutive whitespace characters are reduced to one whitespace character); and with all whitespace stripped (i.e., not considered for comparison).

Namespace/Prefix

These are options for ignoring namespaces and prefixes when searching for differences.

Entities

If **Resolve entities** is selected, then all entities in the document are resolved. Otherwise the files are compared with the entities as is.

Text

If **Ignore text** is selected, then differences in corresponding text nodes are not reported. The different first name is ignored since only the XML structure is compared but not the text content of the tags.

<pre><Person Manager="true" Degree="BA" Programmer="false"> <First>Fred</First></pre>	<pre><Person Manager="true" Programmer ="false" Degree="BA"> <First>Alfred</First></pre>
---	--

Depth

If **Ignore node depth** is selected, then the additional depth of any element (i.e., more levels of descendants) relative to the depth of the corresponding element in the compared file is ignored. This option must be unselected to enable merging and exporting differences.

Case sensitivity

If the **Ignore case** check box is checked, then case is ignored, and you have the option of ignoring or not ignoring case in node names.

Order

If **Ignore order of child nodes** is selected, then the relative position of the child nodes of an element is ignored, provided that the individual nodes within a node level have unique node names. As long as an element node with the same name exists in each of the two sets of sibling nodes, the two sets are considered to be equal. In the following example, the order of the `<Name>` and `<FirstName>` nodes is different in the left and right file and is marked as different if the **Ignore order of child nodes** option is deactivated.

2	<code><Person Manager="true" Developer</code>	2	<code><Person Developer="false" Manage</code>
3	<code><Name>Smith</Name></code>	3	<code><FirstName>John</FirstName></code>
4	<code><FirstName>John</FirstName></code>	4	<code><Name>Smith</Name></code>
5	<code><Phone type="office">+3375456</code>	5	<code><Phone type="office">+3375456</code>

Checking the **Ignore order of child nodes** option will ignore this difference in the comparison window.

2	<Person Manager="true" Developer	2	<Person Developer="false" Manage
3	<Name>Smith</Name>	3	<FirstName>John</FirstName>
4	<FirstName>John</FirstName>	4	<Name>Smith</Name>
5	<Phone type="office">+3375456	5	<Phone type="office">+3375456

Note, however, that DiffDog can ignore the order of child nodes only if the node names on a certain node level are unique. If several occurrences of a node appear, e.g. with different attributes assigned, a node, if appearing in a different order, will always be considered unequal to an element with the same name and attribute in the compared sibling set—even if the Ignore order of child nodes is selected. If we add different attributes to the <Phone> node of our example, then the difference in order of the three occurrences of the <Phone> node will appear in the comparison window although the Ignore order of child nodes check box is selected.

4	<FirstName>John</FirstName>	4	<Name>Smith</Name>
5	<Phone type="office">+3375456	5	<Phone type="office">+3375456
6	<Phone type="mobile">+331894	6	<Phone type="home">+3375584
7	<Phone type="home">+3375584	7	<Phone type="mobile">+331894

In order to ignore the order of several occurrences of child nodes that have different attributes assigned, you can add these attributes as comparison criteria. DiffDog provides two options: (i) add all attributes and (ii) define a list of specific attributes, which in our example will both result in the <Phone> nodes being displayed as equal. However, if you select the Specific attributes option, you will first have to [define an attribute group](#) accordingly.

4	<FirstName>John</FirstName>	4	<Name>Smith</Name>
5	<Phone type="office">+3375456	5	<Phone type="office">+3375456
6	<Phone type="mobile">+331894	6	<Phone type="home">+3375584
7	<Phone type="home">+3375584	7	<Phone type="mobile">+331894

It may happen that several occurrences of child nodes appear that have also the same attribute assigned (e.g. a person with more than one mobile phone number in our example). In the screenshot below the All attributes radio button has been selected, however differences are still reported since two mobile phone numbers are listed.

4	<FirstName>John</FirstName>	4	<Name>Smith</Name>
5	<Phone type="office">+3375456687456<	5	<Phone type="office">+3375456687456<
6	<Phone type="mobile">+331894786914<	6	<Phone type="home">+337558458935<
7	<Phone type="home">+337558458935<	7	<Phone type="mobile">+331894786924<
8	<Phone type="mobile">+331894786924<	8	<Phone type="mobile">+331894786914<

In DiffDog you can cope also with this scenario by activating the Add element text as comparison criteria check box. If element text, attribute value, and node name are identical and only the order of the nodes is different, no differences will be reported.

4	<FirstName>John</FirstName>	4	<Name>Smith</Name>
5	<Phone type="office">+3375456687456<	5	<Phone type="office">+3375456687456<
6	<Phone type="mobile">+331894786914<	6	<Phone type="home">+337558458935<
7	<Phone type="home">+337558458935<	7	<Phone type="mobile">+331894786924<
8	<Phone type="mobile">+331894786924<	8	<Phone type="mobile">+331894786914<

Note that, if the Ignore Order option is specified, then the merge functionality also ignores the order. If Ignore order of child nodes is unselected, then differences in order are represented as differences.

The option of ignoring the order of attributes is also available, and applies to the order of attributes of a single element. In the above example, the Ignore order of attributes option, has been checked, and DiffDog therefore has ignored the order of the attributes of the <Person> node. Note that the order of attributes will always be ignored, if the Ignore order or child nodes check box is activated. In the screenshot below, both the Ignore order of child nodes and the Ignore order of attributes check box are deactivated.

2	<Person Manager="true" Developer="false">	2	<Person Developer="false" Manager="true">
3	<Name>Smith</Name>	3	<FirstName>John</FirstName>
4	<FirstName>John</FirstName>	4	<Name>Smith</Name>

Ignore node types

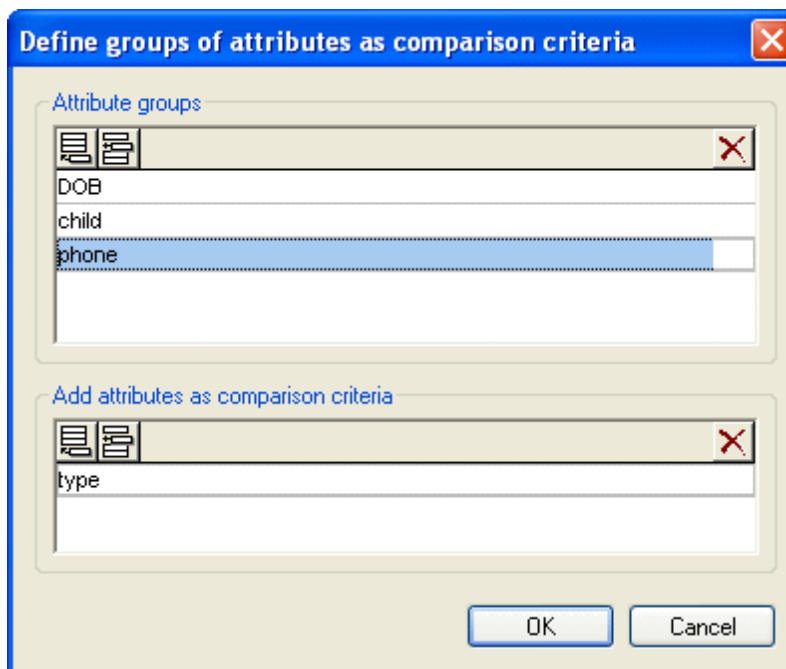
Check the node types that will **not** be compared in the Compare session. Node types that may be ignored are Attributes, CDATA, Comments, Processing Instructions, DOCTYPE statements, and XML declarations.

Filter out specific elements/attributes

Enables you to [define filters](#) to set what elements and/or attributes should not be considered for comparison. A filter is defined at the application level, which means that once a filter is defined, it is available for every comparison. More than one filter can be defined, and, for every comparison, the filter to be used is selected in the drop-down list in the Filter out specific elements/attributes group box.

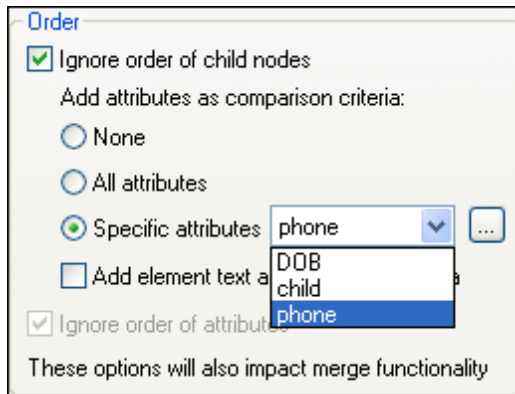
Defining Groups of Attributes

If you choose the Specific attributes radio button in the Order group box, the **Define groups of attributes as comparison criteria** dialog box opens where you can create different lists of attributes that shall be used as comparison criteria.



Attributes to be considered as comparison criteria are organized in attribute groups, that is, you

first have to define an attribute group and then add the relevant attributes to the group. You can select the attribute group to be used from the **Specific attributes** drop-down list in the **Comparison Options** dialog box.

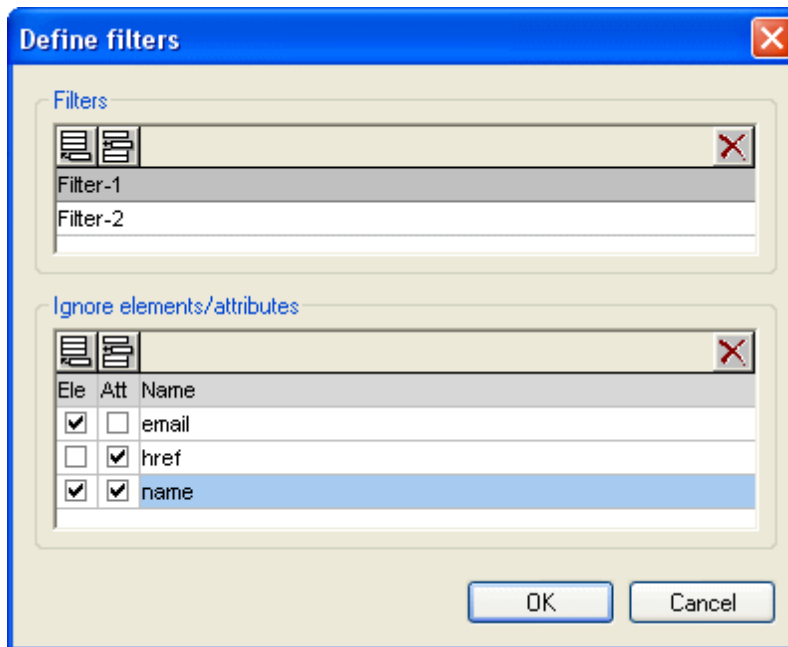


To define groups of attributes to be considered as comparison criteria:

1. Select the menu option **Tools | Comparison Options...** or click the **Comparison Options**  button in the Diff and Merge toolbar, and change to the XML tab.
2. In the Order group box, activate the radio button **Specific attributes** and click the **Browse**  button next to the drop-down list to open the **Define groups of attributes as comparison criteria** dialog box.
3. In the Attribute groups group box, click the respective icon to append  or insert  a group to the list of groups and give it a name. Always define a group before specifying attributes. Do not enter the attributes in the Attribute groups group box.
4. With the attribute group selected, in the Add attributes as comparison group box, click the respective icon to append  or insert  elements to the list and enter the name of the attribute that should be considered. Add an extra list element for each attribute.
5. When done with defining attribute groups, click **OK**. The defined attribute groups are now available in the combo box in the **Comparison Options** dialog box.

Defining a Filter to Ignore Elements or Attributes for Comparison

Filters are defined by clicking the **Define Filters**  button in the **Comparison Options** dialog box, which pops up the **Define Filters** dialog box.



In the screenshot above, two filters (Filter-1 and Filter-2) have been defined. Filter-1 specifies that the elements email and name, and the attributes href and name, are to be ignored for comparison.

To create a filter for ignoring element/attributes for comparison:

1. Select the menu option **Tools | Comparison Options...** or click the **Comparison Options**  button in the Diff and Merge toolbar, and change to the XML tab.
2. In the Filter out specific elements/attributes group box, click the **Define Filters**  button to open the **Define filters** dialog box.
3. In the Filters group box, click the respective icon to append  or insert  a filter to the list of filters and give it a name.
4. With the filter selected, in the Ignore Elements/Attributes group box, click the respective icon to append  or insert  elements and filters to the list. The Ele check box is activated by default.
5. Deactivate the Ele check box and/or activate the Att check box, if required, and enter a name for the element/attribute.
6. Optionally, repeat steps 4 and 5 for additional elements/attributes.
7. When done with defining a filter, click **OK**. The defined filters are now available in the combo box in the **Comparison Options** dialog box.

4.4 Running a File Comparison

When the two documents to be compared are loaded into the comparison window, a comparison is [automatically carried out](#) if the **Autostart Comparison** command is toggled on (which is the default setting). In addition, comparisons can be [explicitly started](#) any number of times with the **Start Comparison** command.

When editing documents, they are compared dynamically [as you type](#) if the **Compare while Editing** command is toggled on.

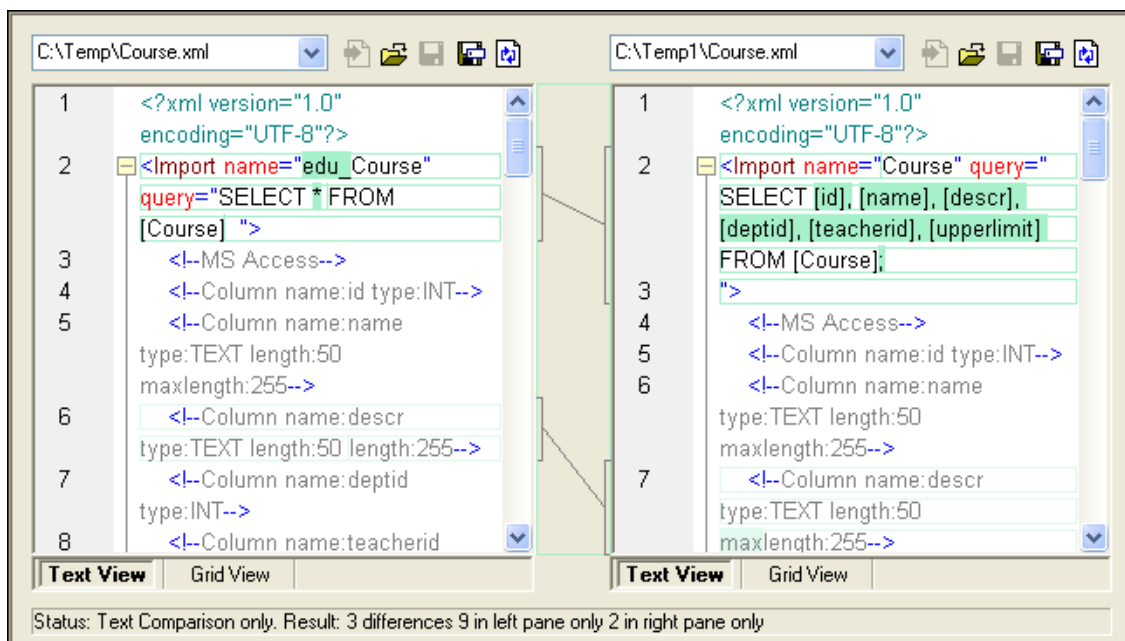
You can run file comparisons using all three of the methods listed above; these methods are not mutually exclusive. If the [Show Options Before Comparison](#) command is toggled on, then the **Comparison Options** dialog box is displayed each time before the comparison is run (except when it is run dynamically by DiffDog while you edit). This is useful if you wish to run comparisons with different options.

4.5 Displaying Differences in Files

After you start a comparison, the differences between the two files are displayed as blocks of highlighted text and the results of the comparison are reported in the Comparison Window Status Bar. Normally, [Text View](#) is used for displaying differences, however if you compare well-formed files, you can also switch to [Grid View](#).

4.5.1 Text View

Text View is the standard display mode for any file pair being compared in DiffDog. Notice that the corresponding differences in the two documents are linked for easier identification and analysis. When [synchronized scrolling](#) is toggled on, both documents scroll so that corresponding differences are always in view simultaneously.

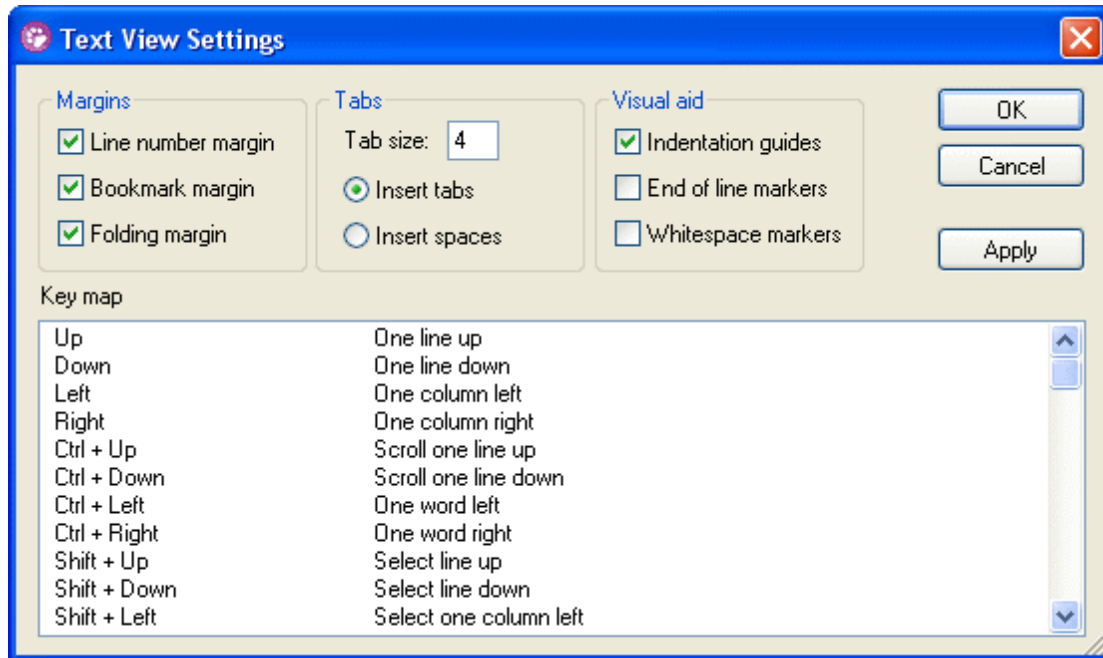


The current difference is highlighted in a different color than the other differences. In the screenshot above the current difference is displayed in a darker green. These colors can be changed in the [DiffDog Options](#). It is important to know which difference is the current difference because [merging](#) is always done for the current difference only. You can [navigate](#) among the differences with the navigation commands that are available in the **Diff and Merge** menu and as toolbar icons.

Displaying Text

Text View has visual features to make the display and editing of large sections of text easier. Some very useful features are: (i) [Line Numbers](#), (ii) [Bookmarks](#), (iii) [Source Folding](#) (expanding and collapsing the display of nodes), (iv) [Indentation Guides](#), and (v) [End-of-Line and Whitespace Markers](#). These commands are available in the **Text View Settings** dialog box (*first screenshot below*) and the Text toolbar (*second screenshot below*).

The **Text View Settings** dialog box is accessed via the **Text View | Text View Settings** command or the **Text View Settings** button in the Text toolbar. Settings in the **Text View Settings** dialog box apply to the entire application—not only to the active document.



Other useful features are the [Zooming](#) and [Go-to-Line/Character](#) features.

Line numbers

Line numbers are displayed in the line numbers margin, which can be toggled on and off in the **Text View Settings** dialog box. When a section of text is collapsed, the line numbers of the collapsed text are also hidden. A related command is the [Go-to-Line/Character](#) command.

Bookmarks

Lines in the document can be separately bookmarked for quick reference and access. If the bookmarks margin is toggled on, bookmarks are displayed in the bookmarks margin; otherwise, bookmarked lines are highlighted in cyan.

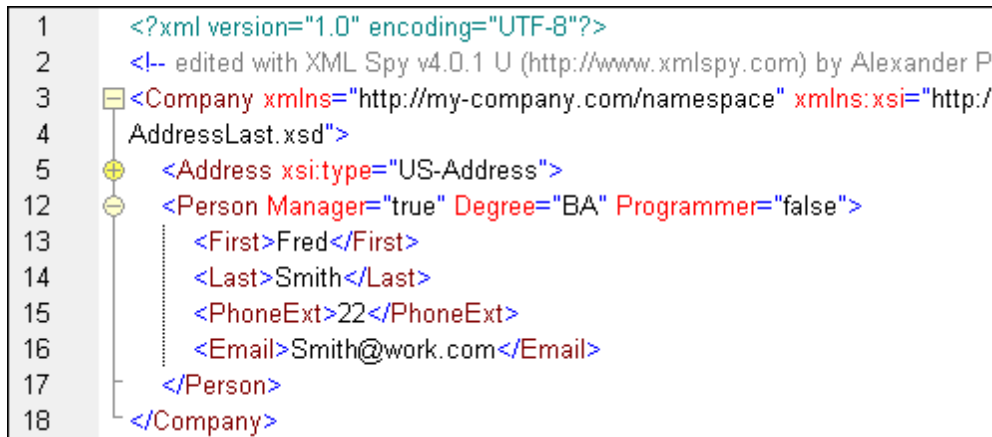
The bookmarks margin can be toggled on or off in the **Text View Settings** dialog box.

You can edit and navigate bookmarks using commands in the **Text View** menu and Text toolbar. Bookmarks can be inserted with the **Text View | Insert/Remove Bookmark** command, enabling you to mark a line in the document for reference. A bookmark can be removed by selecting the bookmarked line and then selecting the **Text View | Insert/Remove Bookmark** command. To navigate through the bookmarks in a document, use the **Text View | Next Bookmark** and **Text View | Previous Bookmark** commands. These bookmark commands are also available as icons in the Text toolbar.

Source folding

Source folding refers to the ability to expand and collapse nodes and is displayed in the source folding margin. The margin can be toggled on and off in the **Text View Settings** dialog box. In the screenshot below, notice how the line numbering at Line 5 has been collapsed together with the

collapsed nodes.



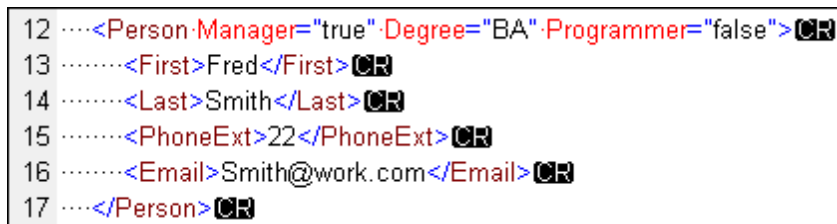
The **Toggle All Folds** command in the Text toolbar toggles all nodes together to their expanded or collapsed forms.

Indentation guides

Indentation guides are vertical dotted lines that indicate the extent of a line's indentation (see *screenshot above*). They can be toggled on and off in the **Text View Settings** dialog box.

End-of-line markers, whitespace markers

End-of-line (EOL) markers and whitespace markers can be toggled on in the **Text View Settings** dialog box. The screenshot below shows these markers in the document display; each dot represents a whitespace.



Zooming in and out

You can zoom in and out of Text View by scrolling (with the scroll-wheel of the mouse) while keeping the **Ctrl** key pressed. This enables you to magnify and reduce the size of text in Text View. If you wish to increase the size of fonts, do this in the [DiffDog Options](#) dialog box.

Go to line/character

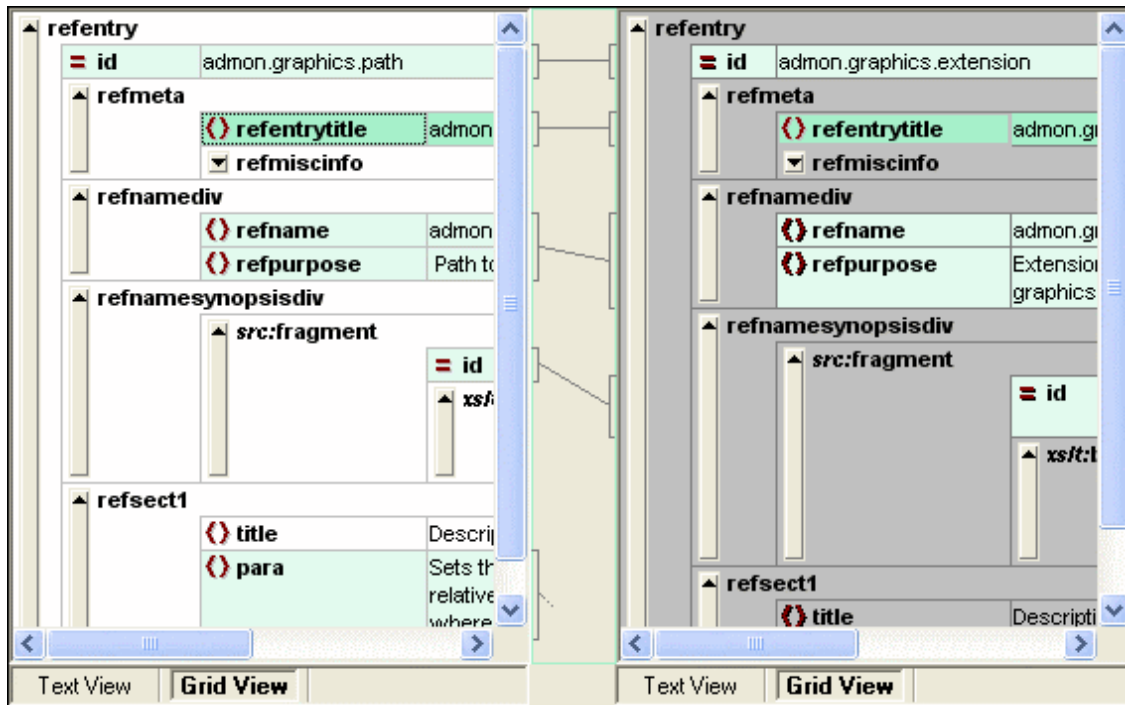
This command in the **View** menu and Text toolbar enables you to go to a specific line and character in the document text.

4.5.2 Grid View

Altova web site:  [xml diff](#)

Grid View can be used to display files that are well-formed, typically XML files. In Grid View, each node is displayed as a row in a grid. This enables you to see the hierarchy in a graphical view, to navigate through the document more easily, and to manipulate the structure of the document

using graphical mechanisms such as drag-and-drop.



Note the following points, all of which can be seen in the screenshot above:

- Node names are displayed in bold, their contents in normal font.
- Different node types are indicated with different symbols. For example, attributes are indicated with a red = symbol, elements with red angular brackets.
- Nodes that are different from one document to the other are highlighted, with the current difference being highlighted in a different color.
- Corresponding differences in the two documents are joined with a line.

Nodes (rows) can be expanded and collapsed by clicking on the upward arrow button at the extreme left of a grid row. To edit a node name or node contents, double-click the location where you wish to insert the cursor.

Grid rows can be dragged to new locations by selecting the row and dragging it to the desired location. Multiple nodes that are contiguously located can be selected for this operation. Individual nodes can also be [moved left](#) or [moved right](#) using the respective **Grid View** menu commands (or their toolbar icons). This changes the position of the node in the document hierarchy. Graphical manipulation of structure and contents is further enhanced in [Table View](#), which is another mode of Grid View.

Columns can be resized by dragging their borders left or right.

Displaying Repeating Elements as Table

In normal Grid View, each node has a grid row to itself, as shown in the screenshot below.

▲ member	name	USA
	pop	290
▲ member	name	UK
	pop	80
▲ member	name	FRA
	pop	82
▲ member	name	GER
	pop	88
▲ member	name	AUT
	pop	9

When an element occurs multiple times at the same hierarchical level (as is the case with the member element in the screenshot above), it can be displayed as a table (screenshot below) in which each occurrence of the element created as a table is represented as a row. The table element's child nodes (attributes, elements, etc) are displayed as columns of the table.

▲ member (5)	name	pop
1	USA	290
2	UK	80
3	FRA	82
4	GER	88
5	AUT	9

To display multiple elements as table:

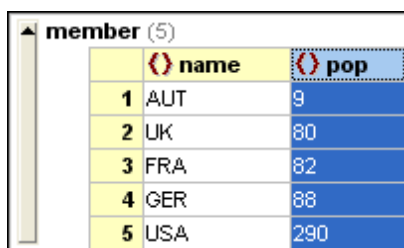
- 1. Select one of the occurrences of the element to be created as a table.
- 2. Select the menu option **Grid View | Table | Display as Table** or click the **Display as Table**  button in the Grid toolbar.

To switch from Table View to the normal Grid View:

- Select the table or any of its rows (not a column or cell), and click the **Display as Table**  toolbar icon.
The table element switches to normal Grid View.

Editing the table

The structure and contents of the table can also be edited using table mechanisms. For example, rows (new table element occurrences) and columns (new child nodes for all table element occurrences) can be inserted into the table, and the table can be sorted on one of its columns.



The screenshot shows a table titled "member (5)" with two columns: "name" and "pop". The table contains 5 rows of data, sorted by the "pop" column in ascending order. The rows are numbered 1 to 5 in the first column. The "name" column contains country codes: AUT, UK, FRA, GER, and USA. The "pop" column contains population values: 9, 80, 82, 88, and 290. The table is displayed in a grid view with alternating yellow and blue rows.

	name	pop
1	AUT	9
2	UK	80
3	FRA	82
4	GER	88
5	USA	290

In the screenshot above, the table (for member elements) is sorted on the pop column. (This was done by selecting the pop column and then clicking the command **Grid View | Table | Ascending Sort.**)

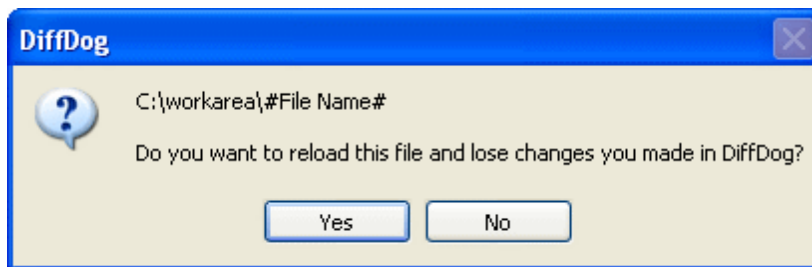
4.6 Editing Files

After you have [run a comparison](#) and [investigated the differences](#) of the two files, you can edit the content of the files directly in DiffDog. The available editing features differ for text-based and XML-based files.

[Changes to the content](#) of both text-based and XML-based files are made in Text View. When comparing well-formed XML-based files, DiffDog's Grid View allows you to also [change the document structure](#) of the files.

Reloading files

You can always undo all changes you have made to a document since you last saved it, and reload the file into DiffDog. A warning message will be displayed if you are about to lose changes.



To reload a file into DiffDog:

1. In the respective pane of a comparison window, click the **Reload**  button.
2. If the file has changed since you last saved it, a warning message is displayed.
3. Click **Yes** if you want to reload, or **No** if you want to cancel the operation.

4.6.1 Changing the Content

In Text View, DiffDog provides [syntax coloring](#) and other visual aids such as [line numbering](#), [indentation](#), and [bookmarking](#), as well as powerful [Find](#) and [Replace](#) functionality that can help with editing. A history of changes is maintained for each file separately, and unlimited Undos are allowed.

If you have the **Compare while Editing**  option activated in the **Diff and Merge** menu, the comparison of the files is refreshed continuously as you type.

To edit files:

- Type in your changes in the respective pane of the File Comparison window.

To undo changes in a file:

- Place the cursor in the file and click **Edit | Undo** or press **Ctrl+Z**.

4.6.2 Changing the Structure

The Grid View shows the hierarchical structure of well-formed, XML-based documents through a set of nested containers, that can be easily expanded and collapsed to get a clear picture of the document's structure. In Grid View contents and structure can both be easily manipulated.

You can insert or append new elements or attributes, edit the content of the file, or drag the individual elements to a different location in the document.

4.7 Finding and Replacing Text

DiffDog offers powerful Find and Replace functionality that can help with [editing](#). The Find and Replace options are different for [Text View](#) and [Grid View](#). Please note that the scope of the **Find**, **Find next**, and **Replace** commands is the active document, and not both documents of a file comparison.

The **Replace** dialog box is similar to the respective **Find** dialog box displayed in [Text View](#) or [Grid View](#), respectively, but additionally has a text box in which you enter the text string with which you wish to replace the found string.

To search for text in the active pane of a comparison window:

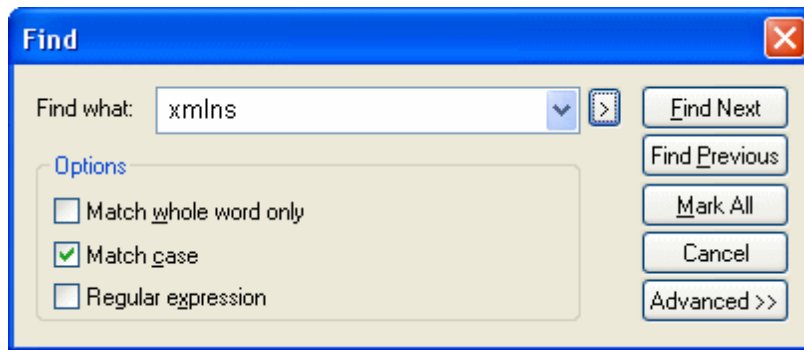
1. Place the cursor into the pane in which you want to search for text.
2. Select the menu option **Edit | Find** or press **Ctrl+F**.
3. Enter the text you want to search for into the Find what field.
4. In Text View, optionally activate the Regular expression check box and use the  button to enter a [regular expression](#).
5. To restrict your search, do one of the following:
 - In Text View, click the **Advanced** button and select the required XML node types to be searched in the [Types](#) group box.
 - In Grid View, select the required XML node type or DTD declarations to be searched in the [Types](#) group box.
6. Click **Find Next**.
7. In Text View, optionally click the **Find Previous** button to jump back to the previous occurrence of the search text.

To mark all occurrences of a text in Text View:

1. Select the menu option **Edit | Find** or press **Ctrl+F** to open the **Find** dialog box.
2. Enter the text you want to search for into the Find what field.
3. Click **Mark All**.
4. Use the **Next Bookmark**  and **Previous Bookmark**  icons in the Text toolbar to navigate between the occurrences of the search text.

4.7.1 Searching Text View

Clicking the **Find** command in Text View pops up the **Find** dialog box shown below. If text is marked prior to opening the dialog box, then the marked text is automatically inserted into the Find what text box.



The **Find Next** and **Find Previous** buttons enable you to navigate through the document when the **Find** dialog box is open. Once the **Find** dialog box is closed, you can repeat the current search by pressing **F3** for a forward search, or **Shift+F3** for a backward search.

Options

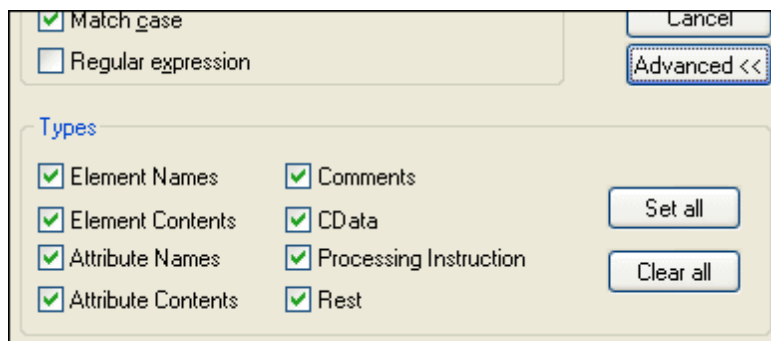
You can check one or more of the options in the Options group box to select them.

Match whole word only finds the text string only if, in the document, it is delimited by spaces. **Match case** finds the text string only if the casing in the document is the same as that in the entry.

Checking the **Regular expression** option causes the entry to be read as a regular expression. The  button to the right of the **Find what** combo box opens a menu with entries to help define [regular expressions](#).

Advanced Options

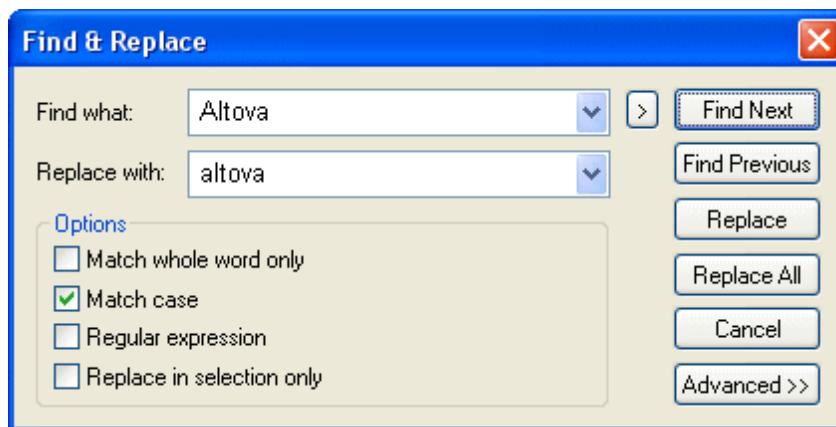
Clicking the **Advanced** button, opens a pane (*screenshot below*) that allows you to select XML node types to be searched.



The **Set all** and **Clear all** buttons enable you to check or uncheck all options with a single click.

Replacing Text

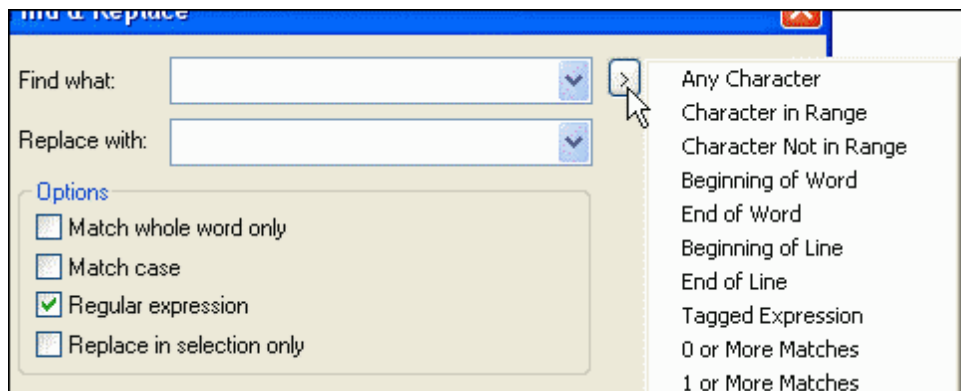
Clicking the **Replace** command in Text View pops up the **Find & Replace** dialog box (*screenshot below*). Clicking the **Advanced** button opens a pane for selecting XML node types in which to search (*see screenshot above*).



Note that the [regular expression](#) option applies only to the Find entry. You can replace within a selected text range (the range must be selected before opening the dialog) by checking the Replace in Selection Only option.

Using Regular Expressions

You can use **regular expressions** to further refine your search criteria. A pop-up list is available to help you build regular expressions. To access this list, click the > button to the right of the input field for the search term.



When you select an entry in the regular expressions popup, DiffDog inserts the corresponding regular expression in the Find what field.

- **Any Character** inserts ".". To find "Smith" as well as "Smyth", enter the following:
- **Character in Range** inserts "[]". Note that the cursor appears between the two brackets. To find "Wong" and "Wang", but not "Wing", enter the following:
- **Character Not in Range** inserts "[^]" and places the cursor after the ^-sign. Enter the character you want to disregard when searching. Note that you can also enter several characters.
- **Beginning of Word** inserts "\b". First choose the regular expression from the popup and

then enter the string you want to find. "\<mark" will find "marketing" but not "benchmark".

\<mark

- **End of Word** inserts "\>". First enter the string you want to find and then choose the regular expression from the popup. "mark\>" will find "benchmark" but not "marketing".

mark\>

- **Beginning of Line** inserts "^"; DiffDog will find the string that follows only if it appears at the beginning of a line.

^Altova

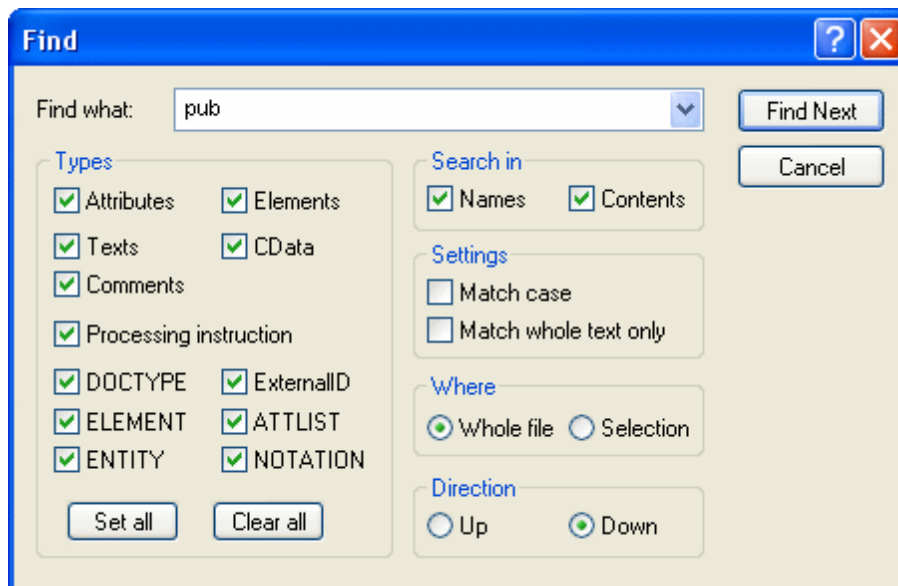
- **End of Line** inserts "\$". Enter a string and choose "End of Line" from the popup. DiffDog will find the string only if it appears at the end of a line.

Altova\$

- **Tagged Expression** inserts "\(\)" and places the cursor in front of the second backslash so that you can enter the tagged expression.
- **0 or More Matches** inserts "*". The character or set of characters, respectively, preceding the * can optionally occur in the string to be found.
- **1 or More Matches** inserts "+". The character or set of characters, respectively, preceding the + can occur once or several times in the string to be found.

4.7.2 Searching Grid View

Clicking the **Find** command in Grid View pops up the **Find** dialog box shown below.



Types

In the Types group box, you can select or deselect various XML node type or DTD declarations to be searched. The **Set all** and **Clear all** buttons enable you to check or uncheck all options with a single click.

Search in

You can search only the names and/or the contents of nodes by activating the respective check boxes in the Search in group box.

Settings

Match `case` finds the text string only if the casing in the document is the same as that in the entry. Match `whole text` only finds the text string only if, in the document, it is delimited by spaces.

Where

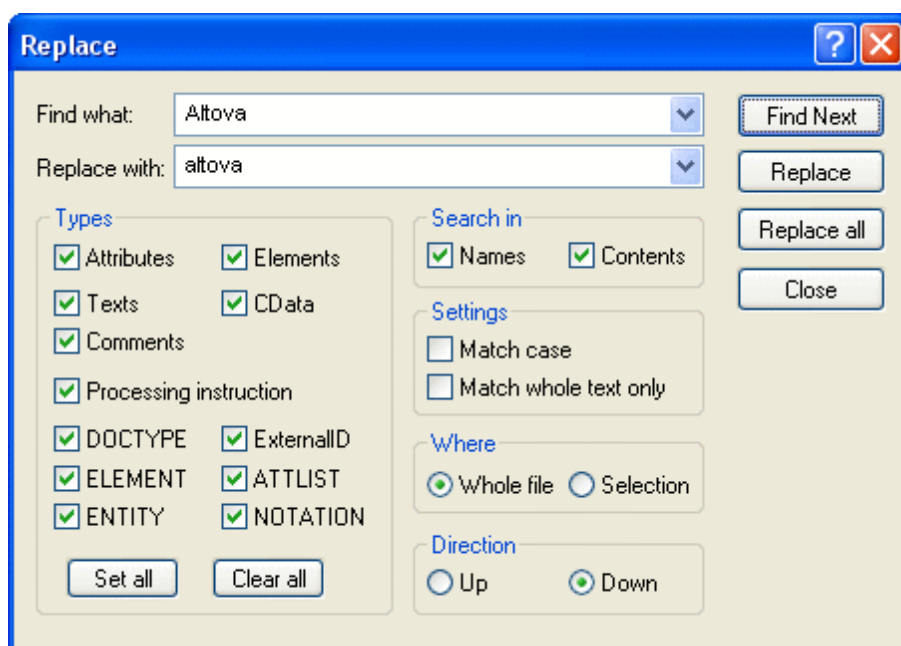
The scope of the search can be restricted to the current selection or the whole file can be searched.

Direction

The radio buttons in the Direction group box allow you to define whether the search should progress upwards or downwards from the current selection or cursor location.

Replacing text

Clicking the **Replace** command in Grid View pops up the **Replace** dialog box shown below.



4.8 Saving Files

To save a document you have edited in DiffDog, use the **Save**  or **Save As**  buttons in the respective panes of the comparison window. Files can also be saved using the [Close](#), [Close All](#), and [Save](#) commands in the **File** menu. Note that the individual files in the comparison window must be saved separately.

In the [File comparison](#) tab of the **DiffDog Options** dialog box, you can also specify whether and how backup files should be saved.

To save a file:

Do one of the following:

- To save an individual file, click the **Save**  button in its pane of the comparison window.
- To save an individual file under a new name or path, click the **Save As**  button in its pane of the comparison window. The Windows **Save As** dialog box appears where you can specify the new name or path for the file.
- To save both files of a comparison, select the menu option **File | Save**. The **Save files** dialog box appears where you can select the files to be saved or choose to discharge the changes.

To save and close the files of a comparison:

1. Click the tab of the comparison window that contains the files you want to save and close.
2. Select the menu option **File | Close**.
3. If a file contains unsaved changes, the **Save files** dialog box appears. Make sure that the file's check box is selected and click **Save selected**.
The file is saved and the comparison window is closed.

To save and close the files of all comparisons:

1. Select the menu option **File | Close all**.
2. For every comparison window that contains a file with unsaved changes, the **Save files** dialog box appears. Make sure that the file's check box is selected and click **Save selected**.
The file is saved and the comparison window is closed.

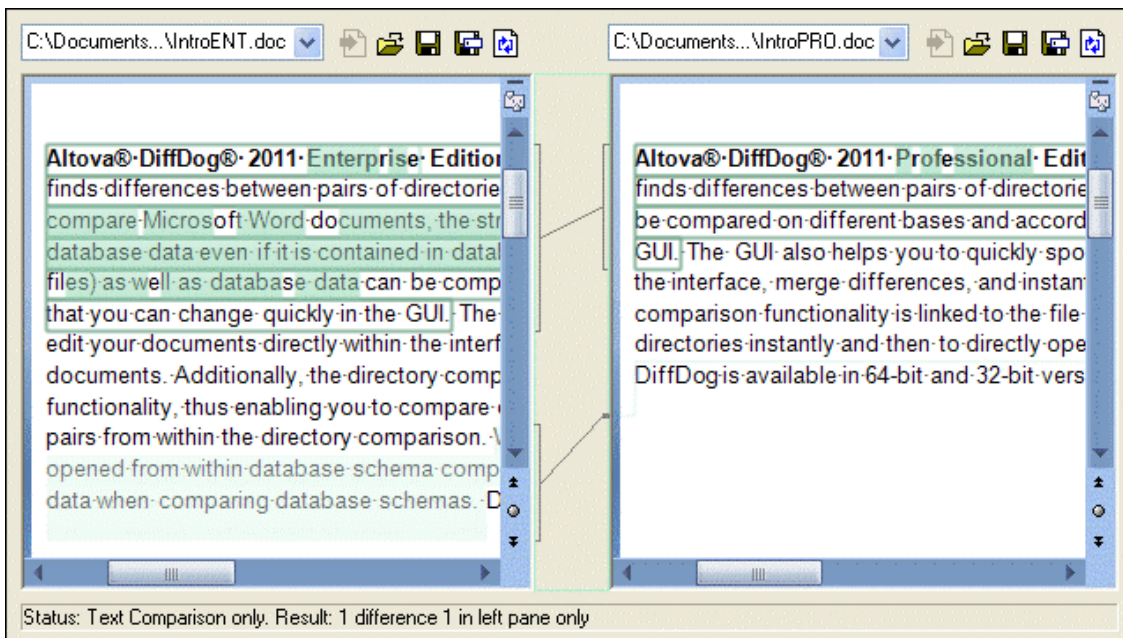
Chapter 5

Comparing Microsoft Word Documents

5 Comparing Microsoft Word Documents

Microsoft Word Document Comparison integrates Microsoft Word into the DiffDog GUI and uses some Microsoft Word functions such as Find, Replace, Copy, Cut, Paste, Undo, Redo, and Clear in the context of DiffDog. This allows you to use Microsoft Word's formatting and editing features together with DiffDog's powerful comparison engine. Please note that whenever the focus is on a Microsoft Word document and you press a keyboard shortcut in DiffDog, this will call the corresponding Microsoft Word function (e.g., if in a Word Comparison window you press **F5** to start a comparison, this will open Microsoft Word's **Find and Replace** dialog box instead).

When you compare MS Word (*.doc or *.docx) documents, two instances of MS Word are opened side by side in DiffDog. Please note that **at least Microsoft Word 2003 must be installed** on your computer and that for both programs (i.e., DiffDog and Microsoft Word) either the 32-bit version or the 64-bit version must be installed, that is, DiffDog x64 requires Microsoft Word x64, while DiffDog x32 requires Microsoft Word x32.



To start a Microsoft Word comparison in DiffDog, you must first open an empty Word Comparison window and then [select the Microsoft Word documents to be compared](#) or simply drag them from Windows Explorer into the Word Comparison window. Alternatively, you can also [select two documents in Windows Explorer](#), right-click and select **Compare with Altova DiffDog** from the context menu. This will open a new instance of DiffDog and display the selected Microsoft Word documents in a Comparison Window.

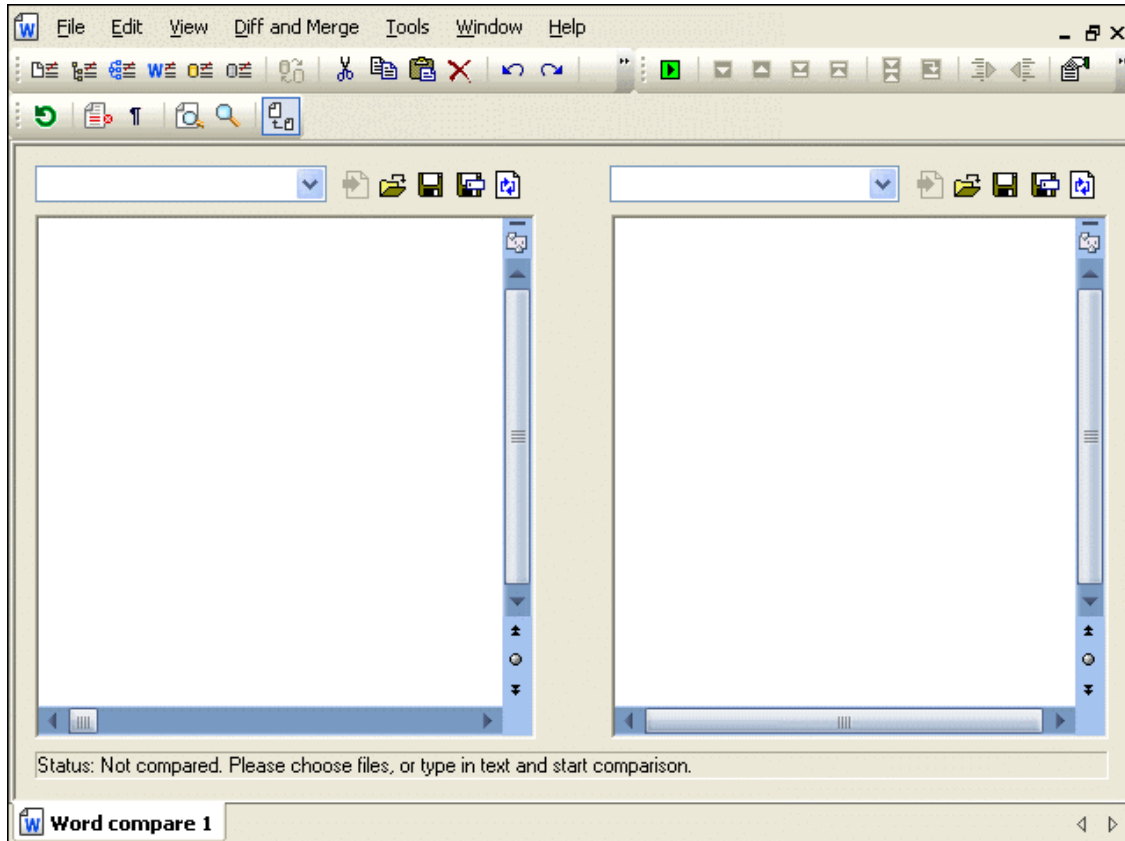
The comparison will start automatically unless you have deactivated the **Autostart Comparison** option in the **Diff and Merge** menu. To eliminate differences, DiffDog allows you to [edit the content](#) of the Microsoft Word documents directly in the comparison window and [copy content from one pane to the other](#).

Microsoft Word documents that have been saved in the *.docx format can also be considered and compared as [ZIP-conformant files and Office Open XML \(OOXML\) files](#) in DiffDog, please note that in this case, the comparison initially has to be started as a [directory comparison](#) and that you

have to define *.docx files as ZIP-conformant in the [File Types](#) tab of the **DiffDog Options** dialog box.

5.1 Opening a Word Comparison Window

When opening a new Word Comparison window, the Microsoft Word document comparison is given a name of the form MS Word compare X, where X is an integer indicating that Microsoft Word document comparison's position in the sequence of Microsoft Word document comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



Note that the **Compare Microsoft Word Files** command opens the Microsoft Word Comparison window with two new and empty Word documents; it does not open any particular Microsoft Word document within the window. The two documents to be compared must be [opened](#) subsequently in the panes of the comparison window, one in each pane.

To open an empty Word Comparison window:

- Select the menu option **File | Compare Microsoft Word Files** or click the **Compare Microsoft Word files**  button in the Standard toolbar.

5.2 Selecting Microsoft Word Documents for Comparison

Microsoft Word documents can be selected for comparison in various ways. You can [open](#) a new Word Comparison window and select documents, [re-open a previous comparison](#), or change the documents in the currently open Word Comparison window. In addition, you can select a pair of documents in Windows Explorer and use a context menu option to start a comparison in DiffDog.

Dragging documents into a DiffDog Word Comparison window

If you drag and drop files from the Windows Explorer into the respective panes of a Word Comparison window, the documents will be opened for comparison. However, you can deactivate the **Open/Insert document on drop** button so as to insert the document as text box in the Word document that is currently open in the Word Comparison window (this is the default behavior for drag and drop in Microsoft Word). Note that the content of text boxes cannot be compared in DiffDog. Therefore, the **Open/Insert document on drop** button is by default activated in DiffDog.

To select Microsoft Word documents in the active Word Comparison window:

1. In the left pane of an existing Word Comparison window, do one of the following:
 - Click the **Open**  icon and select a file in the Windows **Open** dialog box.
 - Enter the full path to a file and click the **Apply**  button.
 - Drag a file from the Windows Explorer into the pane.
 - Select a previously compared file from the drop-down list.
2. Repeat any of the steps described in step 1 for the right pane.

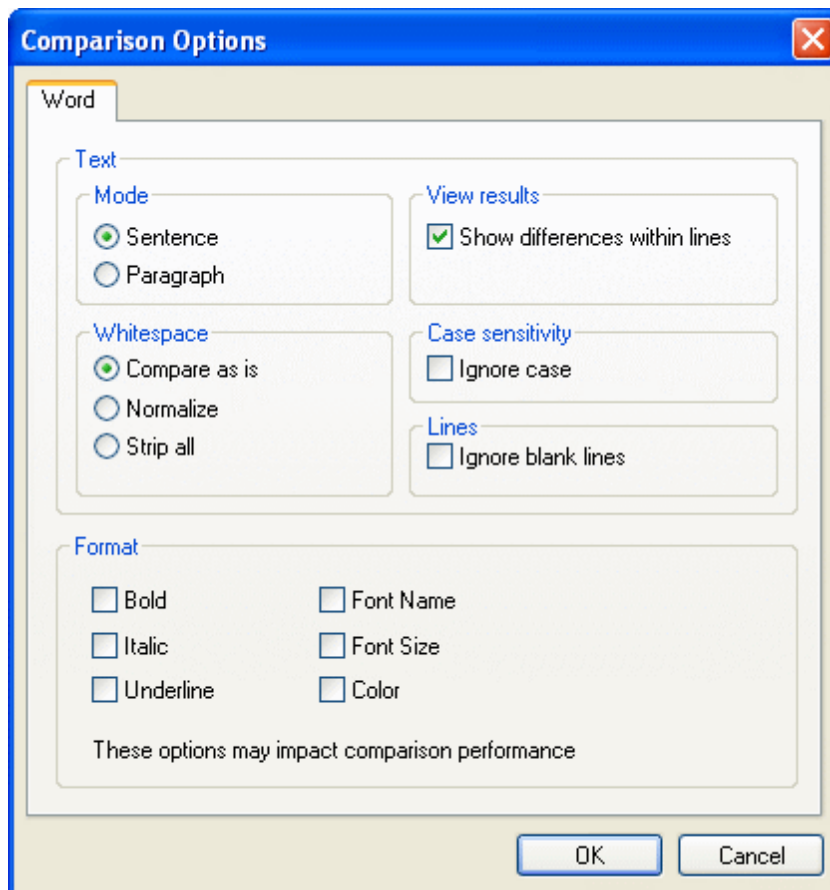
To start a Microsoft Word document comparison from Windows Explorer:

1. Select two Microsoft Word documents in Windows Explorer.
2. Right-click and choose **Compare with Altova DiffDog** from the context menu.

A new instance to DiffDog is opened, the selected files are displayed in a Word Comparison window, and the comparison is started automatically.

5.3 Modifying the Microsoft Word Comparison Options

The Word tab of the **Comparison Options** dialog box displays the options that are used for the comparison of Microsoft Word documents.

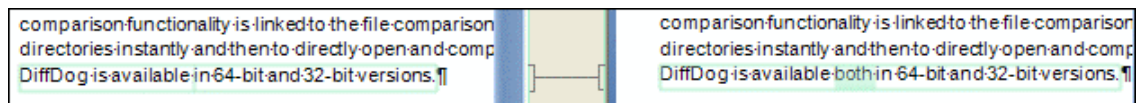


Mode

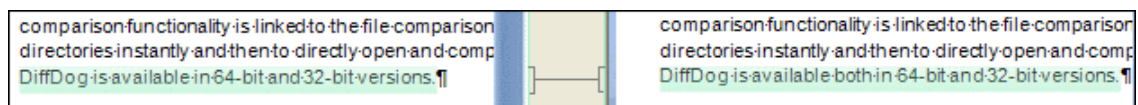
DiffDog can compare the documents either on sentence level or an paragraph level.

View results

By activating the Show differences within lines check box, you can display the differences on character level.



If the check box is deactivated, differences are displayed only on sentence/paragraph level, that is, character level differences are not highlighted. Only the sentence/paragraph, as a whole, is indicated as being different.



Whitespace

Whitespace characters are space, tab, carriage return, and line feed. The three options here compare files with whitespace unchanged; with whitespace normalized (i.e., all consecutive whitespace characters are reduced to one whitespace character); and with all whitespace stripped (i.e., not considered for comparison).

Case sensitivity

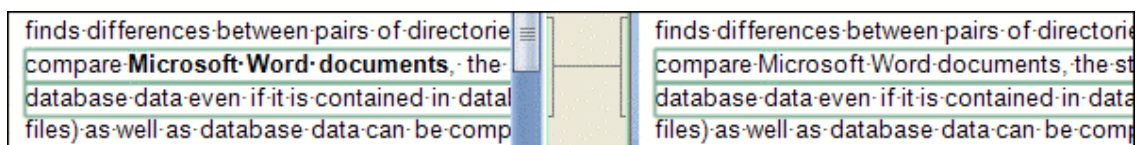
Activate the Ignore case check box if upper and lower casing should be ignored when checking for differences.

Lines

Here you define whether blank lines should be ignored.

Format

You can specify which type of formatting should be considered when comparing documents. If differences in formatting are found, the entire sentence that contains the difference is marked as not equal.



5.4 Running a Microsoft Word Document Comparison

When the two documents to be compared are loaded into the comparison window, a comparison is [automatically carried out](#) if the **Autostart Comparison** command is toggled on (which is the default setting). In addition, comparisons can be [explicitly started](#) any number of times with the **Start Comparison** command.

When editing documents, they are compared dynamically [as you type](#) if the **Compare while Editing** command is toggled on.

You can run file comparisons using all three of the methods listed above; these methods are not mutually exclusive. If the [Show Options Before Comparison](#) command is toggled on, then the **Comparison Options** dialog box is displayed each time before the comparison is run (except when it is run dynamically by DiffDog while you edit). This is useful if you wish to run comparisons with different options.

5.5 Configuring the Word Comparison Window

The Word Comparison window provides a toolbar which enables you to configure the view of the documents that are displayed in the comparison window, and refresh the screen after comparisons.

Configuring the view

Since DiffDog runs Microsoft Word inside the Word Comparison window, some Microsoft Word functions are available in DiffDog and you can use the buttons of the toolbar to switch them on or off.



Show/Hide Revisions and Comments: Revision marks and comments that have been added to a Microsoft Word document are hidden by default when the document is displayed in DiffDog. Activate the **Show/Hide Revisions and Comments** toggle to view them in the Word Comparison window. Please note that this setting also influences the result of a comparison: hidden revisions and comments will not be considered during a comparison!



Show/Hide formatting symbols: Shows or hides non-printing formatting characters such as blanks, paragraph marks, tabs, etc.

Zooming



Zoom to Fit Page: Sizes both documents so that an entire page is displayed in each pane of the Word Comparison window.



Zoom 100%: Zooms the documents in the panes to 100%. You will have to use the scrollbars to navigate through the documents.

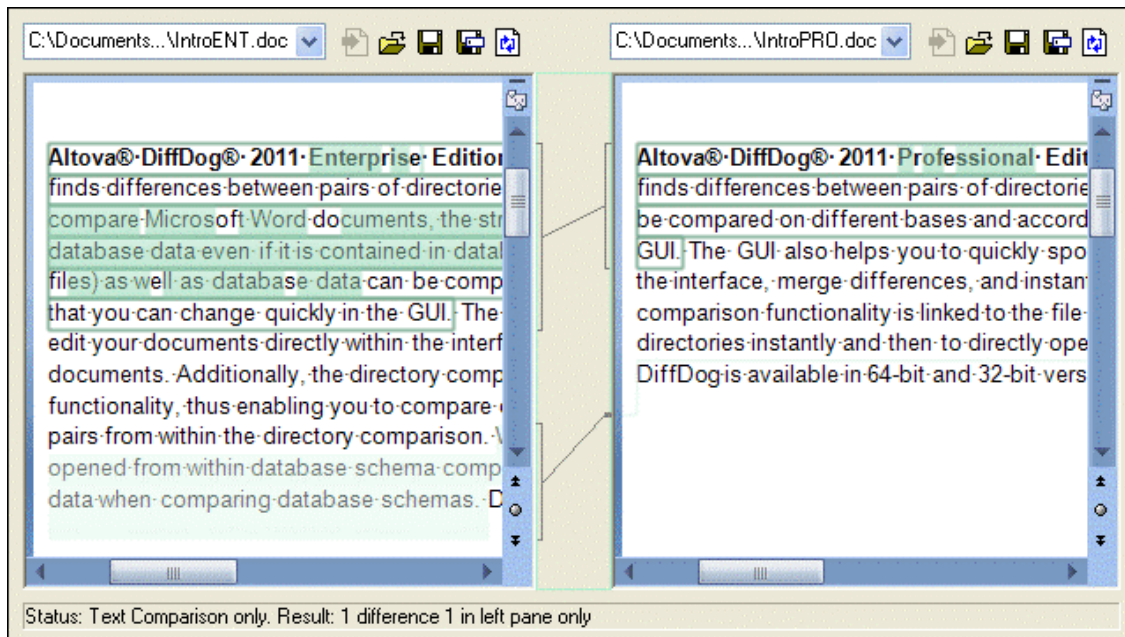
Refreshing the display



Refresh GUI: After you have edited a document in DiffDog, you can refresh the display by clicking this button. Note that this does not reload the documents.

5.6 Displaying Differences in Microsoft Word Documents

After you start a comparison, the differences between the two files are displayed as blocks of highlighted text (which can be a sentence or a paragraph, depending on the setting in the [Word Comparison Options](#)) and the results of the comparison are reported in the Comparison Window Status Bar. Notice that the corresponding differences in the two documents are linked for easier identification and analysis.



The current difference is highlighted in a different color than the other differences. In the screenshot above the current difference is displayed in a darker green. These colors can be changed in the [DiffDog Options](#). It is important to know which difference is the current difference because [merging](#) is always done for the current difference only. You can [navigate](#) among the differences with the navigation commands that are available in the **Diff and Merge** menu and as toolbar icons.

Zooming into the documents

Since each pane of the Word Comparison window hosts an instance of Microsoft Word, you might want to change the zoom of the documents. The **Word Comparison** toolbar provides two options for this: **Zoom 100%** to view the details of the document and edit them, and **Zoom to Fit Page** to display the entire page for a better overview. You can also change the zoom of an individual pane by clicking into it and changing the zoom with the mouse wheel while holding the **Ctrl** key pressed.

5.7 Editing Microsoft Word Documents in DiffDog

After you have [run a comparison](#) and [investigated the differences](#) of the two files, you can edit the content of the files directly in DiffDog. You can use all the features of Microsoft Word that are available via the context menu or keyboard shortcuts.

Finding and replacing text

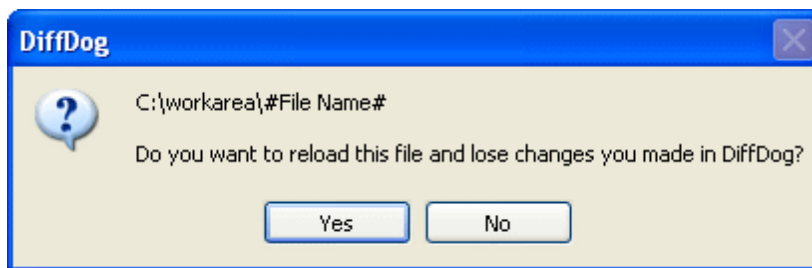
In Word Comparison windows, DiffDog does not use its own Find and Replace functionality but gives you access to Microsoft Word's **Find and Replace** dialog box instead.

To call Microsoft Word's Find and Replace dialog box:

- Place the cursor into the pane in which you want to search for text and press **Ctrl+F**, or click the **Find**  button in the Standard toolbar.
For details on Microsoft Word's find and replace functionality please consult the relevant Microsoft Word help pages.

Reloading documents

You can always undo all changes you have made to a document since you last saved it, and reload the file into DiffDog. A warning message will be displayed if you are about to lose changes.



To reload a file into DiffDog:

- In the respective pane of a comparison window, click the **Reload**  button.
- If the file has changed since you last saved it, a warning message is displayed.
- Click **Yes** if you want to reload, or **No** if you want to cancel the operation.

5.8 Saving Microsoft Word Documents

To save a document you have edited in DiffDog, use the **Save**  or **Save As**  buttons in the respective panes of the comparison window. Files can also be saved using the [Close](#), [Close All](#), and [Save](#) commands in the **File** menu. Note that the individual files in the comparison window must be saved separately.

To save a file:

Do one of the following:

- To save an individual file, click the **Save**  button in its pane of the comparison window.
- To save an individual file under a new name or path, click the **Save As**  button in its pane of the comparison window. The Windows **Save As** dialog box appears where you can specify the new name or path for the file.
- To save both files of a comparison, select the menu option **File | Save**. The **Save files** dialog box appears where you can select the files to be saved or choose to discharge the changes.

To save and close the files of a comparison:

1. Click the tab of the comparison window that contains the files you want to save and close.
2. Select the menu option **File | Close**.
3. If a file contains unsaved changes, the **Save files** dialog box appears. Make sure that the file's check box is selected and click **Save selected**.
The file is saved and the comparison window is closed.

To save and close the files of all comparisons:

1. Select the menu option **File | Close all**.
2. For every comparison window that contains a file with unsaved changes, the **Save files** dialog box appears. Make sure that the file's check box is selected and click **Save selected**.
The file is saved and the comparison window is closed.

Chapter 6

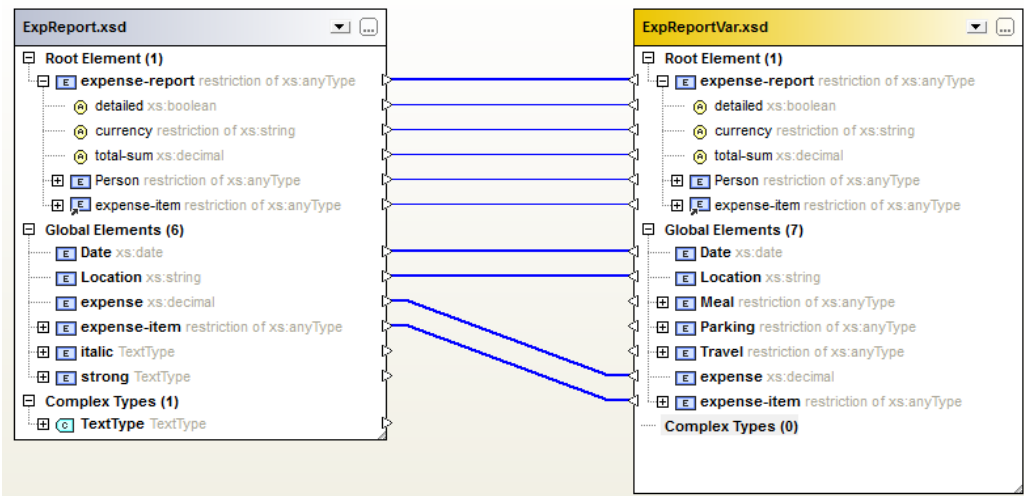
Comparing XML Schemas

6 Comparing XML Schemas

Altova web site:  [XML Schema comparison](http://www.altova.com/XMLSchemaComparison/)

The comparing XML Schemas mechanism works as follows:

1. You load the two XML Schemas to compare. If an XML Schema has more than one global element, DiffDog prompts you to select one of these as the root element. The other global components (global elements and global types) will be loaded in the schema box and listed below the Root Element.



DiffDog displays in the schema box any of the following items, if they are declared in the schema.

Icon	Description
	An element declaration.
	A reference to an element declaration.
	An attribute declaration.
	A named complex type.

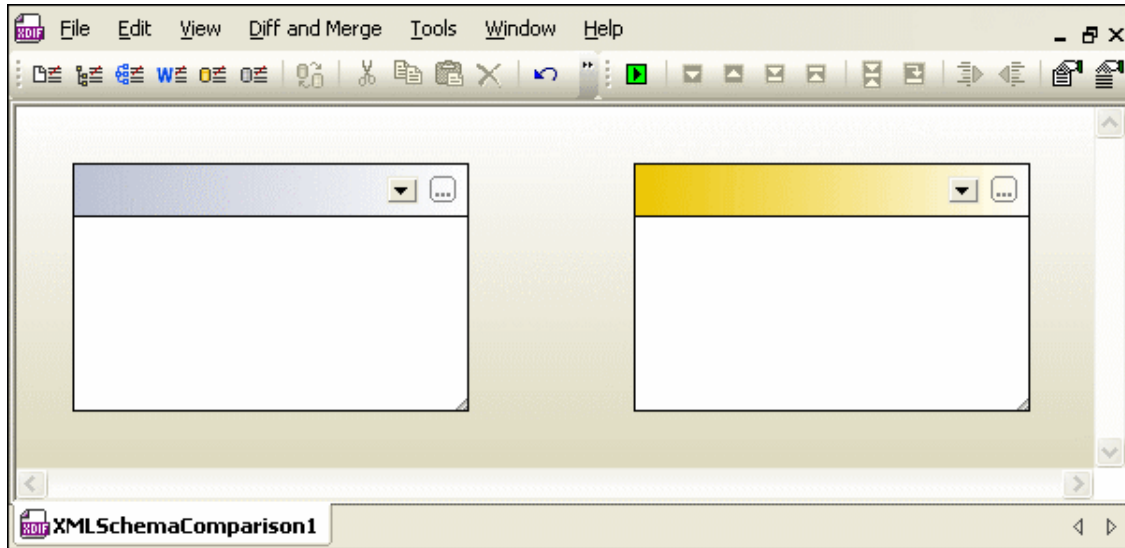
2. DiffDog will automatically map elements in one schema to elements in the other. The mappings are indicated with lines joining pairs of mapped elements (see *screenshot above*). Comparing XML Schemas results in this mapping. You can [modify mappings](#) if you like. If you [run a schema comparison](#), however, the automatic mapping is returned.
3. After the mappings have been made, by running the XML Schema comparison (and modifying the mapping if required), you can generate an [XSLT stylesheet](#) or a [MapForce mapping](#).

Note: Although you can right-click two XML Schemas in Windows Explorer and select **Compare with Altova DiffDog** from the context menu, the selected XML Schemas will be compared as files in this case.

XML Schema comparisons can be [saved](#) to an *.xsdif file. These files can later be reopened in DiffDog using the menu command **File | Open Comparison File....**

6.1 Opening an XML Schema Comparison Window

When opening a new XML Schema Comparison window, the XML Schema comparison is given a name of the form XMLSchemaComparisonX, where X is an integer indicating that XML Schema comparison's position in the sequence of XML Schema comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



Note that the **Compare XML Schemas** command opens only the XML Schema Comparison window; it does not open any XML Schema within the window. The two XML Schemas to be compared must be [opened](#) subsequently in the components of the comparison window, one in each component.

To open an empty XML Schema Comparison window:

- Select the menu option **File | Compare XML Schemas** or click the **Compare XML Schemas**  button in the Standard toolbar.

6.2 Selecting XML Schemas for Comparison

XML Schemas can be selected for comparison in various ways. You can open the XML Schemas in a new XML Schema Comparison window, open an XML Schema comparison document (*.xsdif) from the file system, or change the XML Schemas in the currently open XML Schema Comparison window. XML Schemas that have already been compared before are available in a drop-down list in the title bar of each component. Note that you can select only one schema per component.

To select XML Schemas in the active XML Schema Comparison window:

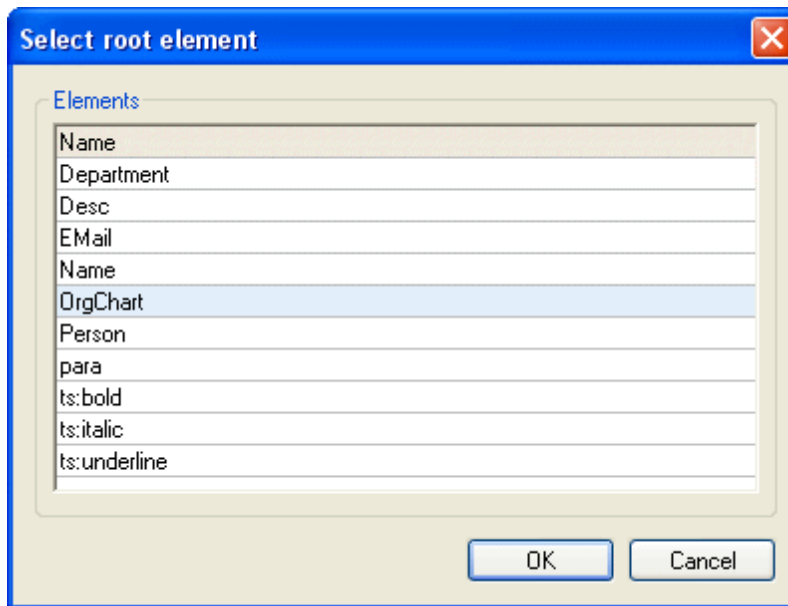
1. In the left component of an existing XML Schema Comparison window, do one of the following:
 - Click the **Browse**  icon and select a file in the Windows **Open** dialog box.
 - Double-click the title bar, enter the path to a file and press **Enter**.
 - Click the  button and select a previously compared XML Schema from the drop-down list.
2. Repeat step 1 for the right component.

To open an XML Schema comparison document:

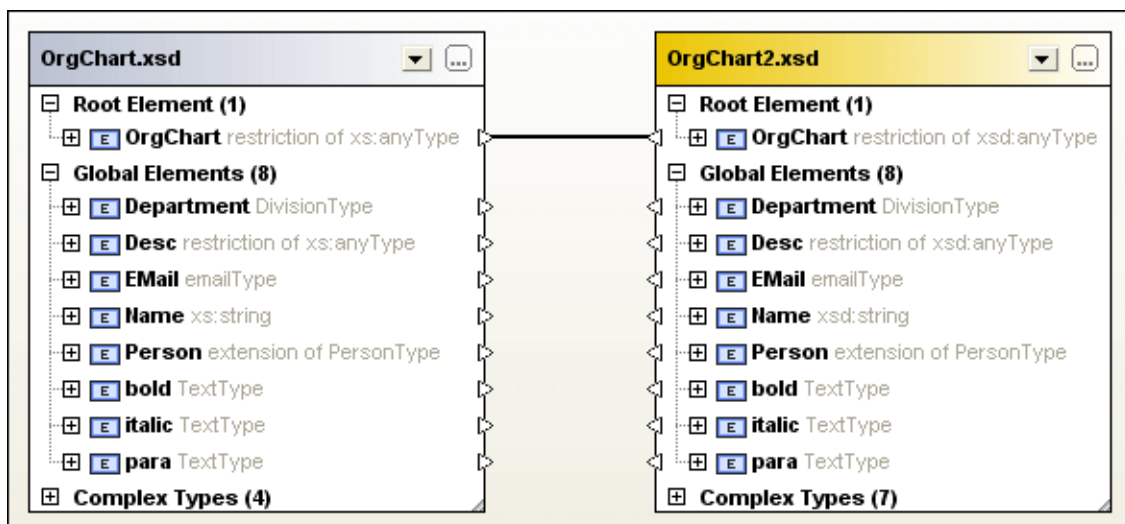
- Select the menu option **File | Open Comparison File...** and choose an *.xsdif file from the file system. The comparison is opened in a new XML Schema Comparison window with the name of the comparison document appearing in the comparison window tab.

6.3 Setting the Active Root Element

A structural comparison of XML Schemas in DiffDog is done between two top-level global elements, called Root Elements. If a schema has more than one global element, then you are prompted, in the Select Root Element dialog (*screenshot below*), to select one of the global elements as the root element.



The selected global element is shown in the schema boxes (*see screenshot below*) as the respective Root Element, and the other global elements are listed under the Global Elements item. The active root element is mapped automatically and cannot be unmapped.



When an XML Schema has already been loaded into a comparison component, you have several options for changing the active root element:

- Manually map two unmapped elements and set one of them as active root element; the mapped element in the opposite component can also be set as active root element, or

you can leave the opposite root element unchanged.

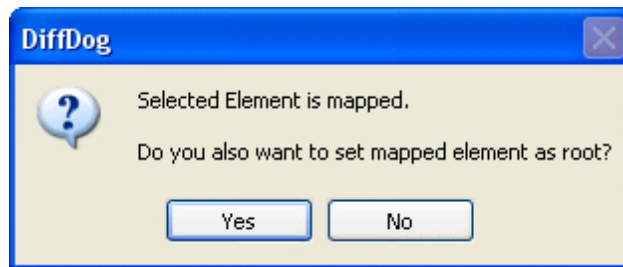
- Activate an unmapped root element in one component; this element will be automatically mapped to the active root element on the other side of the comparison.

If a warning dialog box is displayed, you can always abort the operation by clicking the **No** button in the dialog box. The root element is displayed in a separate section on top of the comparison component.

How to set the active root element:

Do one of the following:

- When opening an XML Schema Comparison window and selecting the XML Schemas for comparison, choose the active root element in the **Select Root Element** dialog box that pops up after you have selected an XML Schema containing more than one global element.
- Right-click a mapped global element in one of the components and select **Set as active root element** from the context menu. A dialog box appears where you can decide whether or not the corresponding element on the opposite side should also be set as the active root element.



If you click **No**, the selected element will be mapped to the current root element of the opposite component.

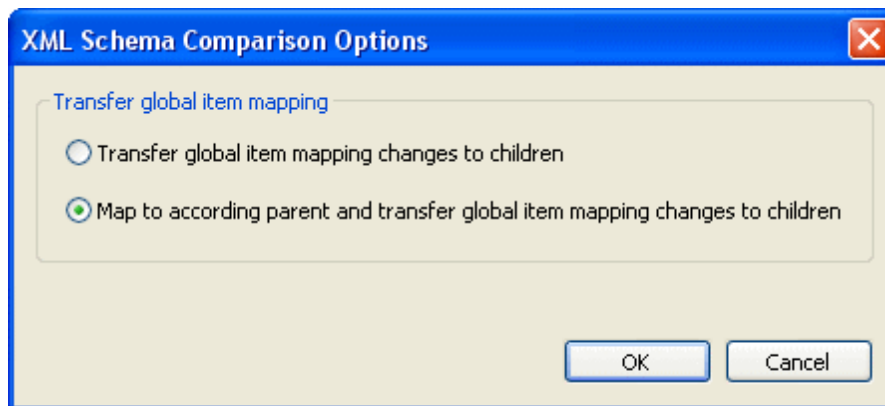
- Right-click an unmapped global element in one of the components and select **Set as active root element** from the context menu. The element is moved to the Root Element section and mapped to the respective root element in the opposite component.

6.4 Modifying the XML Schema Comparison Options

The XML Schema Comparison options can be changed in the **XML Schema Comparison**

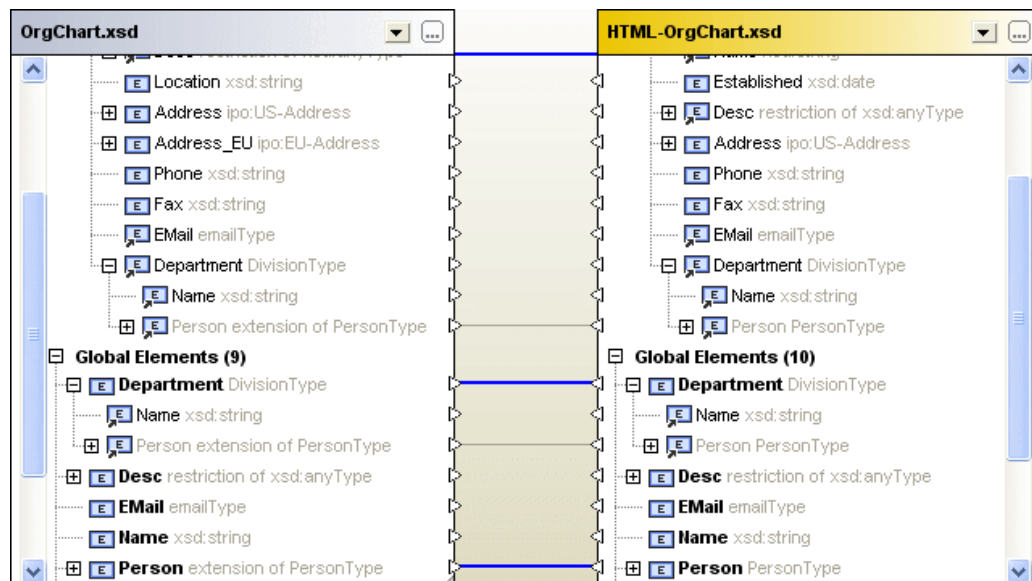
Options dialog box, which is called by clicking the **Comparison Options**  icon in the Diff and Merge toolbar of an XML Schema Comparison window or via the **Tools** menu when the active comparison window is an XML Schema Comparison window.

You can also define whether or not DiffDog should start an [automatic mapping](#) when XML Schemas are loaded.



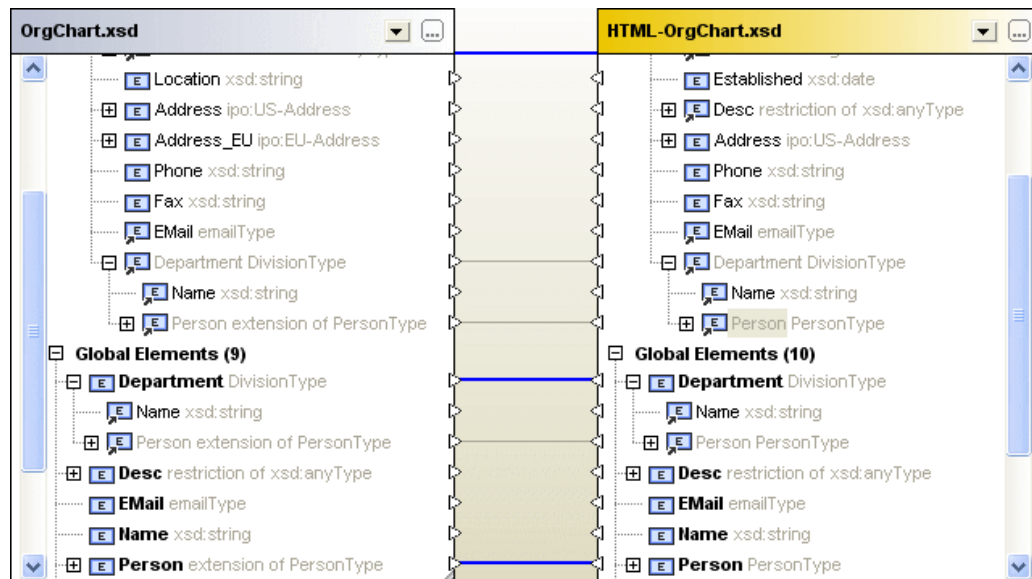
You define how DiffDog should transfer the changes in mapping of a global item to its children. Two options are available:

- **Transfer global item mapping changes to children**
This option transfers the mapping of global items if these items appear as children of other items but does not map the respective parent. In the screenshot below, the mapping of global item "Person" is transferred only when it appears as child of global item "Department", whereas the mapping of parent "Department" is not transferred.



- **Map to according parent and transfer global item mapping changes to children**

This option transfers the mapping of global items even if they do not appear as children. In the screenshot below, the mapping of both child "Person" and its parent "Department" is transferred.



To modify the XML Schema comparison options:

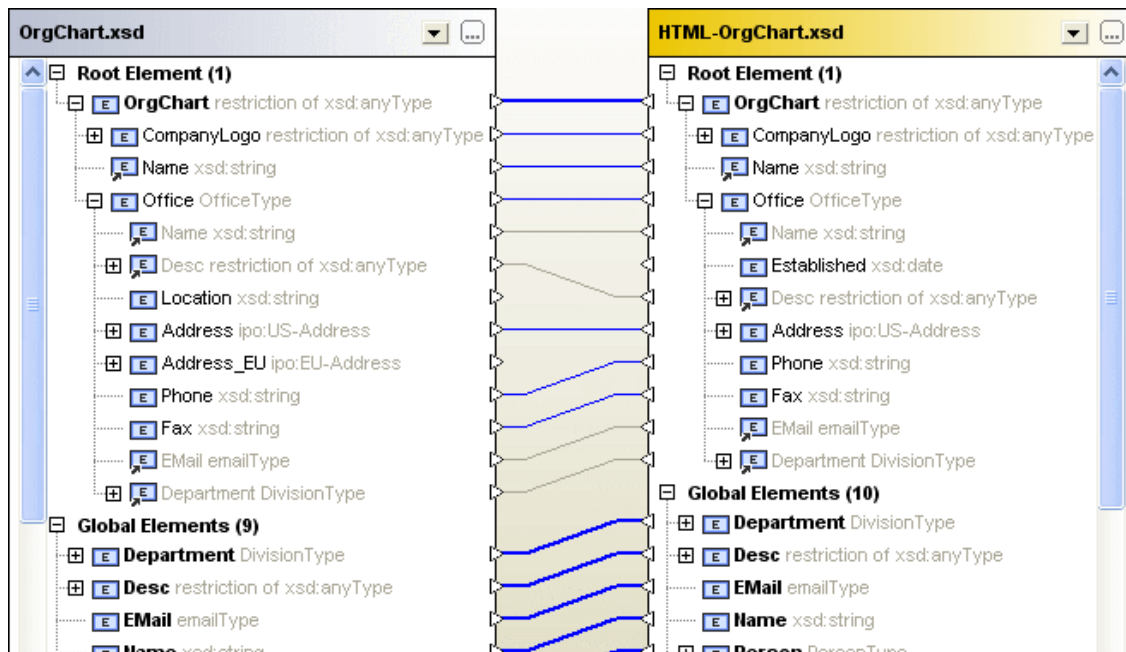
1. Do one of the following:
 - Select the menu option **Tools | Comparison Options...**
 - Click the **Comparison Options**  icon in the Diff and Merge toolbar.
2. Change the settings in the **XML Schema Comparison Options** dialog box as required

6.5 Mapping Elements

When you [select](#) two XML Schemas for comparison, their respective root elements will automatically be mapped when the XML Schemas are loaded into the comparison components of the XML Schema Comparison window. You will have to [select the active root element](#) if an XML Schema contains more than one element on root level.

The remaining elements as well as any child elements of the (active) root element will be mapped automatically by DiffDog when you [start](#) the comparison. If you are not satisfied with the proposed mappings, you can manually change a mapping and re-run the comparison. Note that the mapping of the root element cannot be changed! If the mapping of the root elements is incorrect, you have to [replace](#) one (or both) of the root elements to change the mapping.

If elements are referencing other elements, this is indicated with an icon. When such a referenced element is mapped, DiffDog also maps all references to this element in the same way. These references are indicated with an icon next to the element name (at the location where the reference occurs), and the mapping itself is displayed with gray lines (see screenshot below).



You can still change these automatic mapping by drawing a new mapping connection; such manual mappings will then be displayed with blue connector lines. A context menu option is also available allowing you to re-apply the mapping of the global item to a referenced item.

To change or delete a mapping:

- To delete a mapping, right-click the element in either component or the line that connects two elements, respectively, and choose **Unmap selected** from the context menu or hit the **Del** key.
- To change an existing mapping, click the triangle next to the element name in one component and, keeping the mouse button pressed, draw a line to the corresponding triangle in the opposite component. Release the mouse button when the mouse cursor changes its shape.

To unmap all elements:

- Right-click into the title bar of either component and choose **Unmap items** from the context menu.

Note that the active root element cannot be unmapped.

6.6 Saving XML Schema Comparison Files

After you have [selected](#) XML Schemas for comparison and defined the appropriate [comparison options](#), you can save the comparison to an XML Schema comparison file. This is either done via the **File | Save As...** command or by right-clicking the tab of an XML Schema Comparison window and choosing **Save** from the context menu. If you do a particular comparison on a regular basis, the use of an XML Schema comparison file which can be opened directly may save you a considerable amount of working time.

6.7 Running a Schema Comparison

After you have [selected a root element](#), you can start a comparison. All global elements as well as their child elements will be mapped automatically.

Note: When comparing XML Schemas, DiffDog tries to find matching pairs of elements on both sides of the comparison rather than detecting or indicating differences between the two files. So, XML Schema comparison is about finding and indicating the parts that are equal in two XML Schemas. This approach is different from comparing files, directories, database schemas, or database data!

To start a comparison:

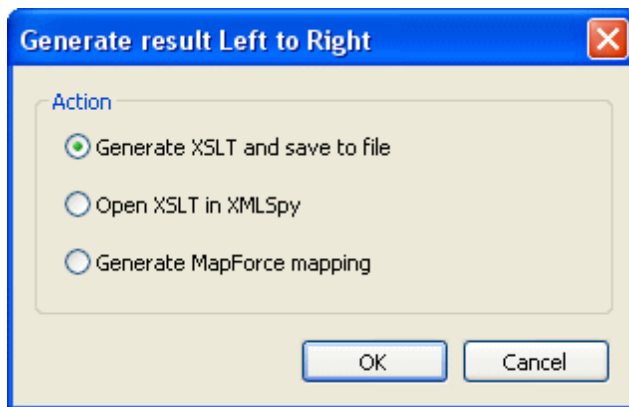
Do one of the following:

- Select the menu option **Diff and Merge | Start XML Schema mapping** or press **F5**.
- Right-click the title bar or any element of either component and choose **Start XML Schema mapping** from the context menu.
- Right-click anywhere into the XML Schema Comparison window and choose **Start XML Schema mapping** from the context menu.
- Right-click the tab of the XML Schema Comparison window and choose **Start Comparison** from the context menu.

6.8 Merging Differences in XML Schemas

If differences occur in compared XML Schemas, DiffDog does not merge the differences in the two compared XML Schemas but provides [XSLT Stylesheets](#) or [MapForce Mappings](#) so that you are able to update the XML files that have been generated with the compared XML Schemas. The respective commands are available as menu options in the **Diff and Merge** menu, as context menu commands, or they can be called by clicking the  and  toolbar options in the Diff and Merge toolbar.

If you click the **Generate Result Left to Right**  or the **Generate Result Right to Left**  button in the Diff and Merge toolbar, a dialog box is displayed, where you can choose which result is to be generated.



Choose the required option and click **OK**.

6.9 Generating an XSLT Stylesheet

After you have [compared](#) two XML Schemas in DiffDog, you can generate an XSLT stylesheet which can later be executed on existing XML files so as to reflect the changes in the XML Schema in the XML files that have previously been generated using this schema.

You can either save the XSLT or open it in XMLSpy® if you have XMLSpy installed on your computer. The relevant commands are included in the context menu.

To generate an XSLT Stylesheet:

Do one of the following:

- Right-click the title bar of either component or anywhere into the XML Schema Comparison window and select **Generate XSLT Left to Right...** or press **Alt+Right**.
Alternatively, click the **Generate Result Left to Right**  button in the Diff and Merge toolbar and select the Generate XSLT and save to file radio button in the **Generate result Left to Right** dialog box.
- Right-click the title bar of either component or anywhere into the XML Schema Comparison window and select **Generate XSLT Right to Left...** or press **Alt+Left**.
Alternatively, click the **Generate Result Right to Left**  button in the Diff and Merge toolbar and select the Generate XSLT and save to file radio button in the **Generate result Right to Left** dialog box.

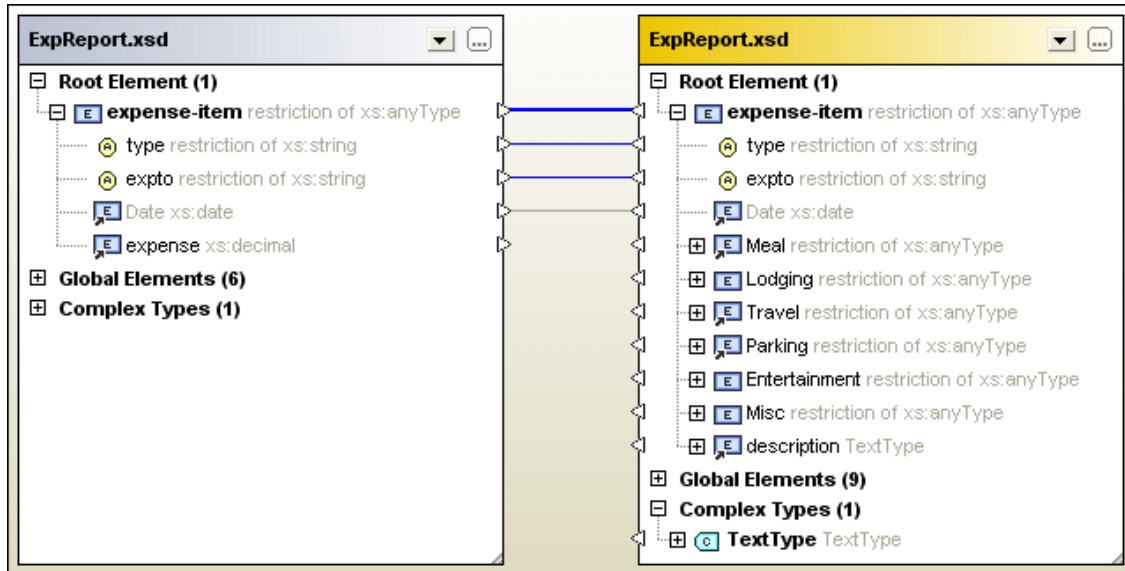
To display an XSLT Stylesheet in XMLSpy:

Do one of the following:

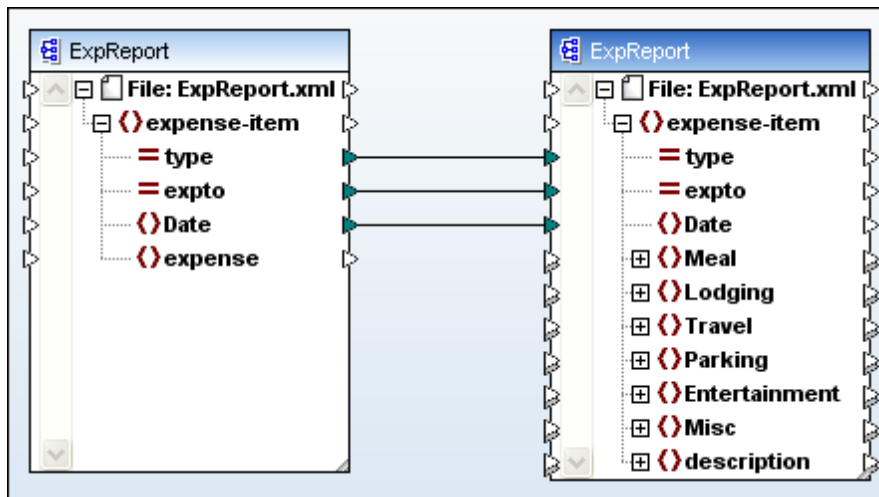
- Right-click the title bar of either component or anywhere into the XML Schema Comparison window and select **Open XSLT Left to Right in XMLSpy**. Alternatively, click the **Generate Result Left to Right**  button in the Diff and Merge toolbar and select the Open XSLT in XMLSpy radio button in the **Generate result Left to Right** dialog box.
- Right-click the title bar of either component or anywhere into the XML Schema Comparison window and select **Open XSLT Right to Left in XMLSpy**. Alternatively, click the **Generate Result Right to Left**  button in the Diff and Merge toolbar and select the Open XSLT in XMLSpy radio button in the **Generate result Right to Left** dialog box.

6.10 Generating a MapForce Mapping

If you have MapForce® installed on your computer, you can create a MapForce Mapping for the compared root element from within DiffDog and display it in a new instance of MapForce. Depending on whether you choose the Left to Right or the Right to Left command, you can determine which file is used as source or target, respectively.



If you choose the **Generate MapForce mapping Left to Right** command in the XML Schema Comparison above, you will get the following mapping in MapForce:



To generate a MapForce mapping:

1. [Define the root element](#) for which you want to generate the MapForce mapping.
2. [Run](#) an XML Schema comparison.
3. Right-click the title bar of either component or anywhere into the XML Schema Comparison window and select **Generate MapForce mapping Left to Right** or **Generate MapForce mapping Right to Left**. The mapping opens in a new MapForce

instance. Alternatively, click the **Generate Result Left to Right**  or **Generate Result Right to Left**  button in the Diff and Merge toolbar and select the Generate MapForce Mapping radio button in the **Generate result** dialog box.

Chapter 7

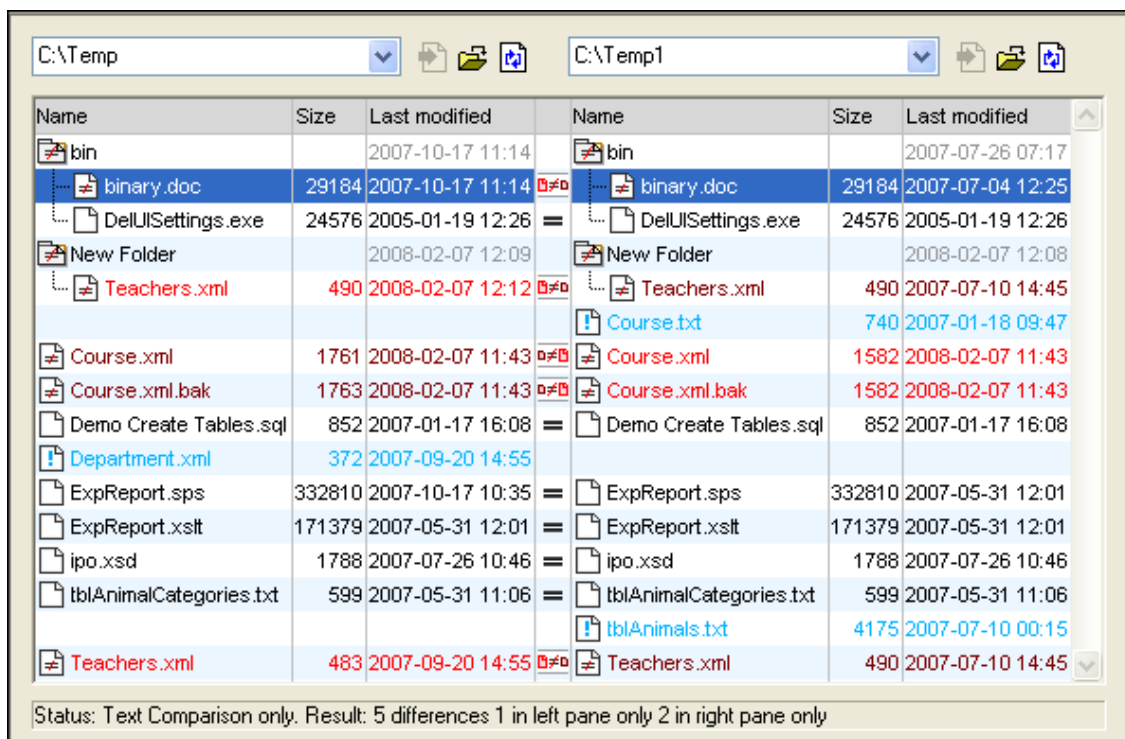
Comparing Directories

7 Comparing Directories

Altova web site:  [folder diff](http://www.altova.com/folder_diff)

In DiffDog, directories and, optionally, their sub-directories are compared in Directory Comparison windows. Here you can [compare](#), [merge](#), or [synchronize](#) directories. There are two ways in which DiffDog compares directories:

- By comparing the sizes and timestamps of files in the directories. This [comparison mode](#) is called Quick Comparison Mode.
- By comparing the contents of files in directories. This comparison mode is Text Comparison Mode, or XML Comparison Mode, or Binary Comparison Mode, or Extensions Comparison Mode.



To start a directory comparison in DiffDog, you can either [directly choose two directories to compare](#) or first open an empty Directory Comparison window and then [select the directories to be compared](#). Alternatively, you can also [select two directories in Windows Explorer](#), right-click and select **Compare with Altova DiffDog** from the context menu. This will open a new instance of DiffDog and display the selected folders in a Directory Comparison Window.

The comparison will start automatically unless you have deactivated the **Autostart Comparison** option in the **Diff and Merge** menu. You can change the [comparison mode](#) as desired and restart the comparison. In addition, to eliminate differences, DiffDog allows you to [copy files from one pane to the other](#).

To open a directory comparison window:

Do one of the following:

- Select the menu option **File | Open** or press **Ctrl+O**. Then do the following:
 1. Select **Compare directories** in the **Open comparison** dialog box.
 2. Choose the directories to be compared in the **Content group** box.
 3. Optionally, select a filter from the **File/directory filter** drop-down list.
 4. Optionally, activate the **Include subdirectories** check box.
 5. Click **OK**.

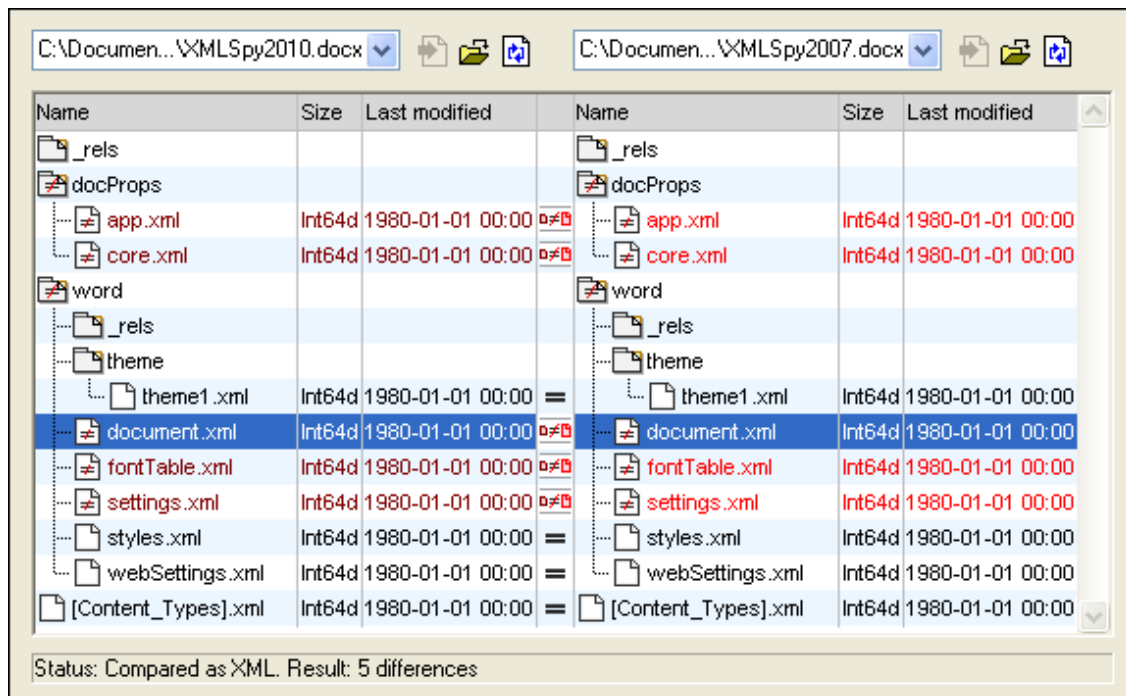
A new Directory Comparison window containing the selected directories is opened.

- Select the menu option **File | Compare Directories** or click the **Compare directories**  icon in the Standard toolbar. An empty Directory Comparison window is opened.

ZIP and OOXML files

ZIP-conformant files are regarded as directories if the ZIP conformant file option is selected as the default file comparison mode for *.zip files on the [File types tab](#) of the **DiffDog Options** dialog (this is the default setting). You can then select a ZIP file as one of the directories in a directory comparison, show the content of a ZIP file if it appears as a file in a directory comparison, and also copy and merge files that are contained in the ZIP file.

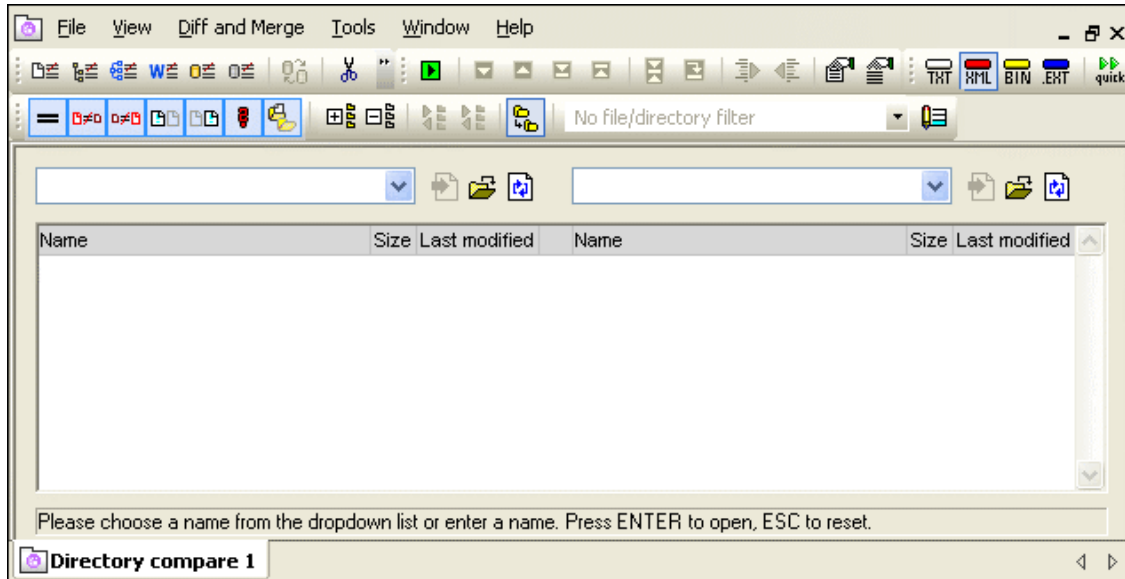
Office Open XML (OOXML) files—which can be thought of as a specialized form of ZIP archives—are also opened for comparison in directory comparison windows. After the content of the OOXML file is displayed in the directory comparison window, you can browse for the document.xml file and [open it in a file comparison](#) window.



Altova web site:  [ooxml diff](#), [zip diff](#)

7.1 Opening a Directory Comparison Window

When opening a new Directory Comparison window, the Directory Comparison is given a name of the form `Directory compare X`, where `X` is an integer indicating that directory comparison's position in the sequence of directory comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



Note that the **Compare Directories** command opens only the Directory Comparison window; it does not open any directory within the window. The two directories to be compared must be [opened](#) subsequently in the panes of the comparison window, one in each pane.

To open an empty Directory Comparison window:

- Select the menu option **File | Compare Directory** or click the **Compare directories**  button in the Standard toolbar.

7.2 Selecting Directories for Comparison

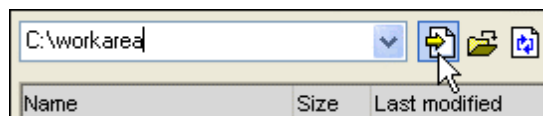
Directories can be selected for comparison in various ways. You can open the directories in a new Directory Comparison window, [re-open a previous comparison](#), or change the directories in the currently open Directory Comparison window.

To open directories in a new Directory Comparison window:

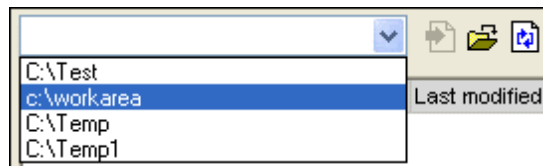
1. Select the menu option **File | Open** or press **Ctrl+O**.
2. In the **Open Comparison** dialog box, select **Compare directories** in the Mode group box.
3. In the Content group box, for the first and the second directory, do one of the following:
 - Enter the path of the directories.
 - Select previously compared directories from the drop-down list.
 - Click the **Browse...** button. In the Browse for Folder dialog that pops up, you can either select a folder from the system (click **Open** after selecting it) or select a web folder URL. To access the Browse for Web Folder dialog, click **Switch to URL**. Accessing a folder via a URL enables you to open folders via FTP and HTTP/HTTPS. How to select a web folder via its URL is [explained below](#).
4. Optionally, choose a filter from the File/Directory filter drop-down list if you want to restrict the displayed content of the directories to certain file types.
5. If required, activate the **Include subdirectories** check box.
6. Click **OK**. The selected directories are opened in a new Directory Comparison window.

To select directories in the active Directory Comparison window:

1. In the left pane of an existing Directory Comparison window, do one of the following:
 - Click the **Open**  icon and select a directory in the Windows **Open** dialog box.
 - Enter the full path of a directory and click the **Apply**  button.



- Select a previously compared directory from the drop-down list.



2. Repeat any of the steps described in step 1 for the right pane.

To start a directory comparison from Windows Explorer:

1. Select two directories in Windows Explorer.
2. Right-click and choose **Compare with Altova DiffDog** from the context menu.

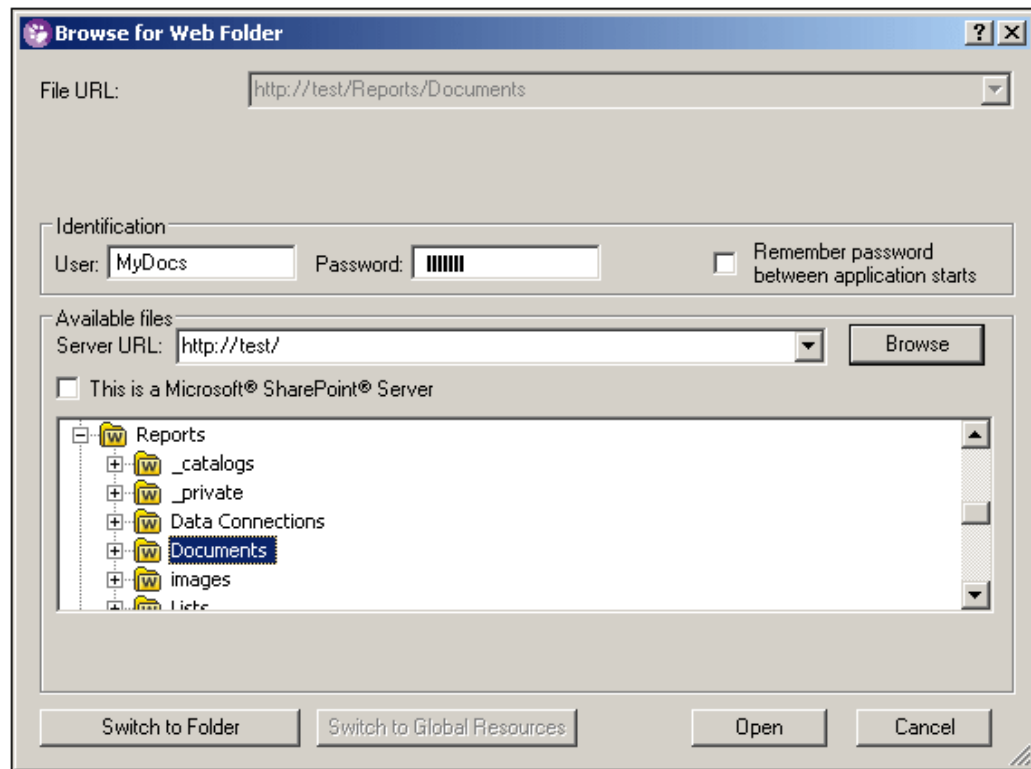
A new instance to DiffDog is opened, the selected folders are displayed in a Directory

Comparison window, and the comparison is started automatically.

Selecting folders via URLs

To select a folder via a URL, do the following:

1. On clicking the **Switch to URL** button, the dialog switches to the URL mode of the dialog (*screenshot below*).



2. Enter the URL of the server you want to access in the *Server URL* field (*screenshot above*). If the server is a Microsoft® SharePoint® Server, check the *Microsoft® SharePoint® Server* check box. See the Microsoft® SharePoint® Server Notes below for further information about working with folders on this type of server.
3. If the server is password protected, enter your User-ID and password in the *User* and *Password* fields.
4. Click **Browse** to view and navigate the directory structure of the server.
5. In the folder tree, browse for the folder you want to load and click it. The folder URL appears in the URL field at the top of the dialog (*screenshot above*). The **Open** button only becomes active at this point.
6. Click the **Open** button to load the folder into DiffDog.

Note: The Browse function is only available on servers which support WebDAV and on Microsoft SharePoint Servers. The supported protocols are FTP, HTTP, and HTTPS.

Microsoft® SharePoint® Server Notes

Note the following points about files on Microsoft® SharePoint® Servers:

- In the directory structure that appears in the Availability pane, folder icons have symbols that indicate their check-in/check-out status. Right-clicking a folder pops up a context

menu containing commands available for that folder.

- The various folder icons are shown below:

	Checked in. Available for check-out.
	Checked out by another user. Not available for check-out.
	Checked out locally. Can be edited and checked-in.

- After you check out a folder, you can carry out DiffDog differencing operations on it.
- You can check-in the folder via the context menu in the Open URL dialog (*see screenshot above*).
- When a folder is checked out by another user, it is not available for check out.
- When a folder is checked out locally by you, you can undo the check-out with the Undo Check-Out command in the context menu (*see screenshot above*). This has the effect of returning the folder to the server.
- If you check out a folder in one Altova application, you cannot check it out in another Altova application. The folder is considered to be already checked out to you. The available commands at this point in any Altova application supporting Microsoft® SharePoint® Server will be: **Check In** and **Undo Check Out**.

7.3 Modifying the Directory Comparison Options

When comparing directories, the [comparison mode](#) you choose determines how the content of the directories in the left and right pane of the Directory Comparison window are compared. The basic comparison mode switch is the Quick Comparison toggle. In order to access Text Comparison Mode, or XML Comparison Mode, or Binary Comparison Mode, or Extensions Comparison Mode, Quick Comparison **must first be toggled off**.

You can also define which types of files will be displayed in the Directory Comparison window by [applying a filter](#). In addition, the **Diff and Merge** menu offers several toggle commands which can be switched on or off via the menu:

- [Show Options Before Comparison](#)
- [Autostart Comparison](#)
- [Compare while Editing](#)
- [Support Recently Compared Pairs](#)

General options for the comparison of directories are furthermore available in the [Directory comparison](#) tab of the **DiffDog Options** dialog box.

Note: If a new Directory Comparison window is opened, it assumes the comparison options of the last comparison window (file or directory) to have had any of its comparison options modified.

To change the mode for directory comparison:

Do one of the following:

- To use Quick Comparison Mode, toggle on Quick Comparison by selecting the menu option **Diff and Merge | Compare only Size and Modification Date** or activating the **Quick Comparison**  icon in the Comparison Mode toolbar.
- Make sure that Quick Comparison is toggled off and select one of the following comparison modes from the **Diff and Merge** menu or activate its corresponding icon in the Comparison Mode toolbar:
 - **Textual Comparison Only** 
 - **Compare as XML** 
 - **Compare as Binary** 
 - **Compare According to File Extension Settings** 

7.4 Running a Directory Comparison

When the two directories to be compared are loaded into the Directory Comparison window, a comparison is [automatically carried out](#) if the **Autostart Comparison** command is toggled on (which is the default setting) or if you have selected directories in Windows Explorer and used the **Compare with Altova DiffDog** context menu command. In addition, comparisons can be [explicitly started](#) any number of times with the **Start Comparison** command.

If you [double-click a file](#) in the Directory Comparison window, this file and the corresponding file in the compared directory are opened in a new File Comparison window and compared immediately.

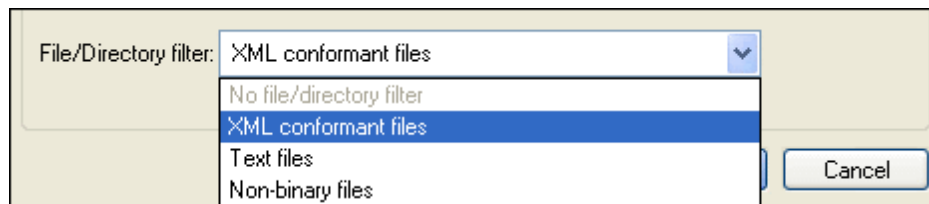
Filtering the content of compared directories

The Directory content toolbar contains a drop-down list from which you can select a [filter](#) to be applied to the Directory Comparison window. You can change this filter at any time prior to or after a comparison, or change the definition of a filter as well as add a new filter.

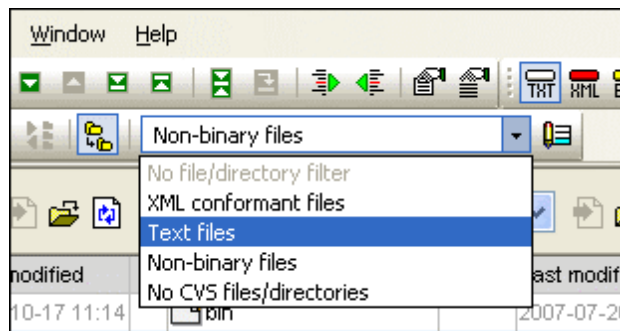
To run a filtered directory comparison:

Do one of the following:

- When selecting directories for comparison using the **File | Open** menu option, select a filter from the File/Directory filter drop-down list in the **Open Comparison** dialog box.



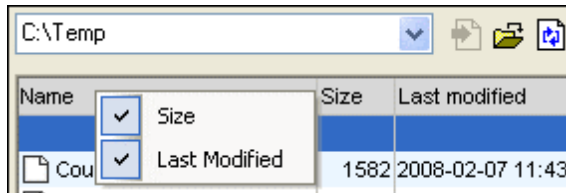
- If you have already opened a Directory Comparison window, select a filter from the drop-down list that is available in the Directory content toolbar.



The content in the Directory Comparison window is updated and a comparison is started immediately.

7.5 Configuring the View

In Directory Comparison windows, you can toggle on and off the display of the Size and Last Modified columns by right-clicking the Header of either pane and then clicking **Size** and/or **Last Modified**.



The column width can also be changed by dragging column borders to the desired location.

Controlling what files are displayed

You can configure the view of individual Directory Comparison windows to display files on the basis of their compared status. For example, you can opt to not display all equal files, or to not display non-comparable files, or to display files that are unequal and newer in the left pane but to not display files that are unequal and newer in the right pane. To do this, you use a set of simple toggle commands that are available as toolbar icons. Note that the toggle is on when the icon has a border around it (as depicted below).



Show/Hide equal: Shows or hides files and sub-directories that are equal in the left and right pane.



Show/Hide left newer: Shows or hides files that are unequal, and where the newer version of the file is located in the left pane.



Show/Hide right newer: Shows or hides files that are unequal, and where the newer version of the file is located in the right pane.



Show/Hide left only: Toggles on and off the display of subdirectories and files that are present in the left pane only.



Show/Hide right only: Toggles on and off the display of subdirectories and files that are present in the right pane only.



Show/Hide not comparable: Toggles on and off the display of files that are not comparable. Files are considered to be non-comparable if they cannot be compared in the selected [Comparison Mode](#). For example, in XML Comparison Mode, file types that have been [specified as not being XML-conformant](#) are considered to be not comparable.



Show/Hide empty directories: Toggles on and off the display of empty directories.

Displaying sub-directories

If, during opening the directories using the **File | Open** menu option, you have decided to not show sub-directories in the Directory Comparison window, you can nevertheless activate this

option in any stage of the comparison by clicking the **Include Subdirectories**  button in the Directory content toolbar. Clicking the button again will toggle the display of sub-directories off again. With the button toggled on, you can use the following buttons to customize the display of sub-directories:



Collapse: Collapses all directories that have subdirectories. Note that this command will

collapse **all** sub-directories in both panes. To collapse a single sub-directory, double-click on it.



Expand: Expands all directories that have subdirectories.

7.6 Displaying Differences in Directories

The directory comparison results are displayed as trees in both panes. If sub-directories are displayed, they can be collapsed and expanded by double-clicking the icons for them. The comparison results are indicated with colors and icons as described below.

Name	Size	Last modified		Name	Size	Last modified
 bin		2007-10-17 11:14		 bin		2007-07-26 07:17
 binary.doc	29184	2007-10-17 11:14		 binary.doc	29184	2007-07-04 12:25
 DelUISettings.exe	24576	2005-01-19 12:26		 DelUISettings.exe	24576	2005-01-19 12:26
 Expenses		2008-02-20 12:44		 Expenses		2008-02-20 12:44
 New Folder		2008-02-20 12:15		 New Folder		2008-02-07 12:08
  Classes.csv	26	2008-02-20 12:17		  Text		2008-02-20 14:55
  Teachers.xml	490	2008-02-07 12:12		  Teachers.xml	490	2007-07-10 14:45
				  Introduction.txt	0	2008-02-20 12:18
				  Course.txt	740	2007-01-18 09:47
 Course.xml	1582	2008-02-07 11:43		 Course.xml	1582	2008-02-07 11:43

The colors in which file names are displayed are significant. DiffDog displays the individual files in a Directory Comparison window in the following colors:

- **Black:** The file is equal in the selected comparison mode.

 ExpReport.xslt	171379	2007-05-31 12:01		 ExpReport.xslt	171379	2007-05-31 12:01
--	--------	------------------	---	--	--------	------------------

Names of files that cannot be compared in the selected comparison mode are also displayed in black.

 Create Tables.sql	852	2007-01-17 16:08		 Create Tables.sql	852	2007-01-17 16:08
---	-----	------------------	---	---	-----	------------------

- **Blue:** The file is present in the directory in which it is displayed, but not in the other directory.

			  Course.txt	740	2007-01-18 09:47
--	--	--	--	-----	------------------

- **Red:** The file is present in both directories, but is not equal in the selected comparison mode. Note that the newer file is colored a brighter red.

  Course.xml.bak	1763	2008-02-07 11:43		  Course.xml.bak	1582	2008-02-07 11:43
--	------	------------------	---	--	------	------------------

Sub-directory names are always displayed in black.

Folder icons

The following icons are used for directories in Directory Comparison windows. Note that expanded directories are shown with their top right corners turned down (left icon):



Directories that contain files that are **equal** in the selected comparison mode are indicated with a blank body.

Directories that contain **different** files in the selected comparison mode are indicated with a not-equal sign.

Directories that contain files that are **not present** in the corresponding directory in the other pane are indicated with a blue exclamation mark.

Directories that have **both extra files and different files** are indicated with an

exclamation mark and a not-equal sign.

ZIP and OOXML icons

The following icons for ZIP and OOXML files are used for directories in Directory Comparison windows:



If the ZIP archives/OOXML files contain files that are **equal** in both panes, the ZIP symbol displays two blank file icons.



ZIP archives/OOXML files that contain **different** files are indicated with a not-equal sign.



ZIP archives/OOXML files that contain files that are **not present** in the corresponding ZIP in the other pane are indicated with a blue exclamation mark. Note that the exclamation mark is displayed in the pane where the additional file is located.



ZIP archives/OOXML files that have **both extra** files **and different** files are indicated with an exclamation mark and a not-equal sign.

File icons

The following file icons are displayed in Directory Comparison windows:



Files that are **equal** in the selected comparison mode are displayed with a blank body.



Files that are **non-equal** in the selected comparison mode are displayed with a not-equal sign.



Files that are **not present** in the other pane are displayed with a blue exclamation mark.

Comparison symbols

The following symbols appear in the column between the two panes and indicate the results of the directory comparison, specifically the relationship between the files on either side of the symbol. Note that these symbols are only displayed for files and not for subdirectories.



Files are **equal** in the selected comparison mode.



Files are **different** in the selected comparison mode.



Files **cannot be compared** in the selected comparison mode.

7.7 Comparing Files from within a Directory Comparison

Double-clicking a file in any of the two directories opens that file and its corresponding file in the other directory in a File Comparison window. If a corresponding file does not exist, no file is opened in the second window.

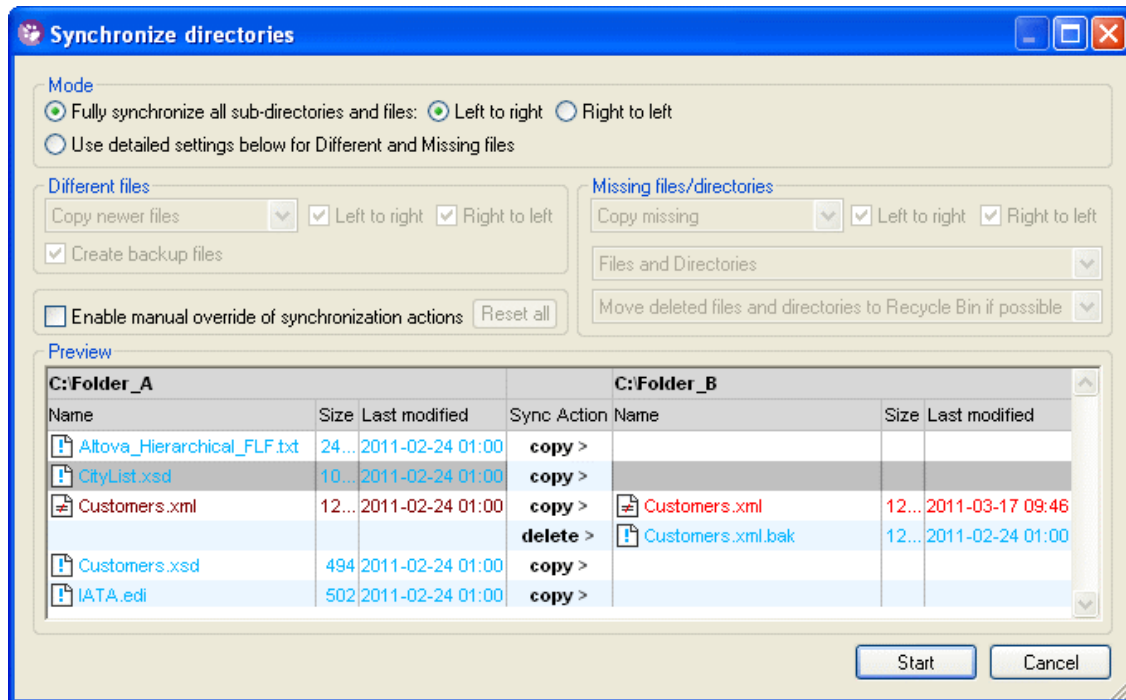
The new file comparison is opened in the [current comparison mode](#) of the directory comparison or—if Quick Comparison is the comparison mode of the directory comparison—in the comparison mode that was the current file comparison mode (Text, XML, Binary, or Extensions) when the directory comparison was opened, respectively.

You can continue to work in the File Comparison window as in a [regular file comparison session](#).

The new feature will allow to save/load comparisons in DiffDog i.e. selected files/directories and according options to exactly reproduce current comparison.

7.8 Synchronizing Directories

In addition to the merging functionality, which allows you to copy individual files from one pane to the other, DiffDog in the **Diff and Merge** menu also provides the **Synchronize directories** option. This option allows you to synchronize the content of the two directories in one single step.



The **Synchronize directories** dialog box can be opened exclusively from a Directory Comparison window, that is, there is no independent menu option available and you have to [open a Directory Comparison window](#) first. After two directories have been [compared](#) in a Directory Comparison window, you have the following options:

- Synchronizing the currently displayed directories including their sub-directories
- Selecting a single sub-directory in the Directory Comparison window and synchronizing only that particular sub-directory

In the Mode group box of the **Synchronize directories** dialog box, you can choose from two options: (i) [Fully synchronize](#) all sub-directories and files (left to right or right to left), or (ii) adapt the [synchronization settings](#). You can always change the [synchronization actions](#) for the individual files by activating the Enable manual override of synchronization actions check box, and, finally, [synchronize the two directories](#).

To open the Synchronize directories dialog box:

1. Make sure that the two directories that you want to synchronize are displayed in a Directory Comparison window and that you have compared them.
2. Do one of the following:
 - To synchronize the currently displayed directories including their sub-directories, select the menu option **Diff and Merge | Synchronize directories** or click the **Synchronize**  button in the Directory content toolbar.

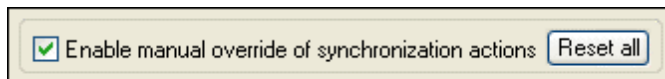
- To synchronize only the sub-directory that is selected in the Directory Comparison window, select the menu option **Diff and Merge | Synchronize selected directory** or click the **Synchronize selected**  button in the Directory content toolbar.

7.8.1 Full Synchronization

If you have activated the Fully synchronize all sub-directories and files check box in the Mode group box, you can choose whether you want to synchronize (i.e., copy) the files from left to right or from right to left by selecting the corresponding radio button. This option will perform the following actions:

- All different files will be overridden
- Files that only exist in the source directory will be copied to the target directory
- Additional files that exist in the target directory will be deleted permanently (respectively moved to the recycle bin, if possible)
- No backup files will be created

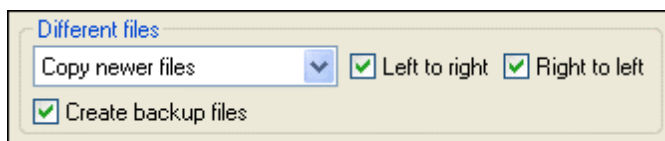
You can, however change the default synchronization settings by activating the Enable manual override of synchronization actions check box.



The Enable manual override of synchronization actions check box enables you to [fine-tune](#) your synchronization actions for one or more particular files or sub-directories. If this check box is activated, the Sync Action column provides a drop-down list where you can choose a synchronization action for an individual file or sub-directory and thus override the settings that have been defined on directory level.

7.8.2 Adapting the Synchronization Settings

Within a running session of DiffDog, the **Synchronize directories** dialog box opens with the previously saved settings for directory synchronization and displays them in the upper part of the dialog. When a new DiffDog instance (or session) is opened, the **Synchronize directories** dialog box opens for the first time with the default settings. Using the drop-down lists and check boxes, you can adapt those settings so as to meet the requirements for synchronizing the currently displayed directories.



In the Different files group box, you define which files are to be copied, that is, whether older or newer files are to be kept, and whether they should be copied to the right, or left directory, or to both directories. The default option copies newer files to the opposite side so that only the newer version of the file will be kept.

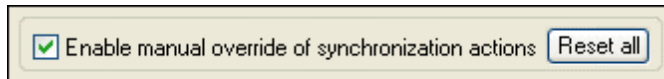
You can choose from among the following options:

- **No action:** This option ignores different files.
- **Copy newer files:** This option copies the newer version of a file to the opposite directory. You can use the Left to right and Right to left check boxes to limit the

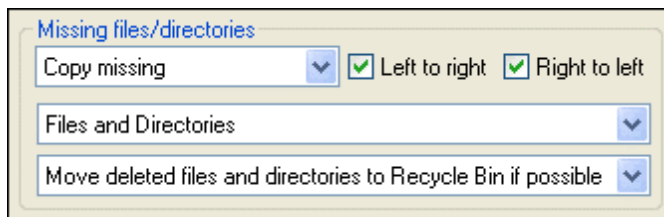
update to one particular directory. Check both boxes to copy the newer files to the opposite directory and thus update both directories.

- **Copy older files:** This option copies the older version of a file to the opposite directory. You can use the Left to right and Right to left check boxes to limit the update to one particular directory. Check both boxes to copy the older files to the opposite directory and thus update both directories.

The Create backup files check box allows you to keep a backup of a file's previous version in the directory. If activated, the previous version is saved with a .BAK extension before the updated version is copied to the directory.



The Enable manual override of synchronization actions check box enables you to [fine-tune](#) your synchronization actions for one or more particular files or sub-directories. If this check box is activated, the Sync Action column provides a drop-down list where you can choose a synchronization action for an individual file or sub-directory and thus override the settings that have been defined on directory level.



The Missing files/directories group box determines, how missing files and/or directories are to be handled when directories are synchronized. You can choose, whether these options are to be applied to files and directories or to directories (when copying) or files (when deleting) only. Furthermore, you can define, whether deleted items should be moved to the Recycle Bin if possible or be deleted permanently.

The following options are available for missing files and directories:

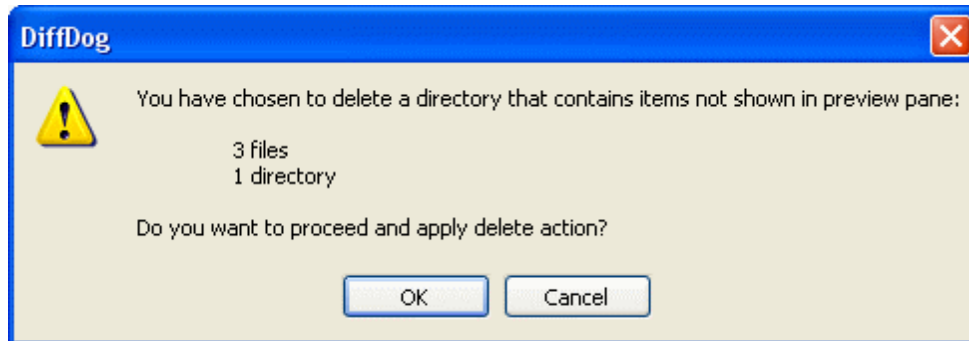
- **No action:** No synchronization for files that are present in only one of the directories.
- **Copy missing:** Missing files are copied to the opposite directory. You can use the Left to right and Right to left check boxes to limit the update to one particular directory. Check both boxes to copy missing files to the opposite directory and thus update both directories.
- **Delete missing:** Missing files are deleted from the opposite side. You can use the Left only and Right only check boxes to restrict the deletion to one particular directory. Check both boxes to delete missing files from the opposite directory and thus delete missing files from both directories.

7.8.3 Changing the Synchronization Actions

Basically, the synchronization options are defined for the directories as a whole. You can, however, change the synchronization actions for one or more individual files or sub-directories manually if the Enable manual override of synchronization actions check box is activated.

C:\Temp				C:\Temp1			
Name	Size	Last modified	Sync Action	Name	Size	Last modified	
bin		2008-02-20 15:47		bin		2007-07-26 07:17	
New Folder		2008-02-20 12:15	< delete >	New Folder		2008-02-07 12:08	
Classes.csv	26	2008-02-20 12:17	< delete >	Teachers.xml	490	2007-07-10 14:45	
Teachers.xml	490	2008-02-07 12:12	< delete >	Text		2008-02-20 14:55	
			< copy >	Introduction.txt	0	2008-02-20 12:18	
				Course.txt	740	2007-01-18 09:47	
Course.xml.bak	17...	2008-02-07 11:43	< delete >	Course.xml.bak	15...	2008-02-07 11:43	
Department.xml	372	2007-09-20 14:55	copy >	tblAnimals.txt	41...	2007-07-10 00:15	
			< copy >	Teachers.xml	490	2007-07-10 14:45	
Teachers.xml	483	2007-09-20 14:55	< copy >				

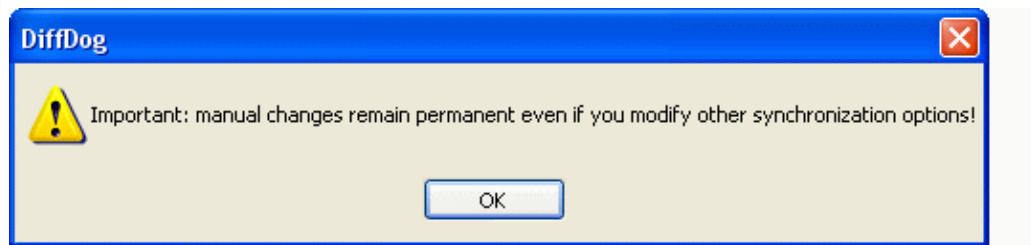
Warning: If you apply a delete action to a sub-directory, also all files that are contained in this directory will be deleted on the chosen side. Since equal files are not displayed in the **Synchronize directories** dialog, DiffDog displays a warning so as to alert you to this fact.



To define synchronization actions manually for individual files:

1. Make sure that the Enable manual override of synchronization actions check box is activated.
2. Optionally, change the default synchronization option for the directories in the Different files and Missing files/directories group boxes.
3. To change the pre-selected synchronization action for a particular file, click the drop-down list in the Sync Action column between the two directory panes and select one of the following options:
 - **<blank>**: No synchronization for this file.
 - **copy >**: The file will be copied from the left side to the right side without considering which file is newer.
 - **< copy**: The file will be copied from the right side to the left side without considering which file is newer.
 - **delete >**: The file will be deleted on the right side.
 - **< delete**: The file will be deleted on the left side.
 - **< delete >**: The file will be deleted on both sides.
4. If you choose to delete a sub-directory, click **OK** in the warning message informing you that also equal files will be deleted.

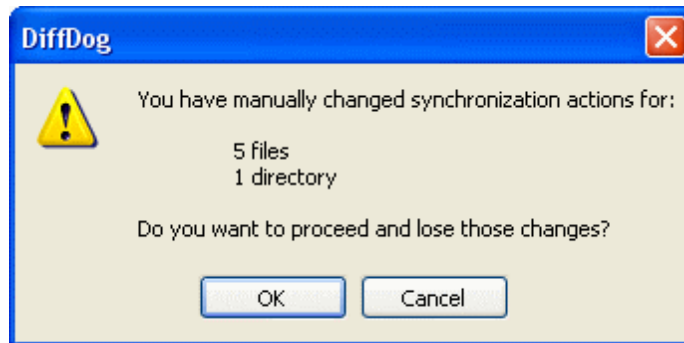
A message pops up informing you that manual changes will not be considered when changing the synchronization options.



5. Click **OK**.
The synchronization action is indicated with a different background color. If you later on change the overall settings for the directories and the settings happen to match the manually changed action, the background color will be removed again.

To reset manual synchronization actions:

1. Do one of the following:
 - Click the **Reset all** button.
 - Deactivate the Enable manual override of synchronization actions check box.
2. Click **OK** in the message box that appears.



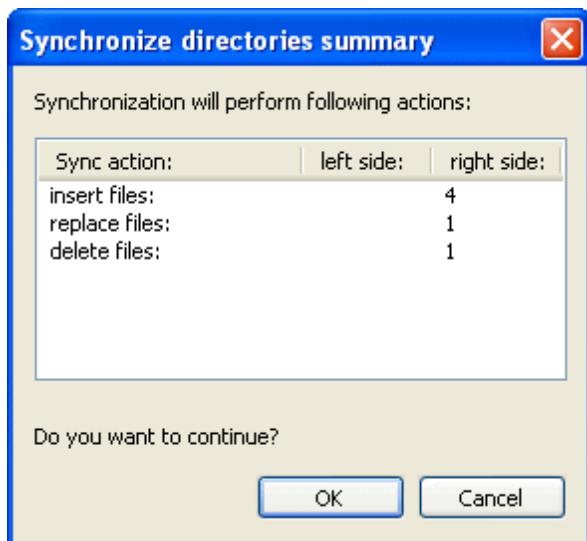
7.8.4 Starting a Directory Synchronization

After you have configured the synchronization actions on [directory level](#) and, if applicable, for [individual files](#), you have to start a directory synchronization manually.

To start a directory synchronization:

1. [Open](#) a Directory Comparison window and [run](#) the comparison.
2. Open the **Synchronize directories** dialog box.
3. Choose either [full synchronization](#) or define [detailed settings](#) for different and missing files.
4. Optionally, [adapt the default synchronization settings](#) or [change the synchronization action](#) for individual files.
5. To run the directory synchronization, click the **Start** button. If you choose to not run the synchronization and abort the synchronization settings you defined in the **Synchronize directories** dialog box, click the **Cancel** button to return to the Directory Comparison window from where you opened the **Synchronize directories** dialog box.

After you have clicked the **Start** button, DiffDog displays a summary where the different actions are listed that will be performed during the synchronization.



You can click on **OK** to commit the changes or cancel the synchronization process.

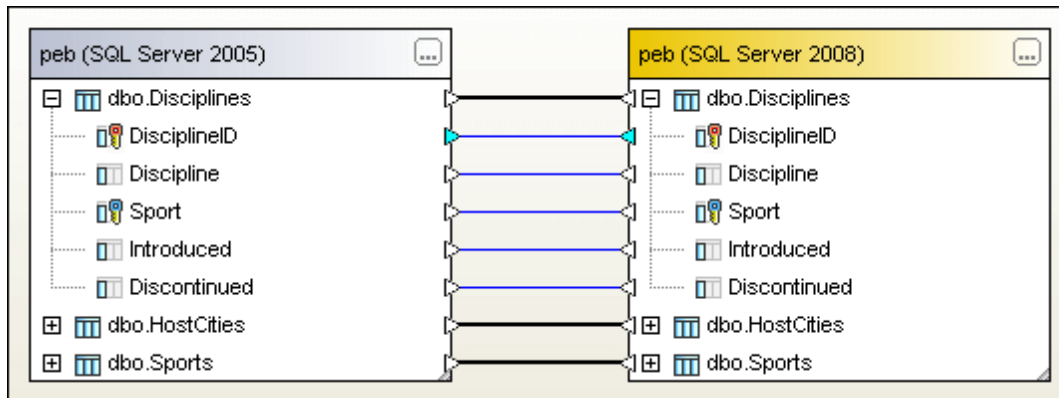
Chapter 8

Comparing Database Data

8 Comparing Database Data

Altova web site:  [database table comparison](http://www.altova.com/database-table-comparison)

To compare database data in DiffDog, the tables that should be compared are [added to components](#) in a Database Data Comparison window, where they are [mapped](#), and where several options for [comparing](#) and [merging](#) the table data are provided. The two components represent the databases that are compared and are indicated with different colors (grey: left component, dark yellow: right component). These colors will later also appear in the [Comparison Result window](#) so that you can easily see which column belongs to which database. The title bar of each component displays the name of the database; if you place the mouse cursor over a title bar, a balloon help appears and displays also the name of the data source that is used to connect to the database.

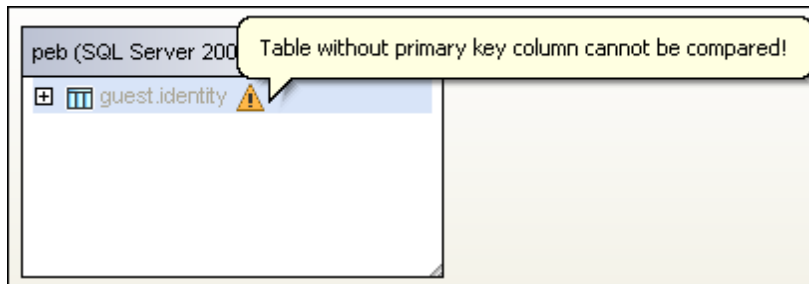


When the [requirements](#) for a database data comparison are met, there are several ways to start a comparison of databases in DiffDog:

- [Opening](#) a Database Data Comparison window and adding tables using the **Select Database Objects for Comparison** dialog box. Tables from both databases can be selected in the dialog box.
- Opening a data comparison file that is stored in your file system using the **File | Open Database Data Comparison File...** command.

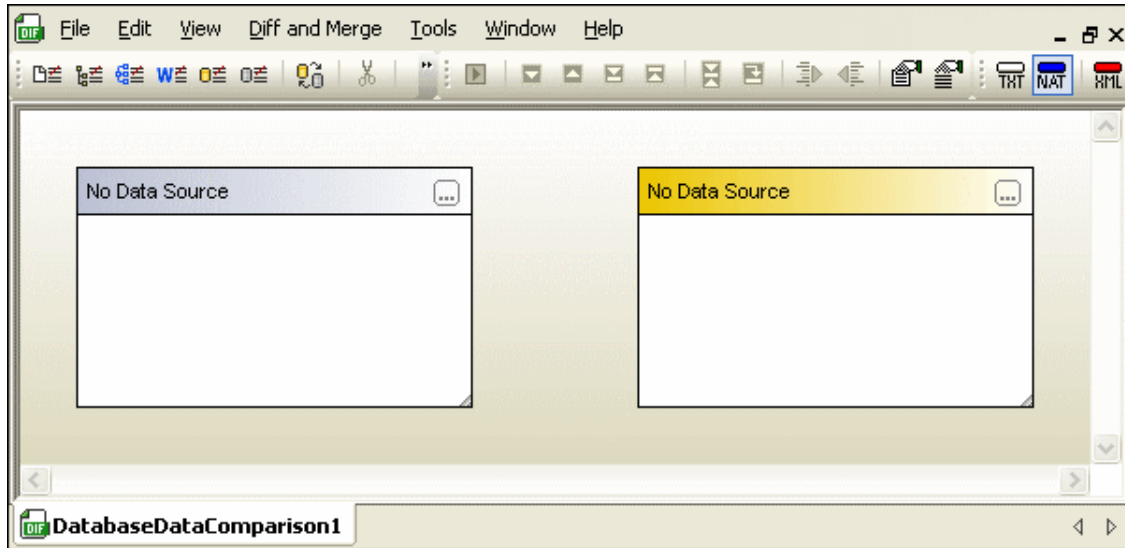
8.1 Prerequisites

At least one column in each table is used as a sort criterion that is needed for comparison. DiffDog uses primary key columns to sort tables for comparison. DiffDog indicates tables that cannot be compared (*see screenshot below*), and these tables cannot be mapped.



8.2 Opening a Database Data Comparison Window

When opening a new Database Data Comparison window, the database comparison is given a name of the form `DatabaseDataComparisonX`, where `X` is an integer indicating that database comparison's position in the sequence of database comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



The **File | Compare Database Data** command opens the Database Data Comparison window and pops up the **Select Database Objects for Comparison** dialog box, where you [select](#) the required tables. Usually you will also [select](#) the first database when opening a new Database Data Comparison window. However, you could also just open a Data Comparison window and [add](#) the tables later. This way, you could, for example, create comparison templates with different options (e.g., ignore whitespace or case, etc.).

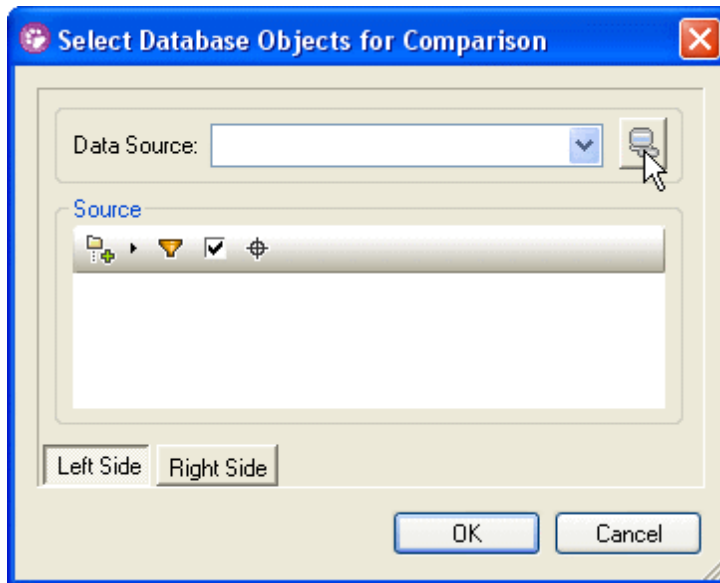
To open a Database Data Comparison window:

- Select the menu option **File | Compare Database Data** or click the **Compare Database Data**  button in the Standard toolbar. If the Show table selection for new documents check box on the Database Data comparison tab of the **DiffDog Options** dialog box is activated (default setting), the **Select Database Objects for Comparison** dialog box pops up automatically.

If you just want to open a Data Comparison window without selecting a database yet, click **Cancel**. The **Select Database Objects for Comparison** dialog box closes and the empty Data Comparison window is displayed in DiffDog.

8.3 Choosing a Data Source Connection

Before you can select tables for comparison you have to connect both components of your comparison window to the data source that hosts the tables in question. If no data source connection exists yet in DiffDog and you double-click the header or click the **Browse** button of either component, the **Select Database Objects for Comparison** dialog box opens but does not contain any data source to choose from in the Data Source drop-down list and, therefore, no tables that can be selected for comparison.



You can connect to a database by clicking the **Connect to a Database**  button. This opens the **Create a Database Connection** dialog box, where you can use the [Connection Wizard](#) to connect to the most commonly used database types, or create an [ADO](#), [JDBC](#) or [ODBC](#) connection from scratch.

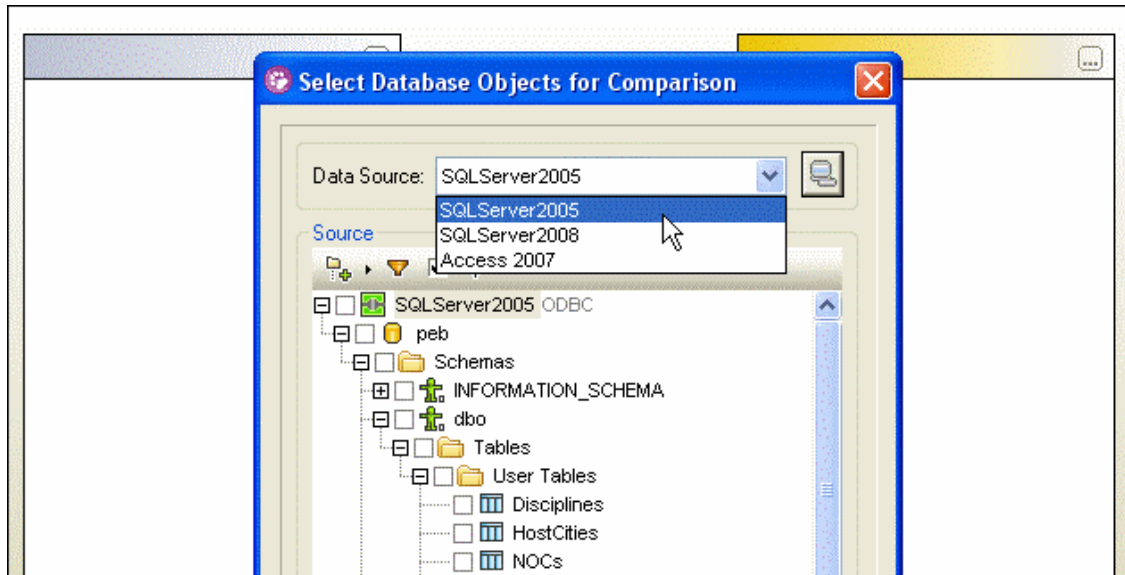
If you have already established connections to data sources in DiffDog before, these connections are listed in the Data Source drop-down list and on the Existing Connections page of the **Create a Database Connection** dialog box.

To connect to a database in DiffDog:

1. [Open a Database Data Comparison window](#).
2. Double-click the header or click the **Browse** button of either component in the Database Data Comparison window to open the **Select Database Objects for Comparison** dialog box.
3. Do one of the following:
 - Select a data source from the Data Source drop-down list.
 - If no data source connection is available, click the **Connect to a Database**  button to call the **Create a Database Connection** dialog box and [create a new data source connection](#) there.
4. Click the **Right Side** button and repeat step 3 for the right side of the comparison (or click the **Left Side** button if you started with the right side).

8.4 Selecting Tables

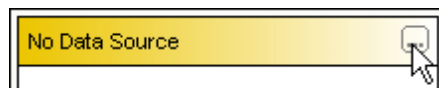
Tables are selected for comparison in the **Select Database Objects for Comparison** dialog box which can be called in various ways: You can either click the **Browse** button in the title bar of either component or double-click one of the title bars. The **Select Database Objects for Comparison** dialog box opens with the pane for the left or right component, respectively, selected. If you have DatabaseSpy installed on your computer, you can also select one or more tables in the Online Browser and drag them into a component of a Database Data Comparison window in DiffDog.



In the **Select Database Objects for Comparison** dialog box, the first connected data source is suggested in the Data Source drop-down list. If the data source containing the tables you want to compare is not listed in the drop-down list, you can click the **Browse** button in the Data Source group box to open the **Create a Database Connection** dialog box, where you can create the required data source connection.

To add tables to a comparison component:

1. [Open](#) a Database Comparison window.
2. Click the **Browse** button in the title bar, or double-click the title bar of either component.



The **Select Database Objects for Comparison** dialog box opens with either the **Left Side** or the **Right Side** button activated, depending on the component you have used to call the dialog box.

3. Choose one of the data sources from the Data Source drop-down list.
4. Expand the data source as required and choose the desired tables by activating the respective check boxes. Activating a folder check box selects all the tables that are contained in the folder.
5. Click the **Right Side** button (or the **Left Side** button, respectively, if you started from the

right side) and repeat steps 3 and 4 for the second database.

6. Click **OK**. The selected tables are displayed in the components of the database comparison window.

8.5 Adding and Removing Tables

If you need to add one or more tables to a database data comparison, you can use the **Select Tables for Comparison** dialog box to do so.

To add tables to an existing data comparison:

- In the Database Data Comparison window, click the **Browse** button in either component or double-click the title bar of a component to open the **Select Database Objects for Comparison** dialog box. If you have clicked into the left component, the dialog box opens for the left side of the comparison, ditto for the right side.

8.6 Mapping Tables and Columns

After you have selected two tables for comparison, DiffDog analyzes the structure of the tables and presents them in the Database Data Comparison window.

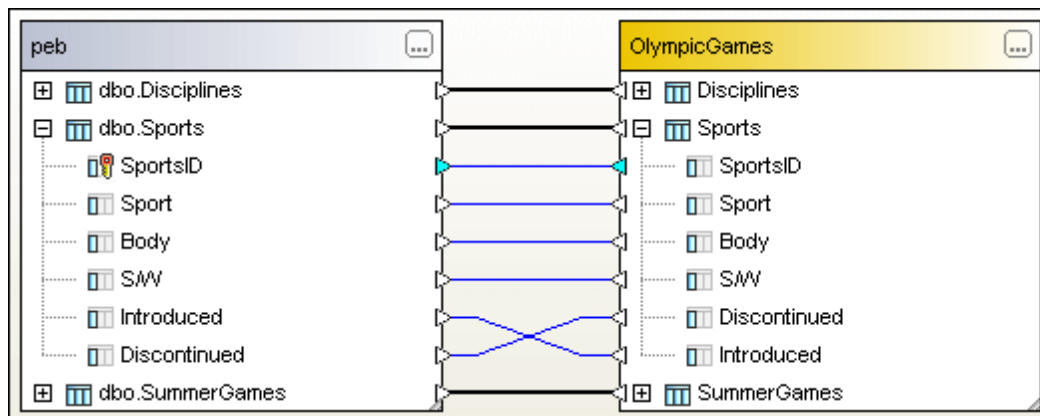
Mapping options

The default comparison options define that tables and columns be mapped automatically according to the table name or column name, respectively, after the second database has been selected. You can change these options on the [Database Data comparison](#) tab of the **DiffDog Options** dialog box.

Automatic table and column mapping

☒ Map tables automatically	☒ Ignore case when mapping tables
☒ Map columns automatically	☒ Exact match when mapping tables
☒ Find mapping by name	☐ Ignore binary data columns
☐ Find mapping by type	☐ Ignore XML columns
☐ Find mapping by name and type	☐ Ignore identity columns
☐ Find mapping based on column positions	☐ Ignore calculated columns
	☐ Ignore case when mapping by name
	☒ Exact match when mapping by name

If you do not change these settings, all tables and columns that you [include in a component](#) for comparison will be mapped automatically. Mapped tables are connected by bold black lines. You can expand or collapse tables to view or hide the table columns. Mapped columns are connected by blue lines.



You can disable auto-mapping for the active comparison and for future comparisons by deactivating the **Map tables automatically** check box on the [Database Data comparison](#) tab of the **DiffDog Options** dialog page. When auto-mapping is disabled, you can map columns and/or table in several ways:

- Select the **Map items** option from the context menu
- Draw a mapping line between the two components

To map tables or columns manually:

1. In a Database Data Comparison window, click the triangle next to a table name and,

keeping the mouse button pressed, move the cursor to the corresponding triangle in the second component. Now triangles are also displayed for the columns of the connected table.

2. Repeat step 1 for all columns that you want to include in your comparison. Be sure to map the column which is indicated by a cyan triangle since this column is used as a sort criterion and the tables cannot be compared without it.

To map all tables of a component:

- Right-click the title bar of either the left or the right component and select **Map items** from the context menu.

8.6.1 Mapping Columns

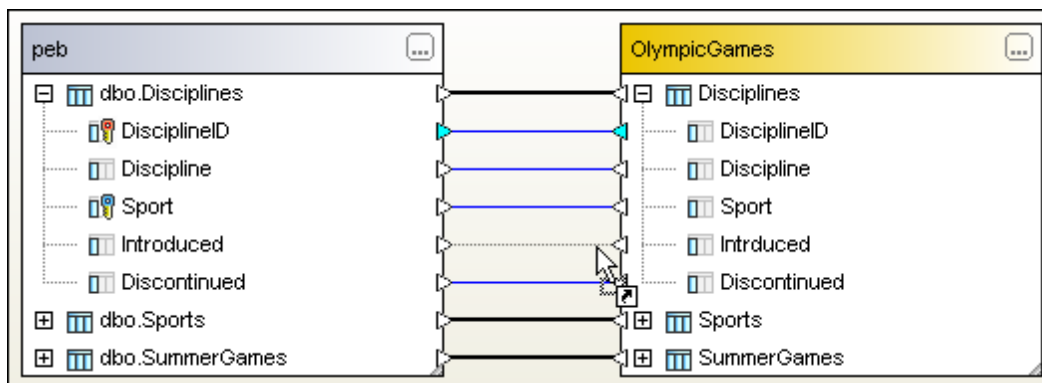
When columns are mapped automatically, you can choose from among the following options on the Database Data comparison tab of the **DiffDog Options** dialog box:

- **Column name:** DiffDog checks for matching column names in both tables. Additional options for ignoring case sensitivity or white space are also available on the Database Data tab of the **Comparison Options** dialog box (for all future comparisons).
- **Data type:** This option should only be used in small databases where each column has a unique data type to prevent conflicts with multiple columns of the same data type. DiffDog analyzes the tables' data types and assigns them to a set of data type representations which can be compared. This way you could automatically map columns that have a different name but share the same data type.
- **Name and data type:** Using this option, DiffDog considers first the column name and then its data type when mapping.
- **Ordinal position:** Columns will only be mapped if the ordinal position at the time of table creation is identical in both tables. This way you can compare tables that are equally designed but use different column names.

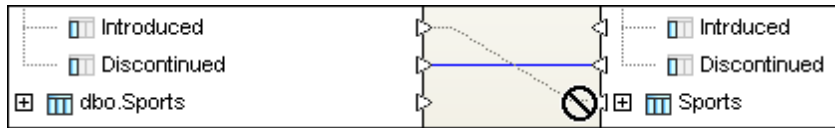
Manual mapping

If automatic mapping fails for some reason (e.g., because of a typo in a column name), you can map columns manually by drawing a line between the triangles next to the column names in both components.

In the screenshot below, the "Introduced" column could not be mapped automatically because it is misspelled in the right component. You have to map this column manually.



Note that you can only map two columns when their parent tables are also mapped. A mapping as illustrated in the screenshot below is not allowed and hence impossible.



To map columns manually:

1. Click the triangle next to the column name in the first component and, keeping the mouse button pressed, move the cursor to the corresponding triangle in the second component.
2. When the shape of the cursor changes (see *first screenshot above*) release the mouse button. The dotted connection line becomes solid and the two columns are mapped. You can only map columns when the corresponding tables have already been mapped (see *second screenshot above*).

8.6.2 Changing and Deleting Mappings

Mappings that are incorrect or concern columns that should not be compared can be deleted. You can also change the mapping of a table or column and map it to a different table or column in the second comparison component.

DiffDog provides context options for deleting the mapping of the selected object or all objects of the comparison component. In addition, you can use your mouse to change the mapping of individual tables or columns. Note that if you have activated automatic mapping of columns in the Database data comparison options, DiffDog tries to map columns automatically when you change the mapping of a table.

To delete mappings:

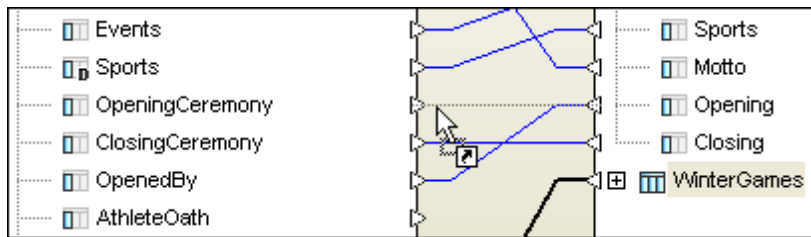
Do one of the following:

- To delete all mappings of a comparison, right-click the title bar of either component and choose **Unmap items** from the context menu.
- To delete a single table or column mapping, right-click the appropriate object and choose **Unmap selected** from the context menu.
- Click the connection line between two mapped tables or columns and hit the **Del** button.

Note that unmapping a table will also unmap all columns of that table.

Changing the mapping

If you want to change an existing mapping, you can either delete the incorrect mapping and use one of the methods for [manual mapping](#) or simply re-draw the connection line between two tables. Please note that you cannot change the end point of a connection line but have to create a mapping as if no mapping would exist for the table or column in question.



In the example above, the Opening column in the right component has been incorrectly mapped to the OpenedBy column in the left component. To correct this, start at the triangle next to the Opening column on the right side and draw a connection to the OpeningCeremony column on the left side. You could also start at the OpeningCeremony column and connect it with the Opening column. The incorrect mapping between OpenedBy and Opening will disappear when the mouse button is released.

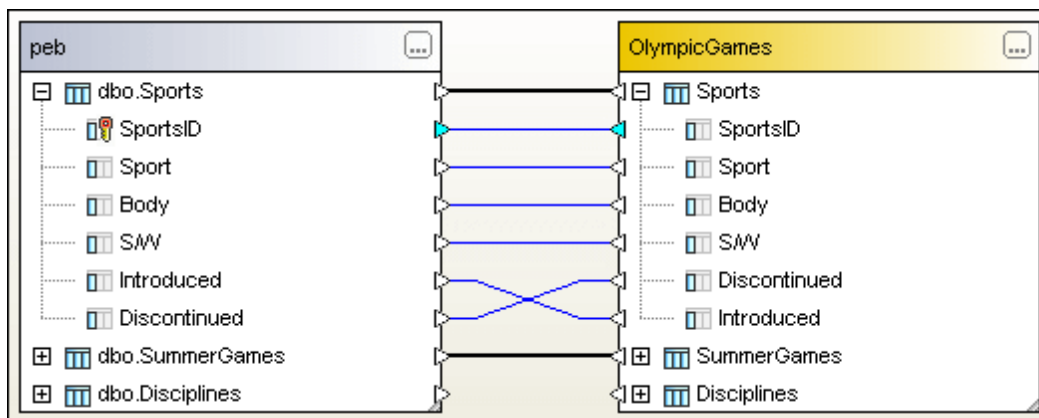
To change an incorrect mapping:

- Ignore the existing mapping and [draw a connection](#) between the two tables or columns you want to map.

8.6.3 Sorting Mapped Tables

Tables that are displayed in the components of a Database Data Comparison window can be sorted either ascending or descending. In addition, DiffDog provides the option to prefer mapped tables in the sort order so that all mapped tables are sorted either ascending or descending, and only then the remaining, unmapped tables are displayed in a component.

The tables in the screenshot below have been sorted using the command **Ascending mapped first**. Note that the column order cannot be changed, only the tables are sorted with the mapped tables being displayed on top.



The sort options are available in the **Diff and Merge** menu and in the context menu that appears when you right click the title bar of either component or an unoccupied area of the Database Data Comparison window. Please note, that the sorting commands always apply to both databases, irrespective of which title bar you have clicked.

To sort tables in the Database Data Comparison window:

1. Do one of the following:

- Select the menu option **Diff and Merge**.
 - Right-click the title bar of either the left or the right component.
 - Right-click into an unoccupied area of the Database Data Comparison window.
2. Choose either **Ascending** or **Descending** from the **Sort tables** sub-menu. If you want to exclude unmapped tables from the sort order, choose **Ascending mapped first** or **Descending mapped first**, respectively.

Dragging tables in components

You can always change the position of a table within a comparison component by dragging the table to the desired location. If both components are connected to the same data source, you can also drag a table from one component to the other. The order in which the columns of a table appear in a component is determined by the column's ordinal position and cannot be changed.

8.7 Modifying the Database Comparison Options

The default comparison options are defined on the [Database Data](#) and [XML](#) tabs of the **Comparison Options** dialog box. These settings apply to all Database Data Comparison windows that are opened in the future.

8.7.1 Options for String Comparison

The Database Data tab of the **Comparison Options** dialog box displays the default comparison options for all future Database Data Comparison windows. Special comparison options for XML fields are defined on the [XML](#) tab of the **Comparison Options** dialog box.

The screenshot shows the 'Comparison Options' dialog box with the 'Database Data' tab selected. The dialog has a title bar with 'XML' and 'Database Data' tabs. The main content area is divided into several sections, each with a blue header:

- Comparison Mode**: Two radio buttons. 'Use native type for comparison' is unselected. 'Use string-representation for comparison' is selected.
- Comparison Options**: Three checkboxes. 'Ignore case in comparison' is checked. 'Ignore whitespaces in comparison' is unchecked. 'Treat [NULL] as empty string' is unchecked.
- Numeric Options**: One checkbox. 'Append trailing zeros to floating point numbers' is unchecked.
- Optimization Options**: One checkbox. 'Keep only different rows in memory' is unchecked.
- Execution Options**: Two rows of options. The first row has 'Process comparison sequentially' (unchecked) and 'Use transaction when committing' (checked). The second row has 'Process comparison in parallel' (selected) and 'Rollback on errors' (checked).

Comparison Mode

You can choose from among two comparison modes: The native type considers the data type of the column that is compared, whereas everything will be converted into strings before comparison if you use the string representation type.

Comparison Options

Deactivate the Ignore case in comparison check box if upper and lower casing should not be ignored when checking for differences.

Check the Ignore whitespaces in comparison option if you do not want to consider whitespaces when comparing database data. Whitespace characters are space, tab, carriage return, and line feed.

If you do not want to make a difference between an empty field and a field containing the NULL value, activate the Treat [NULL] as empty string check box.

Numeric Options

Floating point numbers can be filled up with trailing zeros by activating the Append trailing

zeros to floating point numbers check box.

Optimization Options

If you do not care to see rows that are equal in both tables of a comparison, you can check the Keep only different rows in memory option. In this case, only different rows are kept in the memory and displayed in the Result window.

Execution Options

You can define whether you want to process comparisons of multiple tables sequentially or in parallel. Changes can be committed with or without the use of transactions and you can decide whether or not you want to rollback on errors.

8.7.2 Options for Comparing XML Fields

The XML tab of the **Comparison Options** dialog box displays the default comparison options that apply to columns of type XML if native comparison has been selected. The options that are defined on this dialog page are valid for all future Database Data Comparison windows.

View results

The Detailed differencing option is only used in file comparisons.

Whitespace

Whitespace characters are space, tab, carriage return, and line feed. The three options here compare files with whitespace unchanged; with whitespace normalized (i.e., all consecutive whitespace characters are reduced to one whitespace character); and with all whitespace stripped (i.e., not considered for comparison).

Case sensitivity

If the Ignore case check box is checked, then case is ignored, and you have the option of ignoring or not ignoring case in node names.

Namespace/Prefix

These are options for ignoring namespaces and prefixes when searching for differences.

Order

If `Ignore order of child nodes` is selected, then the relative position of the child nodes of an element is ignored. As long as an element node with the same name exists in each of the two sets of sibling nodes, the two sets are considered to be equal. Note, however, that if an element node has an attribute, it will be considered unequal to an element with the same name in the compared sibling set—even if the `Ignore order of child nodes` is selected. In order to ignore the order of several occurrences of child nodes that have different attributes assigned, you can add these attributes as comparison criteria. DiffDog provides two options: (i) add all attributes and (ii) define a list of specific attributes. However, if you select the `Specific attributes` option, you will first have to [define an attribute group](#) accordingly. It may also happen that several occurrences of child nodes appear that have also the same attribute assigned. In DiffDog you can cope also with this scenario by activating the `Add element text as comparison criteria` check box. If element text, attribute value, and node name are identical and only the order of the nodes is different, no differences will be reported.

The option of ignoring the order of attributes is also available, and applies to the order of attributes of a single element.

Entities

If `Resolve entities` is selected, then all entities in the document are resolved. Otherwise the files are compared with the entities as is.

Text

If `Ignore text` is selected, then differences in corresponding text nodes are not reported. A different string inside a tag will be ignored since only the XML structure is compared but not the text content of the tags.

Depth

If `Ignore node depth` is selected, then the additional depth of any element (i.e., more levels of descendants) relative to the depth of the corresponding element in the compared file is ignored.

Ignore node types

Check the node types that will **not** be compared in the Compare session. Node types that may be ignored are Attributes, CDATA, Comments, Processing Instructions, DOCTYPE statements, and XML declarations.

Filters are only used in file comparisons.

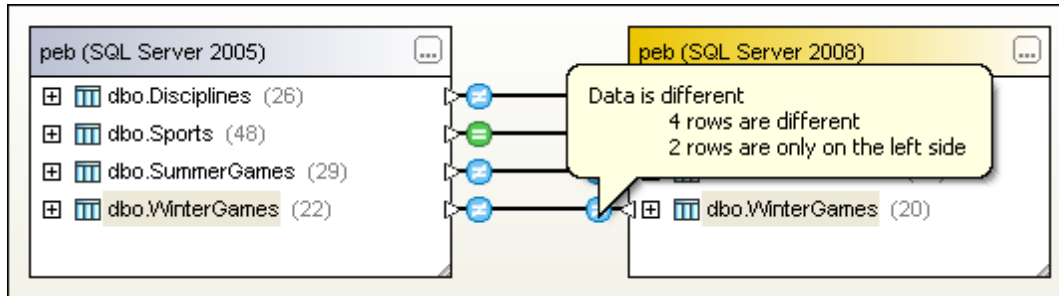
8.8 Saving Database Data Comparison Files

After you have [selected](#) and [mapped](#) tables for comparison and defined the appropriate [comparison options](#), you can save the comparison in a data comparison file. This is either done via the **File | Save As...** command or by right-clicking the tab of a Database Data Comparison window and choosing **Save** from the context menu. If you do a particular comparison on a regular basis, the use of a data comparison file which can be opened directly and establishes the needed data source connections automatically may save you a considerable amount of working time.

8.9 Running a Database Data Comparison

After you have [selected](#) and [mapped](#) the tables and columns you want to compare, you can start a database data comparison in DiffDog. Either one or more selected tables or all tables included in the active database data comparison can be compared. A comparison can be started (i) via the

Diff and Merge menu, (ii) the **Start Comparison**  button in the Database Data Comparison window, (iii) the context menu, or (iv) by pressing **F5**. In the background, SQL SELECT statements are generated and executed for, and data is retrieved from, both tables.



To run a database data comparison:

- To compare all tables in the comparison component, do one of the following:
 - Select the menu option **Diff and Merge | Start Comparison**.
 - Click the **Start Comparison**  button in the Diff and Merge toolbar.
 - Right-click the title bar of either component and select **Compare items** from the context menu.
 - Press **F5**.
- To restrict comparison to only some of the tables in the component:
 1. Select one or more tables in either component.
 2. Right-click and choose **Compare selected** from the context menu or press **F5**.

The result of a comparison is indicated with icons in the Database Data Comparison window. When placing the mouse cursor over an icon, a balloon help appears with a brief description of the comparison result for the selected table (see *screenshot above*). It makes no difference whether you hover over the left or over the right icon. In huge tables which contain a lot of columns, you can collapse and expand individual tables when you are examining the differences. If you double-click a column in one component, both versions of the column are collapsed or expanded, respectively, simultaneously in both components. To collapse all columns in both components with a single click, use the **Collapse tables** command from the **Data Comparison** menu or the context menu that opens when you right click the title bar of a component.

8.10 Displaying Differences in Databases

The result of a database comparison is displayed in a [balloon help](#) when you hover over one of the comparison icons. A detailed view of the differences is available in the Result window where you can check every table cell for differences.

	Olympiad	Olympiad	Year	Year	HostCity	HostCity	Country	Country
1	I	I	1896	1896	1	1	Greece	Greece
2	II	II	1900	1900	2	2	France	France
3	III	III	1904	1904	3	3	United States	USA
4	IV	IV	1908	1908	4	4	United Kingdom	UK
5	IX	IX	1928	1928	8	8	Netherlands	Netherlands
6	V	V	1912	1912	5	5	Sweden	Sweden

The Result window for comparisons displays the columns of the compared tables next to each other in the result grid. This way, you see the content of the compared columns side by side. Differences are indicated with colors.

Hiding columns without differences

In tables with a large amount of columns where only some of the columns contain differences, you can hide the columns that contain no differences and show only different columns in the result grid. Click the **Show/Hide columns which don't have any differences**  button in the Database Data Comparison Result toolbar for this purpose.

Searching text

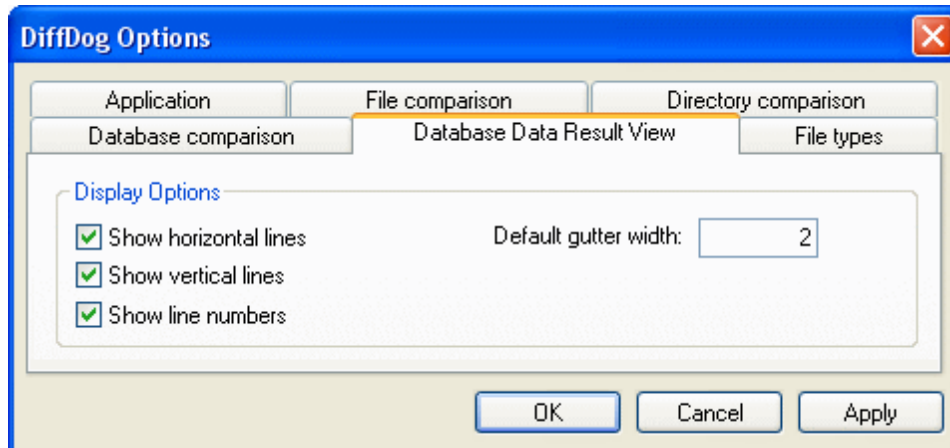
If you search for a particular string in the Comparison Result window, you can use the **Find**  button in the Standard toolbar.

To show the results of a table comparison:

1. Run a [table comparison](#).
2. Do one of the following:
 - In the Database Data Comparison window, click one of the comparison result icons  for the compared table.
 - In one of the comparison components, right-click a table and choose **Show selected results** from the context menu.
 - Right-click the title bar of a comparison component and choose **Show results** from the context menu.
 - Select the menu option **Diff and Merge | Show results**.
3. Optionally, if you want to hide columns where no differences occur, click the **Show/Hide columns which don't have any differences**  button in the Database Data Comparison Result toolbar .

8.10.1 Configuring the Comparison Result View

On the Database Data Result View tab of the **DiffDog Options** dialog box, you can customize the appearance of the Database Data Result View.



Display Options

You can show horizontal and/or vertical lines as well as line numbers in the result grid by activating the respective check boxes. The default gutter width (i.e., the space between the individual column pairs) can also be defined on this page.

Controlling what rows are displayed

You can configure the view of individual Comparison Result windows to display rows on the basis of their compared status. For example, you can opt to not display all equal rows, or to display rows that exist only in the left component but to not display files that exist only in the right component. To do this, you use a set of simple toggle commands that are available as toolbar icons.



Show/Hide all equal rows: Shows or hides rows that are equal in the left and right component.



Show/Hide all different rows: Shows or hides rows that are different in the left and right component.



Show/Hide rows that are only on the left: Shows or hides rows that exist only in the table that is contained in the left component.



Show/Hide rows that are only on the right: Shows or hides rows that exist only in the table that is contained in the right component.



Show/Hide rows that cannot be merged from left to right: Shows or hides rows that are different in the left and right component and can be merged only from the right to the left side and not from the left to the right side.



Show/Hide rows that cannot be merged from right to left: Shows or hides rows that are different in the left and right component and can be merged only from the left to the right side and not from the right to the left side.

In addition, you can also hide all equal columns in the result grid and show only those columns where differences occur.



Show/Hide columns which don't have any differences: A toggle command that toggles the display of columns without differences on and off.

8.11 Comparing Structure from within a Data Comparison

You can open a database schema comparison from within a database data comparison if you want to check the structure of the schema that contains a particular column. The selected tables and their corresponding tables in the other component of the comparison open in a new Database Schema Comparison window and are mapped automatically. If a corresponding table does not exist in the opposite component, no table is opened in the second component.

You can continue to work in the Database Schema Comparison window as in a [regular database schema comparison session](#) (see Comparing Database Schemas for a description of the process).

To compare the structure of selected tables:

1. Select one or more tables in either component of a Database Data Comparison window.
2. Right-click and choose **Open selected in new Schema Comparison** from the context menu or click the  icon in the Standard toolbar.

To compare the structure of all tables contained in a component:

- Right-click the title bar of either component and choose **Open in new Schema Comparison** from the context menu.

8.12 Merging Database Data

After you have [started a database comparison](#) in DiffDog, you have several options for merging the data between the two tables:

- Merging one or more selected table(s) (left to right or right to left) in the Database Data Comparison window
- Merging all tables in the Database Data Comparison window
- Merging [single cells](#) (left to right or right to left) in the Database Data Comparison Result window

The following icons are used for merging (note that the same icons are used for different commands, depending on the menu command you select or the toolbar button you click):

Merge selected Left to Right: This command is available as a context menu option in a database comparison window when at least one table is selected in the left or right component. Clicking this command replaces the table in the right component with the table in the left component.

Merge selected Right to Left: This command is available as a context menu option in a database comparison window when at least one table is selected in the left or right component. Clicking this command replaces the table in the left component with table in the right component.

Merge Left to Right: This command is available in the context menu that opens when you right-click the title bar of either component in a database comparison window. Clicking this command replaces all the tables in the right component with the corresponding tables in the left component.

Merge Right to Left: This command is available in the context menu that opens when you right-click the title bar of either component in a database comparison window. Clicking this command replaces all the tables in the left component with the corresponding tables in the right component.



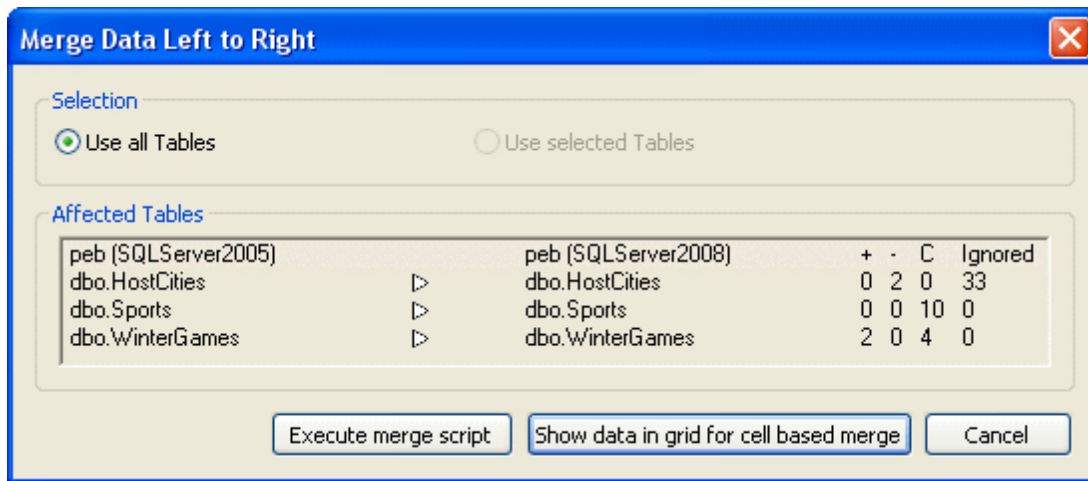
Copy from Left to Right: This command is available in the **Diff and Merge** menu, as a toolbar button in the Diff and Merge toolbar and as a context menu option in the Database Data Comparison Result window when at least one cell is selected. Clicking this command replaces the selected table/cell in the right component with the corresponding table/cell in the left component. When no table is selected in the Database Data Comparison window, then all tables in the component will be merged.



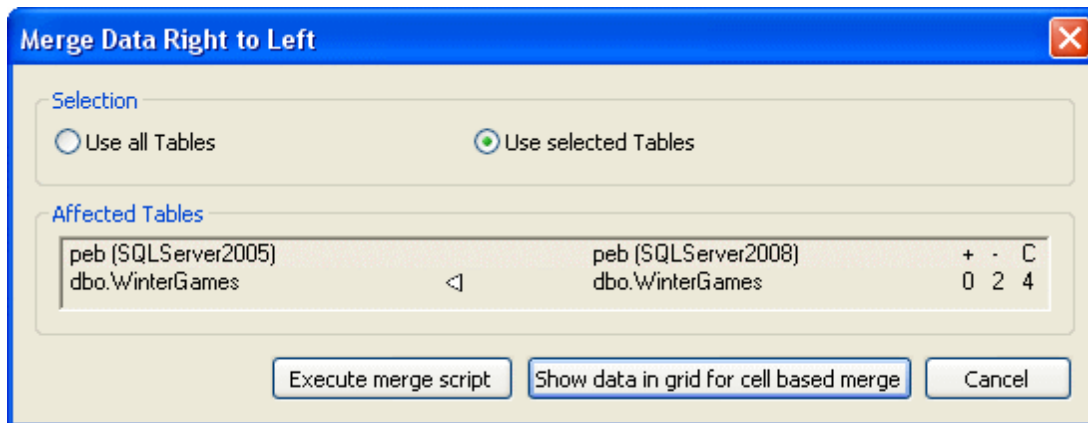
Copy from Right to Left: This command is available in the **Diff and Merge** menu, as a toolbar button in the Diff and Merge toolbar and as a context menu option in the Database Data Comparison Result window when at least one cell is selected. Clicking this command replaces the selected table/cell in the left component with the corresponding table/cell in the right component. When no table is selected in the Database Data Comparison window, then all tables in the component will be merged.

8.12.1 Merging Tables

When you decide to merge tables in your components, DiffDog displays a dialog box providing an overview of the actions to be carried out. You must confirm the merge before the changes are actually committed to the database.



DiffDog displays the databases and the affected tables, and indicates the direction in which the merge will take place. If you have selected at least one table before calling the merge command, the `Use selected Tables` radio button is selected and you can choose in the dialog box whether you want to display (and merge) only the selected or all tables.



To merge all compared tables:

1. [Select](#) and [map](#) the required tables and [run](#) a database data comparison.
2. Check the comparison result and decide which table(s) should be kept.
3. Select the appropriate menu option from the **Diff and Merge** menu:
 - To copy the data from the left table, choose **Copy from Left to Right**.
 - To copy the data from the right table, choose **Copy from Right to Left**.
4. Click **Execute merge script** to commit the changes to the database.
 - Click **Show data in grid for cell based merge** if you want to [merge only selected data](#). A Database Data Comparison Result view opens for each selected table.

To merge selected compared tables:

1. [Select](#) and [map](#) the required tables and [run](#) a database comparison.
2. Check the comparison result and decide which table(s) should be kept.

3. Select the table(s) that you want to merge.
4. Select the appropriate menu option from the context menu or click the corresponding button in the Diff and Merge toolbar:
 - To copy the data from the left table, choose **Merge selected Left to Right** or click the **Copy from left to right**  button or press **Alt+Right**.
 - To copy the data from the right table, choose **Merge selected Right to Left** or click the **Copy from right to left**  button or press **Alt+Left**.
5. Click **Execute merge script** to commit the changes to the database.

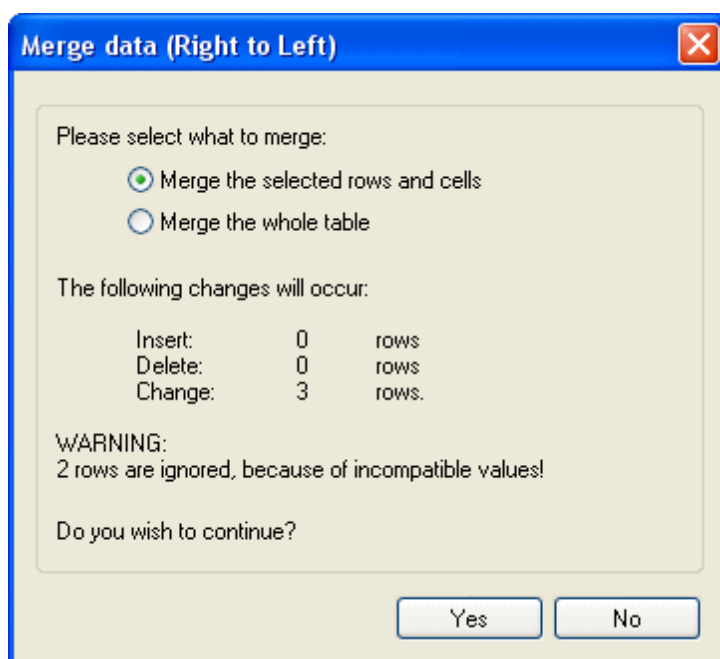
8.12.2 Merging Individual Results

In the Database Data Comparison Result view, you can merge single cells in the result grid, that is, copy individual cells from one column of a comparison pair to the other. This enables you to copy data from both sides of a comparison in the same result grid. Note that the changes cannot be undone and that not all rows may be merged in both directions. When rows are present only on one side of a comparison, only the entire row can be copied to the other side or deleted, respectively!

Cells that cannot be merged in both directions are marked with little arrows in red and green in the result grid, where the green arrow indicates the direction in which the merge is possible, and the red arrow indicates the direction in which a merge is not possible. If columns cannot be merged at all, an icon with two red arrows is displayed. In the example below, the left table uses the 3-digit country code and the data type of its Country column is varchar(3). The right table uses the full name of the country and stores it in a Country column of type varchar(100). Since the full names would be truncated when being copied to the 3-digit column in the left table, only merging from left to right is possible in this case.

Country	Country
GRE	Greece
FRA	France
USA	USA
GBR	United Kingdom

If you try to merge tables that contain such incompatible values, the entire row in which such a merge problem occurs is ignored during the merge. DiffDog displays a message box where the changes are listed and that you have to commit before the merge is started.



In the **Merge Data** dialog box, you can still decide to merge all rows of the table.

The commands **Copy from Left to Right** and **Copy from Right to Left** are available as toolbar icons as well as context menu options. Additionally, you can also use the keyboard shortcuts **Alt+Right** and **Alt+Left**.

To merge individual cells in the Database Data Comparison Result view:

1. In the Database Data Comparison Result view, select one or more cells that are different in the left and right table, and do one of the following:
 - Click the **Copy from Left to Right**  or **Copy from Right to Left**  button, respectively, which are located in the Diff and Merge toolbar.
 - Right-click and select **Copy from Left to Right** or **Copy from Right to Left**, respectively, from the context menu.
2. In the **Merge data** dialog box that appears, click **Yes** to commit the changes to the database.

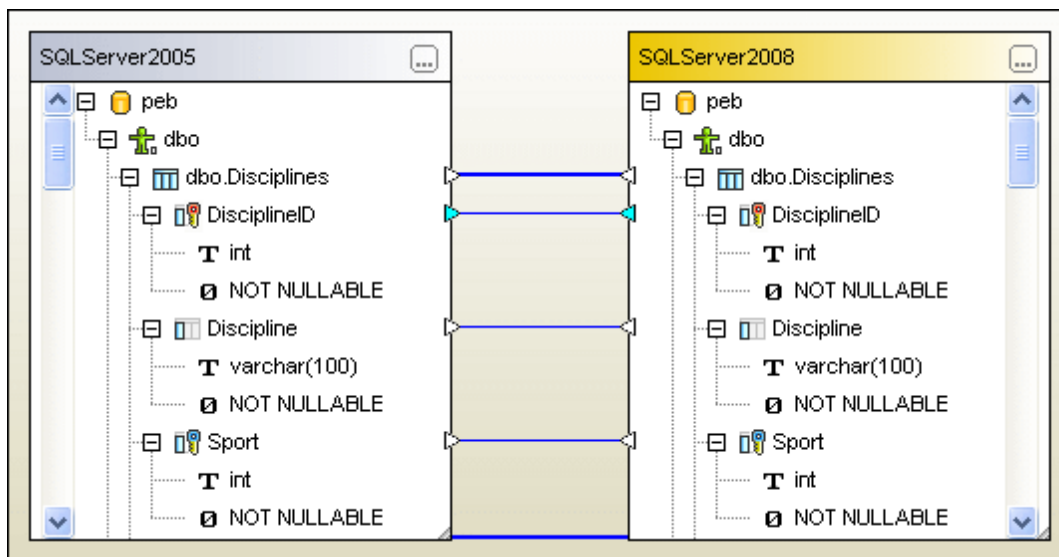
Chapter 9

Comparing Database Schemas

9 Comparing Database Schemas

Altova web site:  [database schema comparison](http://www.altova.com/database-schema-comparison)

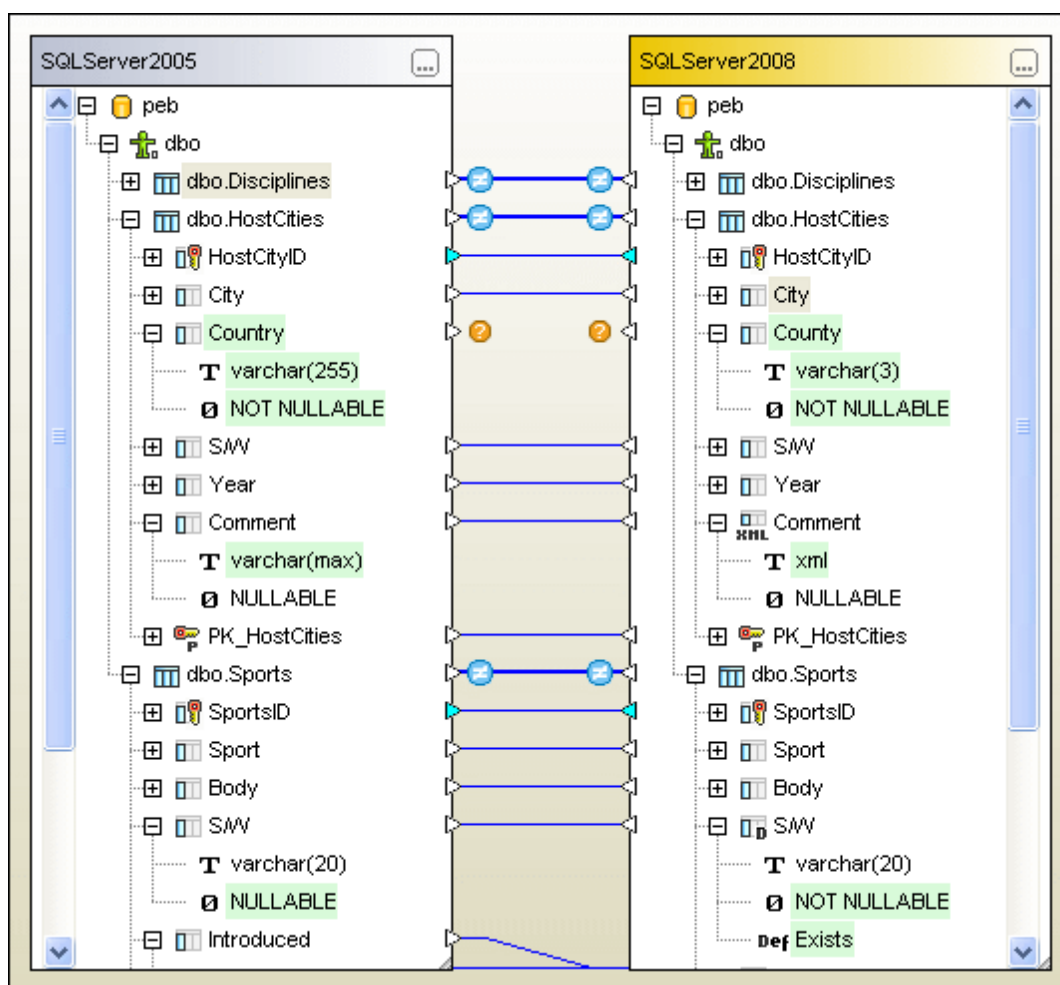
If you show tables in a Database Schema Comparison window (see *screenshot below*), all database items (e.g., data types, constraints, keys, etc.) are displayed in the comparison components so that you are able to compare the structure of the tables within the database schema. By default, corresponding tables and columns are mapped automatically by name after tables have been loaded into the comparison components, however you can also change this settings in the [Database Data comparison](#) tab of the **DiffDog Options** dialog box, or map items manually if you want to compare database items that have not been identified as being correspondent by DiffDog.



There are several ways to start a comparison of database schemas in DiffDog:

- [Opening](#) a Database Schema Comparison window and adding tables using the **Select Database Objects for Comparison** dialog box. Tables from both databases can be selected in the dialog box.
- Opening a schema comparison file that is stored in your file system using the **File | Open Database Data Comparison File...** command.

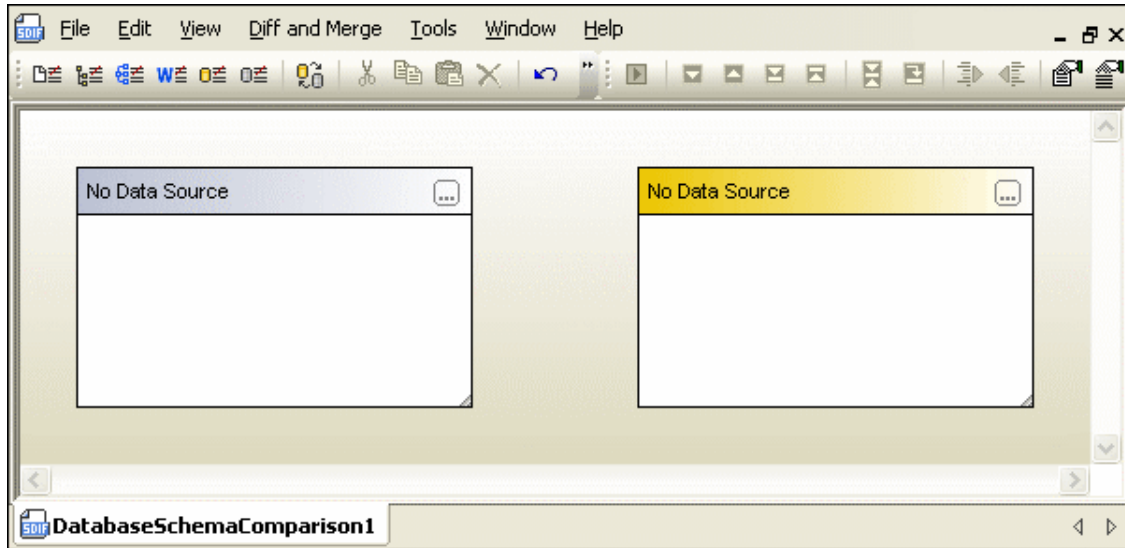
After [a comparison has been started](#), the schema comparison window shows the comparison results and automatically expands the tree structure so as to display the database items that are different in the left and right components (see *screenshot below*).



In the database schema comparison window, you can [merge](#) the two schemas or selected items.

9.1 Opening a Database Schema Comparison Window

When opening a new Database Schema Comparison window, the database comparison is given a name of the form DatabaseSchemaComparisonX, where X is an integer indicating that database schema comparison's position in the sequence of database schema comparisons opened in the current DiffDog session. This name appears in a tab at the bottom of the window.



The **File | Compare Database Schemas** command opens the Database Schema Comparison window and pops up the **Select Database Objects for Comparison** dialog box, where you [select](#) the required schemas and tables. Usually you will also select the first database when opening a new Database Schema Comparison window. However, you could also just open a Schema Comparison window and [add](#) schemas and tables later.

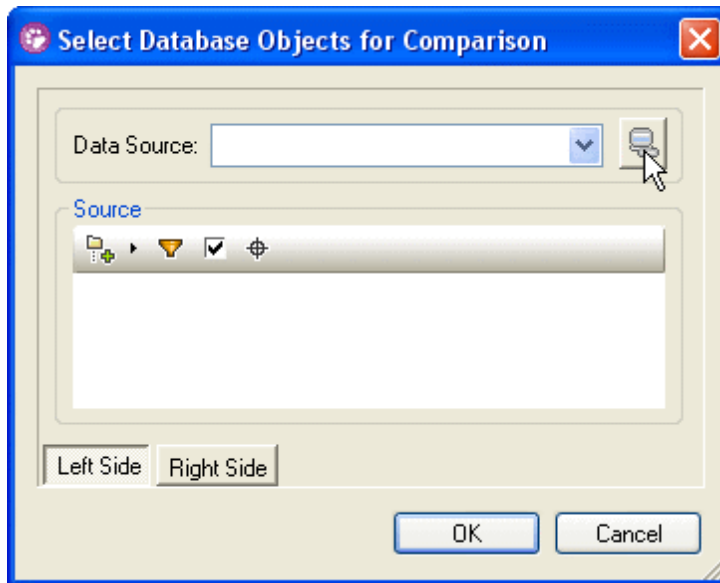
To open a Database Schema Comparison window:

- Select the menu option **File | Compare Database Schemas** or click the **Compare Database Schemas**  button in the Standard toolbar. If the Show table selection for new documents check box on the [Database comparison](#) tab of the **DiffDog Options** dialog box is activated (default setting), the **Select Database Objects for Comparison** dialog box pops up automatically.

If you just want to open a Schema Comparison window without selecting a database yet, click **Cancel**. The **Select Database Objects for Comparison** dialog box closes and the empty Schema Comparison window is displayed in DiffDog.

9.2 Choosing a Data Source Connection

Before you can select tables for comparison you have to connect both components of your comparison window to the data source that hosts the tables in question. If no data source connection exists yet in DiffDog and you double-click the header or click the **Browse** button of either component, the **Select Database Objects for Comparison** dialog box opens but does not contain any data source to choose from in the Data Source drop-down list and, therefore, no tables that can be selected for comparison.



You can connect to a database by clicking the **Connect to a Database**  button. This opens the **Create a Database Connection** dialog box, where you can use the [Connection Wizard](#) to connect to the most commonly used database types, or create an [ADO](#), [JDBC](#) or [ODBC](#) connection from scratch.

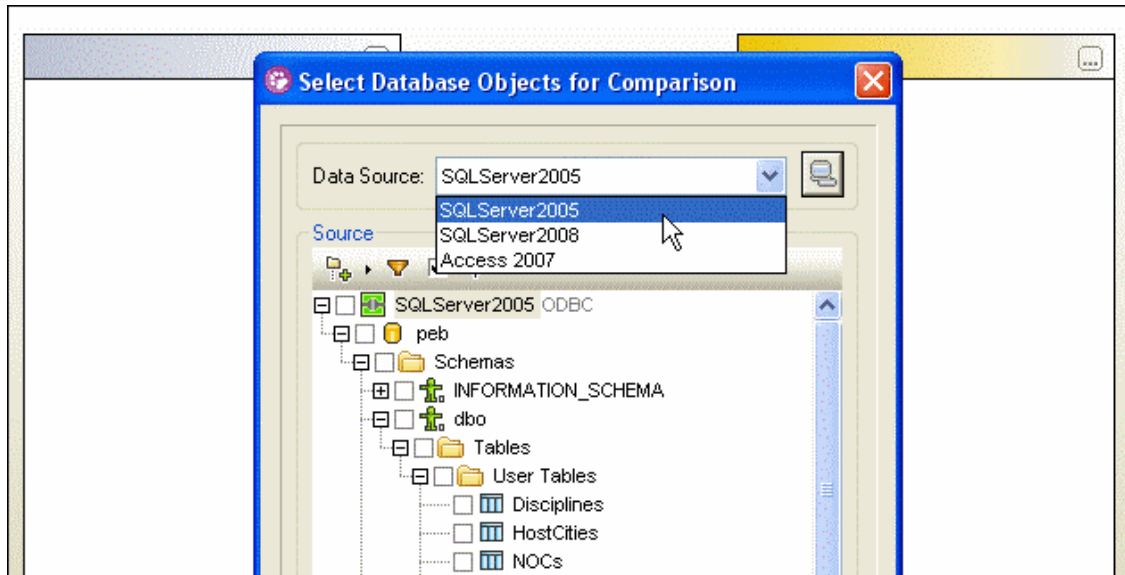
If you have already established connections to data sources in DiffDog before, these connections are listed in the Data Source drop-down list and on the Existing Connections page of the **Create a Database Connection** dialog box.

To connect to a database in DiffDog:

1. [Open a Database Schema Comparison window](#).
2. Double-click the header or click the **Browse** button of either component in the Database Schema Comparison window to open the **Select Database Objects for Comparison** dialog box.
3. Do one of the following:
 - Select a data source from the Data Source drop-down list.
 - If no data source connection is available, click the **Connect to a Database**  button to call the **Create a Database Connection** dialog box and [create a new data source connection](#) there.
4. Click the **Right Side** button and repeat step 3 for the right side of the comparison (or click the **Left Side** button if you started with the right side).

9.3 Selecting Schemas

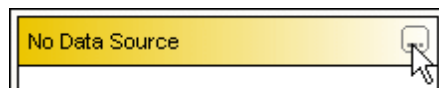
Schemas or individual tables within schemas, respectively, are selected for comparison in the **Select Database Objects for Comparison** dialog box which can be called in various ways: You can either click the **Browse** button in the title bar of either component or double-click one of the title bars. The **Select Database Objects for Comparison** dialog box opens with the pane for the left or right component, respectively, selected. If you have DatabaseSpy installed on your computer, you can also select one or more schemas or tables in the Online Browser and drag them into a component of a Database Schema Comparison window in DiffDog.



In the **Select Database Objects for Comparison** dialog box, the first connected data source is suggested in the Data Source drop-down list. If the data source containing the tables you want to compare is not listed in the drop-down list, you can click the **Browse** button in the Data Source group box to open the **Create a Database Connection** dialog box, where you can create the required data source connection.

To add tables to a comparison component:

1. [Open](#) a Database Schema Comparison window.
2. Click the **Browse** button in the title bar, or double-click the title bar of either component.



The **Select Database Objects for Comparison** dialog box opens with either the **Left Side** or the **Right Side** button activated, depending on the component you have used to call the dialog box.

3. Choose one of the data sources from the Data Source drop-down list.
4. Expand the data source as required and choose the desired tables by activating the respective check boxes. Activating a folder check box selects all the tables that are contained in the folder.
5. Click the **Right Side** button (or the **Left Side** button, respectively, if you started from the

right side) and repeat steps 3 and 4 for the second database.

6. Click **OK**. The selected tables are displayed in the components of the database comparison window.

9.4 Adding and Removing Tables

If you need to add one or more tables to a database schema comparison, you can use the **Select Database Objects for Comparison** dialog box to do so.

To add tables to an existing database schema comparison:

- In the Database Schema Comparison window, click the **Browse** button in either component or double-click the title bar of a component to open the **Select Database Objects for Comparison** dialog box. If you have clicked into the left component, the dialog box opens for the left side of the comparison, ditto for the right side.

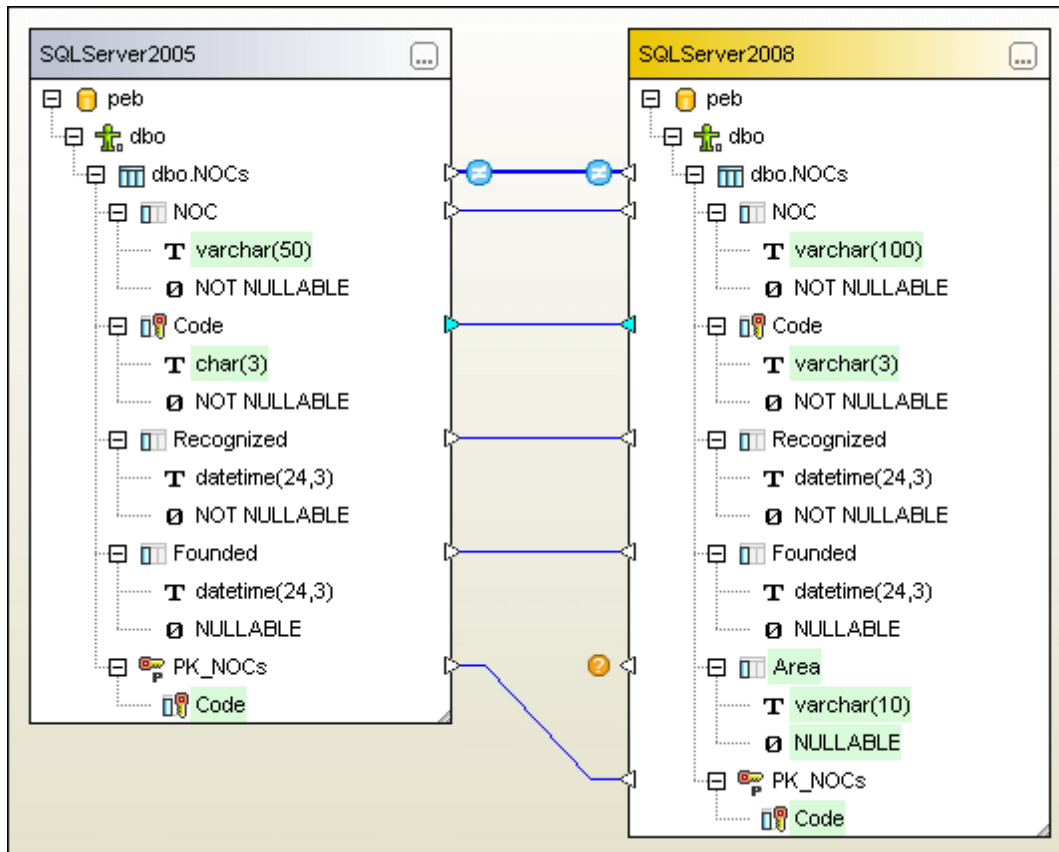
9.5 Saving Database Schema Comparison Files

After you have [selected](#) tables for comparison and defined the appropriate [comparison options](#), you can save the comparison in a database schema comparison file (*.dbsdif). This is either done via the **File | Save As...** command or by right-clicking the tab of a Database Schema Comparison window and choosing **Save** from the context menu. If you do a particular comparison on a regular basis, the use of a database schema comparison file which can be opened directly and establishes the needed data source connections automatically may save you a considerable amount of working time.

9.6 Running a Database Schema Comparison

After you have [selected](#) the schemas and tables you want to compare, you can start a database schema comparison in DiffDog. Either one or more selected tables or all tables included in the active database schema comparison can be compared. A comparison can be started (i) via the

Diff and Merge menu, (ii) the **Start Comparison**  button in the Database Schema Comparison window, or (iii) the context menu, or (iv) by pressing **F5**.



If not all database items could be mapped in both comparison components, unmapped items are indicated with an icon in the components

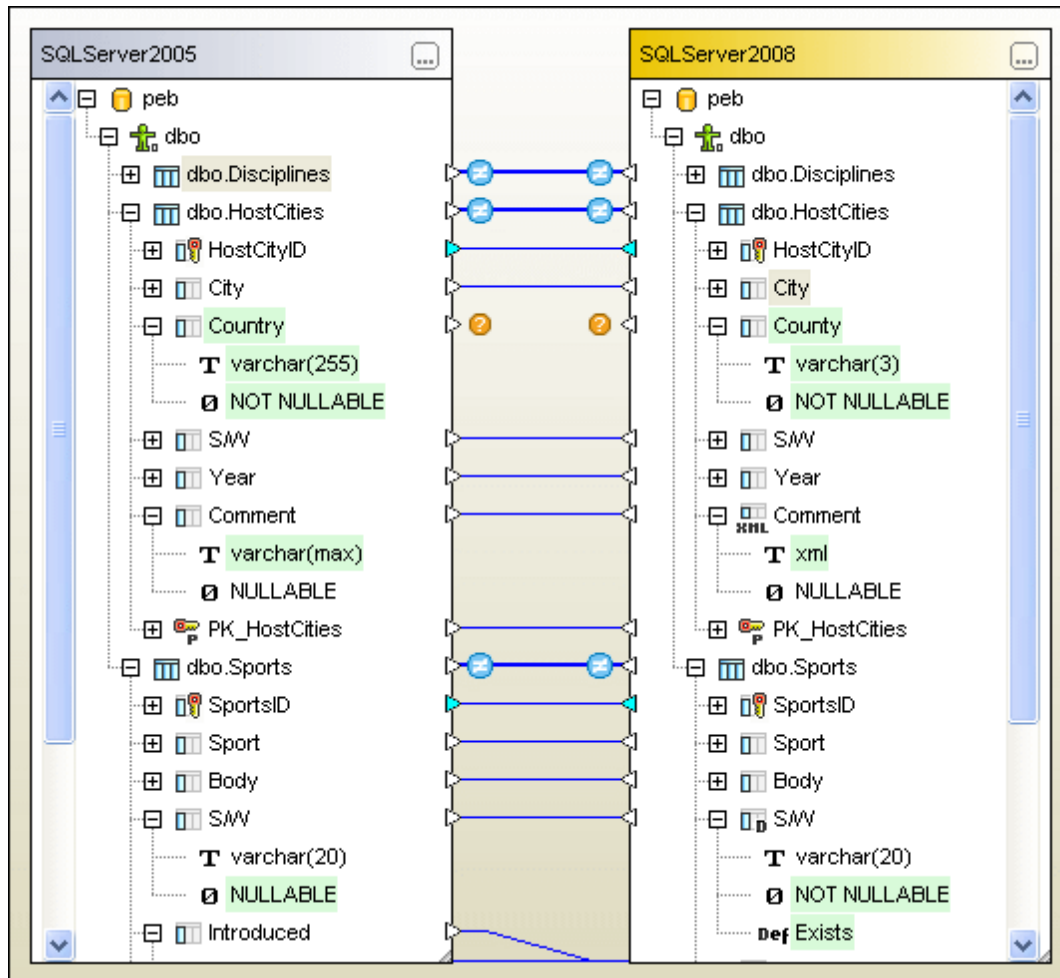
To run a database schema comparison:

- To compare all tables in the comparison component, do one of the following:
 - Select the menu option **Diff and Merge | Start Comparison**.
 - Click the **Start Comparison**  button in the Diff and Merge toolbar.
 - Right-click the title bar of either component and select **Compare items** from the context menu.
 - Press **F5**.
- To restrict comparison to only some of the tables in the component:
 1. Select one or more tables in either component.

2. Right-click and choose **Compare selected** from the context menu or press **F5**.

9.7 Displaying Differences in Database Schemas

After you start a comparison, DiffDog tries to map the tables and columns by comparing the name and structure of the database items. The differences between the tables in the two comparison components are displayed as blocks of highlighted text.



The result of a comparison is furthermore indicated with icons in the Database Schema Comparison window:



The compared tables are equal in both components



Differences exist between the tables in the left and right components



A corresponding item is missing in the opposite component

For unequal or missing items, smaller versions of these icons are also displayed on column or item level, respectively.

In huge tables which contain a lot of columns, you can collapse and expand individual tables when you are examining the differences. If you double-click an item in one component, both versions of the item are collapsed or expanded, respectively, simultaneously in both components. To collapse all items in both components with a single click, use the **Collapse items** command

from the **Schema Comparison** menu or the context menu that opens when you right click the title bar of a component.

9.8 Comparing Data from within a Schema Comparison

You can open a database data comparison from within a database schema comparison if you want to check which data is contained in a particular column. The selected tables and their corresponding tables in the other component of the comparison open in a new Database Data Comparison window and are mapped automatically. If a corresponding table does not exist in the opposite component, no table is opened in the second component.

You can continue to work in the Database Data Comparison window as in a [regular database data comparison session](#) (see Comparing Database Data for a description of the process).

To compare the data of selected tables:

1. Select one or more tables in either component of a Database Schema Comparison window.
2. Right-click and choose **Open selected in new Data Comparison** from the context menu or click the  icon in the Standard toolbar.

To compare the data of all tables contained in a component:

- Right-click the title bar of either component and choose **Open in new Data Comparison** from the context menu.

9.9 Changing and Deleting Mappings

When a schema comparison is started in DiffDog, tables and columns are mapped automatically according to name and structure, that is, DiffDog first looks for pairs of matching names and then tries to find pairs with a similar structure (e.g., data type) that may be compared. If you feel that some of these mappings are incorrect, you can delete mappings and manually map two database items that should be compared.

To delete mappings:

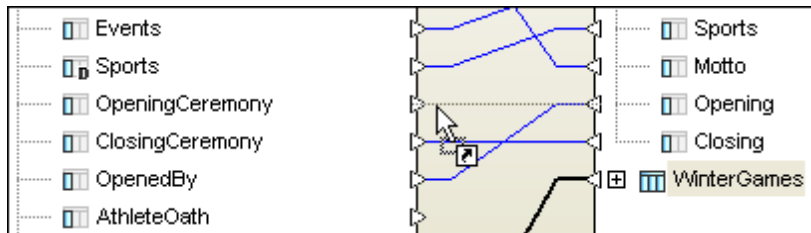
Do one of the following:

- To delete all mappings of a comparison, right-click the title bar of either component and choose **Unmap items** from the context menu.
- To delete a single table or column mapping, right-click the appropriate object and choose **Unmap selected** from the context menu.
- Click the connection line between two mapped tables or columns and hit the **Del** button.

Note that unmapping a table will also unmap all columns of that table.

Changing the mapping

If you want to change an existing mapping, you can either delete the incorrect mapping and use one of the methods for [manual mapping](#) or simply re-draw the connection line between two tables. Please note that you cannot change the end point of a connection line but have to create a mapping as if no mapping would exist for the table or column in question.



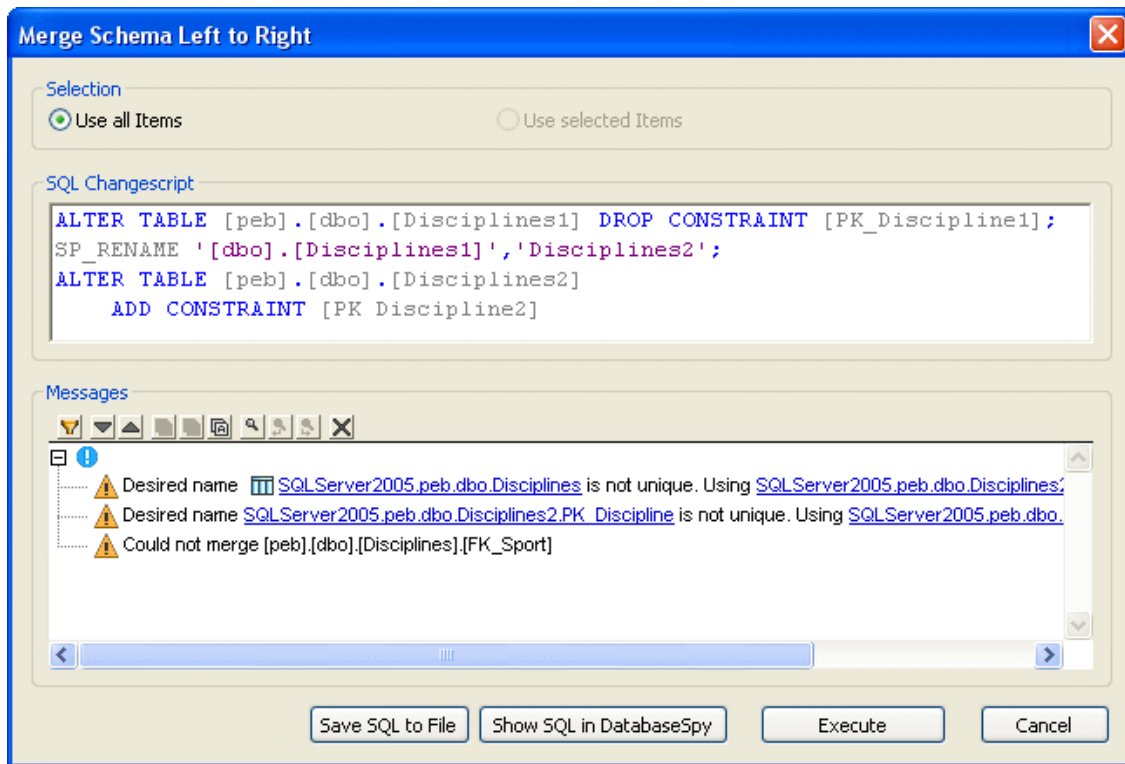
In the example above, the Opening column in the right component has been incorrectly mapped to the OpenedBy column in the left component. To correct this, start at the triangle next to the Opening column on the right side and draw a connection to the OpeningCeremony column on the left side. You could also start at the OpeningCeremony column and connect it with the Opening column. The incorrect mapping between OpenedBy and Opening will disappear when the mouse button is released.

To change an incorrect mapping:

- Ignore the existing mapping and [draw a connection](#) between the two tables or columns you want to map.

9.10 Merging Database Schemas

Database schemas cannot be merged directly with a single click of the mouse. Since you could easily destroy your database this way, DiffDog always displays the SQL that will be executed to commit the changes to the database in the **Merge Schema** dialog box first. After you have reviewed the SQL, you must execute the script to actually merge the schema structures. If you have DatabaseSpy installed, you can also open and edit the merge script in DatabaseSpy.

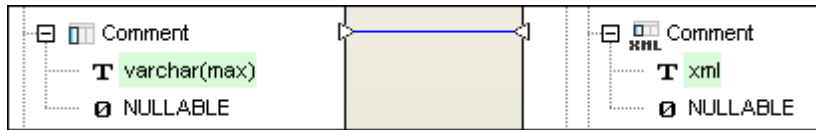


To be able to merge two schemas, you must first [run](#) a schema comparison. Then you can decide whether you want to merge all items of the compared schemas or select individual items for merging. In DiffDog, there are several ways of merging database structures:

- Displaying the **Merge Schema** dialog box, which displays the SQL change script for the selected or for all items. You can choose to execute the script, save it to a file, or show it in DatabaseSpy for further editing and execution.
- Opening the merge script directly in DatabaseSpy, if installed. This opens DatabaseSpy, creates a new project and adds a data source connection to the target database (i.e., the database where the changes will occur). If a project is already open in DatabaseSpy, a new data source connection is added to the project and you may be asked to define a name for that data source. The merge script is displayed in an SQL Editor window, where you can check the script and edit it if required.
- Saving the merge script to a file and using an external editor or the respective database management system to display, edit, and execute the script.

Important note: When you want to merge individual items as opposed to all tables that are contained in the comparison components, you have to select **all** items that should be merged. That is, child elements of a table or column are **not** automatically included in the merge if you

select the parent. For example, if the column name is equal but the data type is different (see *screenshot below*), you must select the data type item to create a valid merge script.



A merge can be started from the **Diff and Merge** menu or the  and  toolbar icons. Note that the context menu provides only options to save the merge script to a file or to show the merge script in DatabaseSpy, if installed.

To show the merge script and merge items in DiffDog:

1. [Add](#) the required items to the Database Schema Comparison window and [run](#) a comparison.
2. Decide which version of the database schema should be kept (i.e., choose the left or the right comparison component).
3. Optionally, if you want to merge only specific items, select these items in a component using **Ctrl+Click**. Note that it has no influence on the direction of the merge whether you select the items in the left or in the right component (e.g., you can select items in the right component and still choose to merge from left to right).
4. Select the appropriate menu option or toolbar icon:
 - To copy the structure of the schema in the left component to the right component, choose the menu option **Diff and Merge | Copy from Left to Right**, press **Alt+Right**, or click the **Copy from left to right**  button in the toolbar of the comparison window.
 - To copy the structure of the schema in the right component to the left component, choose the menu option **Diff and Merge | Copy from Right to Left**, press **Alt+Left**, or click the **Copy from right to left**  button in the toolbar of the comparison window.

The SQL merge script is displayed in the **Merge Schema** dialog box. If no items have been selected before the merge was started, the **Use all Items** radio button in the Selection group box is selected and the merge script is displayed for all different items in the comparison window. The **Use selected Items** radio button is active if one or more items have been selected for merging. In this case you can still decide to merge all items by choosing the **Use all Items** radio button.

5. Review the merge script and click the **Execute** button to actually merge the schemas. If the merge script should be incorrect, you can cancel the operation, save the SQL merge script to a file and edit it with an external editor, or show and edit the SQL merge script in DatabaseSpy, if installed.

To show the merge script in DatabaseSpy:

1. Optionally, select one or more items in either comparison component for merging.
2. Right-click either a component header or one of the selected items and do one of the following:
 - To show the merge script for copying the structure of the schema in the left component to the right component, choose **Show merge script: Left to Right in DatabaseSpy**

from the context menu.

- To show the merge script for copying the structure of the schema in the right component to the left component, choose **Show merge script: Right to Left in DatabaseSpy** from the context menu.
3. The command opens DatabaseSpy, creates a new project and adds a data source connection to the target database (i.e., the database where the changes will occur). If a project is already open in DatabaseSpy, a new data source connection is added to the project and you may be asked to define a name for that data source. The merge script is displayed in an SQL Editor window, where you can check the script and edit it if required.
 4. Connect to the data source, click the **Execute**  button or press **F5** to execute the change script and commit the schema changes to the database.

To save the merge script to a file:

1. Optionally, select one or more items in either comparison component for merging.
2. Right-click either a component header or one of the selected items and do one of the following:
 - To save the merge script for copying the structure of the schema in the left component to the right component, choose **Save merge script: Left to Right...** from the context menu.
 - To save the merge script for copying the structure of the schema in the right component to the left component, choose **Save merge script: Right to Left...** from the context menu.
3. DiffDog opens the **Save SQL Change Script** dialog box, where you can choose a location in your file system to save the change script in a file.

Chapter 10

Supported Databases

10 Supported Databases

The following databases are supported. The available root object for each database is also listed. While Altova endeavors to support other databases, successful connection and data processing have only been tested with the databases listed below. If your Altova application is a 64-bit version, ensure that you have access to the 64-bit database drivers needed for the specific database you are connecting to.

Database	Root Object	Notes
Firebird 2.5.4	database	
IBM DB2 8.x, 9.1, 9.5, 9.7, 10.1, 10.5	schema	
IBM DB2 for i 6.1, 7.1	schema	Logical files are supported and shown as views.
IBM Informix 11.70	database	
Microsoft Access 2003, 2007, 2010, 2013	database	
Microsoft SQL Server 2005, 2008, 2012, 2014	database	
MySQL 5.0, 5.1, 5.5, 5.6	database	
Oracle 9i, 10g, 11g, 12c	schema	
PostgreSQL 8.0, 8.1, 8.2, 8.3, 9.0.10, 9.1.6, 9.2.1, 9.4	database	
SQLite 3.x	database	SQLite connections are supported as native, direct connections to the SQLite database file. No separate drivers are required.
Sybase ASE15	database	

Note: DiffDog supports logical files of the IBM iSeries database and shows logical files as views.

Chapter 11

Connecting to a Database

11 Connecting to a Database

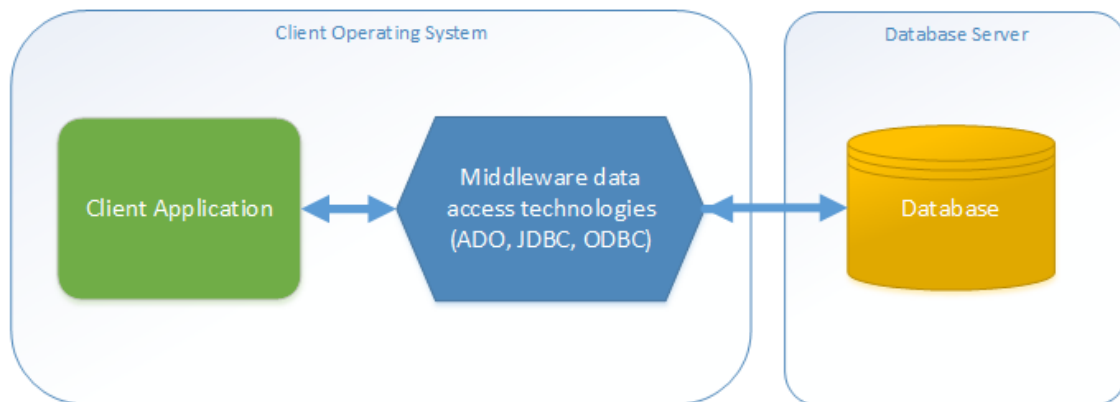
A database typically resides on a database server (either local or remote) which does not necessarily use the same operating system as the application that connects to it and consumes data. For example, while DiffDog runs on a Windows operating system, the database from which you want to access data (for example, MySQL) might run on a Linux machine.

DiffDog uses a database connection mechanism which relies on the data connection interfaces and database drivers that are already available on your operating system or released periodically by the major database vendors. In the constantly evolving landscape of database technologies, this approach caters for better cross-platform flexibility and interoperability. More specifically, DiffDog can access any of the major database types through the following data access technologies:

- ADO (Microsoft® ActiveX® Data Objects), which, in its turn, uses an underlying OLE DB (Object Linking and Embedding, Database) provider
- JDBC (Java Database Connectivity)
- ODBC (Open Database Connectivity)

Direct native connections to SQLite databases are also supported. To connect to a SQLite database, no additional drivers are required to be installed on your system.

The following diagram illustrates a simplified, generic representation of the typical data exchange between a client application such as DiffDog and a database.



Typical data exchange between a client application and a database server

Whether you should use ADO, ODBC or JDBC as a data connection interface largely depends on your existing software infrastructure. You will typically choose the data access technology and the database driver which integrates tighter (preferably natively) with the database system to which you want to connect. For example, to connect to a Microsoft Access 2013 database, you would build an ADO connection string that uses a native provider such as the **Microsoft Office Access Database Engine OLE DB Provider**. To connect to Oracle, on the other hand, you may want to download and install the latest JDBC or ODBC drivers from the Oracle website.

While drivers for Windows products (such as Microsoft Access or SQL Server) may already be available on your Windows operating system, they may not be available for other database types. Major database vendors routinely release publicly available database client software and drivers

which provide cross-platform access to the respective database through any combination of OLE DB, ODBC, or JDBC. In addition to this, several third party drivers may be available for any of the above technologies. In most cases, there is more than one way to connect to the required database from your operating system, and, consequently, from DiffDog. The available features, performance parameters, and the known issues will typically vary based on the data access technology or drivers used.

This section contains the following topics:

- [Starting the Database Connection Wizard](#)
- [Database Drivers Overview](#)
- [Setting up an ADO Connection](#)
- [Setting up an ODBC Connection](#)
- [Setting up a JDBC Connection](#)
- [Using a Connection from Global Resources](#)
- [Examples](#)

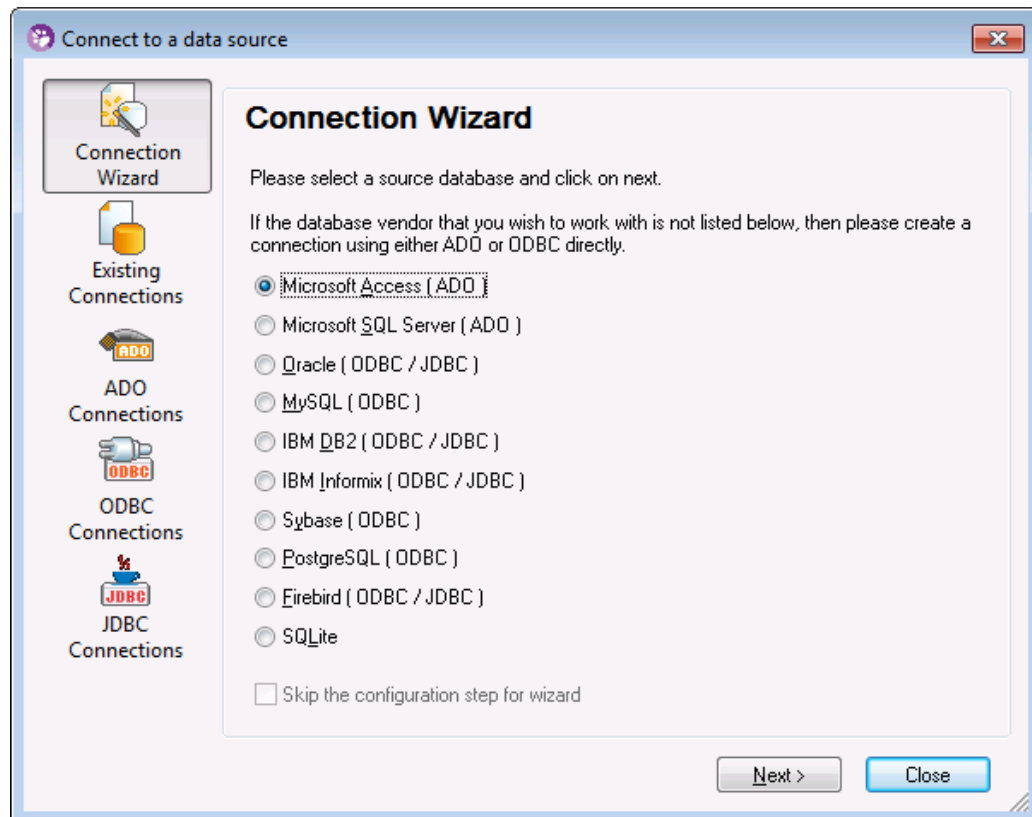
11.1 Starting the Database Connection Wizard

Whenever you take an action that requires a database connection, a wizard appears that guides you through the steps required to set up the connection.

Before you go through the wizard steps, be aware that for some database types it is necessary to install and configure separately several database prerequisites, such as a database driver or database client software. These are normally provided by the respective database vendors, and include documentation tailored to your specific Windows version. For a list of database drivers grouped by database type, see [Database Drivers Overview](#).

To start the database connection wizard:

- On the **File** menu, click **Compare Database Schema** or **Compare Database Data**.



After you select a database type and click **Next**, the on-screen instructions will depend on the database kind, technology (ADO, ODBC, JDBC) and driver used.

For examples applicable to each database type, see the [Examples](#) section. For instructions applicable to each database access technology, refer to the following topics:

- [Setting up an ADO Connection](#)
- [Setting up an ODBC Connection](#)
- [Setting up a JDBC Connection](#)

11.2 Database Drivers Overview

The following table lists common database drivers you can use to connect to a particular database through a particular data access technology. Note that this list does not aim to be either exhaustive or prescriptive; you can use other native or third party alternatives in addition to the drivers shown below.

Even though a number of database drivers are available by default on your Windows operating system, you may still want or need to download an alternative driver. For some databases, the latest driver supplied by the database vendor is likely to perform better than the driver that shipped with the operating system.

With some exceptions, most database vendors provide database client software which normally includes any required database drivers, or provide you with an option during installation to select the drivers and components you wish to install. Database client software typically consists of administration and configuration utilities used to simplify database administration and connectivity, as well as documentation on how to install and configure the database client and any of its components.

Configuring the database client correctly is crucial for establishing a successful connection to the database. If you have not installed your database client software yet, it is strongly recommended to read carefully the installation and configuration instructions of the database client, since they typically vary for each database version and for each Windows version.

Database	ODBC	JDBC	ADO
Firebird	Firebird ODBC driver (http:// www.firebirdsql.org/en/ odbc-driver/)	Firebird JDBC driver (http:// www.firebirdsql.org/en/ jdbc-driver/)	
IBM DB2	IBM DB2 ODBC Driver	IBM Data Server Driver for JDBC and SQLJ	IBM OLE DB Provider for DB2
IBM DB2 for i	iSeries Access ODBC Driver	IBM Toolbox for Java JDBC Driver	• IBM DB2 for i5/OS IBMDA400 OLE DB Provider • IBM DB2 for i5/OS IBMDARLA OLE DB Provider • IBM DB2 for i5/OS IBMDASQL OLE DB Provider
IBM Informix	IBM Informix ODBC Driver	IBM Informix JDBC Driver	IBM Informix OLE DB Provider
Microsoft Access	• Microsoft Access Driver		• Microsoft Jet OLE DB Provider • Microsoft Access Database Engine OLE DB Provider

Database	ODBC	JDBC	ADO
Microsoft SQL Server	SQL Server Native Client	Microsoft JDBC Driver for SQL Server (http://msdn.microsoft.com/en-us/data/aa937724.aspx)	Microsoft OLE DB Provider for SQL Server SQL Server Native Client
MySQL	Connector/ODBC (http://dev.mysql.com/downloads/connector/odbc/)	Connector/J (http://dev.mysql.com/downloads/connector/j/)	
Oracle	Microsoft ODBC for Oracle - Oracle ODBC Driver (typically installed during the installation of your Oracle database client)	- JDBC Thin Driver - JDBC Oracle Call Interface (OCI) Driver These drivers are typically installed during the installation of your Oracle database client. Connect through the OCI Driver (not the Thin Driver) if you are using the Oracle XML DB component.	Microsoft OLE DB Provider for Oracle
PostgreSQL	psqlODBC (https://odbc.postgresql.org/)	Postgre JDBC Driver (https://jdbc.postgresql.org/download.html)	
Sybase	Sybase ASE ODBC Driver	jConnect™ for JDBC	Sybase ASE OLE DB Provider

* The drivers highlighted in bold are Microsoft-supplied. If not already available on Windows system, they can be downloaded from the official Microsoft website.

To understand the capabilities and limitations of each data access technology with respect to each database type, refer to the documentation of that particular database product and also test the connection against your specific environment. To avoid common connectivity issues, consider the following general notes and recommendations:

- Since 32-bit and 64-bit drivers may not be compatible, make sure to install and configure the driver version applicable to your Altova application. For example, if you are using a 32-bit Altova application on a 64-bit operating system, set up your database connection using the 32-bit driver version.
- The latest driver versions may provide features not available in older editions.
- When setting up an ODBC data source, it is generally recommended to create the data source name (DSN) as *System DSN* instead of *User DSN*.
- When setting up a JDBC data source, ensure that JRE (Java Runtime Environment) is installed and that the CLASSPATH environment variable of the operating system is configured.
- For the support details and known issues applicable to Microsoft-supplied database drivers, refer to the MSDN documentation.

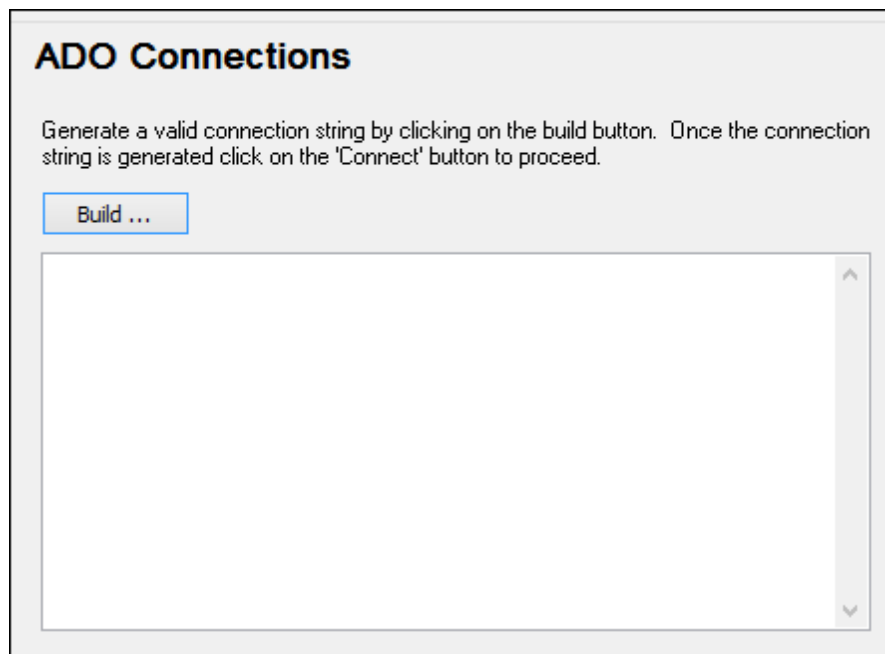
- For the installation instructions and support details of any drivers or database client software that you install from a database vendor, check the documentation provided with the installation package. Whether you are using an official or third party database driver, the most comprehensive information and the configuration procedures applicable to that specific driver on your specific operating system is normally part of the driver installation package.

11.3 Setting up an ADO Connection

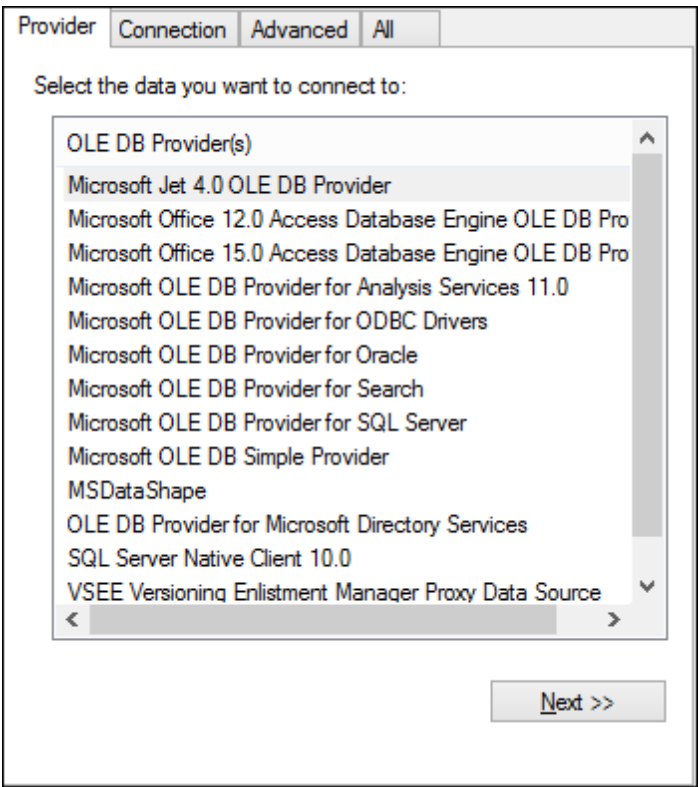
Microsoft ActiveX Data Objects (ADO) is a data access technology that enables you to connect to a variety of data sources through OLE DB. OLE DB is an alternative interface to ODBC or JDBC; it provides uniform access to data in a COM (Component Object Model) environment. ADO is the typical choice for connecting to Microsoft native databases such as Microsoft Access or SQL Server, although you can also use it for other data sources.

To set up an ADO connection:

1. [Start the database connection wizard.](#)
2. Click **ADO Connections**.



3. Click **Build**.



4. Select the data provider through which you want to connect. The table below lists a few common scenarios.

To connect to this database...	Use this provider...
Microsoft Access	• Microsoft Office Access Database Engine OLE DB Provider When connecting to Microsoft Access 2003, you can also use the Microsoft Jet OLE DB Provider.
SQL Server	• SQL Server Native Client • Microsoft OLE DB Provider for SQL Server
Other database	Select the provider applicable to your database. If an OLE DB provider to your database is not available, install the required driver from the database vendor (see Database Drivers Overview). Alternatively, set up an ODBC or JDBC connection. If the operating system has an ODBC driver to the required database, you can also use the Microsoft OLE DB Provider for ODBC Drivers.

5. Click **Next** and complete the wizard.

The subsequent wizard steps are specific to the provider you chose. For SQL Server, you will need to provide or select the host name of the database server, as well as the database username and password. For Microsoft Access, you will be asked to browse for or provide the path to the database file.

The complete list of initialization properties (connection parameters) is available in the **All** tab of the connection dialog box—these properties vary depending on the chosen provider. The following sections provide guidance on configuring the basic initialization properties for Microsoft Access and SQL Server databases:

- [Setting up the SQL Server Data Link Properties](#)
- [Setting up the Microsoft Access Data Link Properties](#)

11.3.1 Connecting to an Existing Microsoft Access Database

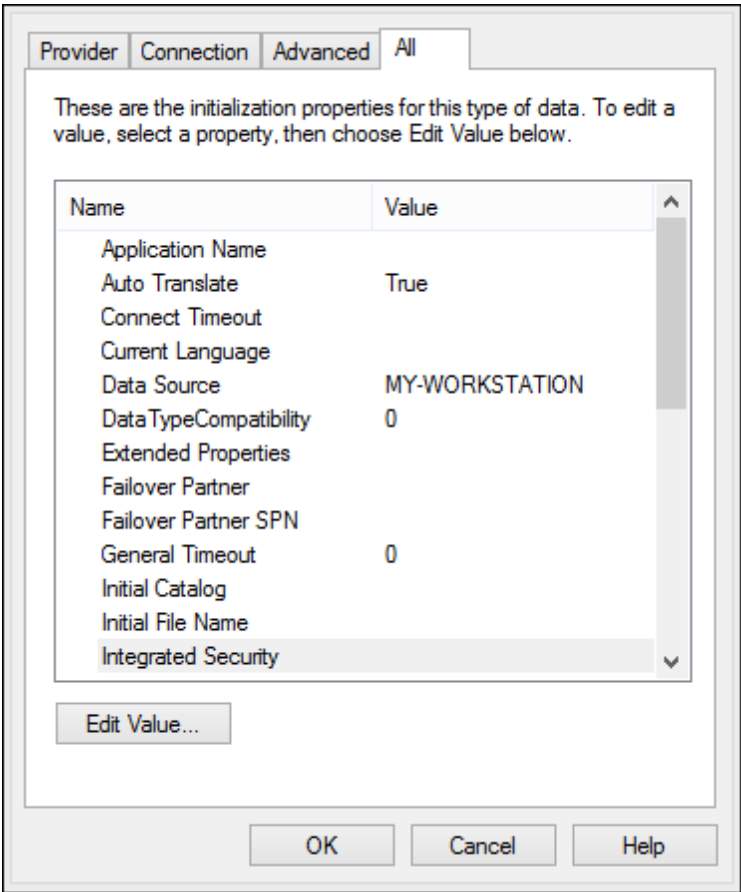
This approach is suitable when you want to connect to a Microsoft Access database which is not password-protected. If the database is password-protected, set up the database password as shown in [Connecting to Microsoft Access \(ADO\)](#).

To connect to an existing Microsoft Access database:

1. Run the database connection wizard (see [Starting the Database Connection Wizard](#)).
2. Select **Microsoft Access (ADO)**, and then click **Next**.
3. Browse for the database file, or enter the path to it (either relative or absolute) .
4. Click **Connect**.

11.3.2 Setting up the SQL Server Data Link Properties

When you connect to a Microsoft SQL Server database through ADO (see [Setting up an ADO Connection](#)), ensure that the following data link properties are configured correctly in the **All** tab of the Data Link Properties dialog box.

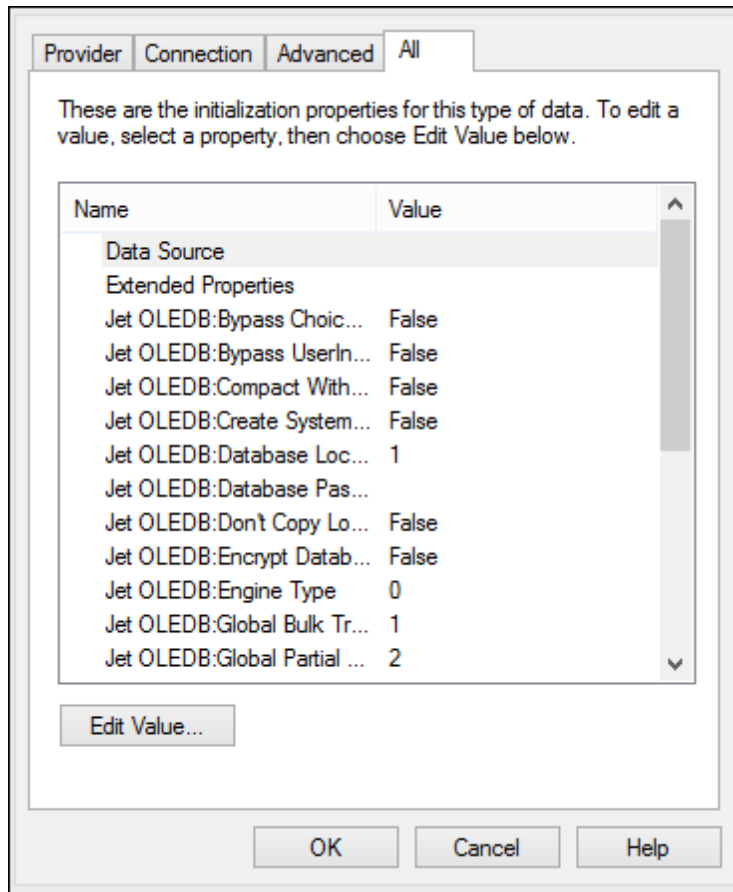


Data Link Properties dialog box

Property	Notes
Integrated Security	If you selected the SQL Server Native Client data provider on the Provider tab, set this property to a space character.
Persist Security Info	Set this property to True .

11.3.3 Setting up the Microsoft Access Data Link Properties

When you connect to a Microsoft Access database through ADO (see [Setting up an ADO Connection](#)), ensure that the following properties are configured correctly in the **All** tab of the Data Link Properties dialog box.



Data Link Properties dialog box

Property	Notes
Data Source	This property stores the path to the Microsoft Access database file. To avoid database connectivity issues, it is recommended to use the UNC (Universal Naming Convention) path format, for example: \\anyserver\share\$\filepath
Jet OLEDB:System Database	This property stores the path to the workgroup information file. You may need to explicitly set the value of this property before you can connect to a Microsoft Access database. If you cannot connect due to a "workgroup information file" error, locate the workgroup information file (System.MDW) applicable to your user profile (see http://support.microsoft.com/kb/305542 for instructions), and set the property value to the path of the System.MDW file.

Property	Notes
	Property Description Jet OLEDB:System database Property Value C:\Users\john.doe\AppData\Roaming\Microsoft\Access Reset Value OK Cancel
Jet OLEDB:Database Password	If the database is password-protected, set the value of this property to the database password. Property Description Jet OLEDB:Database Password Property Value Reset Value OK Cancel

11.4 Setting up an ODBC Connection

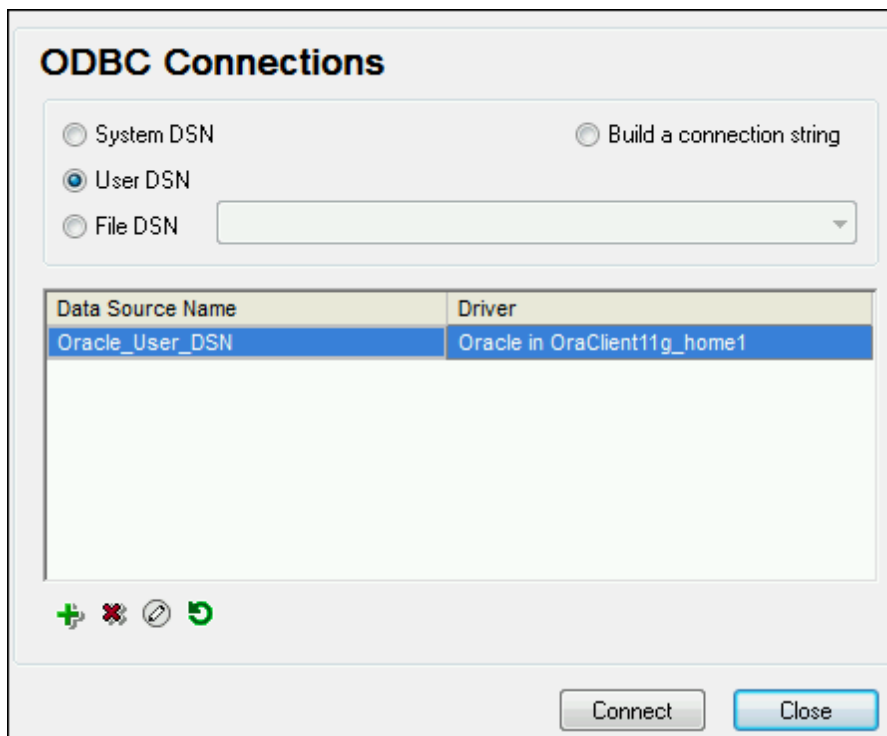
ODBC (Open Database Connectivity) is a widely used data access technology that enables you to connect to a database from DiffDog. It can be used either as primary means to connect to a database, or as an alternative to OLE DB- or JDBC-driven connections.

To connect to a database through ODBC, first you need to create an ODBC data source name (DSN) on the operating system. This step is not required if the DSN has already been created, perhaps by another user of the operating system. The DSN represents a uniform way to describe the database connection to any ODBC-aware client application on the operating system, including DiffDog. DSNs can be of the following types:

- System DSN
- User DSN
- File DSN

A *System* data source is accessible by all users with privileges on the operating system. A *User* data source is available to the user who created it. Finally, if you create a *File DSN*, the data source will be created as a file with the .dsn extension which you can share with other users, provided that they have installed the drivers used by the data source.

Any DSNs already available on your machine are listed by the database connection dialog box when you click **ODBC connections** on the ODBC connections dialog box.



ODBC Connections dialog box

If a DSN to the required database is not available, the DiffDog database connection wizard will assist you to create it; however, you can also create it directly on your Windows operating

system. In either case, before you proceed, ensure that the ODBC driver applicable for your database is in the list of ODBC drivers available to the operating system (see [Viewing the Available ODBC Drivers](#)).

To connect by using a new DSN:

1. [Start the database connection wizard](#).
2. On the database connection dialog box, click **ODBC Connections**.
3. Select a data source type (User DSN, System DSN, File DSN).

To create a System DSN, you need administrative rights on the operating system.

4. Click **Add**  .
5. Select a driver, and then click **User DSN** or **System DSN** (depending on the type of the DSN you want to create). If the driver applicable to your database is not listed, download it from the database vendor and install it (see [Database Drivers Overview](#)).
6. On the dialog box that pops up, fill in any driver specific connection information to complete the setup.

For the connection to be successful, you will need to provide the host name (or IP address) of the database server, as well as the database username and password. There may be other optional connection parameters—these parameters vary between database providers. For detailed information about the parameters specific to each connection method, consult the documentation of the driver provider. Once created, the DSN becomes available in the list of data source names. This enables you to reuse the database connection details any time you want to connect to the database. Note that User DSNs are added to the list of User DSNs whereas System DSNs are added to the list of System DSNs.

To connect by using an existing DSN:

1. [Start the database connection wizard](#).
2. Click **ODBC Connections**.
3. Choose the type of the existing data source (User DSN, System DSN, File DSN).
4. Click the existing DSN record, and then click **Connect**.

To build a connection string based on an existing .dsn file:

1. [Start the database connection wizard](#).
2. Click **ODBC Connections**.
3. Select **Build a connection string**, and then click **Build**.
4. If you want to build the connection string using a File DSN, click the **File Data Source** tab. Otherwise, click the **Machine Data Source** tab. (System DSNs and User DSNs are known as "Machine" data sources.)
5. Select the required .dsn file, and then click **OK**.

To connect by using a prepared connection string:

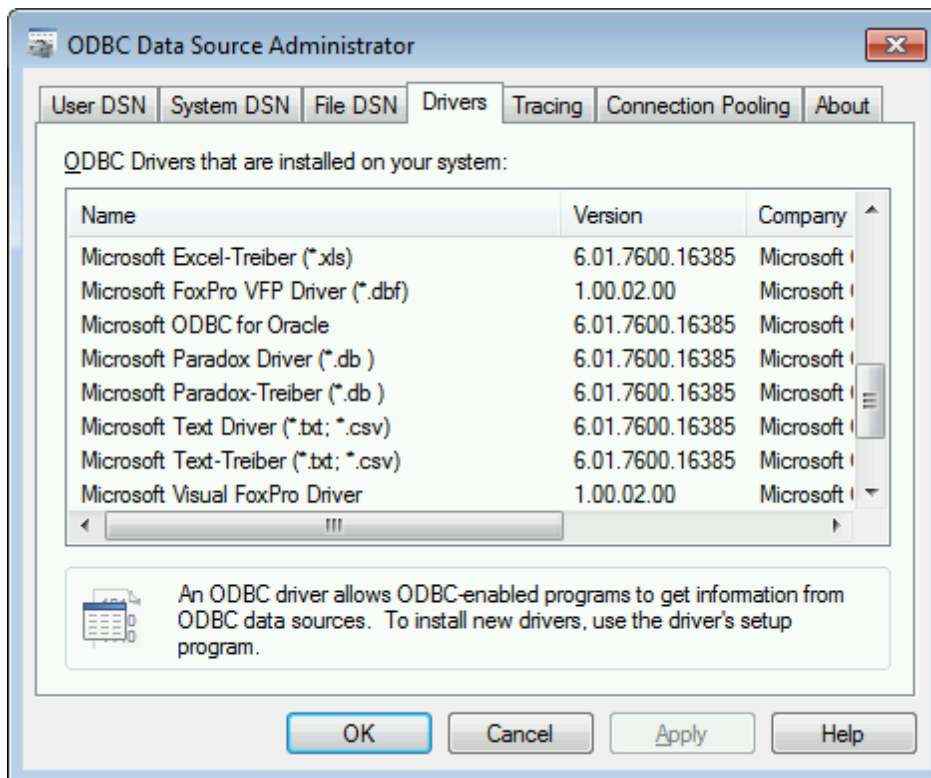
1. [Start the database connection wizard](#).
2. Click **ODBC Connections**.
3. Select **Build a connection string**.
4. Paste the connection string into the provided box, and then click **Connect**.

11.4.1 Viewing the Available ODBC Drivers

You can view the ODBC drivers available on your operating system in the ODBC Data Source Administrator. You can access the ODBC Data Source Administrator (**Odbcad32.exe**) from the Windows Control Panel, under **Administrative Tools**. On 64-bit operating systems, there are two versions of this executable:

- The 32-bit version of the **Odbcad32.exe** file is located in the **C:\Windows\SysWow64** directory (assuming that **C:** is your system drive).
- The 64-bit version of the **Odbcad32.exe** file is located in the **C:\Windows\System32** directory.

Any installed 32-bit database drivers are visible in the 32-bit version of ODBC Data Source Administrator, while 64-bit drivers—in the 64-bit version. Therefore, ensure that you check the database drivers from the relevant version of ODBC Data Source Administrator.



ODBC Data Source Administrator

If the driver to your target database does not exist in the list, or if you want to add an alternative driver, you will need to download it from the database vendor (see [Database Drivers Overview](#)). Once the ODBC driver is available on your system, you are ready to create ODBC connections with it (see [Setting up an ODBC Connection](#)).

11.5 Setting up a JDBC Connection

JDBC (Java Database Connectivity) is a database access interface which is part of the Java software platform from Oracle. JDBC connections are generally more resource-intensive than ODBC connections but may provide features not available through ODBC. It is generally recommended to use a JDBC connection if you are using database features not available through an ODBC connector, for example, support for the XML DB technology in Oracle databases.

Prerequisites:

- JRE (Java Runtime Environment) or Java Development Kit (JDK) must be installed. If you have not installed it already, check the official Java website for the download package and installation instructions.
- The JDBC drivers from the database vendor must be installed. If you are connecting to an Oracle database, note that some Oracle drivers are specific to certain JRE versions and may require additional components and configuration. The documentation of your Oracle product (for example, the "Oracle Database JDBC Developer's Guide and Reference") includes detailed instructions about the configuration procedure for each JDBC driver.
- The operating system's PATH environment variable must include the path to the bin directory of the JRE or JDK installation directory, for example C:\Program Files (x86)\Java\jre1.8.0_51\bin.
- The CLASSPATH environment variable must include the path to the JDBC driver on your Windows operating system. When you install some database clients, the installer may configure this variable automatically. The documentation of the JDBC driver will typically include step-by-step instructions on setting the CLASSPATH variable (see also [Configuring the CLASSPATH](#)).

To set up a JDBC connection:

1. [Start the database connection wizard](#).
2. Click **JDBC Connections**.
3. Do one of the following:
 - a. Select a JDBC driver from the Driver list. This list contains any JDBC drivers configured through the CLASSPATH environment variable (see [Configuring the CLASSPATH](#)).
 - b. Enter a Java class name.
4. Enter the username and password to the database in the corresponding boxes.
5. In the Database URL text box, enter the JDBC connection string in the format specific to your database type (see the [JDBC connection formats](#) below).
6. Click **Connect**.

JDBC connection formats

The following table describes the syntax of JDBC connection strings for common database types.

Database	JDBC Connection Format
Firebird	<code>jdbc:firebirdsql://<host>[:<port>]/<database path or alias></code>
IBM DB2	<code>jdbc:db2://hostName:port/databaseName</code>

Database	JDBC Connection Format
IBM Informix	<code>jdbc:informix-sqli://hostName:port/ databaseName:INFORMIXSERVER=myserver</code>
Microsoft SQL Server	<code>jdbc:sqlserver://hostName:port;databaseName=name</code>
MySQL	<code>jdbc:mysql://hostName:port/databaseName</code>
Oracle	<code>jdbc:oracle:thin:@//hostName:port:databaseName</code>
Oracle XML DB	<code>jdbc:oracle:oci:@//hostName:port:databaseName</code>
PostgreSQL	<code>jdbc:postgresql://hostName:port/databaseName</code>
Sybase	<code>jdbc:sybase:Tds:hostName:port/databaseName</code>

Note: Syntax variations to the formats listed above are also possible (for example, the database URL may exclude the port or may include the username and password to the database). Check the documentation of the database vendor for further details.

11.5.1 Configuring the CLASSPATH

The CLASSPATH environment variable is used by the Java Runtime Environment (JRE) to locate Java classes and other resource files on your operating system. When you connect to a database through JDBC, this variable must be configured to include the path to the JDBC driver on your operating system, and, in some cases, the path to additional library files specific to the database type you are using.

The following table lists sample file paths that must be typically included in the CLASSPATH variable. Importantly, you may need to adjust this information based on the location of the JDBC driver on your system, the JDBC driver name, as well as the JRE version present on your operating system. To avoid connectivity problems, check the installation instructions and any pre-installation or post-installation configuration steps applicable to the JDBC driver installed on your operating system.

Database	Sample CLASSPATH entries
Firebird	<code>C:\Program Files\Firebird\Jaybird-2.2.8-JDK_1.8\jaybird-full-2.2.8.jar</code>
IBM DB2	<code>C:\Program Files (x86)\IBM\SQLLIB\java\db2jcc.jar;C:\Program Files (x86)\IBM\SQLLIB\java\db2jcc_license_cu.jar;</code>
IBM Informix	<code>C:\Informix_JDBC_Driver\lib\ifxjdbc.jar;</code>
Microsoft SQL Server	<code>C:\Program Files\Microsoft JDBC Driver 4.0 for SQL Server\sqljdbc_4.0\enu\sqljdbc.jar</code>
MySQL	<code>mysql-connector-java-version-bin.jar;</code>
Oracle	<code>ORACLE_HOME\jdbc\lib\ojdbc6.jar;</code>

Database	Sample CLASSPATH entries
Oracle (with XML DB)	<code>ORACLE_HOME\jdbc\lib\ojdbc6.jar;ORACLE_HOME\LIB\xmlparserv2.jar;ORACLE_HOME\RDBMS\jlib\xdb.jar;</code>
PostgreSQL	<code><installation directory>\postgresql.jar</code>
Sybase	<code>C:\sybase\jConnect-7_0\classes\jconn4.jar</code>

- Changing the CLASSPATH variable may affect the behavior of Java applications on your machine. To understand possible implications before you proceed, refer to the Java documentation.
- Environment variables can be user or system. To change system environment variables, you need administrative rights on the operating system.
- After you change the environment variable, restart any running programs for settings to take effect. Alternatively, log off or restart your operating system.

To configure the CLASSPATH on Windows 7:

1. Open the **Start** menu and right-click **Computer**.
2. Click **Properties**.
3. Click **Advanced system settings**.
4. In the **Advanced** tab, click **Environment Variables**.
5. Locate the CLASSPATH variable under user or system environment variables, and then click **Edit**. If the CLASSPATH variable does not exist, click **New** to create it.
6. Edit the variable value to include the path on your operating system where the JDBC driver is located. To separate the JDBC driver path from other paths that may already be in the CLASSPATH variable, use the semi-colon separator (;).

To configure the CLASSPATH on Windows 8:

1. Right-click the Windows Start button, and then click **System**.
2. Click **Advanced System Settings**.
3. Click **Environment Variables**.
4. Locate the CLASSPATH variable under user or system environment variables, and then click **Edit**. If the CLASSPATH variable does not exist, click **New** to create it.
5. Edit the variable value to include the path on your operating system where the JDBC driver is located. To separate the JDBC driver path from other paths that may already be in the CLASSPATH variable, use the semi-colon separator (;).

11.6 Setting up a SQLite Connection

SQLite (<http://www.sqlite.org>) is a file-based, self-contained database type, which makes it ideal in scenarios where portability and ease of configuration is important. Since SQLite databases are natively supported by DiffDog, you do not need to install any drivers to connect to them.

11.6.1 Connecting to an Existing SQLite Database

To connect to an existing SQLite database:

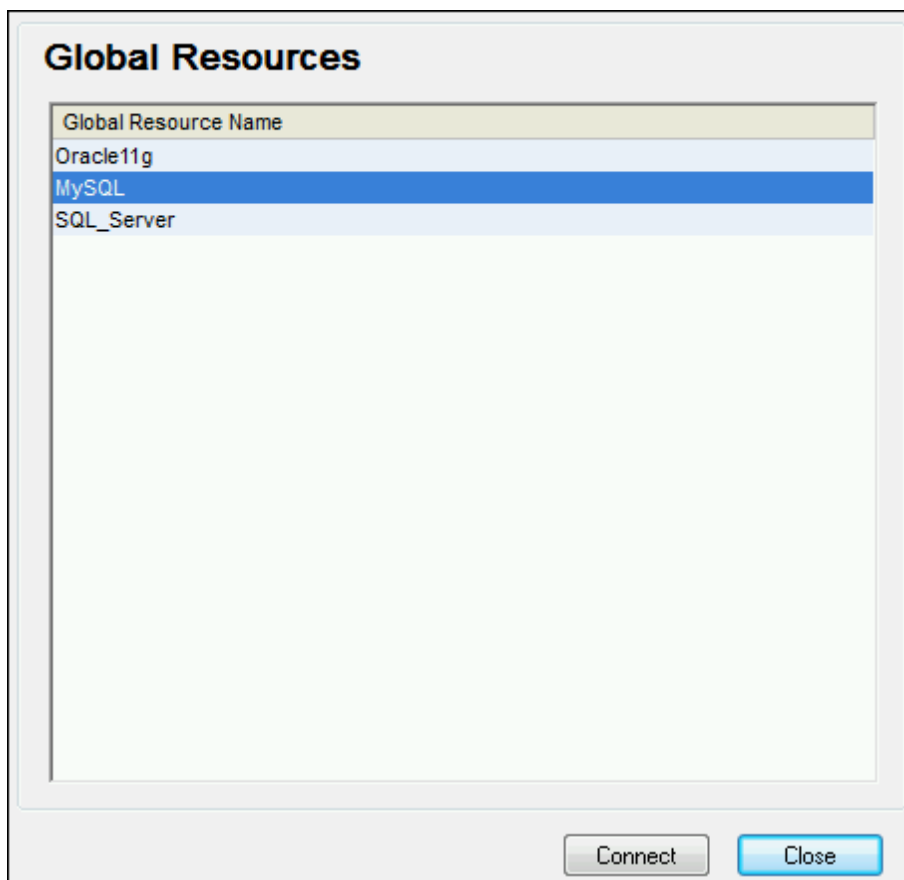
1. Run the database connection wizard (see [Starting the Database Connection Wizard](#)).
2. Select **SQLite**, and then click **Next**.
3. Browse for the SQLite database file, or enter the path (either relative or absolute) to the database. The **Connect** button becomes enabled once you enter the path to a SQLite database file.
4. Click **Connect**.

11.7 Using a Connection from Global Resources

If you have previously configured a database connection to be available as a global resource, you can reuse the connection at any time (even across different Altova applications).

To use a database connection from Global Resources:

1. [Start the database connection wizard.](#)
2. Click **Global Resources**. Any database connections available as global resources are listed.



3. Select the database connection record, and click **Connect**.

Tip: To get additional information about each global resource, move the mouse cursor over the global resource.

11.8 Examples

This section includes sample procedures for connecting to a database from DiffDog. Note that your Windows machine, the network environment, and the database client or server software is likely to have a configuration that is not exactly the same as the one presented in the following examples.

Note: For most database types, it is possible to connect using more than one data access technology (ADO, ODBC, JDBC) or driver. The performance of the database connection, as well as its features and limitations will depend on the selected driver, database client software (if applicable), and any additional connectivity parameters that you may have configured outside DiffDog.

This section includes the following topics:

- [Connecting to IBM DB2 \(ODBC\)](#)
- [Connecting to IBM DB2 for i \(ODBC\)](#)
- [Connecting to IBM Informix \(JDBC\)](#)
- [Connecting to Microsoft Access \(ADO\)](#)
- [Connecting to Microsoft SQL Server \(ADO\)](#)
- [Connecting to Microsoft SQL Server \(ODBC\)](#)
- [Connecting to MySQL \(ODBC\)](#)
- [Connecting to Oracle \(ODBC\)](#)
- [Connecting to PostgreSQL \(ODBC\)](#)
- [Connecting to Sybase \(JDBC\)](#)

11.8.1 Connecting to Firebird (ODBC)

This topic provides sample instructions for connecting to a Firebird 2.5.4 database running on a Linux server.

Prerequisites:

- The Firebird database server is configured to accept TCP/IP connections from clients.
- The Firebird ODBC driver must be installed on your operating system. This example uses the Firebird ODBC driver version 2.0.3.154 downloaded from the Firebird website (<http://www.firebirdsql.org/>).
- The Firebird client must be installed on your operating system. Note that there is no standalone installer available for the Firebird 2.5.4 client; the client is part of the Firebird server installation package. You can download the Firebird server installation package from the Firebird website (<http://www.firebirdsql.org/>), look for "Windows executable installer for full Superclassic/Classic or Superserver". To install only the client files, choose "**Minimum client install - no server, no tools**" when going through the wizard steps.

Important:

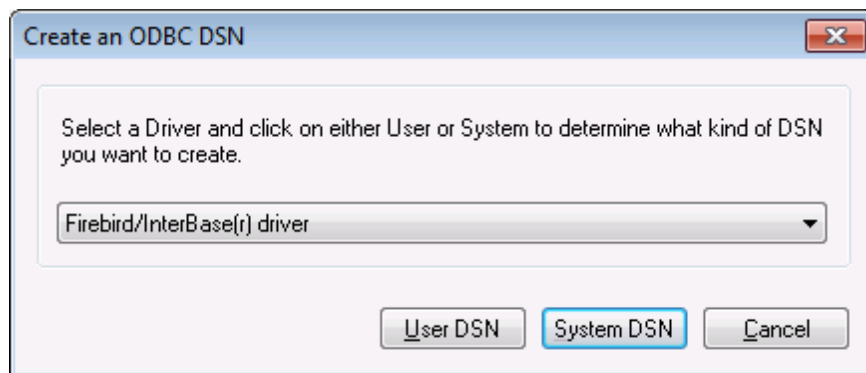
- The platform of both the Firebird ODBC driver and client (32-bit or 64-bit) must correspond to that of DiffDog.
- The version of the Firebird client must correspond to the version of Firebird server to which you are connecting.

- You have the following database connection details: server host name or IP address, database path (or alias) on the server, user name, and password.

To connect to Firebird via ODBC:

1. [Start the database connection wizard](#).
2. Click **ODBC Connections**.
3. Select **User DSN** (or **System DSN**, if you have administrative privileges), and then click

Add  .



4. Select the Firebird driver, and then click **User DSN** (or **System DSN**, depending on what you selected in the previous step). If the Firebird driver is not available in the list, make sure that it is installed on your operating system (see also [Viewing the Available ODBC Drivers](#)).

5. Enter the database connection details as follows:

<i>Data Source Name (DSN)</i>	Enter a descriptive name for the data source you are creating.
<i>Database</i>	Enter the server host name or IP address, followed by a colon, followed by the database alias (or path). In this example, the host name is firebirdserv, and the database alias is products, as follows: firebirdserv:products Using a database alias assumes that, on the server side, the database administrator has configured the alias <i>products</i> to point to the actual Firebird (.fdb) database file on the server (see the Firebird documentation for more details). You can also use the server IP address instead of the host name, and a path instead of an alias; therefore, any of the following sample connection strings are valid: firebirdserver:/var/Firebird/databases/butterflies.fdb

	127.0.0.1:D:\Misc\Lenders.fdb If the database is on the local Windows machine, click Browse and select the Firebird (.fdb) database file directly.
<i>Client</i>	Enter the path to the fbclient.dll file. By default, this is the bin subdirectory of the Firebird installation directory.
<i>Database Account</i>	Enter the database user name supplied by the database administrator (in this example, PROD_ADMIN).
<i>Password</i>	Enter the database password supplied by the database administrator.

6. Click **OK**.

11.8.2 Connecting to Firebird (JDBC)

This topic provides sample instructions for connecting to a Firebird database server through JDBC.

Prerequisites:

- Java Runtime Environment (JRE) or Java Development Kit (JDK) must be installed on your operating system.
- The operating system's PATH environment variable must include the path to the bin directory of the JRE or JDK installation directory, for example C:\Program Files (x86)\Java\jre1.8.0_51\bin.
- The Firebird JDBC driver must be installed on your operating system. This example uses *Jaybird 2.2.8* downloaded from the Firebird website (<http://www.firebirdsql.org/>).
- The operating system's CLASSPATH environment variable must include the path to the Jaybird driver, for example **C:\jdbc\firebird\jaybird-full-2.2.8.jar**. See also [Configuring the CLASSPATH](#).
- You have the following database connection details: host, database path or alias, username, and password.

To connect to Sybase through JDBC:

1. [Start the database connection wizard](#).
2. Click **JDBC Connections**.
3. In the Driver box, select **org.firebirdsql.jdbc.FBDriver**. If the entry is not available, check if the CLASSPATH and PATH environment variables are set correctly (see the prerequisites above).

JDBC Connections

Enter a connection string and select (or enter manually) a valid JDBC driver. Click on 'Connect' to proceed.

Driver:

Username:

Password:

Database URL:

4. Enter the username and password to the database in the corresponding text boxes.
5. Enter the connection string to the database server in the Database URL text box, by replacing the highlighted values with the ones applicable to your database server.

```
jdbc:firebirdsql://<host>[:<port>]/<database path or alias>
```

6. Click **Connect**.

11.8.3 Connecting to IBM DB2 (ODBC)

This topic provides sample instructions for connecting to an IBM DB2 database through ODBC.

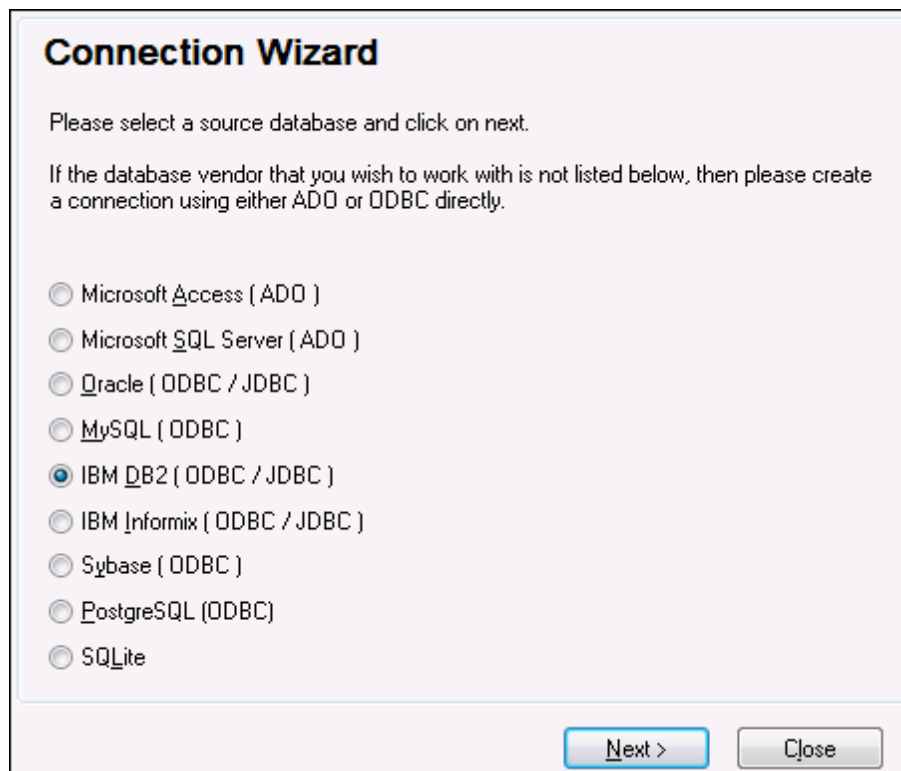
Prerequisites:

- IBM Data Server Client must be installed and configured on your operating system (this example uses IBM Data Server Client 9.7). For installation instructions, check the documentation supplied with your IBM DB2 software. After installing the IBM Data Server Client, check if the ODBC drivers are available on your machine (see [Viewing the Available ODBC Drivers](#)).
- Create a database alias. There are several ways to do this:
 - o From IBM DB2 Configuration Assistant
 - o From IBM DB2 Command Line Processor
 - o From the ODBC data source wizard (for this case, the instructions are shown below)
- You have the following database connection details: host, database, port, username, and

password.

To connect to IBM DB2:

1. [Start the database connection wizard](#) and select **IBM DB2 (ODBC/JDBC)**.



2. Click **Next**.

JDBC vs. ODBC

☐ JDBC

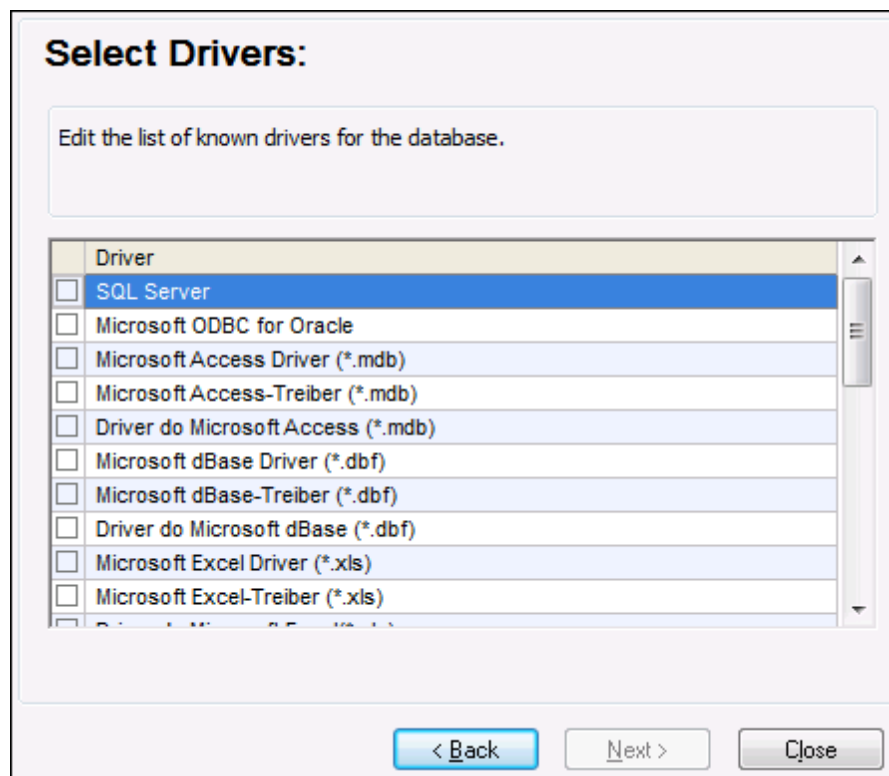
Java-based connection that may provide support for more modern features of your database that aren't available via ODBC. The tradeoff for these features is a potential sacrifice of performance.

☒ ODBC

An ODBC connection will generally be faster and less resource-intensive than a JDBC connection, but lacks support for more modern database features (such as native XML types).

< Back Next > Close

3. Select **ODBC**, and click **Next**. If prompted to edit the list of known drivers for the database, select the database drivers applicable to IBM DB2 (see [Prerequisites](#)), and click **Next**.



4. Select the IBM DB2 driver from the list, and then click **Connect**. (To edit the list of available drivers, click **Edit Drivers**, and then check or uncheck the IBM DB2 drivers you wish to add or remove, respectively.)

Connecting to IBM DB2

[Where can I find IBM DB2 drivers?](#)

Select an option how you wish to connect to the database and click Connect.

☒ Create a new Data Source Name (DSN) with the driver:

IBM DB2 ODBC DRIVER

☐ Use an existing Data Source Name:

☒ User DSN ☐ System DSN

[Edit Drivers](#)

☐ Skip the configuration step for wizard

< Back **Connect** Close

5. Enter a data source name (in this example, **DB2DSN**), and then click **Add**.

Select the DB2 database alias you want to register for ODBC, or select Add to create a new alias. You may change the data source name and description, or accept the default.

Data source name: DB2DSN

Database alias: [Add](#)

Description:

OK Cancel

6. On the **Data Source** tab, enter the user name and password to the database.

The screenshot shows a dialog box with four tabs: 'Data Source', 'TCP/IP', 'Security options', and 'Advanced Settings'. The 'Data Source' tab is active. It contains the following fields and controls:

- Data source name:** A text box containing 'DB2DSN'.
- Description:** An empty text box.
- User ID:** A text box containing 'john_doe'.
- Password:** A text box with masked characters (dots).
- Save password:** An unchecked checkbox.

At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

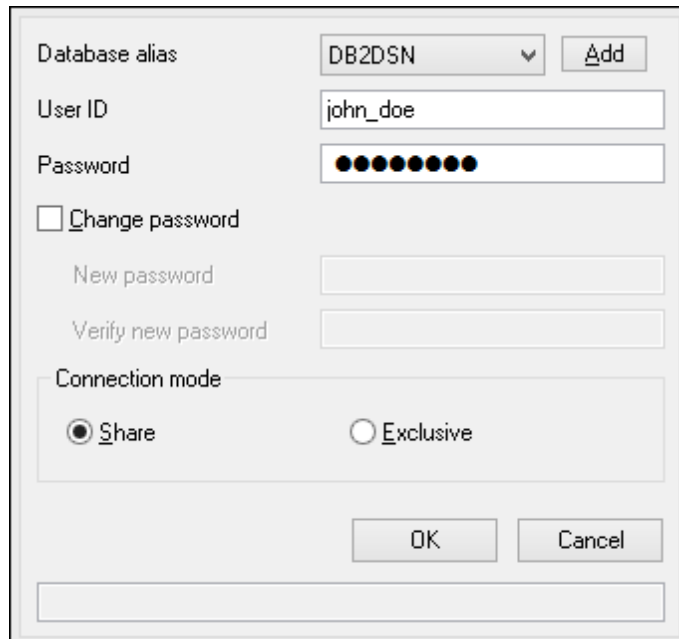
7. On the **TCP/IP** tab, enter the database name, a name for the alias, the host name and the port number, and then click OK.

The screenshot shows the same dialog box, but now the 'TCP/IP' tab is active. It contains the following fields and controls:

- Database name:** A text box containing 'database 1'.
- Database alias:** A text box containing 'alias1'.
- Host name:** A text box containing 'host1'.
- Port number:** A text box containing '50000'.
- Connection options:**
 - ☐ The database physically resides on a host or Q_S/400 system.
 - ☒ Connect directly to the server
 - ☐ Connect to the server via the gateway
- DCS Parameters:** An unchecked checkbox.
- DCS Parameters text box:** A text box containing '..INTERRUPT_ENABLED.....'.
- Optimize for application:** A dropdown menu with 'v' selected.

At the bottom of the dialog are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

8. Enter again the username and password, and then click **OK**.



The screenshot shows a standard Windows-style dialog box for database connection configuration. It contains the following elements:

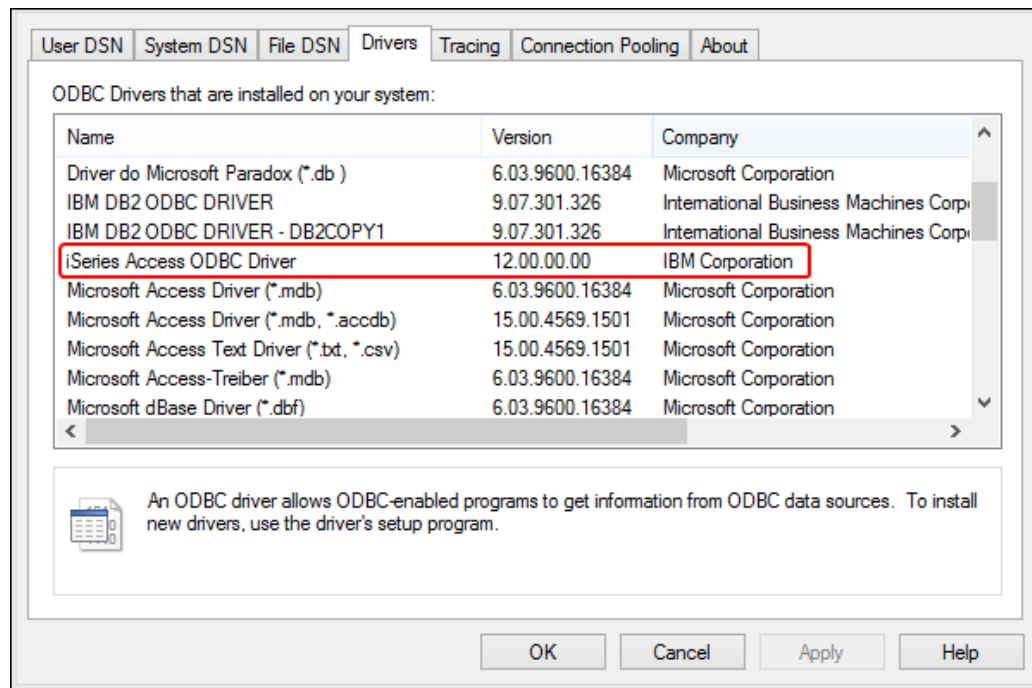
- Database alias:** A dropdown menu currently showing 'DB2DSN' with a small downward arrow, and an 'Add' button to its right.
- User ID:** A text input field containing the text 'john_doe'.
- Password:** A text input field where the characters are masked with black dots.
- Change password:** A checkbox labeled 'Change password' which is currently unchecked.
- New password:** A text input field, currently empty.
- Verify new password:** A text input field, currently empty.
- Connection mode:** A section containing two radio buttons: 'Share' (which is selected) and 'Exclusive'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.
- Footer:** An empty text input field at the very bottom of the dialog.

11.8.4 Connecting to IBM DB2 for i (ODBC)

This topic provides sample instructions for connecting to an *IBM DB2 for i* database through ODBC.

Prerequisites:

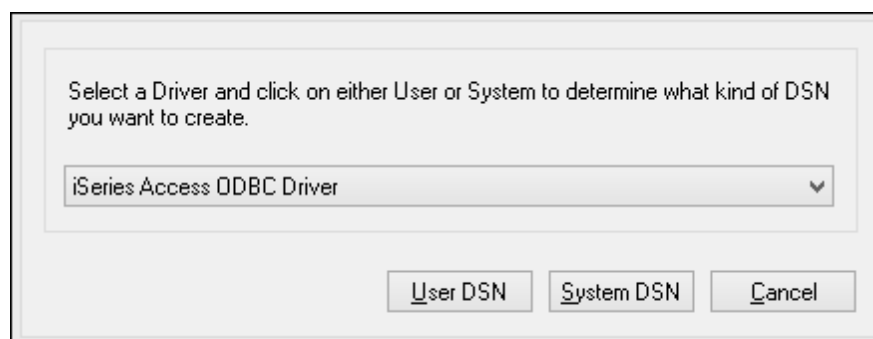
- *IBM System i Access for Windows* must be installed on your operating system (this example uses *IBM System i Access for Windows V6R1M0*). For installation instructions, check the documentation supplied with your *IBM DB2 for i* software. After installation, check if the ODBC driver is available on your machine (see [Viewing the Available ODBC Drivers](#)).



- You have the following database connection details: the I.P. address of the database server, database user name, and password.
- Run *System i Navigator* and follow the wizard to create a new connection. When prompted to specify a system, enter the I.P. address of the database server. After creating the connection, it is recommended to verify it (click on the connection, and select **File > Diagnostics > Verify Connection**). If you get connectivity errors, contact the database server administrator.

To connect to IBM DB2 for i:

1. [Start the database connection wizard.](#)
2. Click **ODBC connections**.
3. Click **User DSN** (alternatively, click **System DSN**, or **File DSN**, in which case the subsequent instructions will be similar).
4. Click **Add** .
5. Select the **iSeries Access ODBC Driver** from the list, and click **User DSN** (or **System DSN**, if applicable).



6. Enter a data source name and select the connection from the System combo box. In this

example, the data source name is **iSeriesDSN** and the System is **192.0.2.0**.

The screenshot shows a dialog box with the 'General' tab selected. It contains the following fields and controls:

- Data source name:** A text box containing 'iSeriesDSN'.
- Description:** A text box containing 'System i Access for Windows ODBC data source'.
- System:** A dropdown menu showing '192.0.2.0'.
- Connection Options...:** A button located to the right of the System dropdown.
- Buttons:** 'OK', 'Cancel', 'Apply', and 'Help' buttons are located at the bottom of the dialog.

7. Click **Connection Options**, select **Use the User ID specified below** and enter the name of the database user (in this example, **DBUSER**).

Default user ID

☐ Use Windows user name

☒ Use the user ID specified below

DBUSER

☐ None

☐ Use System i Navigator default

☐ Use Kerberos principal

Signon dialog prompting

☒ Prompt for SQLConnect if needed

☐ Never prompt for SQLConnect

Security

☐ Do not use Secured Sockets Layer (SSL)

☐ Use Secured Sockets Layer (SSL)

☒ Use same security as System i Navigator connection

OK Cancel Help

8. Click **OK**. The new data source becomes available in the list of DSNs.
9. Click **Connect**.
10. Enter the user name and password to the database when prompted, and then click **OK**.

11.8.5 Connecting to IBM Informix (JDBC)

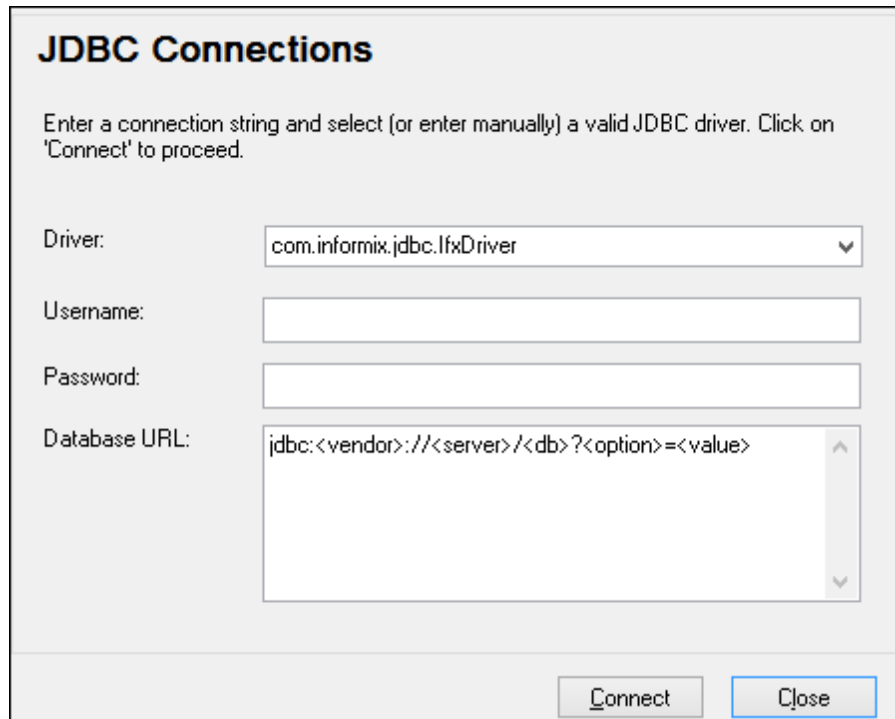
This topic provides sample instructions for connecting to an IBM Informix database server through JDBC.

Prerequisites:

- Java Runtime Environment (JRE) must be installed on your operating system.
- The JDBC driver must be installed on your operating system (in this example, IBM Informix JDBC driver version 3.70 is used). For the driver's installation instructions, see the documentation accompanying the driver or the "IBM Informix JDBC Driver Programmer's Guide").
- The operating system's CLASSPATH environment variable includes the path where the Informix JDBC driver (**ifxjdbc.jar**) was installed. In this example, the Informix JDBC driver is installed in the directory **C:\Informix_JDBC_Driver**, and the value of CLASSPATH variable is **C:\Informix_JDBC_Driver\lib\ifxjdbc.jar**. For more information, see [Configuring the CLASSPATH](#).
- You have the following database connection details: host, name of the Informix server, database, port, username, and password.

To connect to IBM Informix through JDBC:

1. [Start the database connection wizard.](#)
2. Click **JDBC Connections**.
3. Select the Informix JDBC driver from the list of available JDBC drivers (in this example, **com.informix.jdbc.IfxDriver**). If the list does not contain an Informix driver, it is either not installed correctly, or not included in the CLASSPATH variable (see the list of prerequisites above).



4. Enter the username and password to the database in the corresponding text boxes.
5. Enter the connection string to the database server in the Database URL text box, by replacing the highlighted values with the ones applicable to your database server.

```
jdbc:informix-sqli://hostName:port/  
databaseName: INFORMIXSERVER=myserver;
```

6. Click **Connect**.

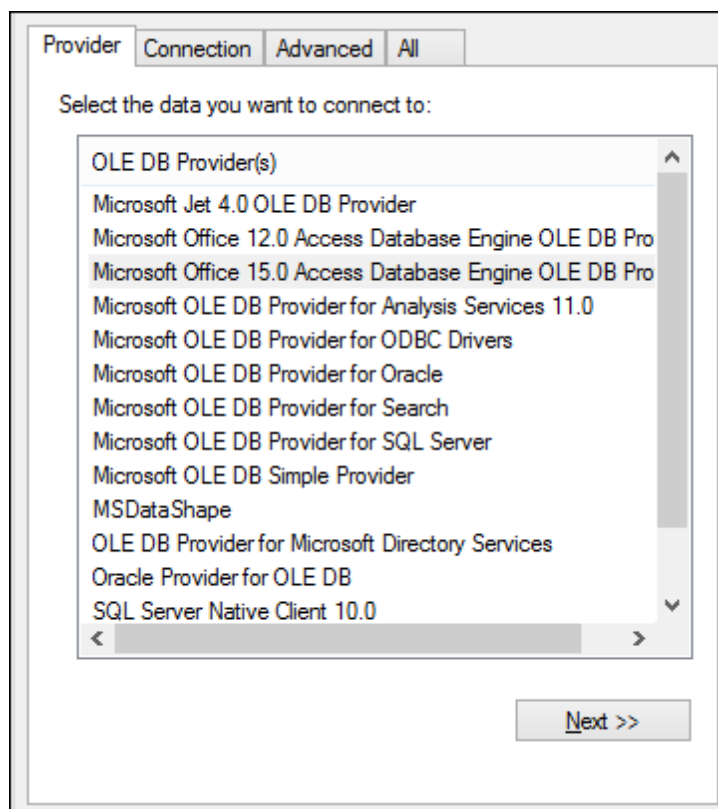
11.8.6 Connecting to Microsoft Access (ADO)

A simple way to connect to a Microsoft Access database is to follow the wizard and browse for the database file, as shown in [Connecting to an Existing Microsoft Access Database](#). An alternative approach is to set up an ADO connection explicitly, as shown in this topic. This approach is useful if your database is password-protected.

It is also possible to connect to Microsoft Access through an ODBC connection, but there are some limitations in this scenario, so it is best to avoid it.

To connect to a password-protected Microsoft Access database:

1. [Start the database connection wizard.](#)
2. Click **ADO Connections**.
3. Click **Build**.



4. Select the **Microsoft Office 15.0 Access Database Engine OLE DB Provider**, and then click **Next**.

Provider Connection Advanced All

Specify the following to connect to this data:

1. Enter the data source and/or location of the data:

Data Source:

Location:

2. Enter information to log on to the server:

☐ Use Windows NT Integrated security

☒ Use a specific user name and password:

User name:

Password:

☒ Blank password ☐ Allow saving password

3. Enter the initial catalog to use:

Test Connection

5. In the Data Source box, enter the path to the Microsoft Access file. Because the file is on the local network share **U:\Departments\Finance\Reports\Revenue.accdb**, we will convert it to UNC format, and namely **\\server1\dfs\Departments\Finance\Reports\Revenue.accdb**, where **server1** is the name of the server and **dfs** is the name of the network share.
6. On the **All** tab, double click the **Jet OLEDB:Database Password** property and enter the database password as property value.

Property Description

Jet OLEDB:Database Password

Property Value

.....

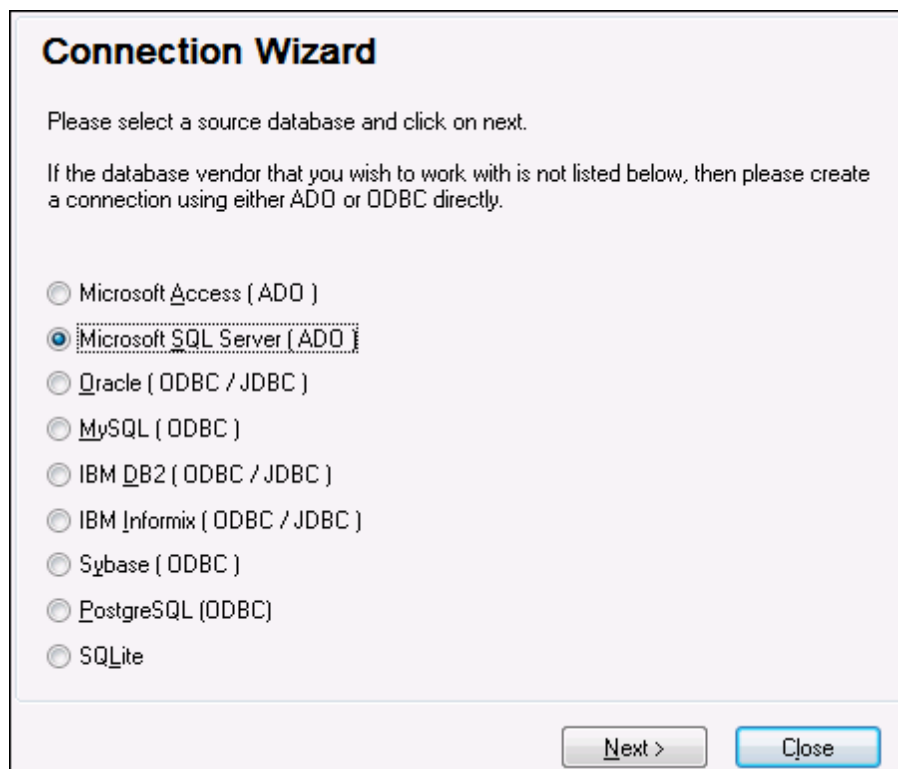
Reset Value OK Cancel

Note: If you are still unable to connect, locate the workgroup information file (**System.MDW**) applicable to your user profile (see <http://support.microsoft.com/kb/305542> for instructions), and set the value of the **Jet OLEDB: System database** property to the path of the **System.MDW** file.

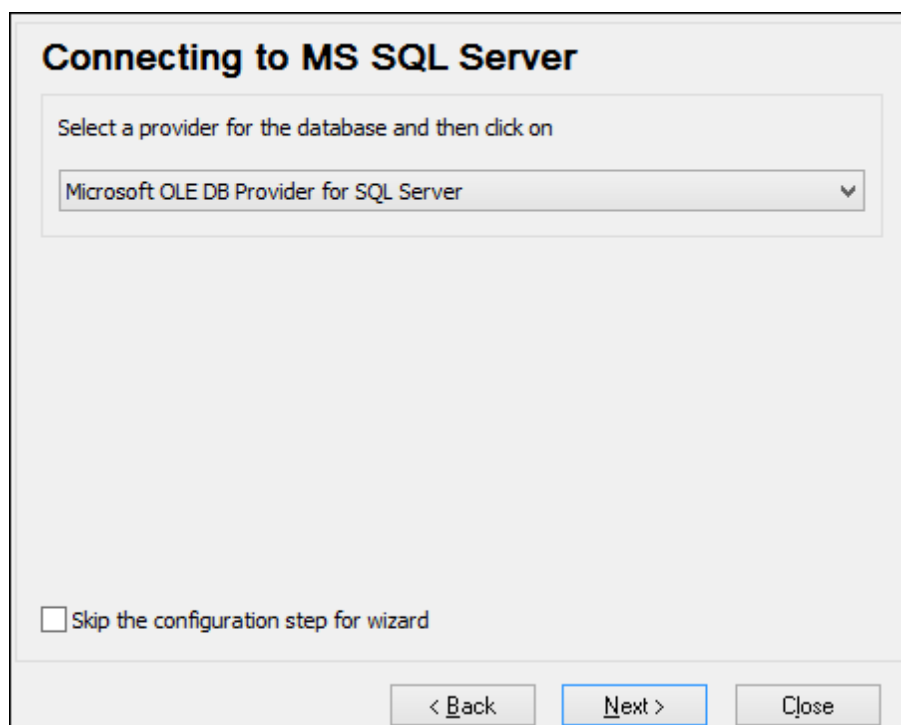
11.8.7 Connecting to Microsoft SQL Server (ADO)

To connect to SQL Server using the Microsoft OLE DB Provider:

1. [Start the database connection wizard.](#)



2. Select **Microsoft SQL Server (ADO)**, and then click **Next**. The list of available ADO drivers is displayed.



3. Select **Microsoft OLE DB Provider for SQL Server**, and then click **Next**.

The screenshot shows a 'Connection' tab in a database connection wizard. The tab is selected, and the 'Advanced' tab is also visible. The 'Connection' tab contains the following elements:

- 1. Select or enter a server name:** A text box with a dropdown arrow and a 'Refresh' button.
- 2. Enter information to log on to the server:**
 - ☐ Use Windows NT Integrated security: A text box for 'Server SPN'.
 - ☒ Use a specific user name and password: Text boxes for 'User name' and 'Password'.
 - ☒ Blank password ☐ Allow saving password
- 3. Select the database:** A dropdown menu.
- ☐ Attach a database file as a database name: A text box for the filename and a 'Using the filename:' text box with a file selection button ('...').
- Buttons: 'Change Password' and 'Test Connection'.
- Bottom buttons: 'OK', 'Cancel', and 'Help'.

4. Select or enter the name of the database server (in this example, **SQLSERV01**). To view the list of all servers on the network, expand the drop-down list.
5. If the database server was configured to allow connections from users authenticated on the Windows domain, select **Use Windows NT integrated security**. Otherwise, select **Use a specific user name and password**, and type them in the relevant boxes.
6. Select the database to which you are connecting (in this example, **NORTHWIND**).
7. To test the connection at this time, click **Test Connection**. This is an optional, recommended step.
8. Do one of the following:
 - a. Select the **Allow saving password** check box.
 - b. On the **All** tab, change the value of the **Persist Security Info** property to **True**.

Provider Connection Advanced All

Specify the following to connect to SQL Server data:

1. Select or enter a server name:
SQLSERV01 Refresh

2. Enter information to log on to the server:
☐ Use Windows NT Integrated security
☒ Use a specific user name and password:
User name: john_doe
Password:
☐ Blank password ☒ Allow saving password

3. ☒ Select the database on the server:
NORTHWIND
☐ Attach a database file as a database name:
Using the filename:
Test Connection

OK Cancel Help

9. Click **OK**.

11.8.8 Connecting to Microsoft SQL Server (ODBC)

To connect to SQL Server using ODBC:

1. [Start the database connection wizard](#).
2. Click **ODBC Connections**.
3. Select **User DSN** (or **System DSN**, if you have administrative privileges), and then click

Add .

Create an ODBC DSN

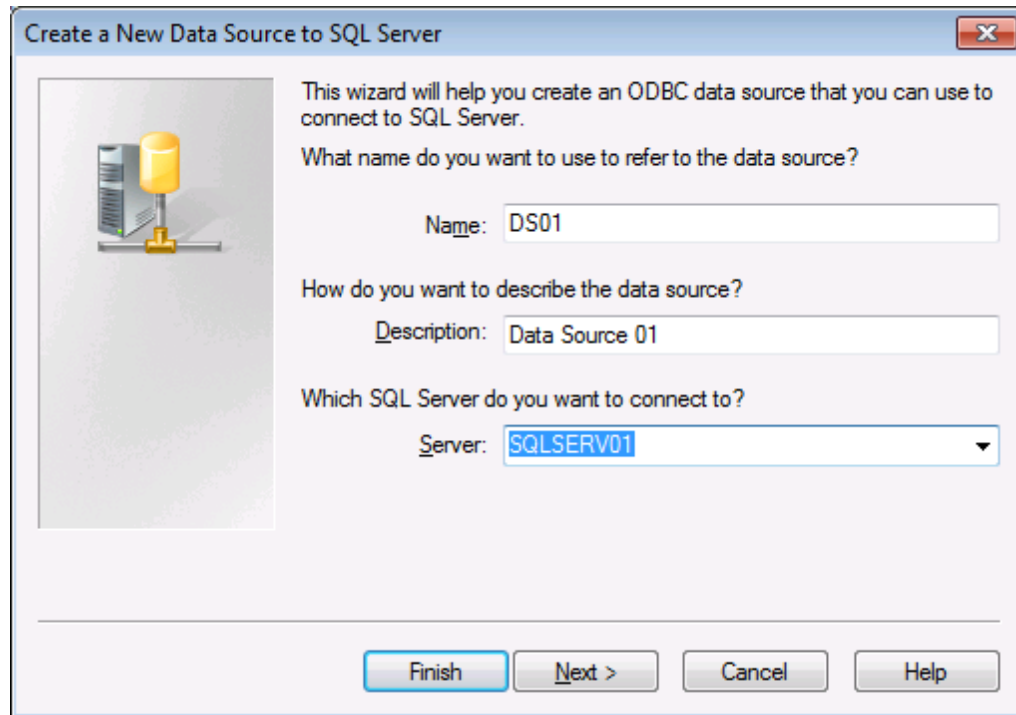
Select a Driver and click on either User or System to determine what kind of DSN you want to create.

SQL Server

User DSN System DSN Cancel

4. Select **SQL Server** (or **SQL Server Native Client**, if available), and then click **User**

DSN (or **System DSN** if you are creating a System DSN).



Create a New Data Source to SQL Server

This wizard will help you create an ODBC data source that you can use to connect to SQL Server.

What name do you want to use to refer to the data source?

Name:

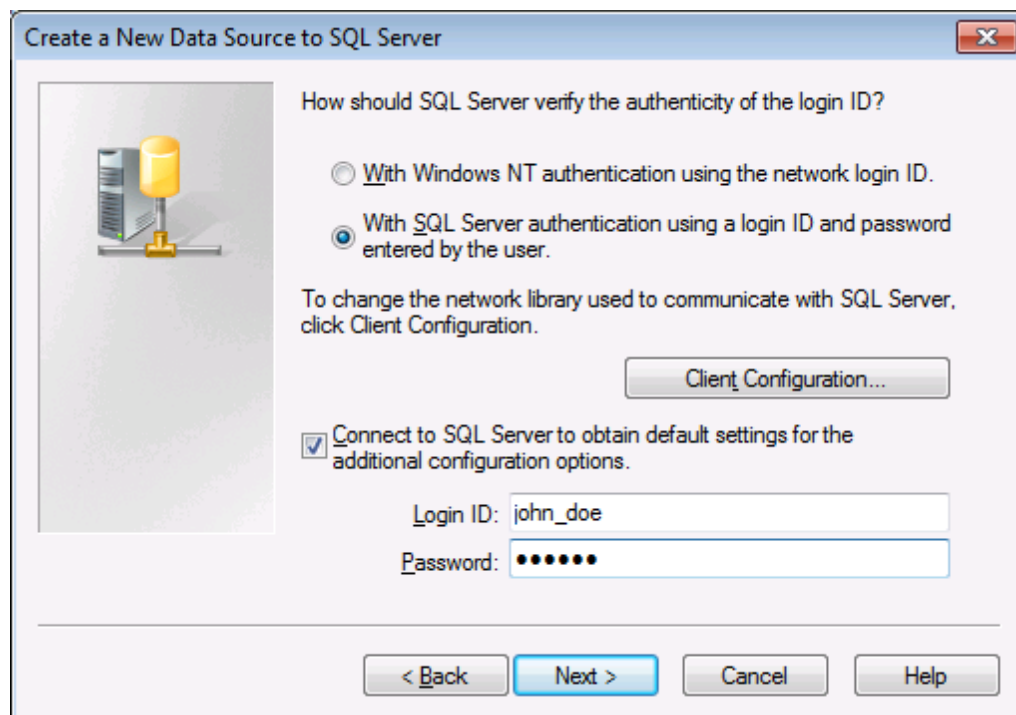
How do you want to describe the data source?

Description:

Which SQL Server do you want to connect to?

Server:

5. Enter a name and description to identify this connection, and then select from the list the SQL Server to which you are connecting (**SQLSERV01** in this example).



Create a New Data Source to SQL Server

How should SQL Server verify the authenticity of the login ID?

☐ With Windows NT authentication using the network login ID.

☒ With SQL Server authentication using a login ID and password entered by the user.

To change the network library used to communicate with SQL Server, click Client Configuration.

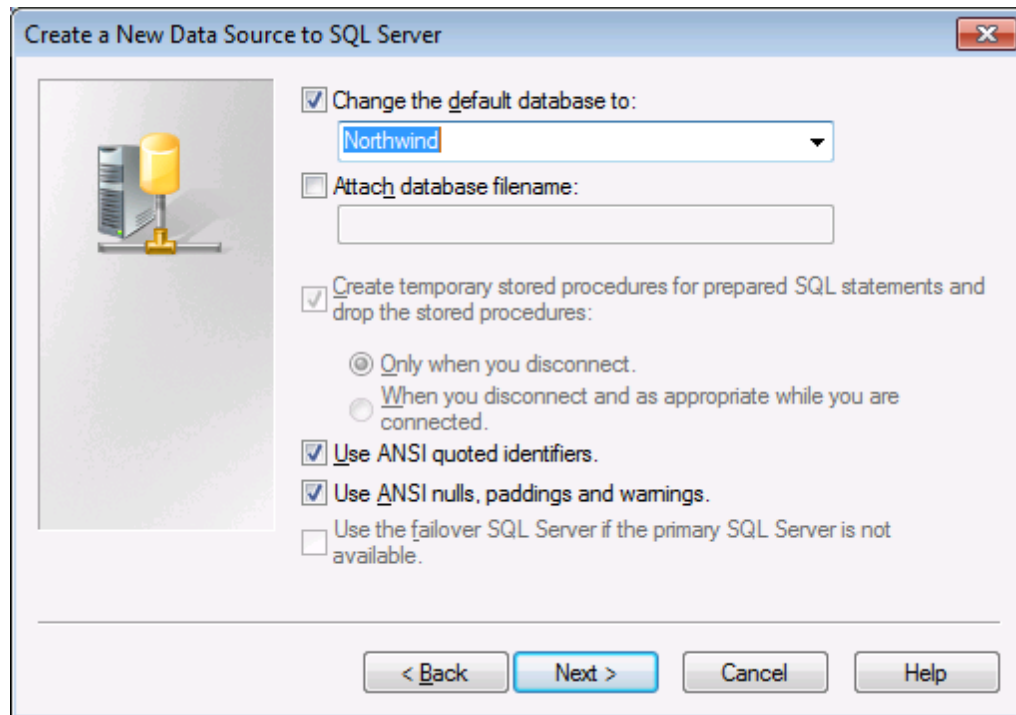
☒ Connect to SQL Server to obtain default settings for the additional configuration options.

Login ID:

Password:

6. If the database server was configured to allow connections from users authenticated on the Windows domain, select **With Windows NT authentication**. Otherwise, select **With**

SQL Server authentication... and type the user name and password in the relevant boxes.



7. Select the name of the database to which you are connecting (in this example, **Northwind**).
8. Click **Finish**.

11.8.9 Connecting to MySQL (ODBC)

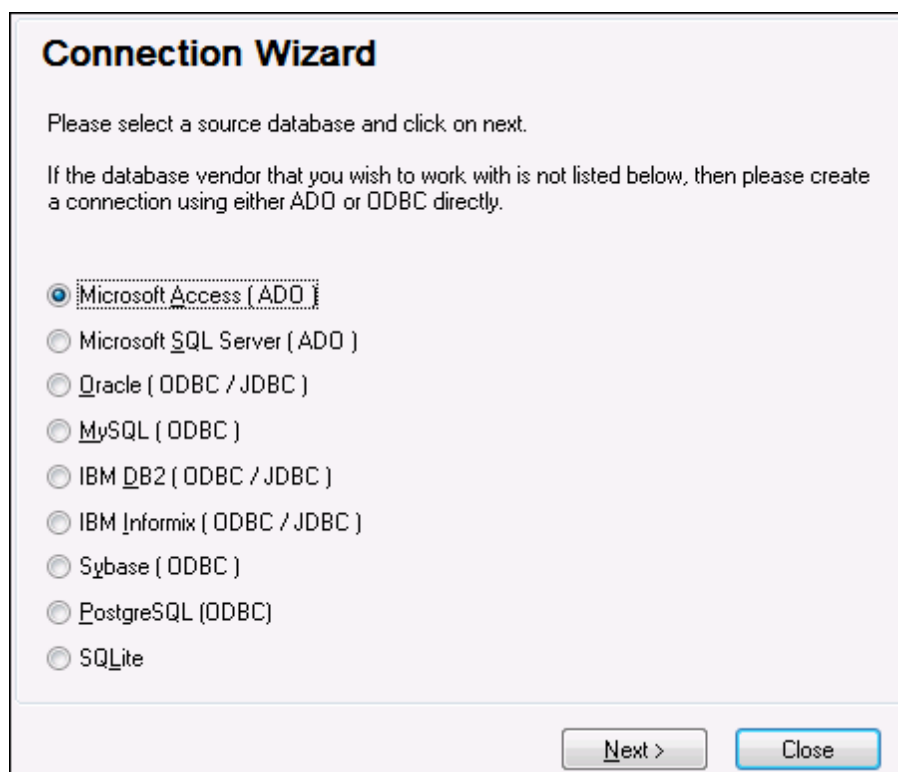
This topic provides sample instructions for connecting to a MySQL database server from a Windows machine through the ODBC driver. The MySQL ODBC driver is not available on Windows, so it must be downloaded and installed separately. This example uses MySQL ODBC driver version 5.3.4 downloaded from the official website (see also [Database Drivers Overview](#)).

Prerequisites:

- MySQL ODBC driver must be installed on your operating system (for installation instructions, check the documentation supplied with the driver).
- You have the following database connection details: host, database, port, username, and password.

To connect to MySQL via ODBC:

1. [Start the database connection wizard](#).



2. Select **MySQL (ODBC)**, and then click **Next**.

Connecting to MySQL

[Where can I find MySQL drivers?](#)

Select an option how you wish to connect to the database and click Connect.

☒ Create a new Data Source Name (DSN) with the driver:

MySQL ODBC 5.3 Unicode Driver

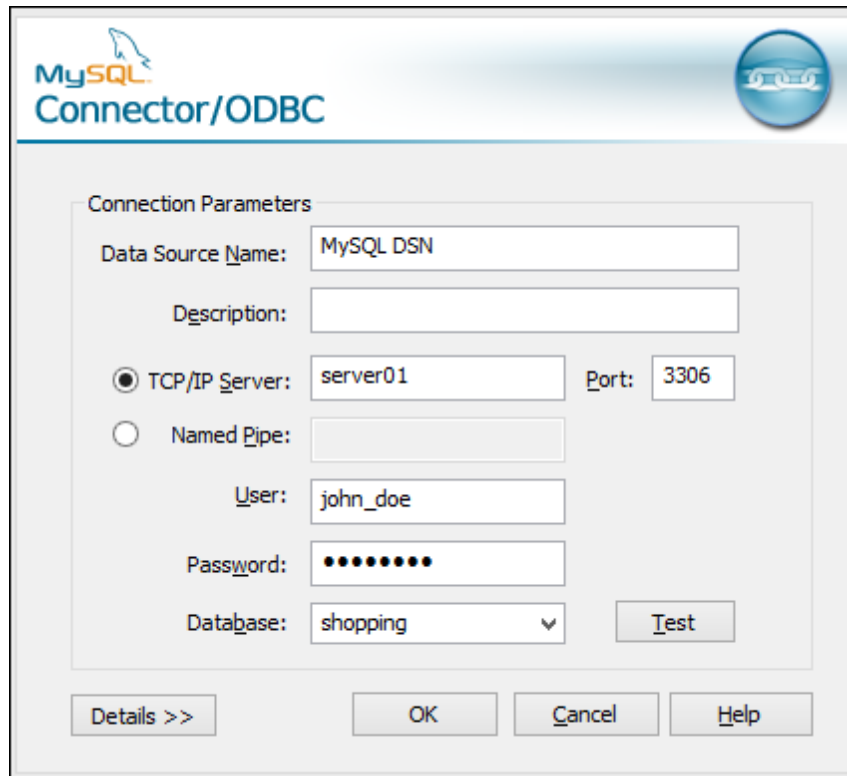
☐ Use an existing Data Source Name:

☒ User DSN ☐ System DSN [Edit Drivers](#)

☐ Skip the configuration step for wizard

< Back [Connect](#) Close

3. Select **Create a new Data Source Name (DSN) with the driver**, and select a MySQL driver. If no MySQL driver is available in the list, click **Edit Drivers**, and select any available MySQL drivers (the list contains all ODBC drivers installed on your operating system).
4. Click **Connect**.



5. In the Data Source Name box, enter a descriptive name that will help you identify this ODBC data source in future.
6. Fill in the database connection credentials (TCP/IP Server, User, Password), select a database, and then click **OK**.

Note: If the database server is remote, it must be configured by the server administrator to accept remote connections from your machine's IP address. Also, if you click **Details>>**, there are several additional parameters available for configuration. Check the driver's documentation before changing their default values.

11.8.10 Connecting to Oracle (ODBC)

This example illustrates a common scenario where you connect from DiffDog to an Oracle database server on a network machine, through an Oracle database client installed on the local operating system.

The example includes instructions for setting up an ODBC data source (DSN) using the database connection wizard in DiffDog. If you have already created a DSN, or if you prefer to create it directly from ODBC Data Source administrator in Windows, you can do so, and then select it when prompted by the wizard. For more information about ODBC data sources, see [Setting up an ODBC Connection](#).

Prerequisites:

- The Oracle database client (which includes the ODBC Oracle driver) must be installed and configured on your operating system. For instructions on how to install and configure an Oracle database client, refer to the documentation supplied with your Oracle software.

- The **tnsnames.ora** file located in Oracle home directory contains an entry that describes the database connection parameters, in a format similar to this:

```
ORCL =  
  (DESCRIPTION =  
    (ADDRESS_LIST =  
      (ADDRESS = (PROTOCOL = TCP)(HOST = server01)(PORT = 1521))  
    )  
    (CONNECT_DATA =  
      (SID = orcl)  
      (SERVER = DEDICATED)  
    )  
  )  
)
```

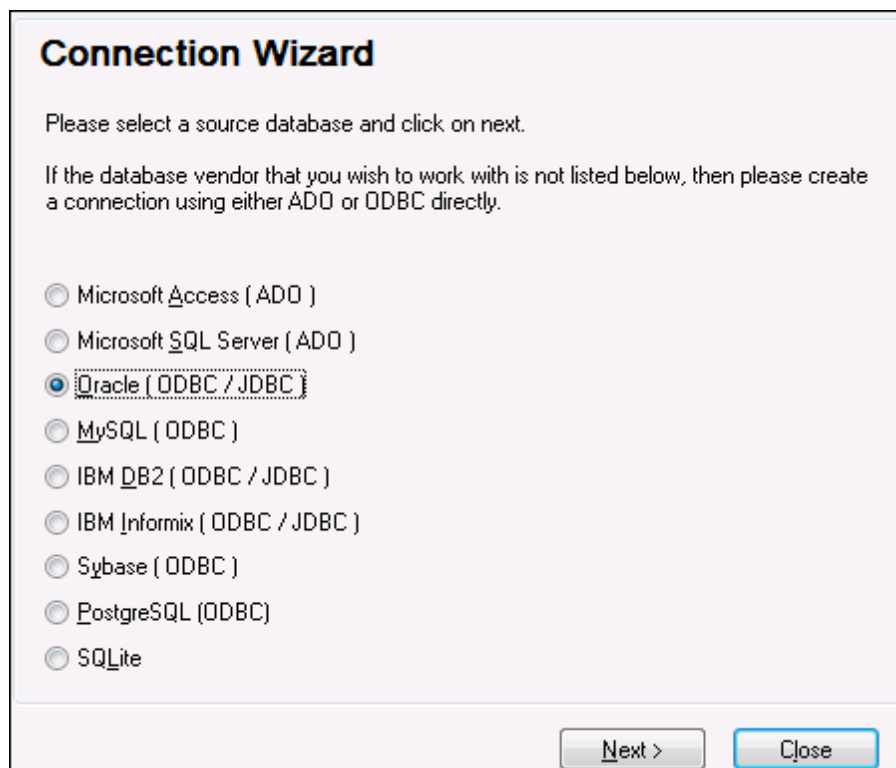
The path to the **tnsnames.ora** file depends on the location where Oracle home directory was installed. For Oracle database client 11.2.0, the default Oracle home directory path could be as follows:

```
C:\app\username\product\11.2.0\client_1\network\admin\tnsnames.ora
```

You can add new entries to the **tnsnames.ora** file either by pasting the connection details and saving the file, or by running the Oracle *Net Configuration Assistant* wizard (if available).

To connect to Oracle using ODBC:

1. [Start the database connection wizard.](#)



2. Select **Oracle (ODBC / JDBC)**, and then click **Next**.

JDBC vs. ODBC

☐ JDBC

Java-based connection that may provide support for more modern features of your database that aren't available via ODBC. The tradeoff for these features is a potential sacrifice of performance.

☒ ODBC

An ODBC connection will generally be faster and less resource-intensive than a JDBC connection, but lacks support for more modern database features (such as native XML types).

< Back Next > Close

3. Select **ODBC**.

Connecting to Oracle Where can I find Oracle drivers?

Select an option how you wish to connect to the database and click Connect.

☐ Create a new Data Source Name (DSN) with the driver:

Microsoft ODBC for Oracle

☒ Use an existing Data Source Name:

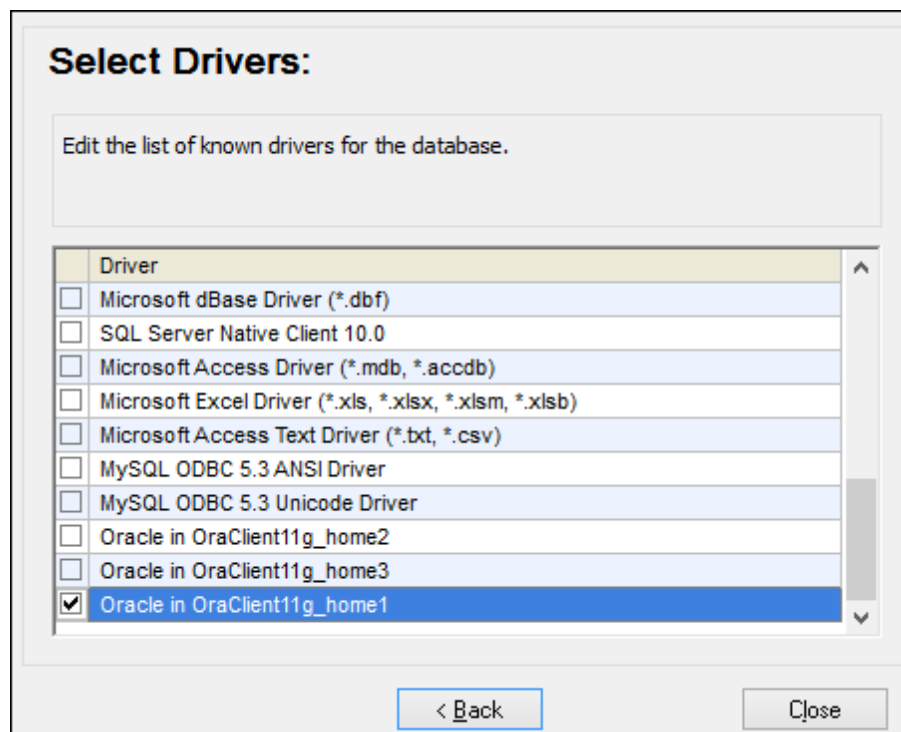
☐ User DSN ☒ System DSN Edit Drivers

Data Source Name

☐ Skip the configuration step for wizard

< Back Connect Close

4. Click **Edit Drivers**.



5. Select the Oracle drivers you wish to use (in this example, **Oracle in OraClient11g_home1**). The list displays the Oracle drivers available on your system after installation of Oracle client.
6. Click **Back**.
7. Select **Create a new data source name (DSN) with the driver**, and then select the Oracle driver chosen in step 4.

Connecting to Oracle

Where can I find Oracle drivers?

Select an option how you wish to connect to the database and click Connect.

☒ Create a new Data Source Name (DSN) with the driver:

Oracle in OraClient11g_home1

☐ Use an existing Data Source Name:

☐ User DSN ☒ System DSN

Edit Drivers

☐ Skip the configuration step for wizard

< Back Connect Close

Avoid using the Microsoft-supplied driver called **Microsoft ODBC for Oracle** driver. Microsoft recommends using the ODBC driver provided by Oracle (see <http://msdn.microsoft.com/en-us/library/ms714756%28v=vs.85%29.aspx>)

8. Click **Connect**.

9. In the Data Source Name text box, enter a name to identify the data source (in this example, **Oracle DSN 1**).
10. In the TNS Service Name box, enter the connection name as it is defined in the **tnsnames.ora** file (see [prerequisites](#)). In this example, the connection name is **ORCL**.
11. Click **OK**.

12. Enter the username and password to the database, and then click OK.

11.8.11 Connecting to PostgreSQL (ODBC)

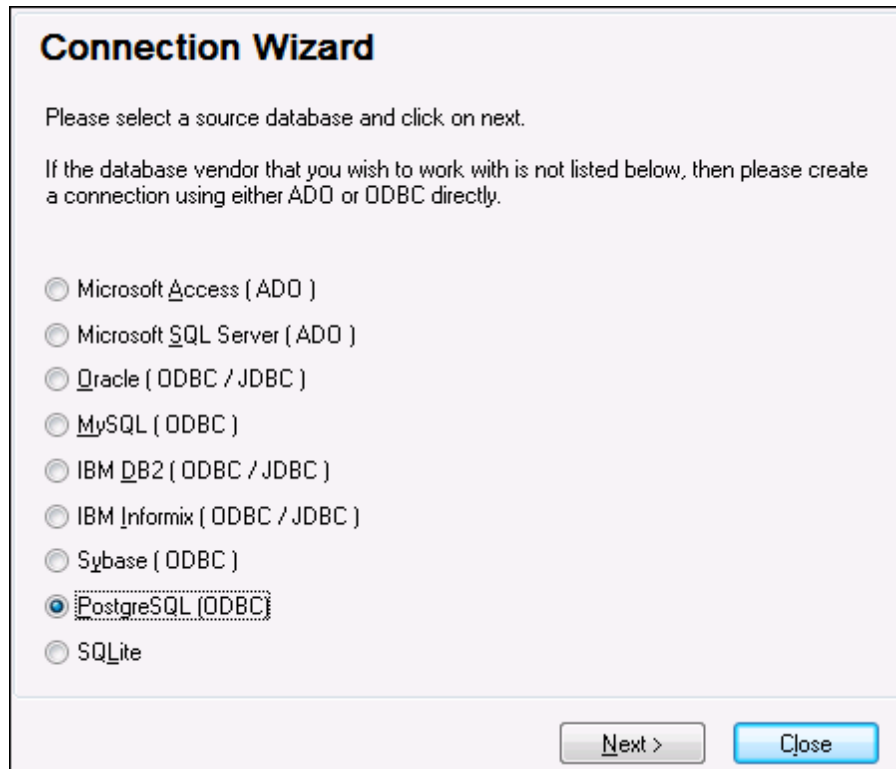
This topic provides sample instructions for connecting to a PostgreSQL database server from a Windows machine through the ODBC driver. The PostgreSQL ODBC driver is not available on Windows, so it must be downloaded and installed separately. This example uses the psqLODBC driver (version 09_03_300-1) downloaded from the official website (see also [Database Drivers Overview](#)).

Prerequisites:

- *psql/ODBC* driver must be installed on your operating system (for installation instructions, check the documentation supplied with the driver).
- You have the following database connection details: server, port, database, user name, and password.

To connect to PostgreSQL using ODBC:

1. [Start the database connection wizard.](#)



2. Select **PostgreSQL (ODBC)**, and then click **Next**.

3. Select **Create a new Data Source Name (DSN) with the driver**, and select the PostgreSQL driver. If no PostgreSQL driver is available in the list, click **Edit Drivers**, and select any available PostgreSQL drivers (the list contains all ODBC drivers installed on your operating system).
4. Click **Connect**.

5. Fill in the database connection credentials (Database, Server, Port, User Name, Password), and then click **OK**.

11.8.12 Connecting to Sybase (JDBC)

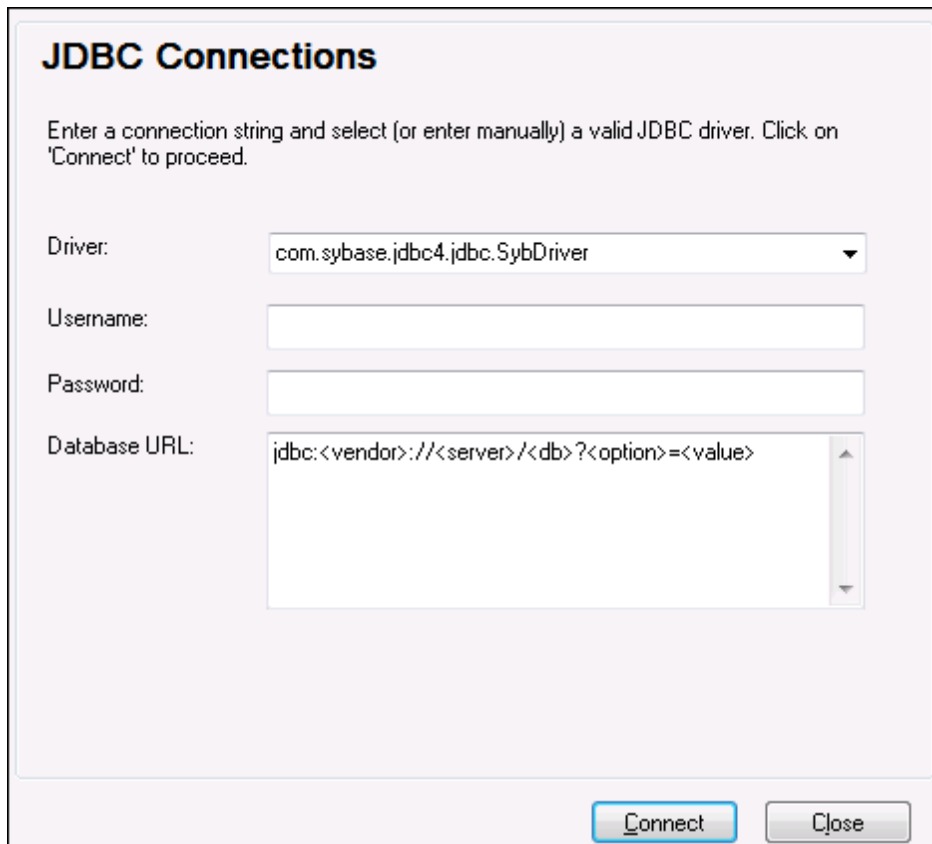
This topic provides sample instructions for connecting to a Sybase database server through JDBC.

Prerequisites:

- Java Runtime Environment (JRE) must be installed on your operating system.
- Sybase *jConnect* component must be installed on your operating system (in this example, *jConnect 7.0* is used, installed as part of the *Sybase Adaptive Server Enterprise PC Client* installation). For the installation instructions of the database client, refer to Sybase documentation.
- The operating system's CLASSPATH environment variable includes the path where the Sybase JDBC driver was installed. In this example, the JDBC driver is installed in the directory **C:\Sybase**, and the value of CLASSPATH variable was configured to include the path **C:\sybase\jConnect-7_0\classes\jconn4.jar**. For more information, see [Configuring the CLASSPATH](#).
- You have the following database connection details: host, port, database name, username, and password.

To connect to Sybase through JDBC:

1. [Start the database connection wizard](#).
2. Click **JDBC Connections**.
3. Select the Sybase JDBC driver from the list of available JDBC drivers (in this example, **com.sybase.jdbc4.jdbc.SybDriver**). If the list does not contain a Sybase driver, it is either not installed correctly, or not included in the CLASSPATH variable (see the list of prerequisites above).



4. Enter the username and password to the database in the corresponding text boxes.

5. Enter the connection string to the database server in the Database URL text box, by replacing the highlighted values with the ones applicable to your database server.

```
jdbc:sybase:Tds:hostName:port/databaseName
```

6. Click **Connect**.

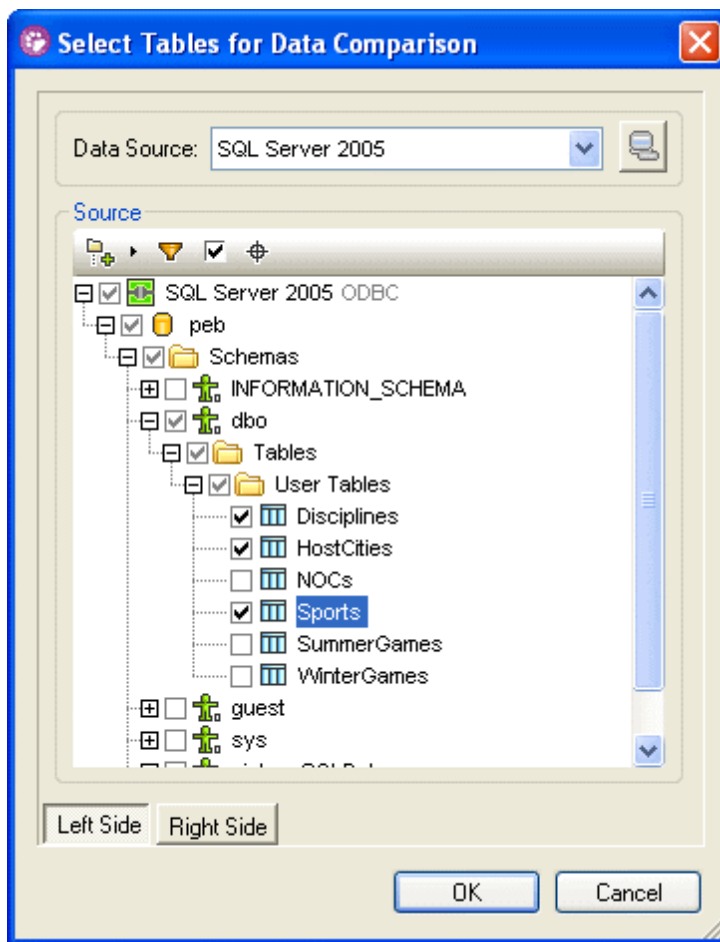
Chapter 12

Browsing Data Sources

12 Browsing Data Sources

When selecting tables and/or columns for comparison, DiffDog provides several options to customize the way the database objects are displayed in the **Select Database Objects for Comparison** dialog box. You can [apply filters](#) to different folders as well as use the [Object Locator](#) to locate specific database objects in the **Select Database Objects for Comparison**

dialog box. The dialog box also provides the **Show checked objects only** ☒ icon, which is particularly useful if you have a large number of tables in your database and want to compare only a few of them. After you have activated the check boxes of the appropriate tables, clicking the **Show checked objects only** icon [displays only the tables that you have selected for comparison](#) and hides the tables not concerned.



After you have clicked **OK**, DiffDog displays the data source and its selected tables in a Database Data Comparison window. Each of the two databases is displayed in a component containing a tree structure of the tables that have been selected for comparison. The tables can be collapsed or expanded to show or hide the table columns.

Display options in the Database Data Comparison window

In the Database Data Comparison window, the schema of compared tables is displayed by default. In the [Database Data Comparison options](#), you can disable this option, and you can also choose to display the tables' data source name in the header of each component.

12.1 Expanding and Collapsing Elements

In the **Select Database Objects for Comparison** dialog box, you can expand and collapse either individual elements or use the menu commands to expand or collapse all siblings or children of a certain element.

To expand or collapse a single element:

Do one of the following:

- To expand an element, click the + icon to the left of the element. Alternatively, you can also select the element and press the right arrow key or the **NUM +** key.
- To collapse an element, click the - icon to the left of the element. Alternatively, you can also select the element and press the left arrow key or the **NUM -** key.

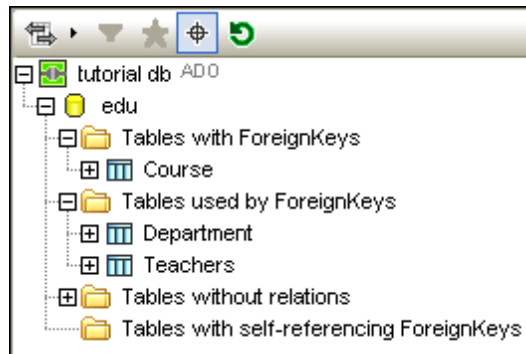
To expand or collapse siblings or children:

- Right-click an object in the **Select Database Objects for Comparison** dialog box and select one of the following from the context menu:
 - **Expand | Siblings:** Fully expands all contents of the objects that are on the same level as the selected object. For example, if you right-clicked on a table, all sibling tables and the selected table will be expanded.
 - **Expand | Children:** Fully expands the descendent objects of the selected object.
 - **Collapse | Siblings:** Collapses all contents of the objects that are on the same level as the selected object. For example, if you right-clicked on a table, all sibling tables and the selected table will be collapsed.
 - **Collapse | Children:** Collapses the descendent objects of the selected object.

12.2 Customizing the Browser Layout

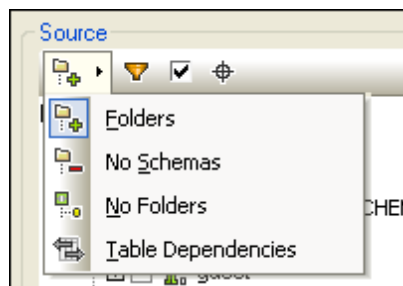
DiffDog provides several predefined layouts for the display of the various database objects in the **Select Database Objects for Comparison** dialog box. You can currently select from among the following layouts:

- The **Folders** layout organizes database objects into folders based on object type in a hierarchical tree. This is the default setting in DiffDog.
- The **No Schemas** layout is similar to the Folders layout, except that there are no schema folders; tables are therefore not categorized by schema.
- The **No Folders** layout displays database objects in a hierarchy without using folders.
- The **Table Dependencies** layout categorizes tables according to their relationships with other tables. There are categories for tables with foreign keys, tables referenced by foreign keys and tables that have no relationships to other tables.



To select a layout for the Source group box:

- In the Source group box, click the layouts  icon and select the desired layout from the drop-down list. Please note that the icon changes in accordance with the selected layout.



12.3 Locating Objects

To find a specific database item by its name, you can either use DiffDog's [filtering functions](#) or the [Object Locator](#) which appears as a drop-down list at the bottom of each database's Source group box in the **Select Database Objects for Comparison** dialog box if you activate the **Object**

Locator  button

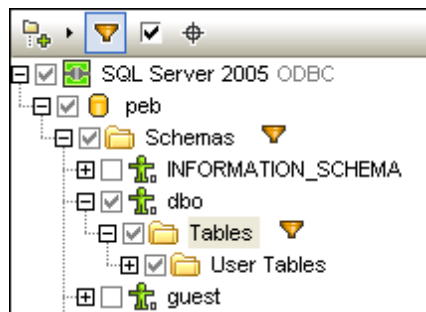
12.3.1 Applying Filters

In the **Select Database Objects for Comparison** dialog box, it is possible to filter schemas and tables by name or part of a name. Objects are filtered as you type in the name.

Please note: The filter function does not work if you are using [No Folders layout](#).

To filter objects in the selection dialog box:

1. Click the **Filter Folder contents**  icon in the toolbar or select a database object and press **Ctrl+Ctrl+Alt+F** to activate filtering. Filter icons appear next to all folders.



2. Click the filter icon that is next to the folder you want to filter. Select the desired filtering option from the popup menu that appears.

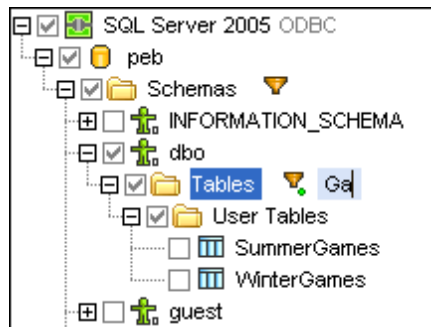


3. Next to the folder, the icon for the chosen filter type appears with an empty field next to it.



4. Expand the folder you are filtering to display the objects it contains.

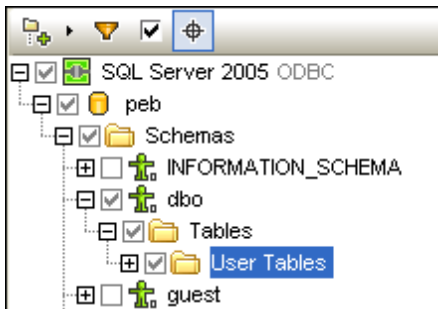
5. In the field, enter the string you want to search for. The results are adjusted as you type.



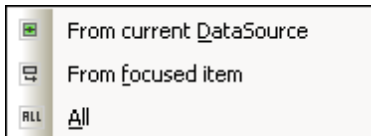
6. If required, repeat the procedure for the second database.

12.3.2 Using the Object Locator

You can use the Object Locator in different ways. Either use the drop-down list to select one of the objects contained herein, or type a string in the text field of the drop-down list and further filter the list of objects contained in the list.



The icon  next to the Object Locator drop-down list opens a menu allowing you to further define the displayed database objects.



Using this menu, you can restrict the display of objects as follows:

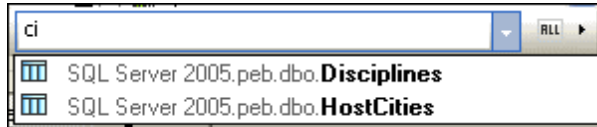
-  **From current Data Source:** Displays only objects from the currently selected data source.
-  **From Focused Item:** Changes the display dynamically, depending on the folder or object that is currently selected.
-  **All:** Displays all objects from all data sources that are currently connected.

To find database elements using the Object Locator:

- Click the **Object Locator**  icon in the Source group box of the **Select Database Objects for Comparison** dialog box or press **Ctrl+L**.
- Optionally, change the Object Locator context by clicking the arrow icon next to the drop-

down list  and select one of the options.

3. Enter the string you want to look for, e.g., "ci".
Clicking the drop-down arrow displays all elements that contain that string.



4. Click the desired object to have it selected in the **Select Database Objects for Comparison** dialog box.

12.4 Hiding Unselected Items

For a better overview in large databases, the **Select Database Objects for Comparison** dialog box allows you to show only selected database items in the individual Source group boxes. This saves you from scrolling through the list of tables and columns and you can easily check whether all items you want to compare are properly selected.

The `Show checked objects only` check box can be activated separately for both databases to be compared. When this option is checked, all unselected items are hidden in the group box and only the items that have been selected for comparison are displayed.

Chapter 13

Navigating Differences

13 Navigating Differences

When the results of a comparison are first displayed in File Comparisons, Word Comparisons, and Directory Comparisons, it is always the first difference that is the current difference. In Database Data Comparisons and Database Schema Comparisons as well as in XML Schema Comparisons, no difference is selected when the result window is first displayed. You can navigate through the differences by selecting other differences to be the current difference or move the selection of the current difference by using the following navigation commands in the **Diff and Merge** menu and toolbar:



Next Difference (Alt+Down): Selects the next difference as the current difference.



Previous Difference (Alt+Up): Selects the previous difference as the current difference.



Last Difference (Alt+End): Selects the last difference in the document as the current difference.



First Difference (Alt+Home): Selects the first difference in the document as the current difference.



Display Current Difference (Ctrl+Enter): Scrolls through the document to display the current difference. This command is useful if you have scrolled to some point that causes the current difference to be outside the display area (document pane).



Make Current Difference (Alt+Enter): Makes the selected difference the current difference, and sets it as the difference from which to navigate. The **Make Current Difference** command is useful if you wish to jump directly to a particular difference and navigate from there. In Database Data Comparisons and Database Schema Comparisons, clicking a difference will always make it the current difference, this command is therefore not available in Database Schema Comparison windows.

If the icons described above are not displayed in your toolbar, you can include them by checking the **Diff and Merge** option in the [Toolbars tab](#) of the **Customize** dialog box.

Please note: The navigation commands move the selection of the current difference in **both** documents/tables. If you wish to [edit](#) highlighted text, you must place the cursor in the highlighted text (in the appropriate document).

Current difference and editing

If, in a File Comparison window, you start typing into the document and the [Compare While Editing](#)  toggle in the **Diff and Merge** menu is off, all difference highlighting disappears in both documents. If the **Compare While Editing** toggle is on, then if you type in something that results in a difference it is highlighted as the current difference; if you make a modification that removes a difference, the difference immediately following the cursor position is highlighted as the current difference.

To make a difference the current difference:

1. Place the cursor in the required difference (which could be anywhere in the document) or navigate to it using the **Next Difference**  or **Previous Difference**  navigation commands listed above.

2. If applicable, select the menu option **Diff and Merge | Make Current Difference** or press **Alt+Enter** or select the corresponding toolbar icon  from the Diff and Merge toolbar. Note that in Database Data Comparison Result windows, every difference that you select automatically becomes the current difference.

Chapter 14

Merging Differences

14 Merging Differences

After running a [file](#), [directory](#), [Microsoft Word document](#), [database data](#), or [database schema](#) comparison in a comparison window, you can merge differences that exist between the directories/files/Microsoft Word documents/tables in the two panes or components, respectively.

In **File Comparison windows** and **Word Comparison windows**, a difference (that is, a text fragment for which there is no, or no identical, corresponding text fragment in the compared file) can be copied over from one file to the corresponding location in the other file. Note that in Microsoft Word document comparisons both **text and formatting** will be copied from the source to the target file.

In **Directory Comparison windows**, the selected non-equal file (a file for which no, or no equal, corresponding file exists in the compared directory) can be copied from one directory to the other directory.

In **Database Data Comparison windows**, data of (i) the selected table(s) or (ii) all tables can be copied from one component to the other component. In **Database Data Comparison Result windows**, non-equal data of the selected rows can be copied from one table to the other table. In both windows, a warning message providing details of the changes is displayed and has to be confirmed before the changes are committed to the database. The necessary database structure change scripts are generated and executed in the background.

In **Database Schema Comparison windows**, the structure of (i) the selected item(s) or (ii) all items can be copied from one component to the other component. Please note that the merge is not executed immediately; DiffDog always shows the database structure change script first and provides the options to save it to a file or display it in DatabaseSpy (if installed).

You use the following commands to merge a difference:



Copy from Left to Right (Alt+Right)

For the selected difference in a file comparison or Microsoft Word comparison, copies text from the document in the left pane to the document in the right pane.

For the selected non-equal file in a directory comparison, copies the file from the (directory in the) left pane to the (directory in the) right pane.

For the selected table in a database data comparison, copies the table's data from the (table in the) left component to the (table in the) right component.

For the selected non-equal row in a database data comparison result, copies the data from the row in the left column to the row in the right column.

For the selected non-equal item in a database schema comparison, opens the **Merge Schema Left to Right** dialog box, where the resulting change script is displayed. In this dialog box you can choose to execute the SQL, save it to a file, or show it in DatabaseSpy (if installed).



Copy from Right to Left (Alt+Left)

For the selected difference in a file comparison or Microsoft Word comparison, copies text from the document in the right pane to the document in the left pane.

For the selected non-equal file in a directory comparison, copies the file from the (directory in the) right pane to the (directory in the) left pane.

For the selected table in a database data comparison, copies the table's data from the (table in the) right component to the (table in the) left component.

For the selected non-equal row in a database data comparison result, copies the data from the row in the right column to the row in the left column.

For the selected non-equal item in a database schema comparison, opens the **Merge Schema Right to Left** dialog box, where the resulting change script is displayed. In this dialog box you can choose to execute the SQL, save it to a file, or show it in DatabaseSpy (if installed).

In file and Microsoft Word comparisons, the source difference is copied in its entirety (i.e., the entire unit highlighted in the current difference background color overwrites the entire difference in the target document). Merged differences in file and Microsoft Word document comparisons can be shown in a different background color. This setting is made in the [File Comparison tab](#) of the **DiffDog Options** dialog box.

To merge a difference in file, Microsoft Word, and directory comparisons:

1. Place the cursor in the required difference (which could be anywhere in the document) or navigate to it using the **Next Difference**  or **Previous Difference**  navigation commands listed above.
2. If applicable, select the menu option **Diff and Merge | Make Current Difference** or press **Alt+Enter** or select the corresponding toolbar icon  from the Diff and Merge toolbar. Note that in Database Data Comparison Result windows, every difference that you select automatically becomes the current difference.
3. Do one of the following:
 - Select the menu option **Diff and Merge | Copy from Left to Right** or click the corresponding toolbar icon  or press **Alt+Right** if you want to copy from the left pane to the right pane.
 - Select the menu option **Diff and Merge | Copy from Right to Left** or click the corresponding toolbar icon  or press **Alt+Left** to copy from the right pane to the left pane.

To merge database data:

- To merge every difference in all tables of a database comparison, select the menu option **Diff and Merge | Copy from Left to Right (Alt+Right)** or **Copy from Right to Left (Alt+Left)**, respectively.
- To merge every difference in selected tables of a database comparison, select one or several tables in the left or right component and choose the menu option **Diff and Merge | Copy from Left to Right (Alt+Right)** or **Copy from Right to Left (Alt+Left)**, respectively. Alternatively, right-click the desired tables and choose **Merge selected Left to Right** or **Merge selected Right to Left**, respectively, from the context menu.

An information box with an overview appears. Optionally, click the **Show Details** button, and click **Yes** to confirm the merge.

- To merge selected differences in a result window of a database comparison:
 1. Select a table in the left or right component and choose the menu option **Diff and Merge | Show results** or right-click a table and choose **Show selected results** from

the context menu. Alternatively, click the comparison result  icon.

2. In the Database Data Comparison Result window, place the cursor in the required difference (which could be anywhere in the document) or navigate to it using the **Next Difference**  or **Previous Difference**  navigation commands listed above.
3. Select the menu option **Diff and Merge | Copy from Left to Right (Alt+Right)** or **Copy from Right to Left (Alt+Left)**, respectively).
4. In the **Merge data (x to y)** dialog box that appears, choose either the Merge the selected rows and cells or the Merge the whole table radio button.
5. Click **Yes** to confirm the merge.

To merge database schemas:

1. Place the cursor in the required difference and do the following:
 - Select the menu option **Diff and Merge | Copy from Left to Right** or click the corresponding toolbar icon  or press **Alt+Right** if you want to copy from the left pane to the right pane.
 - Select the menu option **Diff and Merge | Copy from Right to Left** or click the corresponding toolbar icon  or press **Alt+Left** to copy from the right pane to the left pane.

The **Merge Schema Left|Right to Right|Left** dialog box appears and shows the SQL that will change the schema in the database.

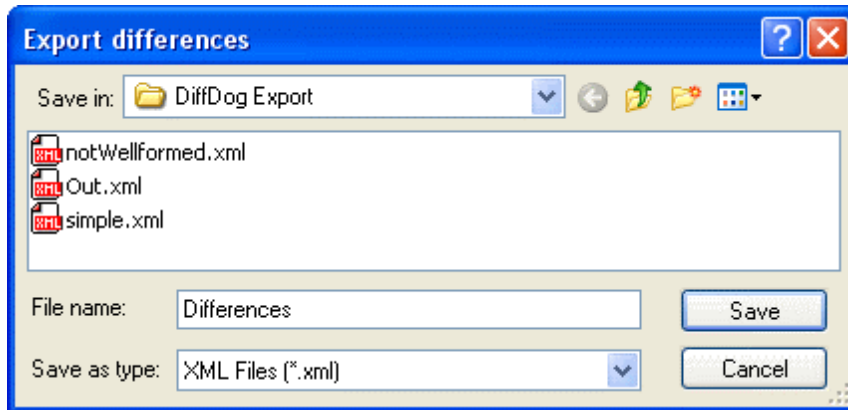
2. Chose one of the following options:
 - Click **Execute** to commit the changes to the database.
 - Click **Save SQL to File** to save the script to a file for later execution.
 - If you have DatabaseSpy installed, click **Show SQL in DatabaseSpy** to display the SQL in DatabaseSpy's SQL Editor where you can check, edit, and execute the script.

Chapter 15

Exporting Differences

15 Exporting Differences

For file and directory comparisons, the differences can be exported to file. Clicking the **Export Differences...** command pops up the **Export Differences** dialog box (*screenshot below*), in which you can specify the file name of the file to which the differences will be exported.



Differences can be exported either in XML  or in text  format; the available format depends on the [comparison mode](#), according to the following table:

					
File comparison			n.a.		n.a.
Directory comparison					

Please note that the menu option **File | Export differences...** is **not available** if the [comparison options for XML files](#) are set as follows:

- The Detailed differencing check box in the View results group box is **not** activated, or
- the Ignore node depth check box in the Depth group box is activated.

The **Export Differences** command is also available from the [command line](#).

To export differences to file:

1. Run a [file comparison](#) or run a [directory comparison](#).
2. Select the menu option **File | Export differences...**
3. In the **Export differences** dialog box, choose the location where you want to export the differences to from the **Save in** drop-down list.
4. Enter a file name and choose the desired file format from the **Save as type** drop-down list.
5. Click **Save** to save the differences under the specified file name.

Chapter 16

Saving and Loading Comparisons

16 Saving and Loading Comparisons

The settings selected for a file or directory comparison can be saved in a `.filedif` or `.dirdif` file, respectively. The `.filedif` extension is used for file and MS Word comparisons. The `.dirdif` contains Word options only if saved from the Enterprise edition. When a `.filedif` or `.dirdif` file is opened with DiffDog, the GUI loads the two objects to be compared using the settings saved in the `.filedif` or `.dirdif` file. This feature is useful if you wish to repeat a comparison of two files or two folders at a later time with the same settings as the current settings for that comparison.

Saving `.filedif` and `.dirdif` files

To save the settings of the comparison, select the command **File | Save As**. Select the appropriate filetype (`.filedif` or `.dirdif`), enter the filename you want and click **Save**. The file is saved to the specified location. DiffDog will be the default editor of these file extensions; this will have been set by the installer at the time of installation.

Opening `.filedif` and `.dirdif` files

To open a comparison file (`.filedif` or `.dirdif`), select the command **File | Open Comparison File**, browse for the comparison file, and click **Open**. You can also drag-and-drop the file from Windows Explorer into DiffDog. Full URL support (that is, local, http, and ftp) is available.

A `.dirdif` file can be opened in any edition, irrespective of which edition the file was saved from. (MS Word options can only be saved in the Enterprise edition.) If you are using a Professional Edition and the `.dirdif` file contains Word options (which are not supported in the Professional edition), then an error message appears on opening the file.

Command line support

You can use the [command line](#) to open one comparison file at a time:

```
DiffDog_Batch C:\test1.filedif
DiffDog_Batch C:\test*.filedif
DiffDog_Batch C:\test.*dif
```

Note the following points:

- Wildcards are allowed
- Any additional options will be ignored except `/g` (this option opens the file in GUI mode)
- Command line output will be similar to other comparison modes (screen or report file)

Chapter 17

Comparison Management Options

17 Comparison Management Options

The **Diff and Merge** menu includes a series of commands that are used to customize the file, directory, Microsoft Word document, and database comparisons and can be summed up as comparison management options. Apart from the option to explicitly start a comparison (see *below*), options to [automate certain comparison functions](#) as well as to facilitate the [selection of recently compared pairs](#) are available.

Starting a comparison

The **Start Comparison** command in the **Diff and Merge** menu applies to File Comparison as well as Directory Comparison, XML Schema Comparison, Word Comparison, and Database Comparison windows and is used to explicitly start a comparison at any time. Please note that a comparison starts automatically and this command is thus not needed if the [Autostart Comparison](#) or [Compare while Editing](#) comparison management options are toggled on.

To explicitly start a comparison:

- Select the menu option **Diff and Merge | Start Comparison** or press **F5**. Alternatively, you can also click the corresponding toolbar button  in the Diff and Merge toolbar or right-click the tab of a comparison window and select the **Start Comparison** command from the context menu that appears.

17.1 Automatic Comparison Functions

DiffDog provides options that automatically start a comparison when files are loaded or edited. In addition, you can display the comparison options each time before a comparison is actually started. Note that all of these options are toggle commands.

Autostart Comparison

If the **Autostart Comparison** option is toggled on, then a comparison is automatically made when files or directories are loaded into a comparison window. If this option is toggled off, then a comparison (file or directory) must be [explicitly started](#).

To autostart comparisons:

- Activate the menu option **Diff and Merge | Autostart Comparison** or activate the corresponding toolbar icon  in the Diff and Merge toolbar.

Compare while Editing

A toggle to compare or not compare documents in File Comparison windows while editing. If toggled on, differences are highlighted as you edit. If toggled off, highlighting of differences is turned off in both documents as soon as you start typing in either document; to highlight differences after editing, you must [run a comparison](#).

To compare files while editing:

- Activate the menu option **Diff and Merge | Compare while Editing** or activate the corresponding toolbar icon  in the Diff and Merge toolbar.

Show Options Before Comparison

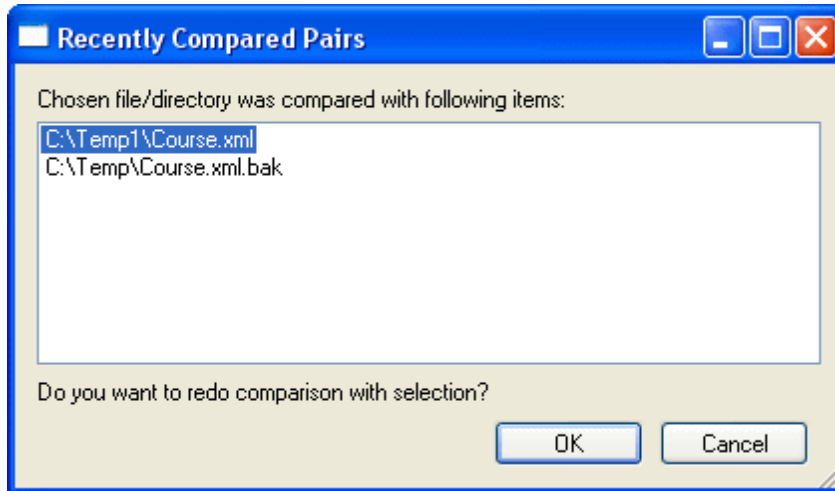
This command is toggled either on or off for individual comparison windows. When toggled on for a comparison window, the **Comparison Options** dialog box is displayed each time a comparison is made in that window. Note that the **Comparison Options** dialog box is not displayed before comparisons made dynamically by DiffDog while you edit a document.

To show the options before comparison:

- Activate the menu option **Diff and Merge | Show Options Before Comparison** or activate the corresponding toolbar icon  in the Diff and Merge toolbar.

17.2 Recently Compared Pairs

If, (i) a file or directory you select for comparison has previously been compared with another file or directory, respectively, and (ii) the **Support Recently Compared Pairs** option in the **Diff and Merge** menu has been toggled on, then the **Recently Compared Pairs** dialog box (shown below) appears. This dialog box contains a list of the files or directories with which the file or directory being opened has most recently been compared.



If you wish to compare the file or directory being opened with one of the files or directories listed in this dialog box, select the item from the list in the dialog box and click **OK**. This causes both files or directories to be opened, one in each pane. If you do not wish to select any of the items listed in the dialog, click **Cancel**. This causes the file or directory to be opened alone; you now have to select the file or directory with which you wish to compare it in the second pane.

Note: Clicking **Cancel** causes the selected file or directory to open in one pane without opening any previously compared file or directory in the other pane. Clicking **Cancel** does not stop the selected file or directory from being opened. If you wish not to have the **Recently Compared Pairs** dialog box appear each time you open a document, then toggle the **Support Recently Compared Pairs** option off.

17.3 Auto-Mapping XML Schemas

If the **Automap on Load XML Schema** toggle is activated in the Diff and Merge menu, DiffDog performs an automatic mapping of the XML Schemas in the comparison components when the documents are loaded into the XML Schema Comparison window.

Chapter 18

DiffDog Options

18 DiffDog Options

The **Tools | DiffDog Options** command enables you to define global application settings. These settings are specified in a dialog box and saved in the registry. They apply to all current and future document windows. The **Apply** button in the **DiffDog Options** dialog box displays the changes in the currently open documents and fixes the current settings. The changes are seen immediately in the background windows.

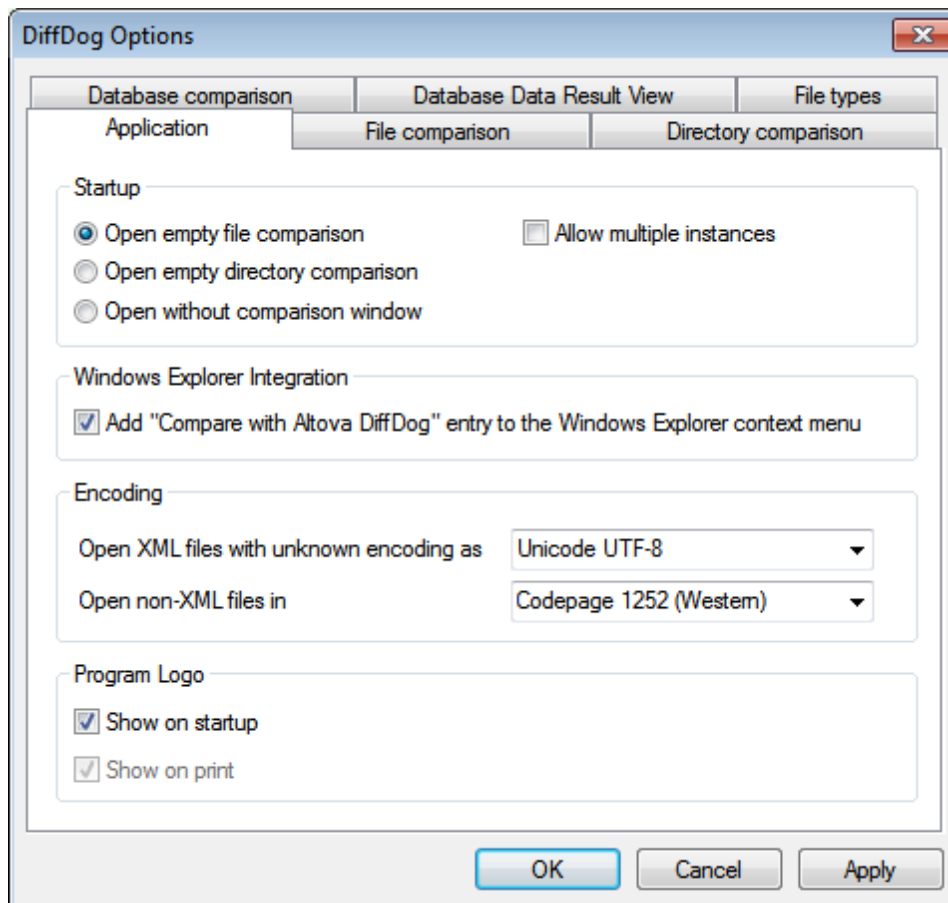
Each page of the **DiffDog Options** dialog box is described in detail in this section.

To change DiffDog settings:

1. Select **Tools | DiffDog Options...** or select the **DiffDog Options**  button in the Diff and Merge toolbar.
The **DiffDog Options** dialog box appears.
2. Select the tabs for the following options:
 - [Application](#)
 - [File Comparison](#)
 - [Directory Comparison](#)
 - [Database Comparison](#)
 - [Database Data Result View](#)
 - [File Types](#)
3. Make the desired changes and click **OK**.

18.1 Application

In the Application tab of the **DiffDog Options** dialog box, you define the startup options of the application.



Startup

Three radio buttons are available to define whether DiffDog starts up with an empty File Comparison window, an empty Directory Comparison window, or no comparison window.

If the `Allow multiple instances` check box is deactivated, starting DiffDog when an instance of DiffDog is already running causes a new comparison window (file, directory, or empty) to open in the already running instance of DiffDog.

The `Show Program Logo` option—if checked—displays the splash screen (logo) when DiffDog starts.

Windows Explorer Integration

If the `Add "Compare with Altova DiffDog" entry to the Windows Explorer context menu` check box is activated, you can start a file or directory comparison directly from Windows Explorer by selecting the respective files or directories and choosing **Compare with Altova DiffDog** from the context menu.

Encoding

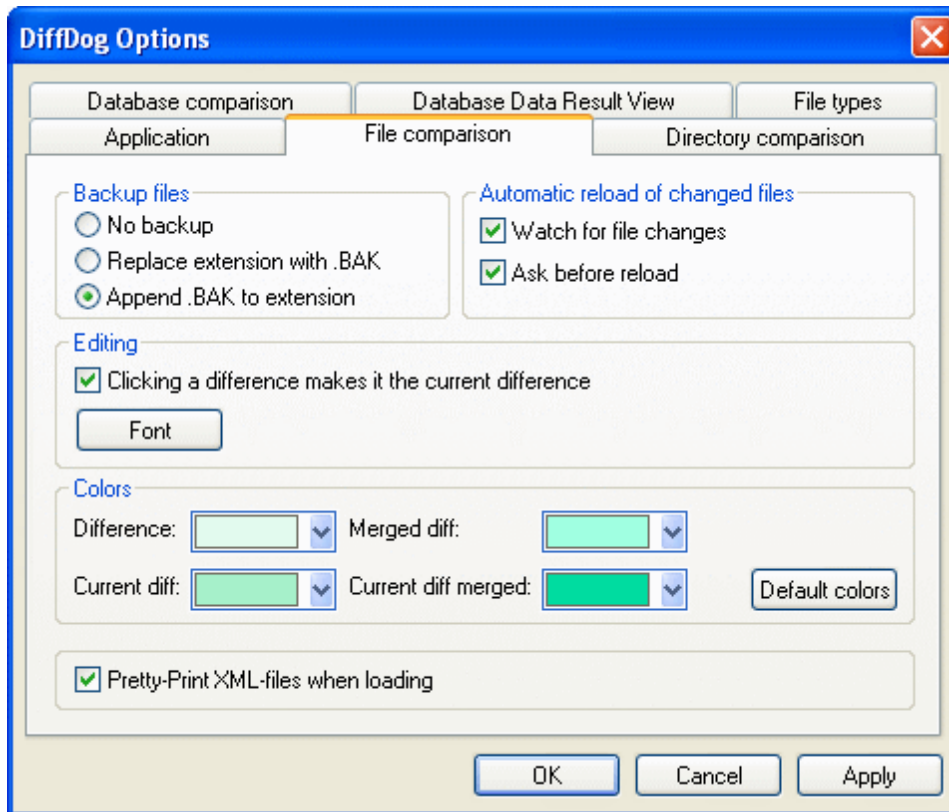
You can select the encoding with which to open an XML file or non-XML files, respectively, where the encoding cannot be detected.

Program logo

The Show Program Logo option—if checked—displays the splash screen (logo) when DiffDog starts. The Show on print becomes enabled and can be switched off after you have registered your application. If this option is checked, the program logo is printed with the active document or directory-comparison result, when this is printed.

18.2 File Comparison

The File comparison tab enables you to set preferences for file comparisons. These options range from display attributes to file actions, and apply to all open and subsequently opened file comparisons.



Backup files

This option lets you configure whether the original file should be saved if you decide to save a version of it that you have edited in DiffDog, and, in such cases, how the original file and edited file should be named. The newly named files are created when you save an edited file. The following options are available.

- No backup: The original file is overwritten by the edited file, and the name of the original file is retained.
- Replace extension with .BAK: If the original file was called `abc.xml`, changes are written to this file, and a copy of the original is saved as `abc.bak`.
- Append .BAK to extension: If the original file was called `abc.xml`, changes are written to this file, and a copy of the original is saved as `abc.xml.bak`.

Tip: The .BAK files can be [set to be XML-conformant](#), and used for comparisons with other XML files.

If ZIP-conformant files change, DiffDog creates a backup for the individual files that have changed inside the ZIP rather than a backup of the ZIP itself.

Automatic reload of changed files

If a file that is open in DiffDog has been changed by another application or another person, DiffDog can reload the changed file, with or without prompting you to reload.

Editing

You can make a difference in the compared documents the current difference by clicking in it if the **Clicking a difference makes it the current difference** check box is activated.

The properties of the display font can be freely chosen. Clicking the **Font** button opens the **Font** dialog box for this purpose.

Colors

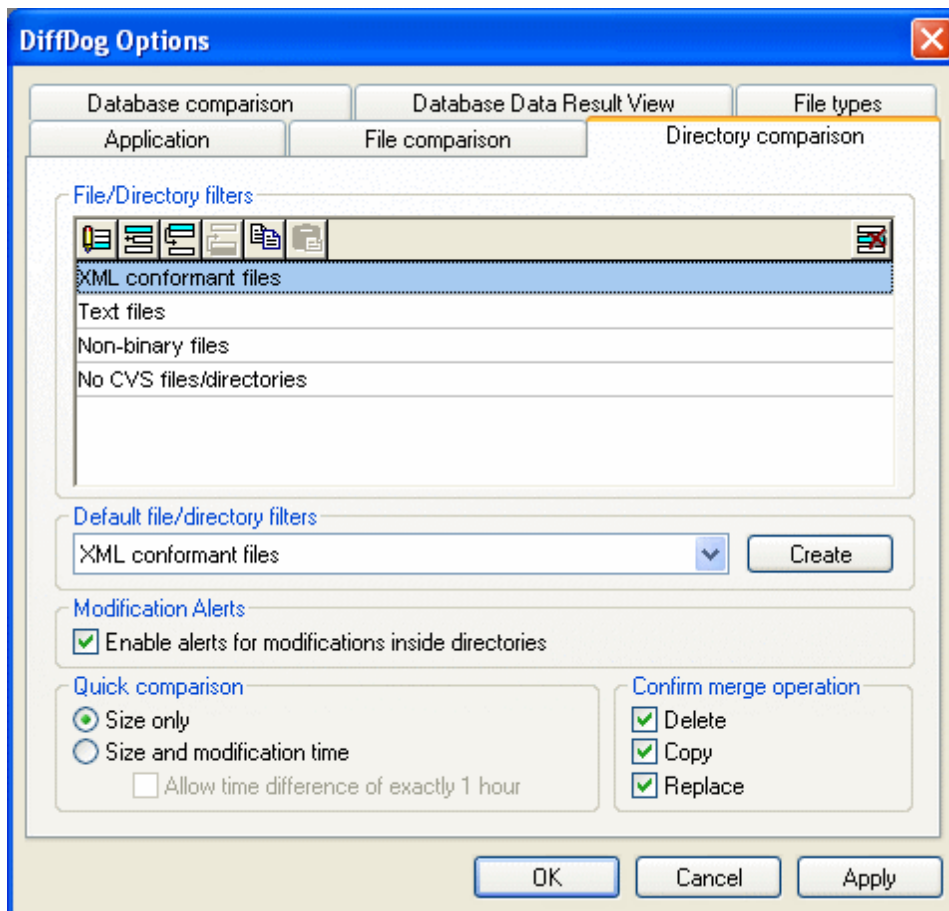
You can choose different background colors for highlighting differences in compared documents, the current difference, merged differences (that is, all merged differences that have not been saved as yet), and the current merged difference (a merged difference that is currently selected). You can go back to the default colors by clicking the **Default colors** button. Note that these colors are also used in Word comparison windows.

Pretty-Print

The **Pretty-Print XML files when loading** option automatically creates a more user-friendly display when XML files that are originally delivered in a continuous stream without line breaks are loaded into File Comparison windows.

18.3 Directory Comparison

The Directory comparison tab enables you to [create filters](#) that determine what files will be considered in directory comparisons.



Note: After exiting this dialog box by clicking **OK**, you still have to select the required filter in the Directory Comparison window. Clicking **OK** does not select the filter for use; it saves the changes and exits the dialog box.

File/Directory filters

Filters are available for selection in the toolbar of the Directory Comparison window and in the **Open Comparison** dialog box if the **Compare directories** option has been selected.

The File/Directory filters group box contains several buttons for defining, organizing, and deleting the filters:



Opens the **Edit Filter** dialog for the selected filter, where you can change the filter definition.



Opens the **Edit Filter** dialog, where you can create a new filter. When the definition is completed, the filter is added to the list of available filters below the filter that has been selected when the button has been clicked.



Moves the selected filter one position down in the list of filters.



Moves the selected filter one position up in the list of filters.



Creates a copy of the selected filter.



Pastes the copy of a filter below the selected filter.



Deletes the selected filter.

Default file/directory filters

This group box contains a drop-down list with the available default filters. Select a filter and click **Create** to open the **Edit Filter** dialog box, where you can create a new filter based on the definition of the selected default. Edit name and filter definition as required and click **OK** to add a new filter to the list of available filters in the File/Directory filters group box.

Modification Alerts

If the **Enable alerts for modifications inside directories** check box is activated, DiffDog displays a warning message when the content of the displayed folders is changed outside of DiffDog. You can then decide whether or not you want to update the display.



Quick comparison

In this group box, you can define whether size only, or size and modification date should be considered during quick comparison. When **Size and modification time** is selected, you can also activate the **Allow time difference of exactly 1 hour** check box. A time difference of exactly one hour may occur shortly after the shift to, or from, daylight saving time when the system time is changed automatically. Activating the **Allow time difference of exactly 1 hour** check box will prevent such files from being displayed as different.

Confirm merge operation

You can define whether or not a warning message should be displayed before files are deleted, copied, or replaced during directory merge operations.



If you activate the Don't show this dialog again! in this dialog box, the corresponding option is automatically deactivated in the **DiffDog Options** dialog box.

18.3.1 Defining a Filter

The **Edit Filter** dialog provides several options to restrict the directory comparison:

- Consider only files of a certain type
- Consider only specific directories
- Ignore certain files or directories
- Compare files or directories with certain attributes
- Define a date range for files/directories to be compared
- Restrict files to a certain file size

Edit Filter

Filter name
XML conformant files

File/Directory names

Include only files:
.biz;.cml;*.dcd;*.dtd;*.ent;*.fo;*.math;*.mml;*.mtx;*.rdf;*.smil;*.svg;*.tld;*.tsd;*.vml;*.vx

Ignore files:

Include only directories:

Ignore directories:

File/Directory attributes

Files: ☐ System ☐ Hidden ☒ Read-only ☒ Archive

Directories: ☐ System ☐ Hidden

Modification date

☐ From 18/Jan/2011 13:13 ☐ Till 18/Jan/2011 13:13

File size

☐ From Bytes ☐ Till Bytes

OK Cancel

Note that if a file type is included in both the Include only files and Ignore files field, then that file type is **ignored** in a directory comparison.

For Directory Comparison windows that were opened before a new filter is selected, you must reload both directories so that the new filters are applied to these comparison windows.

Modification date

In the Modification date group box, you can enter a From and/or a Till date to define a date range for directory comparison. Only files within that particular date range will be considered when the directories are compared. To include all files from or until a particular date, activate only the corresponding check box (From or Till, respectively) and leave the second check box unchecked.

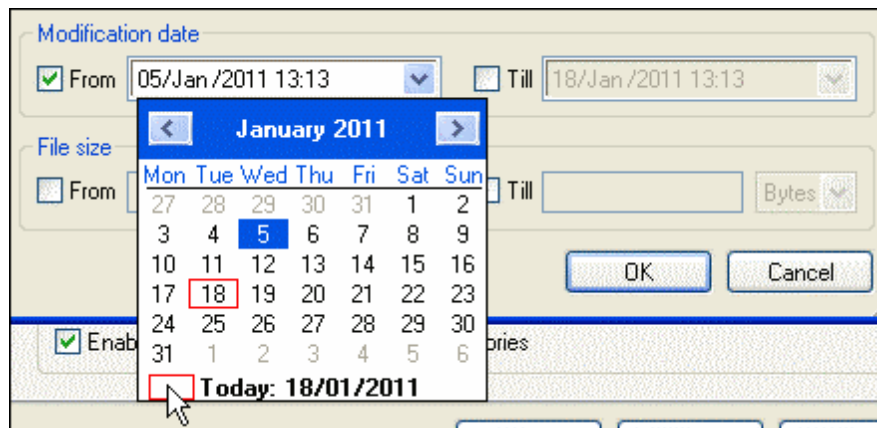
If a check box is activated, you have several options for changing the date:

- Type a two-digit number in the year, day, hour, and minute fields. Note that in the year field, the number 91 through 99 will display the years 1991 through 1999, whereas the numbers 00 through 90 will result in years 2000 through 2090.

- In the respective date field, click the arrow button to the right of the date to open the calendar drop-down window. Here, several options are available:
 - Select a date by clicking on it.
 - Select today's date by clicking the corresponding button (see *second screenshot below*) or by right-clicking anywhere in the calendar drop-down window and selecting **Go to today** from the context menu that appears.
 - Browse the calendar years by clicking into the year and using the arrow buttons that appear next to the year (see *screenshot*), or the Up and Down keys.



- Browse the calendar months by clicking the arrows or by clicking into the month and selecting the desired new month from the list that appears.



- Click into the date field and select the date part (i.e., year, month, day, hour, minute) you want to change and use the Up and Down keys or, for day, year, and time, simply type in the new number to alter the content. You can navigate to the next or previous date part by pressing the Right or Left key on your keyboard.

To define a filter for directory comparison:

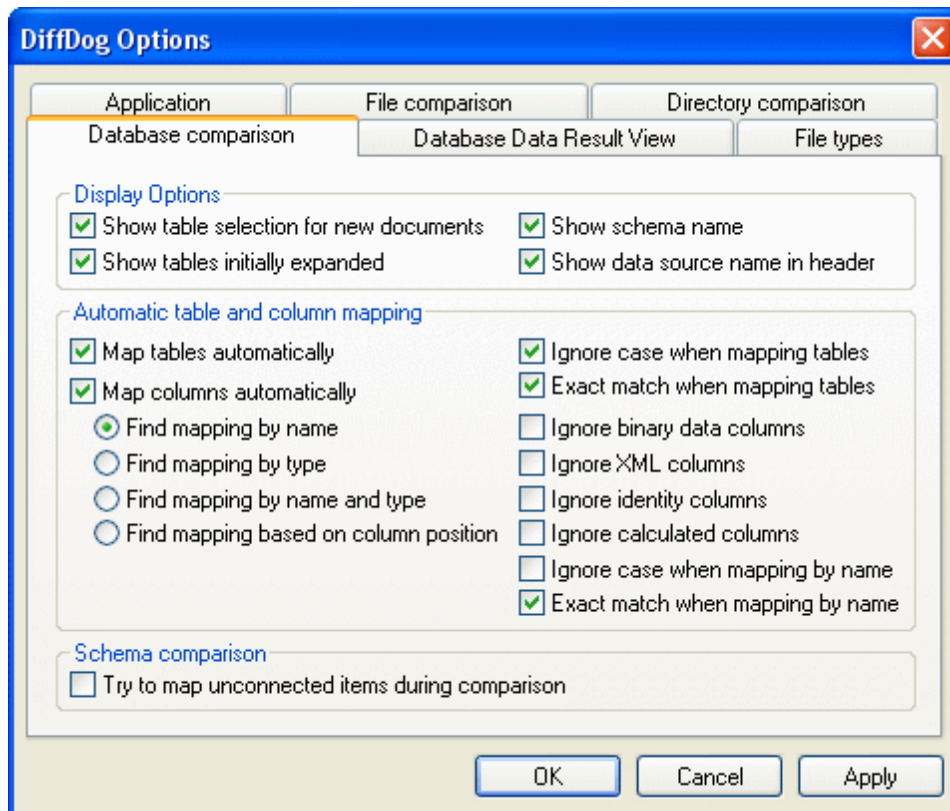
1. Select the menu option **Tools | DiffDog Options** and change to the Directory Comparison tab, or click the **Edit Filter**  button in the toolbar of a File Comparison window to open the **DiffDog Options** dialog.
2. Click the  button to open the **Edit Filter** dialog.
3. In the **Edit Filter** dialog, enter a descriptive name in the Filter name field. By default, "*.*)" is displayed in the Include only files fields and "*" is displayed in the Include only directories fields. If you don't change this settings, files of all types and in all directories will be compared.
4. To restrict the comparison to certain file types, enter the file extension in the Include only files field. To exclude file types from comparison, enter the file extension in the Ignore files field. Note that file types are listed in the form *.ext, and that the delimiter between file types in a filter is the semi-colon (;).
5. To include or ignore specific sub-folders of a directory during comparison, enter the name of the folder(s) in the Include only directories field or the Ignore directories field, respectively. You can also use the wildcard character * to enter

only parts of folder names. Note that the delimiter between individual folder names in a filter is the semi-colon (;).

6. To include files or directories that have certain attributes applied, activate the respective check box(es) in the File/Directory attributes group box. Files or directories with unchecked attributes will not be shown in the Directory Comparison window. Note that hidden files in hidden directories will not be shown if the Hidden check box is activated for files but deactivated for directories.
7. Activate the From and/or Till check boxes in the Modification date group box, if you want to restrict the comparison to a certain date range.
8. Activate the From and/or Till check boxes in the File size group box, if you want to restrict the comparison to files of a certain size. Enter a number and select the appropriate unit from the drop-down list.
9. Click **OK** to save the changes.

18.4 Database Comparison

The Database comparison tab defines how compared data and structure in tables are displayed in the comparison components and whether tables and/or columns should be mapped automatically when added to a comparison. Additional settings related to database data comparison are defined on the [XML](#) and [Text](#) tabs of the **Comparison Options** dialog box.



Display Options

In order to be able to open a Database Comparison window without having to specify data source and tables to be compared, deactivate the Show table selection for new documents check box. If you prefer that all tables be shown with the columns not expanded, deactivate the Show tables initially expanded check box. You can deactivate the display of the schema name for tables in components, and show the data source name in the component header.

Automatic table and column mapping

When tables are added to a comparison, they are automatically mapped. You can deactivate the automatic mapping of columns and/or tables and choose how (i.e., by name, by type, by name and type, or based on ordinal position) they should be mapped. In addition, you can specify whether or not binary data columns, XML columns, identity columns, calculated columns, or the case of a column name should be ignored. If you want to map item names that match to a large extent but are not exactly equal (e.g. "expenses2008" and "expenses_09"), deactivate the Exact match when mapping by name check box.

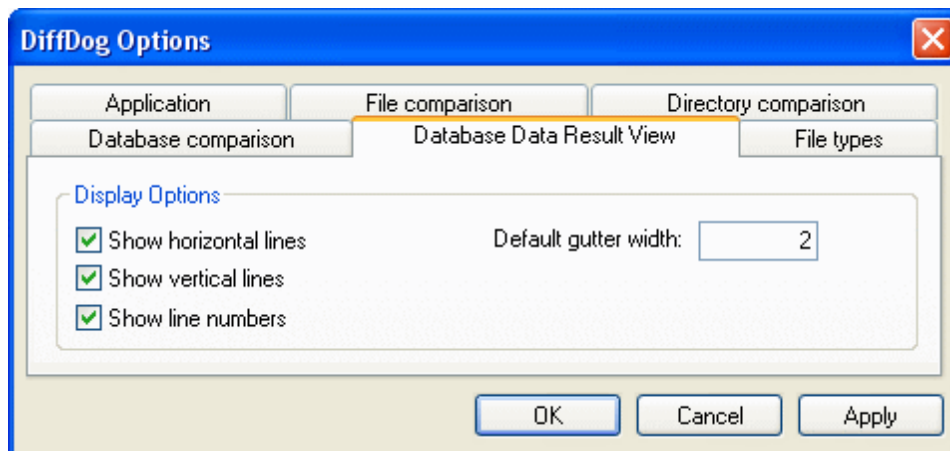
Schema comparison

If you activate the Try to map unconnected items during comparison check box,

DiffDog will try to find corresponding items for unmapped items in the opposite component when a comparison is started.

18.5 Database Data Result View

The Database Data Result View tab of the **DiffDog Options** dialog box provides options for customizing the display of the comparison results.

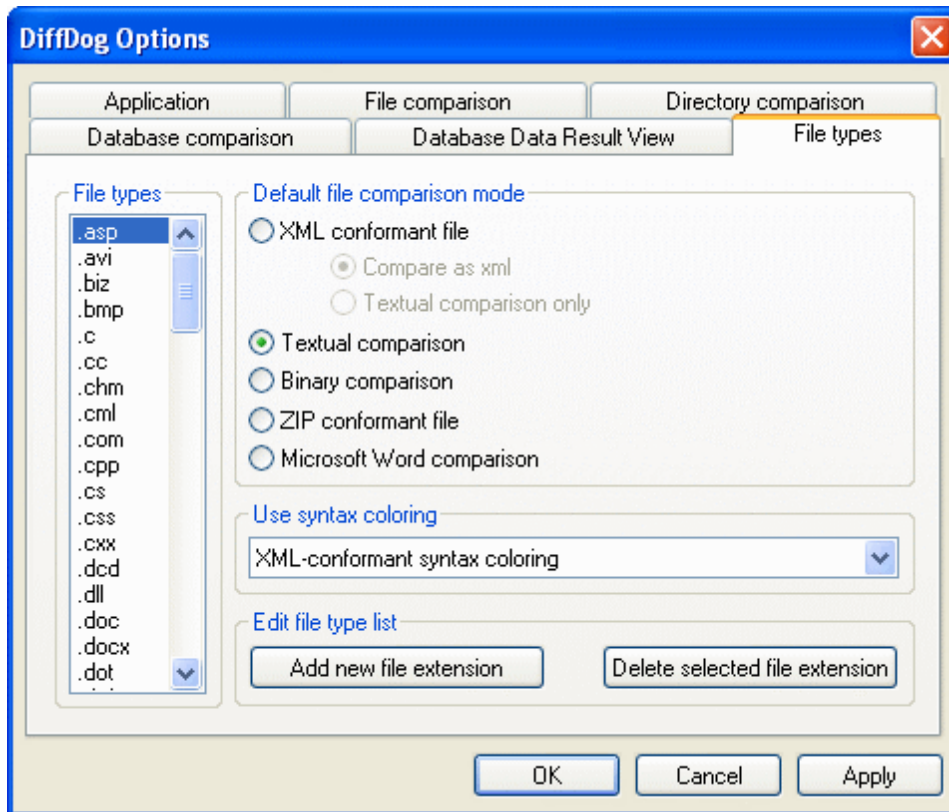


Display options

Activate the relevant check boxes if you want to display horizontal or vertical lines, or line numbers in the Compare Result View. You can also adapt the default gutter width if you want to separate the compared columns from each other more clearly.

18.6 File Types

In the File types tab (*screenshot below*), you set the default comparison mode of various file types. File types are identified by their extension (.asp, .biz, etc.), and the [comparison mode](#) can be XML, text, binary, or ZIP-conformant.



File types

This pane is used to select the file extension for which the options in the group boxes Default comparison mode and Use syntax coloring are defined. Please note that any changes that you make in these two group boxes only apply to the file type currently selected in the File Types pane.

Default file comparison mode

To assign a default comparison mode for a particular file type, in the Default file comparison mode group box, choose one of the following radio buttons:

- XML-conformant file
An instance of that file type is checked for XML conformance, and is treated as an XML file if it is conformant. An XML-conformant file may be compared as XML or text.
- Textual comparison
- Binary comparison
An instance of that file type is considered as binary file. A byte-by-byte comparison is used in directory comparison. Files of this type will not be displayed in text view.
- ZIP-conformant file
An instance of that file type is considered as a sub-directory in directory comparison. In

file comparison, files of this type are compared as binaries.

- Microsoft Word comparison
An instance of that file is considered as Microsoft Word document and can be compared in a Microsoft Word comparison.

The comparison mode can be overridden for individual file comparisons by selecting the desired comparison mode in the **Diff and Merge** menu. DiffDog detects binary files automatically.

Use syntax coloring

You can choose from among the following options for syntax coloring:

- No syntax coloring
- XML-conformant syntax coloring
- Source code-conformant syntax coloring

Edit file type list

To add a new file type to the list in the File types pane, click the **Add New File Extension** button. To delete a file type from the list, select the file extension in the list and then click the **Delete Selected File Extension** button.

Chapter 19

User Reference

19 User Reference

The **User Reference** section contains a complete description of all DiffDog menu commands. We've tried to make this user manual as comprehensive as possible. If, however, you have questions which are not covered in the User Reference or other parts of this documentation, please look up the [FAQs](#) and Discussion Forums on the Altova website. If you are still not able to have your problem satisfactorily addressed, please do not hesitate to contact us through the [Support Center](#) on the Altova website.

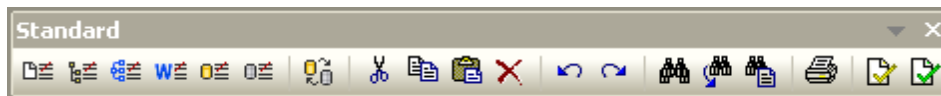
Note that in the [File](#) and [Edit](#) menus, all standard Windows commands are supported, as well as DiffDog-related commands

19.1 Toolbar icons

Icons in the toolbar are shortcuts for various commands, most of which are also available as menu commands. You can toggle the display of any group of icons in the toolbar on or off using the [Toolbars tab](#) of the **Customize** dialog (**Tools | Customize**). In the GUI, you can move a toolbar by dragging its handle to the desired location.

The available toolbars are depicted below. See the respective chapters in the Reference section for a description of the commands.

The **Standard** Group of icons are shortcuts for file commands and common editing commands that occur in the [File](#), [Edit](#), and [XML](#) menus.



The **Comparison Mode** Group of icons enables you to select the comparison mode for files and directories. This group of commands is available in the [Diff and Merge](#) menu.



The **Database Data Comparison Mode** Group of icons enables you to select the comparison mode for database data. This group of commands is available in the [Diff and Merge](#) menu.



The **Diff and Merge** Group of icons enables you to start comparisons, navigate through differences between files, merge differences, and set application and comparison options. All these commands are available in the [Diff and Merge](#) menu and in the [Tools](#) menu.



The **Directory Content** Group of icons enables you to configure the display of Directory Comparison windows. Note that—except for the directory synchronization commands, which are included in the [Diff and Merge](#) menu—none of these commands are available as menu commands (see chapters "Configuring the View" and "Running a Directory Comparison" in the section "Comparing Directories" for a description). Each of these commands applies to the active directory comparison only.



The **Word Comparison** Group of icons enables you to configure the display of Word Comparison windows. Note that none of these commands are available as menu commands (see chapter "Configuring the Word Comparison Window" in the section "Comparing Microsoft Word Documents" for a description).



The **Database Data Comparison Result** Group of icons enables you to configure the display of Database Data Comparison Result windows. Note that these commands are available only as context menu commands (see chapter "Configuring the Comparison Result View" in section "Comparing Database Data" for a description). Each of these commands applies to the active database data comparison result only.



The **Grid** Group of icons is enabled in [Grid View](#) in File Comparison windows, and most of these commands are available in the [Grid View](#) menu. With the Grid Group commands, you can make structural editing changes and modify the Grid View of your XML document. Grid View is not available for non-XML or non-well-formed documents; that is, for the Grid View of a document to be displayed, the document must be an XML document and be well-formed.



The following icons are **not** included in the **Grid View** menu:



Expand all selected: In Grid View, this command expands one or more selected nodes in Grid View.



Collapse all selected: In Grid View, this command collapses the selected nodes.



Fully expand all selected: In Grid View, this command expands all selected nodes and their descendant nodes.



Collapse unselected: In Grid View, this command collapses all selected nodes and their descendant nodes.



Optimal widths: In Grid View, this command sets columns to optimal widths.

The **Text** Group of icons enables you to configure the display and navigation features of [Text View](#). Some of these commands apply to the selected file only (that is, the file in which the cursor is). Other commands apply to all open files and subsequently opened files. All these commands are available as [Text View](#) menu commands.

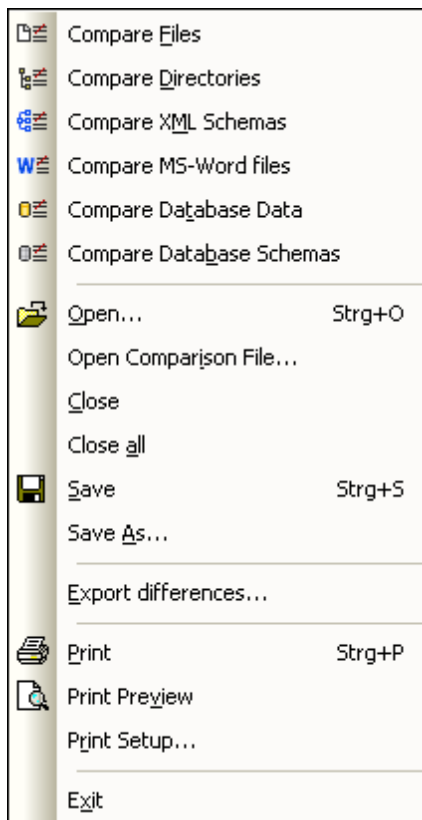


Icons in the **Grid Edit** Group are used for editing in [Grid View](#). These commands are fully described in the [Grid View Menu](#) section. Please note that this toolbar is deactivated by default, you have to activate the respective check box in the [Toolbars](#) tab of the **Tools | Customize** dialog box to view it.



19.2 File Menu

The **File** menu contains all commands relevant to manipulating files, in the order common to most Windows software products.



In addition to the standard [Open](#), [Save](#), [Print](#), [Print Setup](#), and [Exit](#) commands, DiffDog offers a range of application-specific commands. Note that in File Comparison and Directory Comparison windows, each of the two panes also has pane-specific icons located near the top of each pane to open and refresh the file/directory in that pane and (for file comparisons) to save the file in that pane.

19.2.1 Compare Files



The **Compare Files** command [opens a new empty window](#) with two empty panes for file comparison. The two files to be compared must be [opened](#) subsequently in the panes of the comparison window.

19.2.2 Compare Directories



The **Compare Directories** command [opens a new empty window](#) for directory comparison. The

two directories to be compared must be [opened](#) separately in each pane.

19.2.3 Compare Microsoft Word Files



The **Compare Microsoft Word Files** command [opens a new empty window](#) with two empty Microsoft Word documents for Microsoft Word file comparison. The two Microsoft Word documents to be compared must be [opened](#) subsequently in the panes of the comparison window.

19.2.4 Compare XML Schemas



The **Compare XML Schemas** command [opens a new empty window](#) for XML Schema comparison. The two XML Schemas to be compared must be [opened](#) subsequently in the components of the comparison window.

19.2.5 Compare Database Data



The **Compare Database Data** command [opens a new empty window](#) for database data comparison. The two databases to be compared must be opened and the tables to be compared must be [selected](#) separately in each component.

19.2.6 Compare Database Schemas



The **Compare Database Schema** command [opens a new empty window](#) for database schema comparison. The two databases to be compared must be [opened](#) and the schemas to be compared must be [selected](#) separately in each component.

19.2.7 Open...



Ctrl+O

The **Open...** command enables you to open a File Comparison window or Directory Comparison window with the files or directories already selected. This is in contrast with the [Compare Files](#) and [Compare Directories](#) commands, which open empty comparison windows.

Note that the layout of the dialog box changes depending on whether you choose Compare files or Compare directories in the Mode group box.

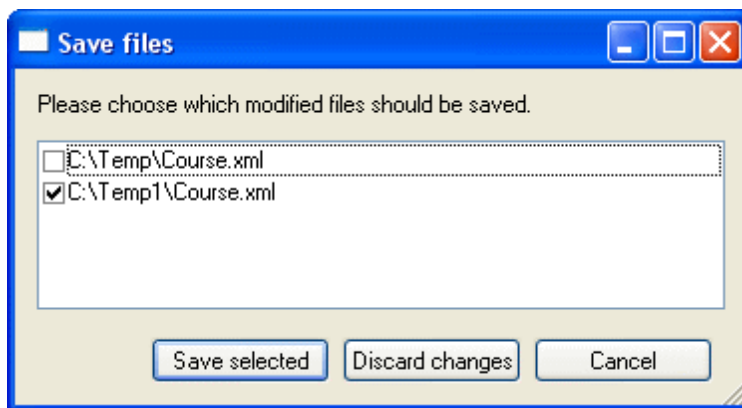
Database data comparison files (*.dbdif) cannot be opened with this command, you have to use the [Open Database Data Comparison File...](#) command.

19.2.8 Open Comparison File...

The **Open Comparison File...** command enables you to open a Database Data Comparison window, Database Schema window, or XML Schema Comparison window with the data sources and tables or XML Schemas, respectively, already selected. This is in contrast with the [Compare Database Data](#), [Compare Database Schema](#), or [Compare XML Schema](#) commands, which open an empty Comparison window.

19.2.9 Close

The **Close** command closes the active comparison window. If you have unsaved changes in either document of a file comparison being closed, the **Save files** dialog box appears (*screenshot below*). Both files in the file comparison are displayed. If a file contains unsaved changes, it is checked.



To close a comparison window:

1. Click the tab of the comparison window you want to close.
2. Select the menu option **File | Close** or click the **Close**  button in the upper right corner of the comparison window.
3. If a file contains unsaved changes, the **Save files** dialog box appears. Do one of the following:
 - If you wish to save changes in a file, make sure that its check box is selected and click **Save selected**.
 - Click **Discard changes** to not save changes.
 - Click **Cancel** to not close the comparison window.

19.2.10 Close All

The **Close all** command closes all open comparison windows. If a document in a file comparison contains unsaved changes, the **Save files** dialog box ([see screenshot above](#)) appears for that file comparison. Directory comparisons are closed without any prompt.

If more than one file comparison contains document/s with unsaved changes, a **Save files** dialog box is displayed for each File Comparison window before the window is closed.

19.2.11 Save



Ctrl+S

The **Save** command is available only for file comparisons and database data comparisons. For file comparisons, it pops up the **Save files** dialog box ([see screenshot above](#)). Both files are displayed in the dialog. If a file contains unsaved changes, the file is listed with a check mark.

Note: Clicking the **Save**  icon of an **individual pane** in a File Comparison window causes the document in that pane to be saved without further prompting. The **Save As**  icon enables you to save the document in that pane with a different filename.

19.2.12 Save As

The **Save As...** command pops up the familiar Windows **Save As** dialog box, in which you enter the name and location of the file you wish to save the active file as.

19.2.13 Export Differences...

The **Export differences...** command allows you to [export differences to a file](#). This menu option is available only for file and directory comparisons.

19.2.14 Print...



Ctrl+P

The **Print...** command pops up the Windows **Print** dialog box, in which you enter details about the print job. Note that this command prints the **active document**, that is, the document in which the cursor is when the command is invoked.

Note: You can print the active document from both [Text View](#) and [Grid View](#). The output will be a printout of the selected view.

19.2.15 Print Preview



The **Print Preview** command displays a preview of how the active document will be printed.

19.2.16 Print Setup...

The **Print Setup...** command pops up the Windows **Print Setup** dialog, in which you can change printer settings for the print job and other printer properties. Settings include page orientation, paper size, and paper source. After you exit the Print Setup dialog, you must still use the **Print** command to print a document.

19.2.17 Exit

This command exits the DiffDog application. If documents in one or more File Comparison windows contain unsaved changes, DiffDog pops up the **Save files** dialog box separately for each file comparison containing an unsaved change.

If you have not saved a database data comparison to a database data comparison file (*.dbdif) when you close DiffDog, a message box appears and prompts you to save the Database Data Comparison window.

After you have answered the prompts, DiffDog closes.

19.3 Edit Menu

In DiffDog, you can [edit documents](#) displayed in a File Comparison window. You edit a document either by typing directly into it, and/or by using keyboard shortcuts or commands in the **Edit** menu.



The commands in the **Edit** menu include standard editing functions, such as [Undo](#), [Cut](#), [Copy](#), [Paste](#), and a powerful [Find](#) and [Replace](#) function. These commands are described in the sub-sections of this section.

Please note that editing commands are document-specific and that **Edit** menu commands are not available when a directory comparison or a Database Data Comparison Result window is active.

19.3.1 Undo



Alt+Backspace, Ctrl+Z

The **Undo** command enables you to undo an unlimited number of previous actions for each document separately. To undo previous actions in any document, place the cursor in that document and select the **Undo** command. You can switch among documents in multiple open file comparisons. In each document, the Undos will continue from the point where it was last left.

Please consider the following when using the **Undo** and [Redo](#) commands:

- The **Undo** and **Redo** commands also undo and redo merged differences an unlimited number of times.
- It is important to place the cursor in the document that has been changed. For example, if you merge a difference from the Left Pane to the Right Pane, then the **Undo** for this action will only be available if the cursor is placed in the Right Pane (because this pane contains the document that has been changed).
- The Undo and Redo history is lost when the view is switched from Text View to Grid View, or vice versa.
- The **Edit** menu and the **Undo** and **Redo** commands are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.2 Redo



Ctrl+Y

The **Redo** command reverses a previous [Undo](#) command, and can be executed as many times as an Undo was performed. Like the **Undo** command, the **Redo** command is also document-specific, and you can switch among documents.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.3 Cut



Shift+Delete, Ctrl+X

The **Cut** command copies the selected text to the clipboard and deletes it from its present location.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.4 Copy



Ctrl+C

The **Copy** command copies the selected text to the clipboard. This can be used to duplicate data within DiffDog or to move data to another application.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.5 Paste



Ctrl+V

The **Paste** command inserts the contents of the clipboard at the current cursor position of any document you make active in DiffDog. You can also paste text from the clipboard into any other document in an application that supports pasting from the clipboard.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.6 Delete



Delete

The **Delete** command enables you to delete a selection in the document.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.7 Find...



Ctrl+F

The **Find...** command pops up the [Find](#) dialog box, in which you can specify the string you want to find and other options for the search.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.8 Find next



F3

The **Find next** command repeats the last [Find...](#) command to search for the next occurrence of the requested text. Clicking this command when the **Find** dialog box is open, closes the **Find** dialog box before taking you to the next occurrence of the search string.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.3.9 Replace...



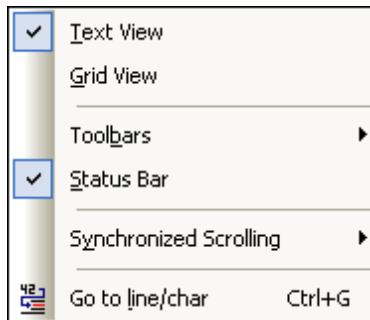
Ctrl+H

The **Replace...** command enables you to find and replace one text string with another text string. It features the same options as the [Find...](#) command. You can replace each item individually or you can use the **Replace All** button to perform a global search-and-replace operation.

Note that the **Edit** menu and, therefore, this command are not available in Directory Comparison and Database Data Comparison Result windows.

19.4 View Menu

The **View** menu contains commands to customize and organize the display of the DiffDog interface. It also contains the [Go to line/char](#) command, which takes you directly to a given line and character.



19.4.1 Text View

The **Text View** command is available in File Comparison windows (not Directory Comparison or Database Data Comparison windows), and switches **both files** of the active File Comparison window to Text View. Note that **both** files are always displayed in the same view. To switch the view, you can also use the Text View tab of either pane; the tabs are located at the bottom of each pane.

Note that this command is not available in Database Data Comparison and Database Data Comparison Result windows.

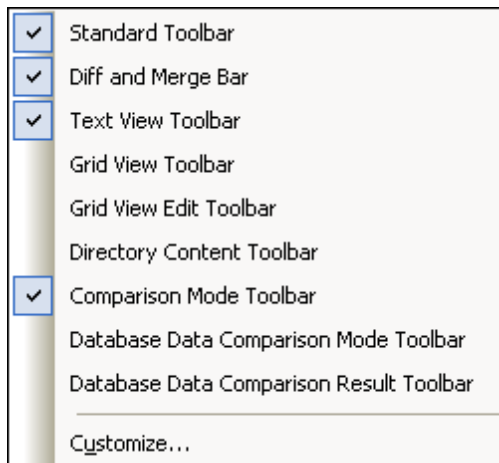
19.4.2 Grid View

The **Grid View** command is available in File Comparison windows (not Directory Comparison or Database Data Comparison windows), and switches **both files** of the active File Comparison window to Grid View. Note that **both** files are always displayed in the same view. To switch the view, you can also use the Grid View tab of either pane; the tabs are located at the bottom of each pane.

Note that this command is not available in Database Data Comparison and Database Data Comparison Result windows.

19.4.3 Toolbars

The **Toolbars** menu item is available in File Comparison, Directory Comparison, and Database Data Comparison windows, and contains a submenu which looks something like this:



The submenu items are toolbars that can be toggled on and off (by clicking the submenu item). In the screenshot above, the Standard Toolbar, Diff and Merge Toolbar, Text View Toolbar, and Comparison Mode Toolbar are toggled on, and are displayed in the GUI.

Toolbar settings are made for file comparisons, directory comparisons, and database data comparisons separately. If toolbar settings are made with a File Comparison window open, the settings apply to all File Comparison windows that are currently open and that will be opened subsequently. The same applies for Directory Comparison and Database Data Comparison windows.

Clicking the **Customize...** submenu item pops up the **Customize** dialog box. (For a description of customization options, see the **Tools | Customize** section.) The [Toolbars](#) tab lists all the available toolbars.

19.4.4 Status Bar

The Status Bar, located at the bottom of the DiffDog application window, displays the following application-level information:

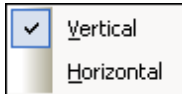
- A description of menu command and toolbar icon actions; displayed when the mouse cursor is placed over the command or icon. This information is on the left side in the Status Bar.
- Position of the cursor in a document, in terms of line number and character number. (At right in Status Bar.)
- Status of the Caps Lock, Num Lock and Scroll Lock keys. (At right in Status Bar.)
- If you are using the 64-bit version of DiffDog, this is indicated in the status bar with the suffix (x64) after the application name. There is no suffix for the 32-bit version.

You can toggle the Status Bar on and off using the **Status Bar** command in File Comparison, XML Schema Comparison, Directory Comparison, Database Data Comparison, and Database Schema Comparison windows.

Note: Do not confuse the Application Status Bar described here with the File Comparison and Directory Comparison Status Bars, which are located at the bottom of Comparison Windows and contain information about that comparison. Comparison Window status bars are described in the [DiffDog Interface](#) section.

19.4.5 Synchronized Scrolling

The **Synchronized Scrolling** command opens a sub-menu, where you can set this option separately for horizontal and vertical scrolling.



Synchronized scrolling is available in File Comparison windows. If documents extend over a horizontal or vertical length greater than the size of its containing pane, horizontal and vertical scrollbars, respectively, appear at the bottom and right of the pane, respectively. When synchronized scrolling is enabled, both documents can be scrolled simultaneously so that corresponding sections of the two documents are displayed simultaneously.

If you scroll through one document (by moving the scrollbar, clicking the scroll arrows, or using the mouse wheel) when synchronized scrolling is toggled on, the document in the other pane will also scroll (horizontally or vertically) so that the corresponding part of the document is displayed.

Please note that synchronized scrolling is possible only after a file comparison has been carried out (since the correspondence of sections in the two documents can only be determined after a comparison is made).

Settings for synchronized scrolling apply to the application as a whole, and take effect immediately for all open File Comparison windows and subsequently opened File Comparison windows.

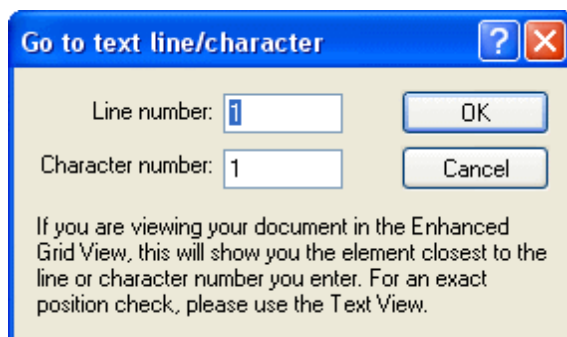
Note that this command is not available in Database Data Comparison and Database Data Comparison Result windows.

19.4.6 Go to line/char



Ctrl+G

The **Go to line/char** feature is available in File Comparison windows only, and enables you to go to a particular location in the active document using line and character coordinates. The command pops up the **Go to text line/character** dialog (*screenshot below*).



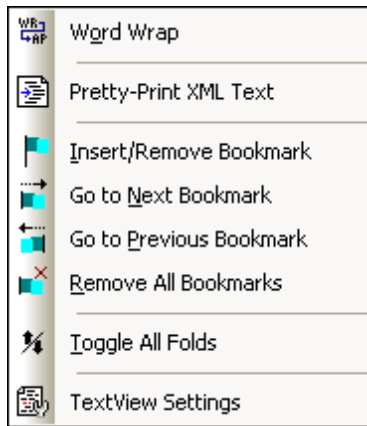
Enter the required line and character numbers in the respective text boxes, and click **OK**. This positions the cursor at the specified location.

Note: In Grid View, the Go to line/char feature highlights the grid cell closest to the line or character number you enter.

Note that this command is not available in Database Data Comparison and Database Data Comparison Result windows.

19.5 Text View Menu

The **Text View** menu contains commands that apply to the Text View display of documents in File Comparison windows. They enable you to customize the display of documents.



19.5.1 Word Wrap



The **Word Wrap** command enables or disables word wrapping in [Text View](#).

19.5.2 Pretty-Print XML Text



The **Pretty-Print XML Text** command reformats the active XML document in Text View to give a structured display of the document. Each child node is offset from its parent by four space characters.

Note: The Pretty-Print XML Text command is not a toggle command. Once the command is executed, the pretty-printed format cannot be undone by clicking the Pretty-Print XML Text command again. To undo the pretty-printed format, you must use the [Undo](#) (**Ctrl+Z** or **Alt +Backspace**) command.

19.5.3 Insert/Remove Bookmark



The **Insert/Remove Bookmark** command is available in [Text View](#) only. It inserts a bookmark at the current cursor position, or removes the bookmark if the cursor is in a line that has been bookmarked previously.

Bookmarked lines are displayed in one of two ways: If the bookmarks margin has been enabled, then a solid cyan-colored ellipse appears to the left of the text in the bookmark margin. If the bookmarks margin has **not** been enabled, then the complete line containing the cursor is highlighted in cyan.

Tip: You can assign a keyboard shortcut for this command in the [Keyboard tab](#) of the **Customize** dialog box.

19.5.4 Go to Next Bookmark



The **Go to Next Bookmark** command is available in [Text View](#) only. It places the text cursor at the beginning of the next bookmarked line.

Tip: You can assign a keyboard shortcut for this command in the [Keyboard tab](#) of the **Customize** dialog box.

19.5.5 Go to Previous Bookmark



The **Go to Previous Bookmark** command is available in [Text View](#) only. It places the text cursor at the beginning of the previous bookmarked line.

Tip: You can assign a keyboard shortcut for this command in the [Keyboard tab](#) of the **Customize** dialog box.

19.5.6 Remove All Bookmarks



The **Remove All Bookmarks** command is available in [Text View](#) only. It removes all currently defined bookmarks in the active document. Note that the [Undo](#) command does not undo the effects of this command.

Tip: You can assign a keyboard shortcut for this command in the [Keyboard tab](#) of the **Customize** dialog box.

19.5.7 Toggle All Folds



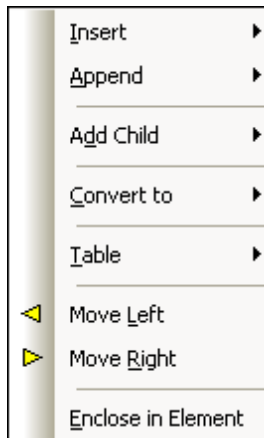
The **Toggle All Folds** command toggles the active document between two states: (i) all nodes expanded, and (ii) all nodes collapsed.

19.5.8 Text View Settings

The **Text View Settings** command opens the **Text View Settings** dialog box where you can [define settings](#) for the display of line number, bookmark, and source folding margins, specify the tab size, and define which visual aids are available in Text View.

19.6 Grid View Menu

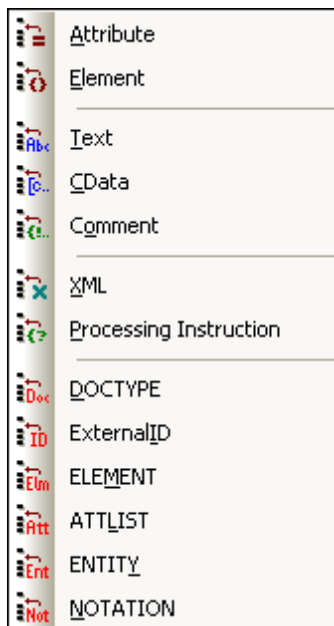
The **Grid View** Menu contains commands for working with documents in the [Grid View](#) of File Comparison windows.



These commands are not available in Text View.

19.6.1 Insert

Placing the cursor over the **Insert** command pops up a sub-menu which contains the items that can be inserted. The submenu items of the **Insert** command are enabled only in [Grid View](#). Items that cannot be inserted for the current selection are grayed out.



The commands of the **Insert** sub-menu can be used to insert (i) the [XML declaration](#) and node types ([Attribute](#), [Element](#), [Text](#), [CDATA](#), [Comment](#), [Processing Instruction](#)) in XML documents, (ii) [DOCTYPE](#) declarations and [external DTD declarations](#) in XML documents, and (iii) DTD declarations ([ELEMENT](#), [ATTLIST](#), [ENTITY](#), and [NOTATION](#)) in DTD documents and internal DTD

declarations of XML documents.

Insert | Attribute



The **Insert | Attribute** command is available in [Grid View](#) only, and inserts a new attribute before the selected item. Sometimes, an inserted attribute may appear a few lines before the current item in Grid View. This is because attributes immediately follow their parent element in Grid View and precede all child elements of that parent element.

Insert | Element



The **Insert | Element** command is available in [Grid View](#) only, and inserts a new element before the selected item. If the current selection is an attribute, the new element is inserted before the first child element of the attribute's parent element.

Insert | Text



The **Insert | Text** command is available in [Grid View](#) only, and inserts a new text row before the selected item. If the current selection is an attribute, the text row is inserted after the attribute and before the first child element of the attribute's parent element.

Insert | CData



The **Insert | CData** command is available in [Grid View](#) only, and inserts a new CDATA block before the selected item. If the current selection is an attribute, the CDATA block is inserted after the attribute and before the first child element of the attribute's parent element.

Insert | Comment



The **Insert | Comment** command is available in [Grid View](#) only, and inserts a new comment before the selected item. If the current selection is an attribute, the new comment row is inserted after the attribute and before the first child element of the attribute's parent element.

Insert | XML



The **Insert | XML** command is available in [Grid View](#) only, and inserts a row for the XML declaration before the selected item. You must insert the child attributes of the XML declaration and the values of this attribute. An XML declaration must look something like this:

```
<?xml version="1.0" encoding="UTF-8"?>
```

Note: Since an XML document may only contain one XML declaration at the very top of the file, this command should only be used with the topmost row selected and if an XML declaration does not already exist.

Insert | Processing Instruction

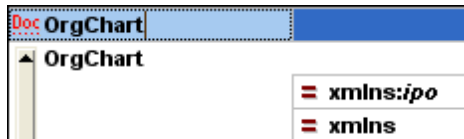


The **Insert | Processing Instruction** command is available in [Grid View](#) only, and inserts a new processing instruction (PI) before the selected item. If the current selection is an attribute, the PI is inserted after the attribute and before the first child element of the attribute's parent element.

Insert | DOCTYPE



The **Insert | DOCTYPE** command is available in the [Grid View](#) of an XML file when a top-level node is selected. It appends a DOCTYPE declaration at the top of the XML document. You must enter the name of the DOCTYPE, and this name must be the same as the name of the document element.



After you have entered the name of the DOCTYPE, you can enter the declarations you wish to use in the internal DTD subset.

Note: A DOCTYPE declaration may only appear between the XML declaration and the XML document element.

Insert | ExternalID



The **Insert | ExternalID** command is available when a child item of the [DOCTYPE](#) declaration in an XML file is selected in [Grid View](#). This command inserts a Grid View row for an external identifier (PUBLIC or SYSTEM). You must enter the type of identifier and its value.



The Text View corresponding to the screenshot of the Grid View shown above looks like this:

```
<!DOCTYPE OrgChart SYSTEM "orgchart.dtd" [
  <!ELEMENT name (#PCDATA)>
]>
```

Note: A row for ExternalID can be [added as a child](#) when the DOCTYPE item is selected, or it can be inserted or [appended](#) when one of the child items of the DOCTYPE item is selected, for example, the ELEMENT declaration name in the example above.

Referencing external resources

A DOCTYPE declaration in an XML file can contain a reference to an external resource containing DTD declarations. This resource is referenced either through a public or system identifier. For

example:

```
<!DOCTYPE doc_element_name PUBLIC "publicID" "systemID">
<!DOCTYPE doc_element_name SYSTEM "systemID">
```

A system identifier is a URI that identifies the external resource. A public identifier is location-independent and can be used to dereference the location of an external resource. For example, in your <%SPY-GEN%> installation, URIs for popular DTDs and XML Schemas are listed in a catalog file called `MainCatalog.xml`. A public identifier in an XML document can be used to dereference a DTD listed in `MainCatalog.xml`.

Insert | ELEMENT



The **Insert | ELEMENT** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It inserts an ELEMENT declaration before the selected declaration.

Insert | ATTLIST



The **Insert | ATTLIST** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It inserts an ATTLIST declaration before the selected declaration.

DOCTYPE OrgChart						
ID SYSTEM		"orgchart.dtd"				
attribute list						
		Att Name	Att Type	Att Values	Att Presence	Att Default
	1					
Elem name		#PCDATA				

Insert | ENTITY



The **Insert | ENTITY** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It inserts an ENTITY declaration before the selected declaration.

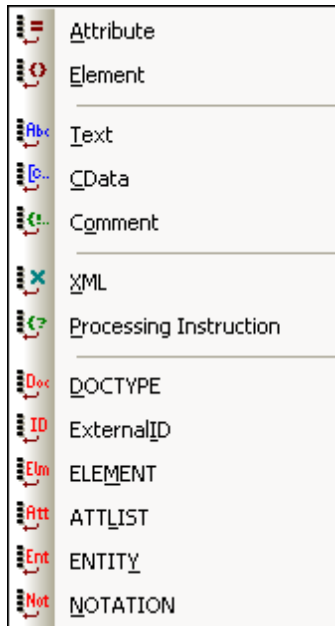
Insert | NOTATION



The **Insert | NOTATION** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It inserts a NOTATION declaration before the selected declaration.

19.6.2 Append

Placing the cursor over the **Append** command pops up a submenu which contains the items that can be inserted for a given selection. The submenu items of the **Append** command are enabled only in [Grid View](#). Items that cannot be inserted for the current selection are grayed out.



The commands of the **Append** sub-menu can be used to append (i) the [XML declaration](#) and node types ([Attribute](#), [Element](#), [Text](#), [CDATA](#), [Comment](#), [Processing Instruction](#)) in XML documents, (ii) [DOCTYPE](#) declarations and [external DTD declarations](#) in XML documents, and (iii) DTD declarations ([ELEMENT](#), [ATTLIST](#), [ENTITY](#), and [NOTATION](#)) in DTD documents and internal DTD declarations of XML documents.

Append | Attribute



The **Append | Attribute** command is available in [Grid View](#) only, and appends a new attribute.

Append | Element



The **Append | Element** command is available in [Grid View](#) only, and appends an element node after the last sibling element of the selected element. If an attribute node is selected, then the element node is appended after the last child of the selected attribute's parent element.

Append | Text



The **Append | Text** command is available in [Grid View](#) only, and appends a text block after the last sibling element of the selected element. If an attribute node is selected, then the text block is appended after the last child of the selected attribute's parent element.

Append | CData



The **Append | CData** command is available in [Grid View](#) only, and appends a CDATA node after

the last sibling of any selected node other than an attribute node. If an attribute node is selected, then the CDATA section is appended after the last child of the selected attribute's parent element.

Append | Comment



The **Append | Comment** command is available in [Grid View](#) only, and appends a comment node after the last sibling of any selected node other than an attribute node. If an attribute node is selected, then the comment node is appended after the last child of the selected attribute's parent element.

Append | XML



The **Append | XML** command is available in [Grid View](#) only, and inserts a row for the XML declaration as the first item in a document. You must insert the child attributes of the XML declaration and the values of this attribute. An XML declaration must look something like this:

```
<?xml version="1.0" encoding="UTF-8"?>
```

Note: Since an XML document may only contain one XML declaration at the very top of the file, this command should only be used with the topmost row selected and if an XML declaration does not already exist.

Append | Processing Instruction

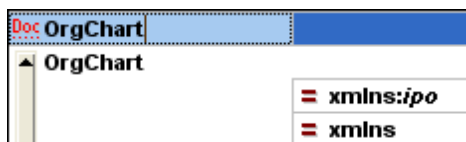


The **Append | Processing Instruction** command is available in [Grid View](#) only, and appends a processing instruction node after the last sibling of any selected node other than an attribute node. If an attribute node is selected, then the processing instruction node is appended after the last child of the selected attribute's parent element.

Append | DOCTYPE



The **Append | DOCTYPE** command is available in the [Grid View](#) of an XML file when a top-level node is selected. It appends a DOCTYPE declaration at the top of the XML document. You must enter the name of the DOCTYPE, and this name must be the same as the name of the document element.



After you have entered the name of the DOCTYPE, you can enter the declarations you wish to use in the internal DTD subset.

Note: A DOCTYPE declaration may only appear between the XML declaration and the XML document element.

Append | ExternalID



The **Append | ExternalID** command is available when a child item of the [DOCTYPE](#) declaration in an XML file is selected in [Grid View](#). This command inserts a Grid View row for an [external identifier](#) (PUBLIC or SYSTEM). You must enter the type of identifier and its value.



The Text View corresponding to the screenshot of the Grid View shown above looks like this:

```
<!DOCTYPE OrgChart SYSTEM "orgchart.dtd" [
  <!ELEMENT name (#PCDATA)>
]>
```

Note: A row for ExternalID can be [added as a child](#) when the DOCTYPE item is selected, or it can be [inserted](#) or appended when one of the child items of the DOCTYPE item is selected, for example, the ELEMENT declaration name in the example above.

Append | ELEMENT



The **Append | ELEMENT** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It appends an ELEMENT declaration to the list of declarations.

Append | ATTLIST



The **Append | ATTLIST** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It appends an ATTLIST declaration to the list of declarations.

Append | ENTITY



The **Append | ENTITY** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It appends an ENTITY declaration to the list of declarations.

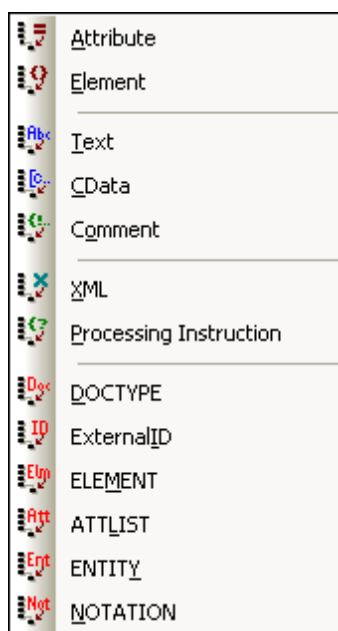
Append | NOTATION



The **Append | NOTATION** command is available in [Grid View](#) only, for DTD documents or when an item in the [DOCTYPE](#) declaration of an XML document is selected. It appends a NOTATION declaration to the list of declarations.

19.6.3 Add Child

Placing the cursor over the **Add Child** command pops up a submenu which contains the items that can be inserted for a given selection. The submenu items of the **Add Child** command are enabled only in [Grid View](#). Items that cannot be inserted for the current selection are grayed out.



The commands of the **Add Child** sub-menu can be used to add child nodes for (i) the [XML declaration](#) and node types ([Attribute](#), [Element](#), [Text](#), [CDATA](#), [Comment](#), [Processing Instruction](#)) in XML documents, (ii) [DOCTYPE](#) declarations and [external DTD declarations](#) in XML documents, and (iii) DTD declarations ([ELEMENT](#), [ATTLIST](#), [ENTITY](#), and [NOTATION](#)) in DTD documents and internal DTD declarations of XML documents.

Add Child | Attribute



The **Add Child | Attribute** command is available in [Grid View](#) only and when an element node is selected. It inserts a new attribute as a child of the selected element node.

Add Child | Element



The **Add Child | Element** command is available in [Grid View](#) only. It inserts a new element as a child of the selected node.

Add Child | Text



The **Add Child | Text** command is available in [Grid View](#) only, and inserts new text content as a child of the selected item.

Add Child | CData



The **Add Child | CData** command is available in [Grid View](#) only, and inserts a new CDATA section as a child of the selected item.

Add Child | Comment



The **Add Child | Comment** command is available in [Grid View](#) only, and inserts a new Comment node as a child of the selected item.

Add Child | XML



The **Add Child | XML** command is available in [Grid View](#) only and when the file is **empty**. It inserts a row for the XML declaration. You must insert the child attributes of the XML declaration and the values of this attribute. An XML declaration must look something like this:

```
<?xml version="1.0" encoding="UTF-8"?>
```

Add Child | Processing Instruction



The **Add Child | Processing Instruction** command is available in [Grid View](#) only and inserts a new Processing Instruction (PI) as a child of the selected item.

Add Child | DOCTYPE



The **Add Child | DOCTYPE** command is available in the [Grid View](#) of an **empty** document. It inserts a DOCTYPE declaration in an XML document. The DOCTYPE declaration can be used to declare an internal DTD subset.

Add Child | ExternalID



The **Add Child | ExternalID** command is available when the [DOCTYPE](#) declaration in an XML file is selected in [Grid View](#). This command inserts a Grid View row for an [external identifier](#) (PUBLIC or SYSTEM). You must enter the type of identifier and its value.

DOCTYPE OrgChart		
ID	SYSTEM	"orgchart.dtd"
name	#PCDATA	

The Text View corresponding to the screenshot of the Grid View shown above looks like this:

```
<!DOCTYPE OrgChart SYSTEM "orgchart.dtd" [  
  <ELEMENT name (#PCDATA)>  
>
```

Note: A row for ExternalID can be added as a child when the DOCTYPE item is selected, or it can be [inserted](#) or [appended](#) when one of the child items of the DOCTYPE item is selected, for example, the ELEMENT declaration name in the example above.

Add Child | ELEMENT



The **Add Child | ELEMENT** command is available in [Grid View](#) only, for DTD documents or when the [DOCTYPE](#) declaration of an XML document is selected. It appends an ELEMENT declaration to the list of declarations.

Add Child | ATTLIST



The **Add Child | ATTLIST** command is available in [Grid View](#) only, for DTD documents or when the [DOCTYPE](#) declaration of an XML document is selected. It appends an ATTLIST declaration to the list of declarations.

Add Child | ENTITY



The **Add Child | ENTITY** command is available in [Grid View](#) only, for DTD documents or when the [DOCTYPE](#) declaration of an XML document is selected. It appends an ENTITY declaration to the list of declarations.

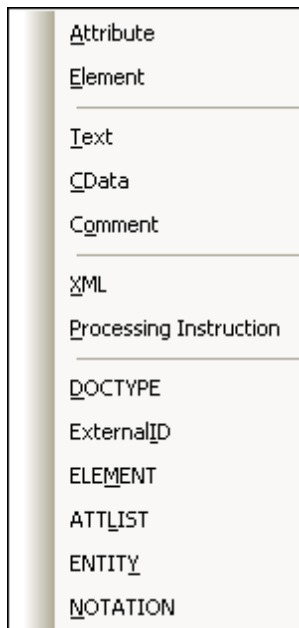
Add Child | NOTATION



The **Add Child | NOTATION** command is available in [Grid View](#) only, for DTD documents or when the [DOCTYPE](#) declaration of an XML document is selected. It appends a NOTATION declaration to the list of declarations.

19.6.4 Convert to

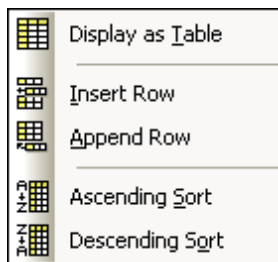
The **Convert to** command converts a selected item in [Grid View](#) to a different item type. This operation is available only in Grid View on individual items that do not contain any child node. Placing the cursor over the **Convert to** command pops up a submenu which contains the items to which the selected item can be converted.



If the operation would result in a loss of data (for example, converting an attribute to a comment would result in a loss of the attribute name), a warning dialog box will appear.

19.6.5 Table

The **Table** menu command can be used only in [Grid View](#). It pops out a sub-menu with commands that enable you to edit the selection as a table.



Display as Table



The **Display as Table** command allows you to switch between the standard [Grid View](#) and [Table View](#) of an element in the document.

Insert Row



The **Insert Row** command is enabled in [Table View](#) when a row or cell is selected. It inserts a new row before the selected row. The new row corresponds to an occurrence of the table element. Mandatory child elements are created for the new element.

Append Row

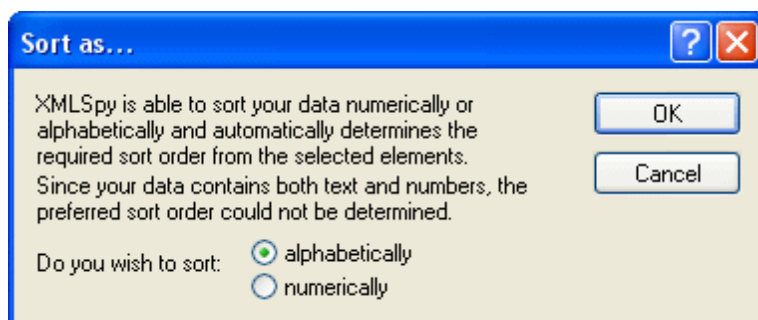


The **Append Row** command is enabled in [Table View](#) when a row or cell is selected. It appends a new row after the last row of the table. The new row corresponds to an occurrence of the table element. Mandatory child elements are created for the new element.

Ascending Sort



The **Ascending Sort** command is enabled in [Table View](#) when a column or cell is selected. It sorts the table on the basis of the contents of the selected column, in ascending order. DiffDog tries to automatically determine what kind of data is used in the column, and sorts on alphabetic or numeric order, as required. In case of uncertainty, you will be prompted for the sort method to use (*screenshot below*).



Descending Sort



The **Descending Sort** command is enabled in [Table View](#) when a column or cell is selected. It sorts the table on the basis of the contents of the selected column, in descending order. DiffDog tries to automatically determine what kind of data is used in the column, and sorts on alphabetic or numeric order, as required. In case of uncertainty, you will be prompted for the sort method to use (*For a screenshot see chapter [Ascending Sort](#) above*).

19.6.6 Move Left



The **Move Left** command is available in [Grid View](#) only. It moves the selected node to the left by one level, thereby changing a child element into a sibling of its parent.

19.6.7 Move Right

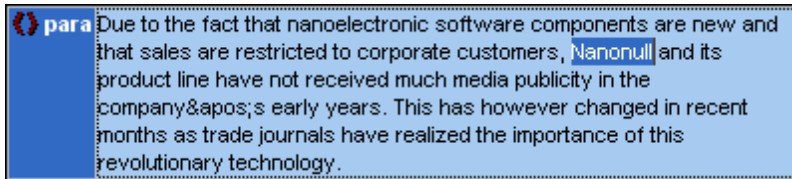


The **Move Right** command is available in [Grid View](#) only. It moves the selected node to the right by one level, thereby turning it into a child element of the preceding sibling element.

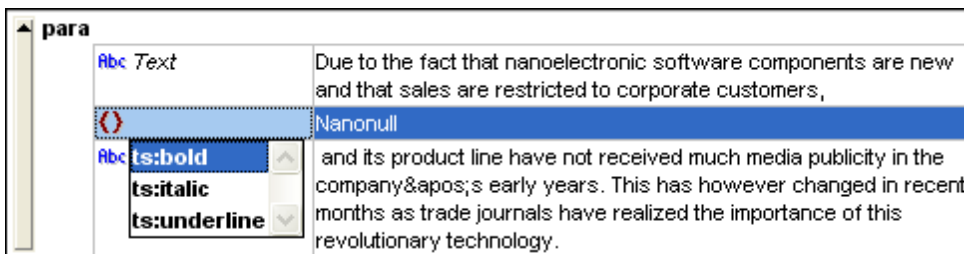
19.6.8 Enclose in Element

The **Enclose in Element** command is enabled in [Grid View](#) only. It encloses a selected text range in a new element. The new element is created inline around the selected text. If you are editing a document based on a Schema or DTD, you will automatically be presented with a list of valid choices for the name of the element in which the text is to be enclosed.

For example, in the screenshot below, the text Nanonull in the para element is highlighted.



When you select the command **Grid View | Enclose in Element**, the text "Nanonull" is enclosed in a newly created inline element and a list appears offering a choice for the name of the element. These elements are defined in the schema as children of para.



The selection you make will be the name of the new element. Alternatively, you can enter some other name for the element.

19.7 XML Menu

The **XML** menu contains commands that relate to XML documents opened in File Comparison windows.

	Check <u>W</u> ell-Formedness	F7
	<u>V</u> alidate	F8

19.7.1 Check Well-Formedness



The **Check Well-Formedness** command checks the active document for well-formedness by the definitions of the XML 1.0 specification. This command is available in both the [Text View](#) and [Grid View](#) of File Comparison windows. On running the well-formedness check, a message box displays the result of the check: whether successful or not.

Note: This command is available for all files with extensions that have been set as XML-conformant in the [File Types](#) tab of the **DiffDog Options** dialog box.

19.7.2 Validate



The **Validate** command is available in both the [Text View](#) and [Grid View](#) of File Comparison windows. It enables you to validate the active XML document against a DTD, XML Schema, or other schema. The associated schema must be declared in the file being validated. On validating the document, a message box displays the result of the validation: that is, whether successful or not.

Note: This command is available for all files with extensions that have been set as XML-conformant in the [File Types](#) tab of the **DiffDog Options** dialog box.

19.8 Diff and Merge Menu

The **Diff and Merge Menu** lists commands to manage [file](#), [XML Schema](#), [directory](#), [Microsoft Word document](#), [database data](#), and [database schema](#) comparisons. Depending on the active comparison window, commands to set the [comparison mode](#), [navigate](#) compared documents in the comparison windows and [merge](#) differences in them, as well as commands to [synchronize directories](#), generate merge scripts, or to map, expand and collapse database items are also available in this menu.

Please note that the content of the **Diff and Merge** menu changes dynamically, depending on whether a [file](#) comparison, [XML Schema](#) comparison, a [directory](#) comparison, a Microsoft Word document comparison, a [database data](#) comparison, or a [database schema](#) comparison is active.

19.8.1 File Comparison

The **Diff and Merge Menu** for **file comparisons** lists commands to (i) set [comparison modes](#), (ii) start a comparison, (iii) [navigate](#) compared documents and display differences in File Comparison windows, (iv) [merge](#) differences in them, and (v) set the [comparison management options](#).

	Textual Comparison <u>Only</u>	
	Compare as <u>X</u> ML	
	Compare as <u>B</u> inary	
	Compare According to File Extension Settings	
	<u>S</u> tart Comparison	F5
	<u>N</u> ext Difference	Alt+Down
	<u>P</u> revious Difference	Alt+Up
	<u>L</u> ast Difference	Alt+End
	<u>F</u> irst Difference	Alt+Home
	<u>D</u> isplay Current Difference	Ctrl+Enter
	<u>M</u> ake Current Difference	Alt+Enter
	Copy from <u>L</u> eft to Right	Alt+Right
	Copy from <u>R</u> ight to Left	Alt+Left
	Show <u>O</u> ptions Before Comparison	
	<u>A</u> utostart Comparison	
	Compare <u>w</u> hile Editing	
	Support <u>R</u> ecently Compared Pairs	

Textual Comparison Only



The **Textual Comparison Only** command changes the comparison mode of a file or directory

comparison to textual comparison. Note that this command is not available if the [Quick Comparison](#) mode is active. To change to the Text Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

Compare as XML



The **Compare as XML** command changes the comparison mode of a file or directory comparison to XML comparison. Note that this command is not available if the [Quick Comparison](#) mode is active. To change to the XML Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

Compare as Binary



The **Compare as Binary** command changes the comparison mode of a file or directory comparison to binary comparison. Note that this command is not available if the [Quick Comparison](#) mode is active. To change to the Binary Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

Compare According to File Extension Settings



The **Compare According to File Extension Settings** command changes the comparison mode of a file or directory comparison dynamically according to the settings on the [File types](#) tab of the **DiffDog Options** dialog box. Note that this command is not available if the [Quick Comparison](#) mode is active. To change to the File Extension mode in that case, you have to deactivate the Quick Comparison mode first.

Start Comparison



F5

This command [starts comparison](#) for the active comparison window.

Next Difference



Alt+Down

This command selects the next difference as the [current difference](#).

Previous Difference



Alt+Up

This command selects the previous difference as the [current difference](#).

Last Difference



Alt+End

This command selects the last difference as the [current difference](#).

First Difference**Alt+Home**

This command selects the first difference as the [current difference](#).

Display Current Difference**Ctrl+Enter**

This command scrolls through the document to display the [current difference](#).

Make Current Difference**Alt+Enter**

This command makes the selected difference the current difference, and sets it as the difference from which to navigate.

Copy from Left to Right**Alt+Right**

This command copies text of the selected difference from the document in the left pane to the document in the right pane.

Copy from Right to Left**Alt+Left**

This command copies text of the selected difference from the document in the right pane to the document in the left pane.

Show Options Before Comparison

When this command is toggled on for a Comparison Window, the **Comparison Options** dialog box is displayed each time a comparison is made in that window. Note that the **Comparison Options** dialog box is not displayed before comparisons made dynamically by DiffDog [while you edit](#) a document.

Autostart Comparison

When toggled on, this command automatically starts a comparison when both files or both directories are selected and opened in the comparison window. If this option is toggled off, then a comparison (file or directory) must be [explicitly started](#) (by clicking **Diff and Merge | Start Comparison**).

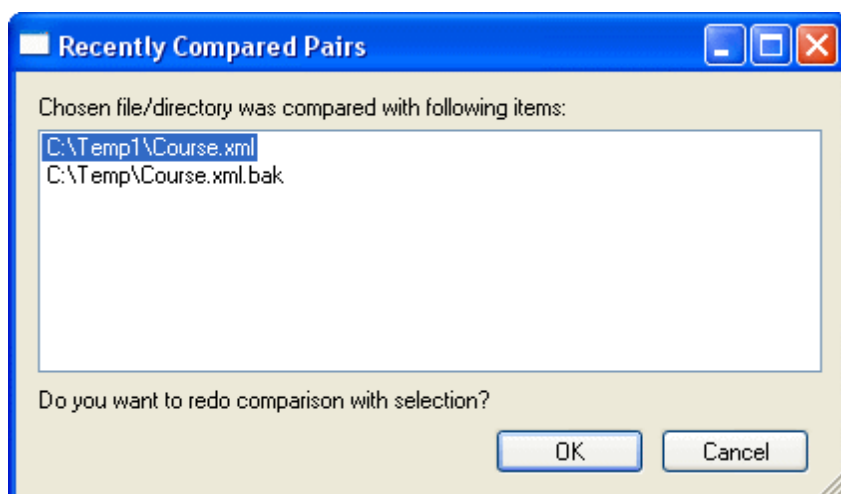
Compare while Editing

This command is a toggle to compare or not compare documents in File Comparison windows while editing. If toggled on, differences are highlighted as you edit. If toggled off, highlighting of differences is turned off in both documents as soon as you start typing in either document; to highlight differences after editing, you must [run a comparison](#) (by clicking **Diff and Merge | Start Comparison**).

Support Recently Compared Pairs

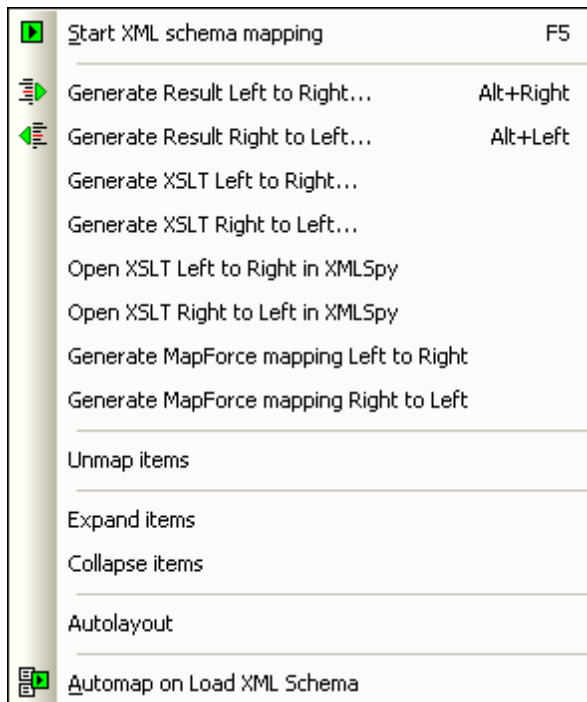


This command is a toggle that switches on and off the option of suggesting recently compared files or directories each time a file or directory is selected in one pane. When you click this command, the **Recently Compared Pairs** dialog box is displayed (*screenshot below*). The dialog box shows the previous five files/directories with which the selected file/directory has been compared.



19.8.2 XML Schema Comparison

The **Diff and Merge Menu** for **XML Schemas** lists commands to (i) [start the XML Schema mapping](#), (ii) generate [results](#), [XLS](#), or [MapForce mappings](#), (iii) [unmap](#) or, (iv) expand or collapse items, (v) enable [Autolayout](#), and (vi) automatically [map items on loading](#).



Start XML Schema mapping



F5

This command [creates a mapping](#) for the active XML Schema comparison window.

Generate Result Left to Right...



Alt+Right

This command opens the **Generate result Left to Right** dialog box, where you can choose to generate and save an XSLT Style Sheet, generate an XSLT Style sheet and open it in XMLSpy (if installed), or generate a MapForce Mapping.

Generate Result Right to Left...



Alt+Left

This command opens the **Generate result Right to Left** dialog box, where you can choose to generate and save an XSLT Style Sheet, generate an XSLT Style sheet and open it in XMLSpy (if installed), or generate a MapForce Mapping.

Generate XSLT Left to Right

This command generates an XSLT Style Sheet that reflects the changes resulting from a left-to-right merge of the compared XML Schemas, and can be used to transfer these changes to XML files that have been generated using this XML Schema. The XSLT will not be displayed; the command opens the **Generate XSLT** dialog box where you have to define a location where the file is saved.

Generate XSLT Right to Left

This command generates an XSLT Style Sheet that reflects the changes resulting from a right-to-left merge of the compared XML Schemas, and can be used to transfer these changes to XML files that have been generated using this XML Schema. The XSLT will not be displayed; the command opens the **Generate XSLT** dialog box where you have to define a location where the file is saved.

Open XSLT Left to Right in XMLSpy

This command generates an XSLT Style Sheet that reflects the changes resulting from a left-to-right merge of the compared XML Schemas and opens the XSLT in XMLSpy (if installed). In XMLSpy, the file can be used to transfer changes to XML files that have been generated using this XML Schema.

Open XSLT Right to Left in XMLSpy

This command generates an XSLT Style Sheet that reflects the changes resulting from a right-to-left merge of the compared XML Schemas and opens the XSLT in XMLSpy (if installed). In XMLSpy, the file can be used to transfer changes to XML files that have been generated using this XML Schema.

Generate MapForce Mapping Left to Right

This command generates a MapForce Mapping for the active root element. In MapForce, the left component is used as source and the right component is used as target.

Generate MapForce Mapping Right to Left

This command generates a MapForce Mapping for the active root element. In MapForce, the right component is used as source and the left component is used as target.

Unmap Items

The **Unmap items** command deletes all mappings in the active comparison window. If one or more items are selected in the components, only the mapping of the selected item will be deleted.

Expand Items

The **Expand items** command expands all items in both components of the active comparison window.

Collapse Items

The **Collapse items** command collapses all items in both components of the active comparison window.

Autolayout

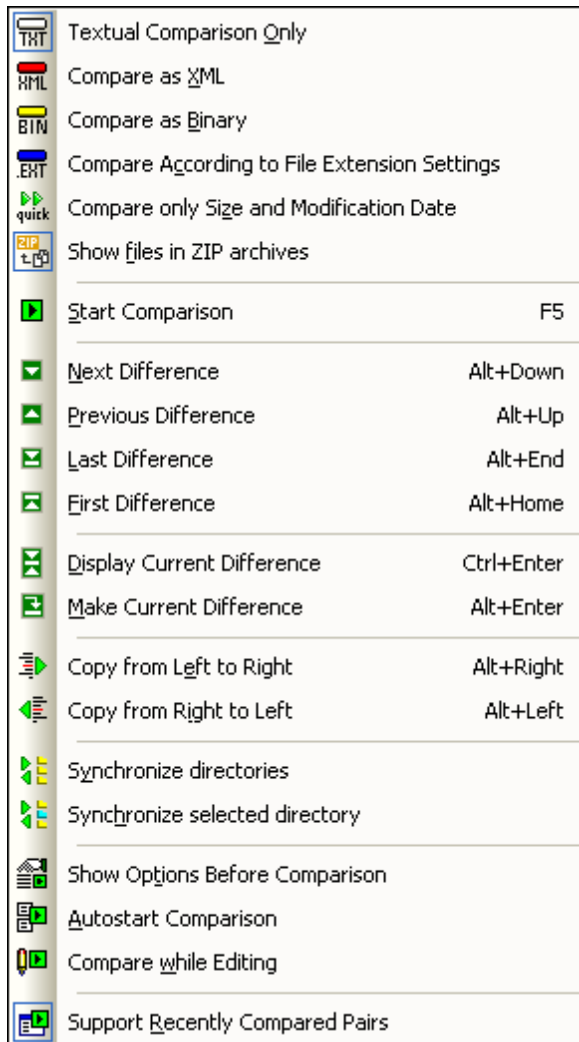
The **Autolayout** command fits the components into the visible part of the comparison window, tries to avoid horizontal scrollbars in the components, and aligns the top and bottom borders of the components.

Automap on Load XML Schema

This command automatically maps the items in the comparison component when an XML Schema is loaded.

19.8.3 Directory Comparison

The **Diff and Merge Menu** for **directory comparisons** lists commands to (i) set [comparison modes](#), (ii) start a comparison, (iii) [navigate](#) compared documents and display differences in Directory Comparison windows, (iv) [merge](#) differences in them, (v) [synchronize directories](#), and (vi) set the [comparison management options](#).



Show Files in ZIP Archives



The **Show files in ZIP archives** option is deactivated by default, therefore only the file itself will be shown in directory comparisons. To be able to expand the file and view its content you must activate the **Show files in ZIP archives** option.

Compare Only Size and Modification Date



The **Compare only Size and Modification Date** command compares files within directories and subdirectories by size and date modified. This mode is either toggled on or off. When toggled off, the four [file comparison modes](#) become available. Selecting one of the file comparison modes causes directories to be compared in terms of their contents as text, XML, or binary files.

Copy from Left to Right



Alt+Right

This command copies the selected non-equal file from the (directory in the) left pane to the (directory in the) right pane.

Copy from Right to Left



Alt+Left

This command copies the selected non-equal file from the (directory in the) right pane to the (directory in the) left pane.

Synchronize Directories



This command opens the [Synchronize directories](#) dialog box and populates it with all non-equal files that are present in at least one of the directories.

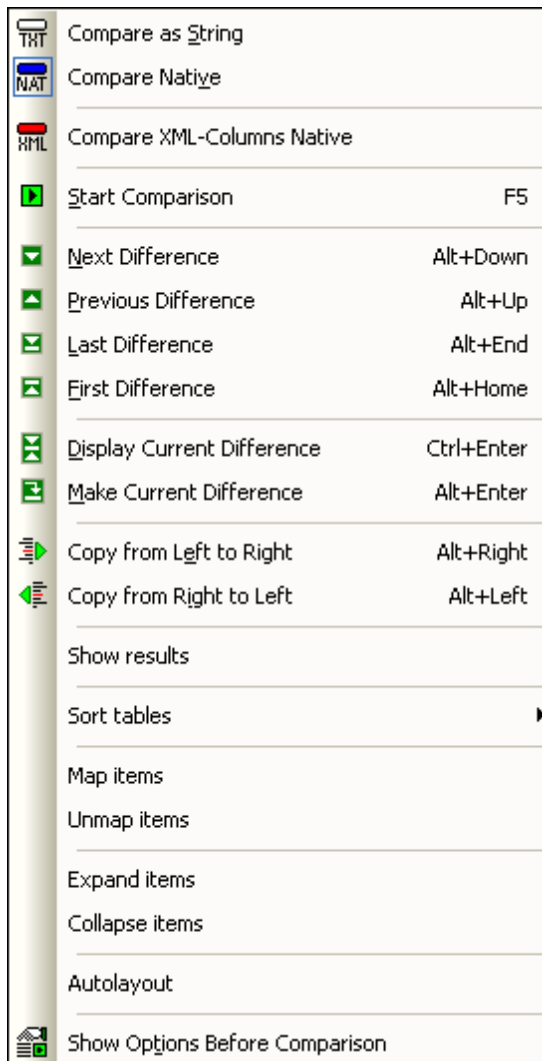
Synchronize Selected Directory



This command is only available if at least one of the compared directories contains a sub-directory which is selected. It opens the [Synchronize directories](#) dialog box and populates it with all non-equal files that are present in the selected sub-directory.

19.8.4 Database Data Comparison

The **Diff and Merge Menu** for **database data comparisons** lists commands to (i) set [comparison modes](#) and XML comparison comparisons, (ii) [start a comparison](#), (iii) [navigate](#) compared documents and display differences in Database Data Comparison windows, (iv) merge differences in them, (v) [show results](#), (vi) sort tables (vii) [map and unmap](#) or, (viii) expand or collapse items, (ix) enable [Autolayout](#), and (x) show the [comparison options](#) before comparison.



Compare as String



The **Compare as String** command changes the comparison mode of a database data comparison to string comparison.

Compare Native



The **Compare Native** command changes the comparison mode of a database data comparison to native comparison.

Compare XML Columns Native



The **Compare XML Columns Native** command changes the comparison mode for XML columns to native XML comparison. Note that this command is only available if the comparison mode of a

database data comparison is set to [native comparison](#).

Copy from Left to Right



Alt+Right

This command copies the selected table's data from the (table in the) left component to the (table in the) right component.

Copy from Right to Left

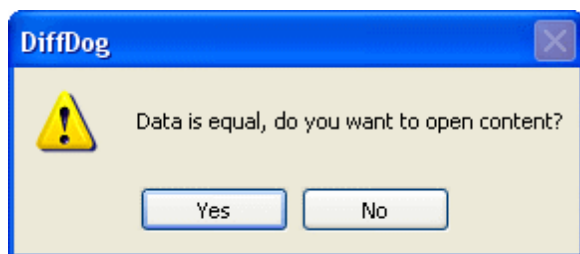


Alt+Left

This command copies the selected table's data from the (table in the) right component to the (table in the) left component.

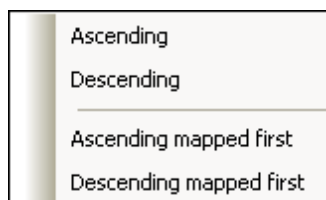
Show Results

The **Show Results** command opens the Database Data Comparison Result window for (i) the selected table or (ii) all tables if no table is selected. If some of the tables do not contain differences or if you select a table with equal data in both databases, DiffDog displays a message box and you can still abort the operation.



Sort Tables

The **Sort Tables** sub-menu of the **Diff and Merge** menu provides options for sorting the tables that are included in the components of a database comparison.



The commands always affect both sides of the comparison (i.e., you cannot sort just one component).

Ascending

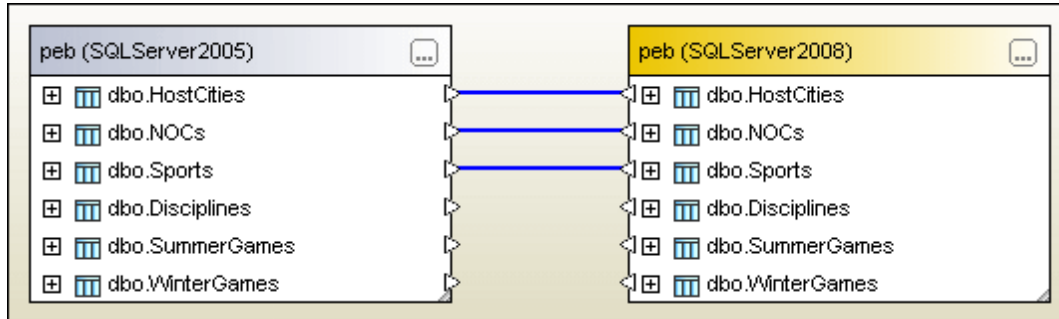
The **Ascending** command sorts all tables in ascending order.

Descending

The **Descending** command sorts all tables in descending order.

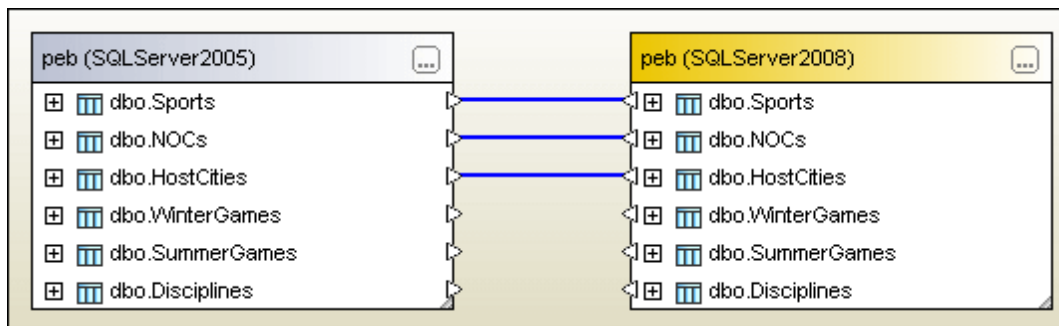
Ascending Mapped First

The **Ascending Mapped First** command sorts all tables and displays the mapped tables in ascending order first (see *screenshot*).



Descending Mapped First

The **Descending Mapped First** command sorts all tables and displays the mapped tables in descending order first (see *screenshot*).



Map Items

The **Map items** command tries to map all tables in the Database Data Comparison window using the settings defined in the [Database comparison](#) tab of the **DiffDog Options** dialog box.

19.8.5 Database Schema Comparison

The **Diff and Merge Menu** for **database schema comparisons** lists commands to (i) [start a comparison](#), (ii) [merge](#) differences in them, (iii) sort tables, (iv) [map and unmap](#) or, (v) expand or collapse items, and (vi) enable [Autolayout](#).

	Start Comparison	F5
	Next Difference	Alt+Down
	Previous Difference	Alt+Up
	Last Difference	Alt+End
	First Difference	Alt+Home
	Display Current Difference	Ctrl+Enter
	Make Current Difference	Alt+Enter
	Copy from Left to Right	Alt+Right
	Copy from Right to Left	Alt+Left
	Sort tables	▶
	Map items	
	Unmap items	
	Expand items	
	Collapse items	
	Autolayout	

Copy from Left to Right



Alt+Right

This command opens the **Merge Schema Left to Right** dialog box which displays the SQL merge script that has to be executed to merge the schemas.

Copy from Right to Left

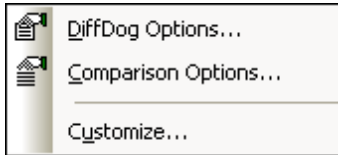


Alt+Left

This command opens the **Merge Schema Right to Left** dialog box which displays the SQL merge script that has to be executed to merge the schemas.

19.9 Tools Menu

The **Tools Menu** contains commands that enable you to set the [application](#) and [comparison](#) options and to [customize](#) the appearance of DiffDog.



19.9.1 DiffDog Options...



This command opens the **DiffDog Options** dialog box where you can set the options for the [application](#), [file comparison](#), [directory comparison](#), [database comparison](#), and the [database data result view](#), and define the [file types](#) that can be compared.

19.9.2 Comparison Options...

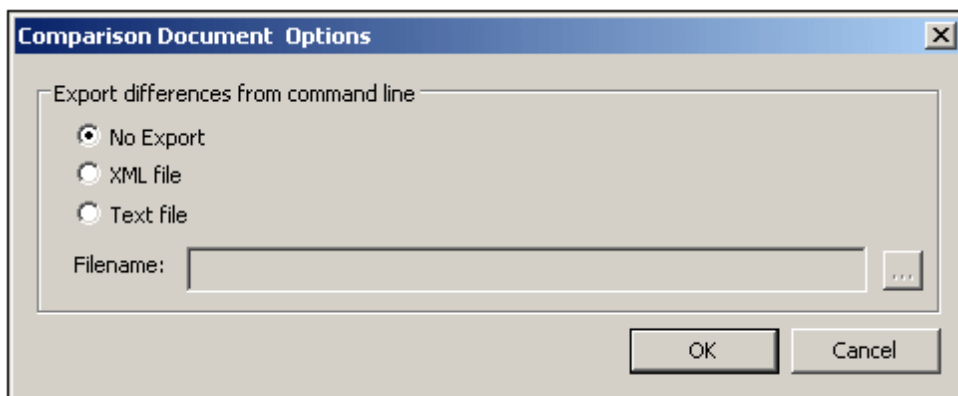


This command opens the **Comparison Options** dialog box which provides separate tabs to set the comparison options for [file comparison](#), [directory comparison](#), [XML Schema comparison](#), [Microsoft Word document comparison](#), and [database data comparison](#).

Please note that in file, directory, Microsoft Word document, and database data comparisons the **Comparison Options** dialog box is [displayed automatically](#) before a comparison is started if the **Show Options Before Comparison** option is toggled on in the **Diff and Merge** menu.

19.9.3 Comparison Document Options

Clicking the Comparison Document Options command pops up the Comparison Document Options dialog (*screenshot below*), in which you can specify the filetype of the file to which comparison differences are exported from the command line.



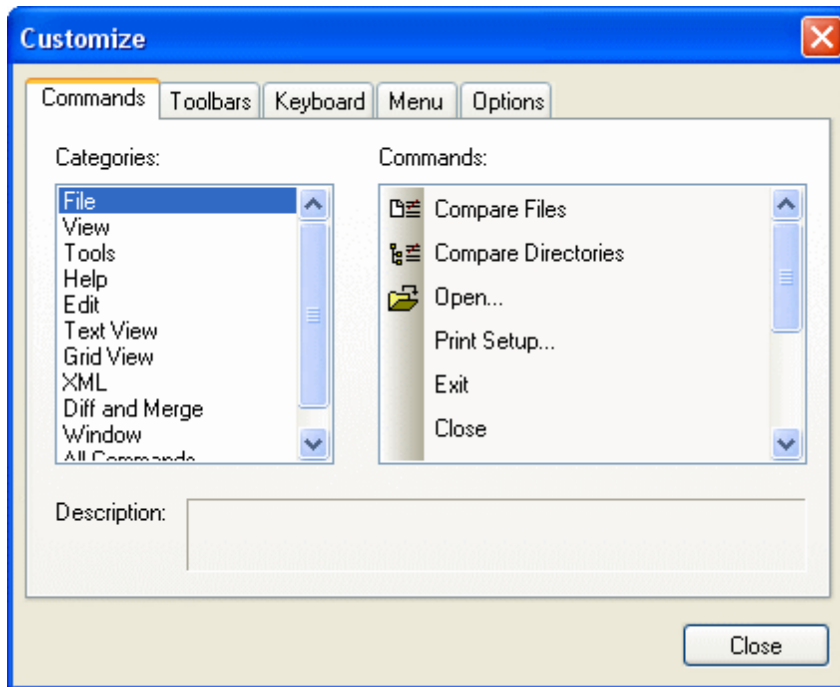
The options are: (i) No export; (ii) XML file; and (iii) Text file.

19.9.4 Customize...

The **Customize...** command lets you customize DiffDog to suit your personal needs.

Commands

The **Commands** tab allows you to customize your menus or toolbars.



To add a command to a toolbar or menu:

1. Select the menu option **Tools | Customize**.
The **Customize** dialog box appears.
2. Select the **All Commands** category in the Categories list box.
The available commands appear in the Commands list box.
3. Click on a command in the Commands list box and drag it to an existing menu or toolbar.
An **I-beam** appears when you place the cursor over a valid position to drop the command.
4. Release the mouse button at the position you want to insert the command.
 - A small button appears at the tip of mouse pointer when you drag a command. The "x" below the pointer means that the command cannot be dropped at the current cursor position.
 - The "x" disappears whenever you can drop the command (over a tool bar or menu).
 - Placing the cursor over a menu when dragging opens it, allowing you to insert the command anywhere in the menu.
 - Commands can be placed in menus or toolbars. If you created your own toolbar you can populate it with your own commands/icons.

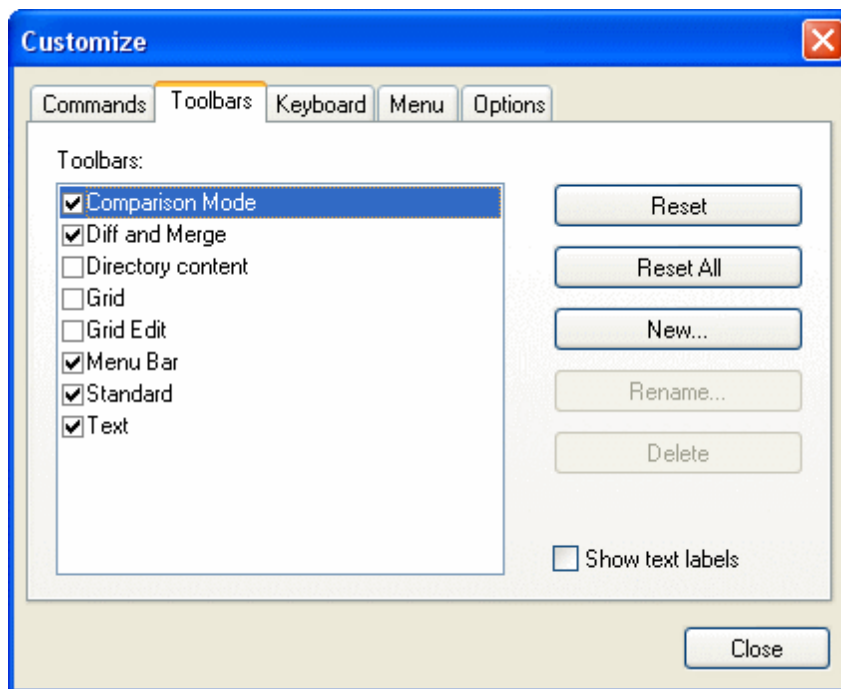
Please note: You can also edit the commands in the [context menus](#) (right-click anywhere to open the context menu), using the same method. Click the Menu tab and then select the specific context menu available in the Context Menus combo box.

Toolbars

The **Toolbars** tab allows you to activate or deactivate specific toolbars, as well as create your own specialized ones.

DiffDog toolbars contain symbols for the most frequently used menu commands. For each symbol you get a brief "tool tip" explanation when the mouse cursor is directly over the item and the status bar shows a more detailed description of the command.

You can drag the toolbars from their standard position to any location on the screen, where they appear as a floating window. Alternatively, you can also dock them to the left or right edge of the main window.



Show text labels:

This option displays explanatory text below toolbar icons when activated. You can activate or deactivate this option for each toolbar individually.

To activate or deactivate a toolbar:

- Click the check box to activate (or deactivate) the specific toolbar.

To create a new toolbar:

1. Click the **New...** button, and give the toolbar a name in the **Toolbar Name** dialog box that appears.
2. Drag commands to the toolbar in the [Commands](#) tab of the **Customize** dialog box.

To reset the Menu Bar:

1. Click the Menu Bar entry.
2. Click the **Reset** button, to reset the menu commands to the state they were in when DiffDog was installed.

To reset all toolbar and menu commands:

1. Click the **Reset All** button to reset all the toolbar commands to the state they were when the program was installed.
A prompt appears stating that all toolbars and menus will be reset.
2. Click **Yes** to confirm the reset.

To change a toolbar name:

- Click the **Rename...** button to edit the name of the toolbar.

This option is available only for user-defined toolbars.

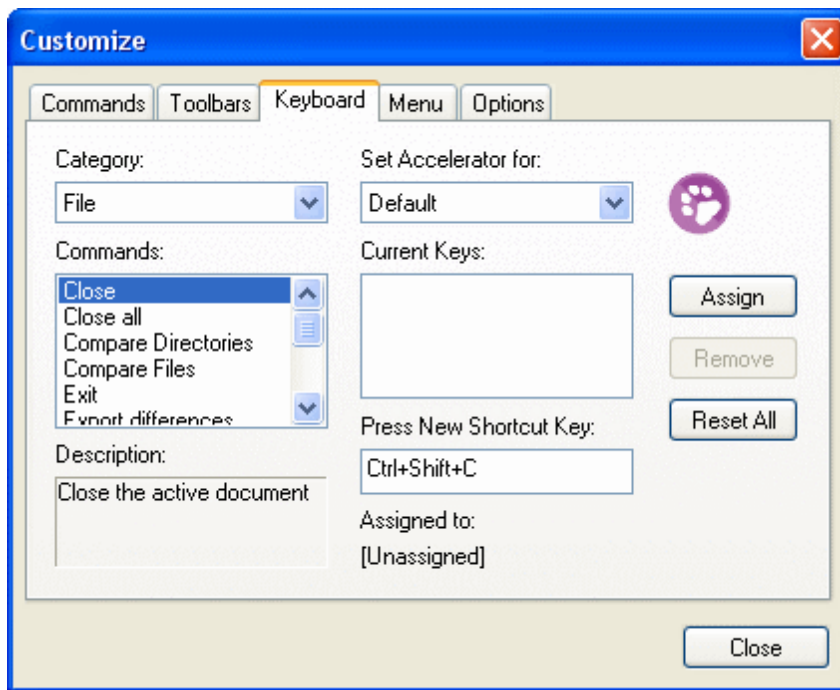
To delete a toolbar:

1. Select the toolbar you want to delete in the Toolbars list box.
2. Click the **Delete** button.
A prompt appears, asking if you really want to delete the toolbar.
3. Click **Yes** to confirm the deletion.

This option is available only for user-defined toolbars.

Keyboard

The **Keyboard** tab allows you to define (or change) keyboard shortcuts for any DiffDog command.



In the Set accelerator for drop-down list, you can differentiate between shortcuts that are

valid in the Default menu or in the DiffDog Design menu.

To assign a new Shortcut to a command:

1. Select the All Commands category using the Category combo box.
2. Select the command you want to assign a new shortcut to, in the Commands list box.
3. Click in the Press New Shortcut Key text box, and press the shortcut keys that are to activate the command.
The shortcuts appear immediately in the text box. If the shortcut was assigned previously, then that function is displayed below the text box.
4. Click the **Assign** button to assign the shortcut.
The shortcut now appears in the Current Keys list box.
(To clear this text box, press any of the control keys, **CTRL**, **ALT** or **SHIFT**).

To de-assign or delete a shortcut:

1. Click the shortcut you want to delete in the Current Keys list box.
2. Click the **Remove** button.
3. Click the **Close** button to confirm.

To reset all shortcut keys:

1. Click the **Reset All** button to reset all the shortcut keys to the state they were when the program was installed.
A prompt appears stating that all toolbars and menus will be reset.
2. Click **Yes** to confirm the reset.

Currently assigned keyboard shortcuts

Hotkeys by key

Ctrl+C	Copy
Ctrl+F	Find
Ctrl+G	Go to Line/Char
Ctrl+H	Replace
Ctrl+O	Open
Ctrl+P	Print
Ctrl+S	Save
Ctrl+V	Paste
Ctrl+X	Cut
Ctrl+Z	Undo
F1	Table Of Contents
F3	Find Next
F5	Start Comparison
F7	Check Well-Formedness
F8	Validate
Alt+Enter	Make Current Difference
Ctrl+Enter	Display Current Difference

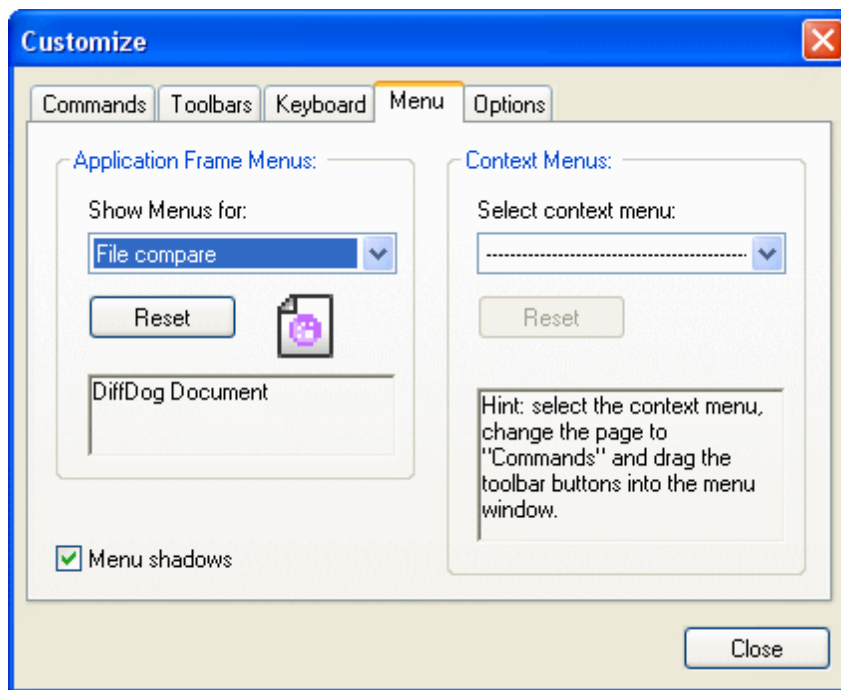
Delete	Delete
Shift+Delete	Cut
Alt+Backspace	Undo
Ctrl+Insert	Copy
Shift+Insert	Paste
Alt+Down	Next Difference
Alt+Up	Previous Difference
Alt+Home	First Difference
Alt+End	Last Difference
Alt+Left	Copy from Right to Left
Alt+Right	Copy from Left to Right

Hotkeys by function

Check Well-Formedness	F7	
Copy	Ctrl+C	Ctrl+Insert
Copy from Left to Right	Alt+Right	
Copy from Right to Left	Alt+Left	
Cut	Ctrl+X	Shift+Delete
Delete	Delete	
Display Current Difference	Ctrl+Enter	
Find	Ctrl+F	
Find Next	F3	
First Difference	Alt+Home	
Go to Line/Char	Ctrl+G	
Last Difference	Alt+End	
Make Current Difference	Alt+Enter	
Next Difference	Alt+Down	
Open	Ctrl+O	
Paste	Ctrl+V	Shift+Insert
Previous Difference	Alt+Up	
Print	Ctrl+P	
Replace	Ctrl+H	
Save	Ctrl+S	
Start Comparison	F5	
Table Of Contents	F1	
Undo	Ctrl+Z	Alt+Backspace
Validate	F8	

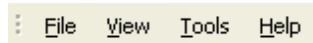
Menu

The **Menu** tab allows you to customize the main menu bars as well as the context menus.

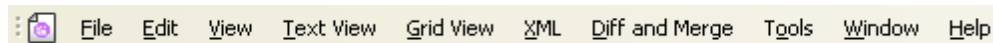


You can customize the Default, the file compare, the Directory compare, the Microsoft Word comparison, the Database Data comparison, the Database Data compare result, the Database Schema Comparison, and the XML Schema Comparison menu bars.

The Default menu is the one visible when no comparison windows are open in DiffDog.



The File compare menu is the menu bar that is displayed when at least one File Comparison window has been opened and is active.

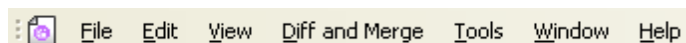


The Directory compare menu is the menu bar visible when at least one Directory Comparison window has been opened and is active.

The Database Data compare result menu is the menu bar visible when at least one Database Data Comparison Result window has been opened and is active.



The Database Data Comparison menu is the menu bar visible when at least one Database Data Comparison window has been opened and is active. The Database Schema Comparison menu is the menu bar visible when at least one Database Schema Comparison window has been opened and is active. The XML Schema Comparison menu is the menu bar visible when at least one XML Schema Comparison window has been opened and is active. The Microsoft Word Comparison menu is the menu bar visible when at least one Word Comparison window has been opened and is active.



Menu shadows

The Menu shadows check box, which is checked by default, can be deactivated if you do not want all your menus to have shadows.

To customize a menu:

1. Select the menu bar you want to customize from the Show Menus for combo box.
2. Click the [Commands](#) tab, and drag the commands to the menu bar of your choice.

To delete commands from a menu:

1. Select the menu option **Tools | Customize** to open the **Customize** dialog box.
2. Do one of the following:
 - Right-click the command or icon representing the command and select the **Delete** option from the context menu.
 - Drag the command away from the menu, and drop it as soon as the check mark icon appears below the mouse pointer.

To reset either of the menu bars:

1. Select either the Default, the File compare, the Directory compare, the Microsoft Word compare, the Database Data compare, the Database Data compare result, the Database Schema compare, and the XML Schema compare entry in the Show Menus for combo box.
2. Click the **Reset** button just below the menu name.
A prompt appears asking if you are sure you want to reset the menu bar.
3. Click **Yes**.

To customize any of the context menus (right-click menus):

1. Select the context menu from the Select context menu combo box.
The context menu you selected appears.
2. Click the [Commands](#) tab, and drag the commands to the context menu.

To delete commands from a context menu:

1. Select the menu option **Tools | Customize** to open the **Customize** dialog box.
2. Do one of the following:
 - Right-click on the command or icon representing the command and select the **Delete** option from the context menu.
 - Drag the command away from the context menu, and drop it as soon as the check mark icon appears below the mouse pointer.

To reset any of the context menus:

1. Select the context menu from the combo box.
2. Click the **Reset** button just below the context menu name.
A prompt appears asking if you are sure you want to reset the context menu.

To close a context menu window:

Do one of the following:

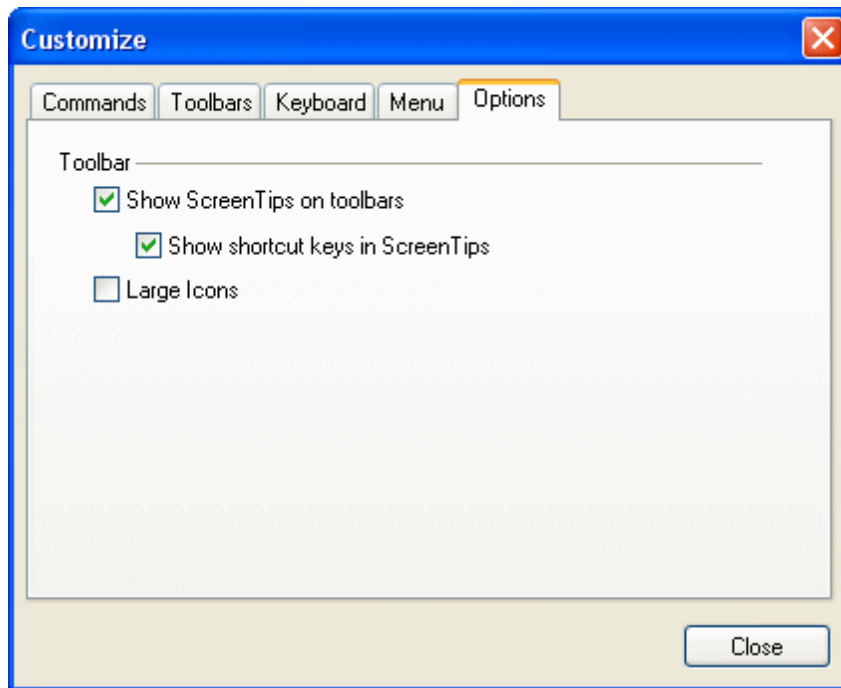
- Click on the **Close icon** at the top right of the title bar.
- Click the **Close** button of the **Customize** dialog box.

To change the appearance of menus:

- If required, deactivate the **Menu shadows** check box.

Options

The **Options** tab allows you to set general environment settings.



Toolbar

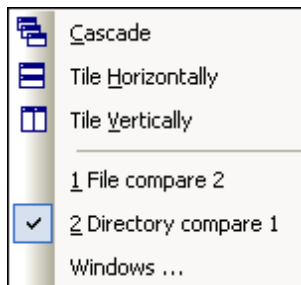
When active, the **Show ScreenTips on toolbars** check box displays a popup when the mouse pointer is placed over an icon in any of the icon bars. The popup contains a short description of the icon function, as well as the associated keyboard shortcut, if one has been assigned.

The **Show shortcut keys in ScreenTips** check box allows you to decide whether or not you want to have the shortcut displayed in the tooltip.

When active, the **Large icons** check box switches between the standard size icons, and larger versions of the icons.

19.10 Window Menu

The **Windows** menu provides commands to arrange and organize the display of open windows.



You can [cascade](#) the open windows, tile them [horizontally](#) or [vertically](#), or arrange document icons once you have minimized them. You can also switch to an [open document window](#) directly from the menu.

19.10.1 Cascade



The **Cascade** command rearranges all open document windows so that they are all cascaded (i.e., staggered) on top of each other.

19.10.2 Tile Horizontally



The **Tile horizontally** command rearranges all open document windows as **horizontal tiles**, making them all visible at the same time.

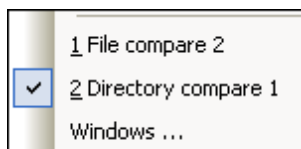
19.10.3 Tile Vertically



The **Tile vertically** command rearranges all open document windows as **vertical tiles**, making them all visible at the same time.

19.10.4 Currently Open Windows List

This list shows all currently open windows and lets you quickly switch between them.



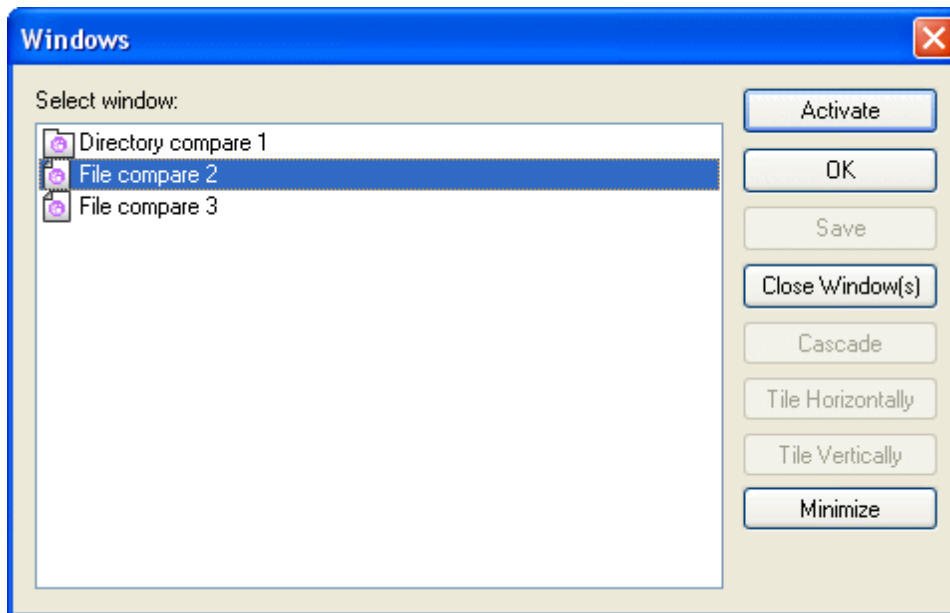
The list is ordered in the sequence in which windows were opened. The active window is indicated

with a check mark.

You can also use the **Ctrl+TAB** or **Ctrl+F6** keyboard shortcuts to cycle through the open windows.

19.10.5 Windows...

At the bottom of the list of open windows is the **Windows...** command. Clicking this entry opens the **Windows** dialog box, which displays a list of all open windows and provides commands that can be applied to the selected window(s). A window is selected by clicking on its name.

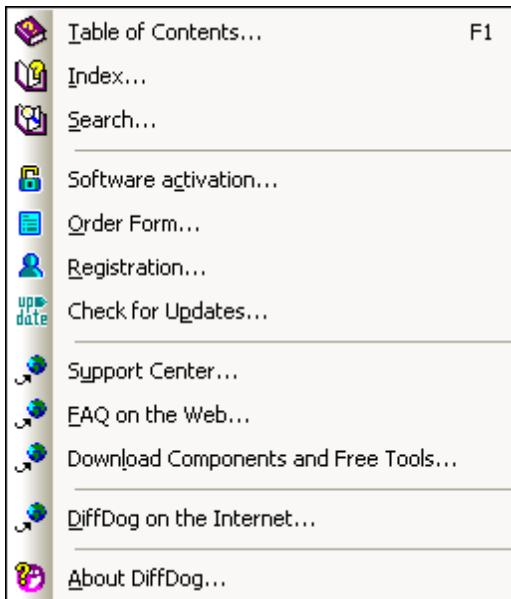


The **Cascade** and **Tile** options are available only when more than one window is selected. The **Activate** option is enabled only when a single window is selected.

Warning: To exit the **Windows** dialog box, click **OK**; do **not** click the **Close Window(s)** button in the dialog box. The **Close Window(s)** button closes the window(s) currently selected in the **Windows** dialog box.

19.11 Help Menu

The **Help** menu contains commands required to get help or more information on DiffDog, as well as links to information and support pages on our web server.



The **Help** menu also contains the [Registration](#) dialog box, which lets you enter your license key-code once you have purchased the product.

19.11.1 Table of Contents...



The **Table of Contents...** command displays a **hierarchical representation** of all chapters and topics contained in the online help system. Use this command to jump to the table of contents directly from within DiffDog.

Once the help window is open, use the three tabs to navigate between the table of contents, [index](#), and [search](#) panes. The Favorites tab lets you bookmark certain pages within the help system.

19.11.2 Index...



The **Index...** command accesses the **keyword index** of the Online Help. You can also use the Index tab in the left pane of the online help system.

The index lists all relevant keywords and lets you navigate to a topic by double-clicking the respective keyword. If more than one topic matches the selected keyword, you are presented a list of available topics to choose from.

19.11.3 Search...



The **Search...** command performs a **full-text search** on the entire online help system.

1. Enter your search term in the query field and press **Enter**.
The online help system displays a list of available topics that contain the search term you've entered.
2. Double-click on any item in the list to display the corresponding topic.

19.11.4 Software Activation...



After you download your Altova product software, you can activate it using either a free evaluation key or a purchased permanent license key.

- **Free evaluation key.** When you first start the software after downloading and installing it, the **Software Activation** dialog box will pop up. In it is a button to request a free evaluation key-code. Enter your name, company, and e-mail address in the dialog that appears, and click **Request Now!** The evaluation key is sent to the e-mail address you entered and should reach you in a few minutes. Now enter the key in the key-code field of the **Software Activation** dialog box and click **OK** to start working with your Altova product. The software will be unlocked for a period of 30 days.
- **Permanent license key.** The **Software Activation** dialog box contains a button to purchase a permanent license key. Clicking this button takes you to Altova's online shop, where you can purchase a permanent license key for your product. There are two types of permanent license: single-user and multi-user. Both will be sent to you by e-mail. A single-user license contains your license-data and includes your name, company, e-mail, and key-code. A multi-user license contains your license-data and includes your company name and key-code. Note that your license agreement does not allow you to install more than the licensed number of copies of your Altova software on the computers in your organization (per-seat license).

Note: When you enter your license information in the **Software Activation** dialog box, ensure that you enter the data exactly as given in your license e-mail. For multi-user licenses, each user should enter his or her own name in the Name field.

The **Software Activation** dialog box can be accessed at any time by clicking the **Help | Software Activation...** command.

19.11.5 Order Form...



When you are ready to order a licensed version of the software product, you can use either the **Order license key** button in the **Software Activation** dialog box (see [Software Activation](#)) or the **Help | Order Form...** command to proceed to the secure Altova Online Shop.

19.11.6 Registration...



The first time you start your Altova software after having activated it, a dialog box appears asking whether you would like to register your product. There are three buttons in this dialog:

- **OK:** Takes you to the Registration Form
- **Remind Me Later:** Pops up a dialog box in which you can select when you wish to be next reminded.
- **Cancel:** Closes the dialog box and suppresses it in future. If you wish to register at a later time, you can use the **Help | Registration...** command.

19.11.7 Check for Updates...



Checks with the Altova server whether a newer version than yours is currently available and displays a message accordingly.

19.11.8 Support Center...



If you have any questions regarding our product, please feel free to use this command to send a query to the Altova Support Center at any time. This is the place where you'll find links to the FAQ, support form, and e-mail addresses for contacting our support staff directly.

19.11.9 FAQ on the Web...



To help you in getting the best support possible, we are providing a list of Frequently Asked Questions (FAQ) on the Internet, that is constantly updated as our support staff encounters new issues that are raised by our customers.

Please make sure to check the FAQ before contacting our technical support team. This will allow you to get help more quickly.

We regret that we are not able to offer technical support by phone at this time, but our support staff will typically answer your e-mail requests within one business day.

If you would like to make a feature suggestion for a future version of DiffDog or if you wish to send us any other general feedback, please use the questionnaire form.

19.11.10 Download Components and Free Tools...



This command is a link to the Components Download page at the Altova website, from where you can download components, free tools, and third-party add-ins. Such software ranges from XSLT and XSL-FO processors to Application Server Platforms.

19.11.1:DiffDog on the Internet...



The **DiffDog on the Internet...** command takes you directly to the [Altova web-server](#) where you can find out about news, product updates and additional offers from the Altova team.

19.11.1:About DiffDog...



The **About DiffDog** command shows the DiffDog splash screen and copyright information dialog box, which includes the version number of your product and the DiffDog logo. If you are using the 64-bit version of DiffDog, this is indicated with the suffix (x64) after the application name. There is no suffix for the 32-bit version.

19.12 Status and Result Messages

For **file and directory comparisons**, status and result messages for comparisons appear in the Comparison Window Status Bar, which is located at the bottom of each Comparison Window.

In **database data comparisons**, the status as well as the result of a comparison is indicated by comparison result icons in the Database Data Comparison window.

Status messages

Status messages indicate the status of that particular comparison, essentially whether files/directories have been selected; whether a comparison has been carried out; and what kind of comparison was carried out (that is, which Comparison Mode was used).

Result messages

If differences are found, a summary of the comparison results is provided by result messages in the Status Bar. If no differences are found, this is also reported in the Status Bar. The result message lists number and type of differences in the form:

Result: n differences n in left pane only n in right pane only

In File Comparison windows, Text Comparison counts differences in terms of blocks of contiguous differences, even if the [Show Differences within Lines](#) option is selected. So if there are six differences in four lines, four differences are reported. If two or more lines with differences appear consecutively, without being interrupted by a line that is equal in both files, only one difference is counted in the result message. In XML comparisons, differences are counted in terms of nodes. Note that a difference is counted when the node exists in both documents but is different. If the node does not exist in one document, such a node is listed as being either present **in Left Only** or **in Right Only**. In Binary Comparisons, it is only stated whether or not the file pair is different; no details concerning the number or location of differences are available.

Comparison result icons

As long as no comparison has been started yet, no icons are displayed in the database data comparison window. For each compared table, however, an icon indicating whether or not the two tables are equal is displayed. By clicking such a comparison result icon, you can display the detailed differences of a comparison in an extra result window.

Chapter 20

Command Line Options

20 Command Line Options

DiffDog can be used from the command line either in Quiet Mode or in GUI Mode.

Quiet Mode

In Quiet Mode, directories or files, respectively, can be specified from the command line. The comparison mode and comparison options for such comparisons are defined on the command line. When the command is executed, a comparison is carried out, and the results of the comparison are either displayed on the command line or can be written to a file.

For **file comparisons**, the two files are listed and are followed by the result of the comparison. Examples:

- `c:\workarea\1.sps c:\workarea\add_element\1.sps equal`
The two files are equal.
- `c:\workarea\1.sps c:\workarea\add_element\1.sps different`
The two files are different.

For **directory comparisons**, each item or pair of items in the directories (that is, files and subdirectories) is/are listed, followed by the comparison result. For example:

- `c:\workarea\1\subdir_a\team.xml c:\workarea\add_element\subdir_a\team.xml different`
The two files are different.
- `c:\workarea\add_element\subdir_addelem\team.xml righonly`
The file is present in the directory in the right pane only.
- `c:\workarea\1.sps c:\workarea\add_element\1.sps equal`
The two files are equal.

The default comparison mode for directory comparisons is Quick Comparison Mode. To compare directories on the basis of the content of their files, use the Comparison Mode option.

GUI Mode

In GUI Mode, directories or files can be opened in a Directory Comparison window or File Comparison window, respectively, from the command line. The comparison mode and comparison options for such comparisons are specified on the command line. When the command is executed, the directories or files are opened in the appropriate comparison window, a comparison is carried out, and the results are displayed in the GUI.

If the Allow Multiple Instances option is selected in the [Application tab](#) of the **DiffDog Options** dialog box (menu option **Tools | DiffDog Options**), and an instance of DiffDog is already running, then a new instance of DiffDog will be started. If the Allow Multiple Instances option is not checked, then the new comparison is opened in a new comparison window of an already running DiffDog instance.

To run a comparison from the command line:

1. Be sure to start the command line processing from the same directory where Altova DiffDog is installed.

2. Enter DiffDogBatch into the command line window and add the required [options](#). Do not use DiffDog since this would start the normal DiffDog application.

20.1 Command Line Syntax

The command line options are simple switches and are optional. If not specified, the switch is off. Although they are organized into groups, the options listed can appear in any order. Note (i) that the options are not case-sensitive, and (ii) that you can use both the minus sign (-) and the slash (/) before options. The command line syntax is as follows:

```
DiffDogBatch [source name1 name2] [general options] [compare mode]
[compare options] [filter filename] [directory compare options]
[file-filter file filename] [export result] [>filename.txt]
```

source:

```
/cd    compare directories
/cf    compare files
```

name1 name2:

names of files or directories to compare

general options:

```
/h or /? output this information
/g      show GUI
```

compare mode:

```
/mE    compare according to extension settings
/mX    compare as XML
/mT    compare as text
/mB    compare binary
```

compare options:

```
/dD    detailed differencing
/dL    show differences within lines
/iB    ignore blank lines
/iC    ignore case but not in node names
/iCN   ignore case
/iD    ignore node depth
/iN    ignore namespace
/iINT A CD C PI D X
        ignore node types (Attributes, CData, Comments, Processing Instructions, Doctype,
        XML declaration)
/iOA   ignore order of attributes
/iOC   ignore order of child nodes
/iOC A G groupname T
        ignore order of child nodes and add attributes as comparison criteria (All Attributes,
        Specific Attributes as defined in Group groupname, Add Element Text as Comparison
        Criteria)
/iP    ignore prefixes
/iT    ignore text (XML)
/e     resolve entities
/wN    normalize whitespaces
/wS    strip all whitespaces
```

filter:

```
/f      filter out specific elements/attributes
```

filename:

name of predefined filter

directory compare options:

/iS ignore [sub-directories](#)

file-filter:

/fD filter out [specific files/directories](#) in directory comparison

file filename:

name of predefined file-filter

export:

/rT [export](#) differences in text format

/rX export differences in XML format

This switch must be followed by the "result" parameter (*see below*). In text comparisons, both the /rX and the /rT switches can be used; in XML comparisons, only the /rX switch is allowed. When exporting differences to text files, differences within lines (/dL) will not be exported.

result:

name of export file

> filename.txt

Filename.txt is the name of the file to which the results of the comparison is to be written. Note that it must be preceded by a greater than sign and must be the last parameter of the command. Do not use this option together with the export parameter.

Note: Some Comparison Options apply to XML Comparison Mode only (for example, /iN and /iNT). These options will therefore be ignored if the Comparison Mode option is not /mX.

20.2 Command Line Samples

Always be sure to start the command line processing from the same directory where Altova DiffDog is installed!

File Comparison

File comparisons in batch mode are indicated by the /cF switch following the DiffDogBatch command. If no further options are specified, DiffDogBatch will run in Quiet Mode. The command

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\DDIntroEnt.txt c:\workarea\DDIntroPro.txt
```

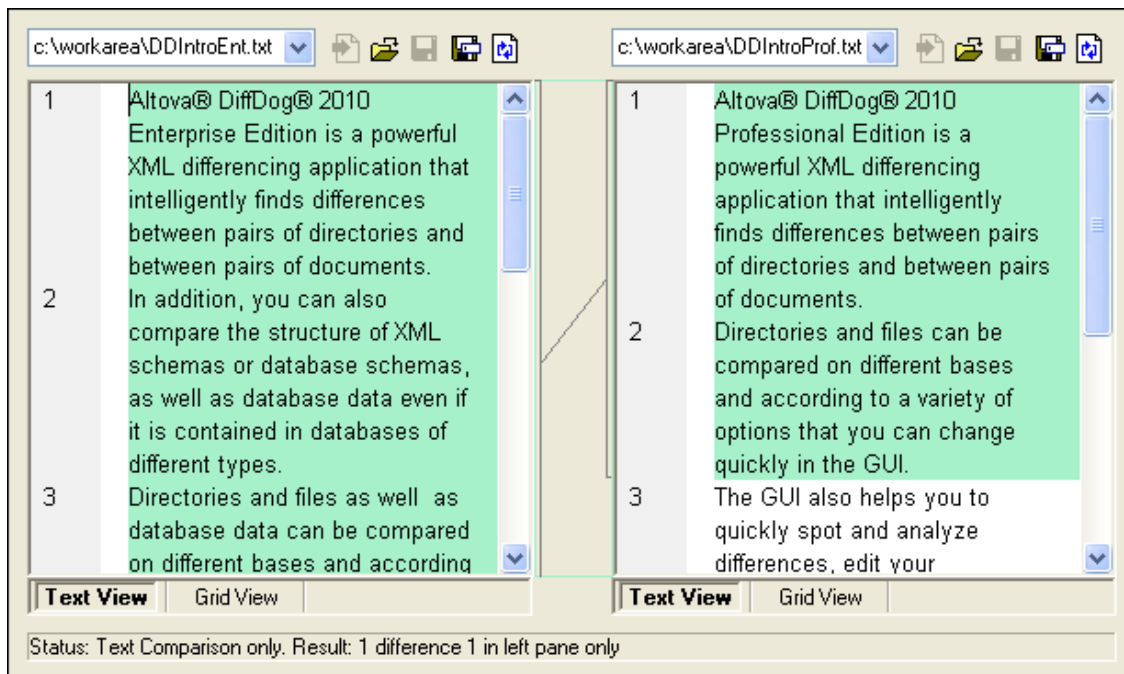
which compares text versions of the Welcome Pages of DiffDog's Enterprise and Professional Editions, will result in the following output:

```
c:\workarea\DDIntroEnt.txt c:\workarea\DDIntroPro.txt different
```

To have the **comparison result displayed in DiffDog** rather than in the command line window, use the /g switch to specify the GUI Mode:

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\DDIntroEnt.txt c:\workarea\DDIntroPro.txt /g
```

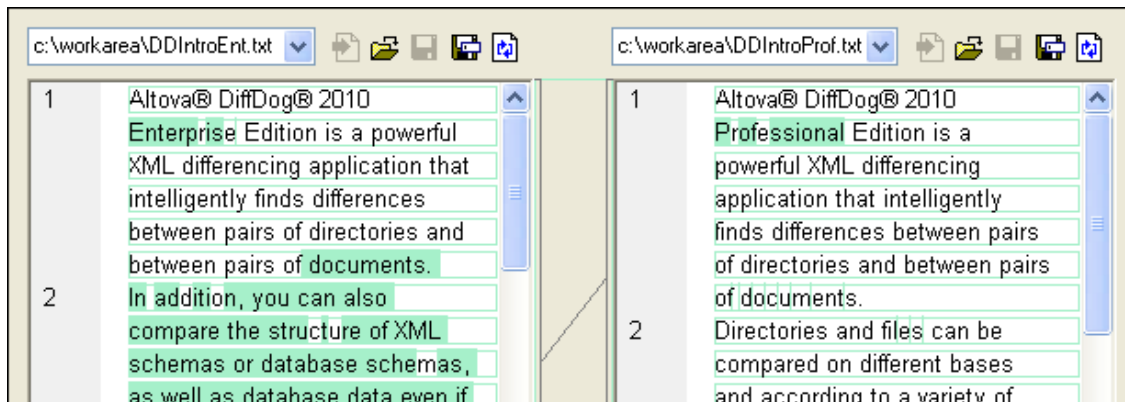
The comparison result is displayed in a new instance (or a new comparison window of the same instance if the Allow Multiple Instances option is not checked) of DiffDog. Note that all comparison options are deactivated by default if you run DiffDog from the command line. Any option that you want to use has to be activated by entering the appropriate switch in the command line.



To display differences within lines, add the /dL switch to the command:

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\DDIntroEnt.txt c:\workarea\DDIntroPro.txt /g /dL
```

This will result in the following output:



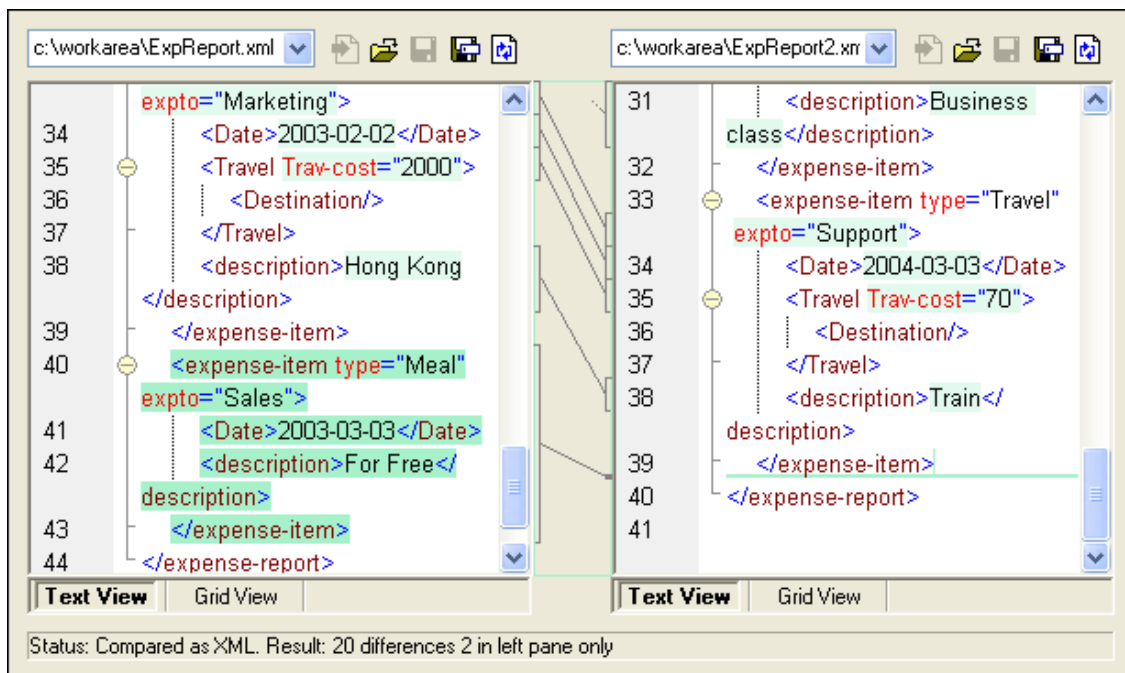
If you want to keep it for your records, you can **write the comparison result to a text file**. Add the file name (and path if you prefer a folder other than DiffDog's installation directory) to the command:

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\DDIntroEnt.txt c:\workarea\DDIntroPro.txt /dL >c:\workarea\IntroDiffs.txt
```

The content of this file will be equal to the command line output in Quiet Mode, so be sure to disable GUI Mode if you want to generate a result file, since otherwise the file will be created but remain empty because the result is not written to the command line but displayed in DiffDog in this case.

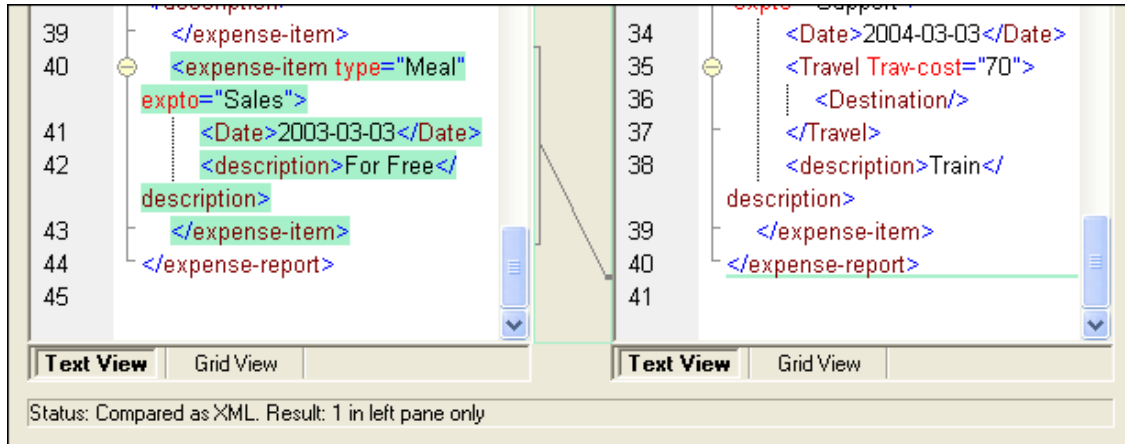
In order to compare two **XML files in XML mode with detailed differencing** enabled, you will have to add both the /mX and /dD switches:

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\ExpReport.xml c:\workarea\ExpReport2.xml /g /mX /dD
```



If you want to compare only the XML structure of the files and **ignore text**, add the /iT switch to the command:

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\ExpReport.xml c:\workarea\ExpReport2.xml /g /mX /iT
```



To generate and **export a detailed differencing report** in XML format, add the /rX switch and a file name (and path) to the command. If you do not specify a path, the file will be saved in DiffDog's installation directory.

```
c:\...\DiffDog2016\DiffDogBatch /cF c:\workarea\ExpReport.xml c:\workarea\ExpReport2.xml /mX /dD /rX c:\workarea\xmldiffs.xml
```

An XML file with the name and at the location that you have specified will be generated:



Directory Comparison

Directory comparisons in batch mode are indicated by the /cD switch following the DiffDogBatch command. The default comparison mode for directory comparisons is Quick Comparison Mode. To compare directories on the basis of the content of their files, use the Comparison Mode option.

If no options are specified, the comparison will run in Quiet mode and the result will be output to the command line window. The command

```
c:\...\DiffDog2016\DiffDogBatch /cD c:\workarea c:\work-backup
```

which compares the following directories

Name ▲	Size	Type	Date Modified	Name ▲	Size	Type	Date Modified
 DDIntroEnt.txt	2 KB	Text...	16/09/2009 09:06	 DDIntroEnt.txt	2 KB	Text...	16/09/2009 09:06
 DDIntroProf.txt	1 KB	Text...	16/09/2009 13:16	 DDIntroProf.txt	1 KB	Text...	16/09/2009 09:06
 ExpReport2.xml	2 KB	XML ...	16/09/2009 10:29	 ExpReport.xml	2 KB	XML ...	16/09/2009 10:29
 ExpReport.xml	2 KB	XML ...	16/09/2009 10:29	 xmldiffs2.xml	10 KB	XML ...	16/09/2009 11:46
 IntroDiffs.txt	0 KB	Text...	16/09/2009 10:18	 xmldiffs.xml	10 KB	XML ...	16/09/2009 11:41
 karli.txt	1 KB	Text...	16/09/2009 14:15				
 xmldiffs.xml	10 KB	XML ...	16/09/2009 13:17				

will result in the following output:

```
C:\workarea\DDIntroEnt.txt C:\work-backup\DDIntroEnt.txt equal
C:\workarea\DDIntroProf.txt C:\work-backup\DDIntroProf.txt different
C:\workarea\ExpReport.xml C:\work-backup\ExpReport.xml equal
C:\workarea\ExpReport2.xml leftonly
C:\workarea\IntroDiffs.txt leftonly
C:\workarea\xmldiffs.xml C:\work-backup\xmldiffs.xml different
C:\work-backup\xmldiffs2.xml rightonly
```

You can apply a **predefined filter** to your directory comparison by adding the /fD switch and specifying the name of the filter (use quotes if the name contains spaces!). New filters cannot be created from the command line.

```
c:\...\DiffDog2016\DiffDogBatch /cD c:\workarea c:\work-backup /mX /fD
"xml conformant files"
```

Only files that match the filter criteria are considered in the comparison:

```
C:\workarea\ExpReport.xml C:\work-backup\ExpReport.xml equal
C:\workarea\ExpReport2.xml leftonly
C:\workarea\xmldiffs.xml C:\work-backup\xmldiffs.xml different
C:\work-backup\xmldiffs2.xml rightonly
```

20.3 Exit Codes

DiffDog provides exit codes to allow for conditional batch processing of file or directory comparisons. DiffDogBatch can complete with the following codes:

- 0 Equal:** The file or directory that has been compared shows no differences.
- 1 Different:** The two files or directories that have been compared are not equal.
- 2 Error:** An error occurred while comparing the file or directory.

Chapter 21

Version Control System Integration

21 Version Control System Integration

DiffDog can easily be integrated with version control systems that provide the option to use a custom (external) executable for differencing and merging.

For your convenience, this section provide instructions on how to configure miscellaneous version control systems to use DiffDog as differencing and/or merging tool. If your version control system is not listed, or if it has a different version, refer to its documentation for instructions on how to use a custom differencing or merging tool.

This section includes the following topics:

- [Integrating DiffDog with Git](#)
- [Integrating DiffDog with TortoiseSVN](#)
- [Other Version Control Systems](#)

21.1 Integrating DiffDog with Git

If you are using Git (<http://www.git-scm.com>) as version control system, you can set DiffDog as Git differencing tool. You can also integrate DiffDog with any Git-based tool that provides the option to define a custom external differencing tool (for example, **gitk**). The configuration instructions below were tested for Git 1.9.4; they are likely to be similar for other Git versions. For further information about integrating Git with external differencing tools, refer to the Git user's manual.

To set DiffDog as the Git differencing tool:

- Add or edit the following lines in the **.gitconfig** file (this file is located in the user home directory, typically: **C:\Users\<username>\.gitconfig**):

```
[diff]
    tool = diffdog
[difftool "diffdog"]
    cmd = '"C:/Program Files/Altova/DiffDog2016/DiffDog.exe"'
"$LOCAL" "$REMOTE"
```

Note: If you are using DiffDog 32-bit on a 64-bit operating system, adjust the path to the DiffDog executable so that it points to **C:/Program Files (x86)** instead of **C:/Program Files**.

To check whether DiffDog is set as differencing tool:

- Open the Git shell and enter the command **git difftool --tool-help**, as shown below.

```
$ git difftool --tool-help
'git difftool --tool=<tool>' may be set to one of the following:
    vimdifff
    vimdifff2
    user-defined:
        diffdog
```

To view changes to a Git repository file in DiffDog:

1. Open the Git repository in the Git shell, and enter the command **git difftool <changed file>**, for example:

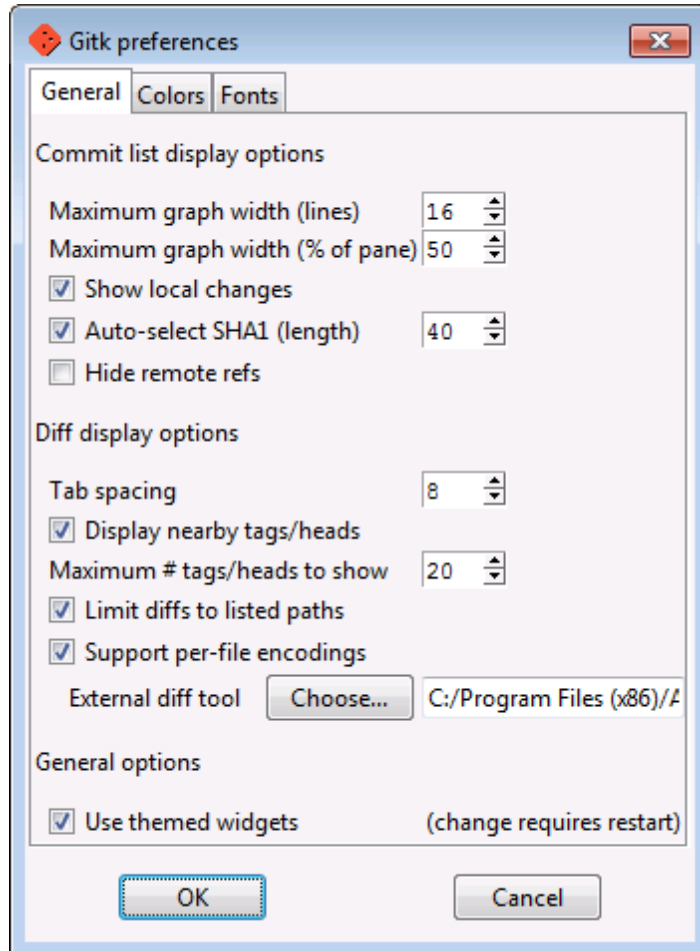
```
git difftool MyFile.txt
```

2. When prompted to confirm whether DiffDog should be launched, type **Y**, and then press **Enter**. To run DiffDog without being prompted first, use the command **git difftool -y <changed file>**.

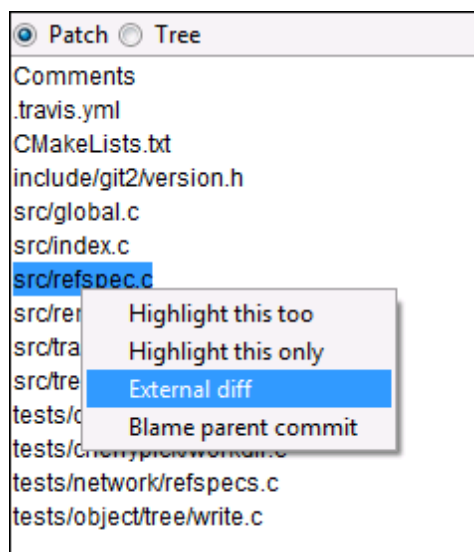
Note that the **difftool** command does not yield results if you provide an unchanged file as argument.

To configure DiffDog as differencing tool in the Git graphical user interface:

1. Run **gitk** (for example, by right-clicking on a directory which is under Git control, and selecting **Git History**).
2. On the **Edit** menu, click **Preferences**.
3. Under **External diff tool**, click **Choose** and select the path to the DiffDog executable (for example, C:/Program Files/Altova/DiffDog2016/DiffDog.exe).



In the Git graphical user interface, you can now use the **External diff** command to view in DiffDog the changes between two Git commits.



21.2 Integrating DiffDog with TortoiseSVN

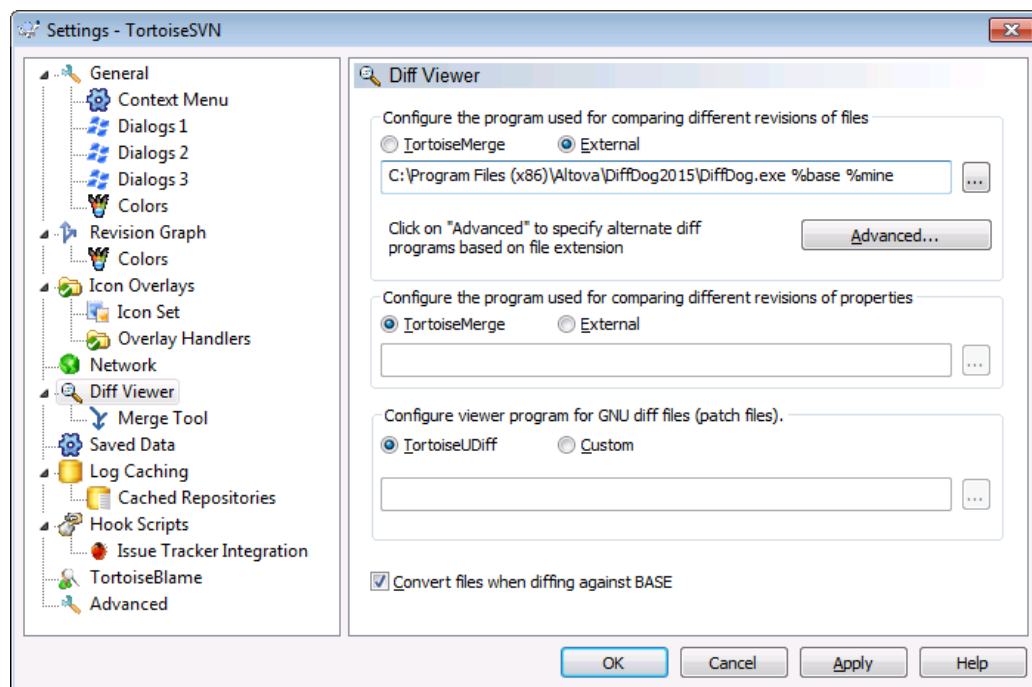
If you are using TortoiseSVN (<http://www.tortoissvn.net>) as version control system, you can set DiffDog as the program used for comparing different revisions of files. Although the configuration instructions below apply for TortoiseSVN 1.8.8, they are likely to be similar for other versions. For further information, refer to the TortoiseSVN user's manual.

To set DiffDog as the TortoiseSVN differencing tool:

1. Right-click on any folder, and select **TortoiseSVN | Settings**.
2. Click **Diff Viewer**.
3. Click **External**, and enter the path to the DiffDog executable in the format below.

```
C:/Program Files/Altova/DiffDog2016/DiffDog.exe %base %mine
```

Note: If you are using DiffDog 32-bit on a 64-bit operating system, adjust the path so that it points to C:/Program Files (x86) instead of C:/Program Files.



21.3 Other Version Control Systems

Borland StarTeam Cross-Platform Client 2008 R2

<http://www.borland.com/us/products/starteam>

The following steps integrate Altova DiffDog into Borland Star Team:

1. Use the StarTeam client personal options (**Tools | Personal options | File | Alternate applications**)
2. Compare utility: Enter the DiffDog full path.
3. Compare utility options: \$file1 \$file2.

Dynamsoft SourceAnywhere for VSS 5.3.2 Client

http://www.dynamsoft.com/Products/SAW_Overview.aspx

The following steps will integrate Altova DiffDog into Dynamsoft SourceAnywhere for VSS:

1. Go to the Dynamic SourceAnywhere For VSS client Options.
2. Specify the DiffDog full path as External application for diff/merge, with the arguments: %FIRST_FILE% "%%SECOND_FILE%".

Warning: Do not perform these settings from the Altova product options, as there is no possibility of inserting the external application parameters.

Dynamsoft SourceAnywhere Hosted Client (22252)

<http://www.dynamsoft.com/Products/SourceAnywhere-Hosting-Version-Control-Source-Control.aspx>

Dynamsoft SourceAnywhere Standalone 2.2 Client

<http://www.dynamsoft.com/Products/SourceAnywhere-SourceSafe-VSS.aspx>

The following steps will integrate Altova DiffDog into Dynamsoft SourceAnywhere Hosted and Dynamsoft SourceAnywhere Standalone:

1. Click the **Advanced** button of the Source Control tab.
2. Specify the DiffDog full path as External program application for diff/merge with arguments %FIRST_FILE% "%%SECOND_FILE%".

Jalindi Igloo 1.0.3

<http://www.jalindi.com/igloo/>

The following steps will integrate Altova DiffDog into Jalindi Igloo:

1. Start the **Show differences** command in your Altova application or other application that accesses the source control system's differencing tool.
2. Open the **Show Differences or Merge Files** panel.
3. Set the *External Diff Command* by entering the DiffDog full file path as the External Diff EXE path.

Warning: When using the default diff editor CvsConflictEditor, you might have problems comparing files with excessively long lines. We recommended that you "pretty print" all files (particularly .ump files) before storing them in the repository. This limits the line length, thus

avoiding problems with the CVSConflictEditor.

March-Hare CVS Suite Client 2008 (3321)

<http://www.march-hare.com/cvsnt/en.asp>

The following steps will integrate Altova DiffDog into Marc-Hare CVS Suite 2008:

1. Go to the TortoiseCVS Preferences and choose the Tools tab.
2. Specify the DiffDog full path as Diff application, and the parameters %1 %2 as two-way differencing parameters.

Mercurial

see under [Sergey Antonov HgScc 1.0.1](#)

Microsoft Visual Source Safe 2005 with CTP

<http://msdn.microsoft.com/en-us/vstudio/aa718670.aspx>

The following steps will integrate Altova DiffDog into Microsoft SourceSafe 2005:

1. Click the **Advanced** button of the Source Control tab.
2. Click the Custom Editors tab and enter C:\Program Files\Altova\DiffDog2016\DiffDogexe %1 %2 in the Command Line field.
3. In the Operation combo box, select *File Difference*.

Microsoft Team Foundation Server 2008/2010 MSSCCI Provider

<http://www.microsoft.com/downloads>

Requirements: Visual Studio 2008 Team Explorer or Visual Studio 2008 *with* Team Explorer 2008.

The following steps will integrate Altova DiffDog into Microsoft Visual Studio Team System 2008 Team Foundation Server MSSCCI Provider:

1. In the manager (Visual Studio 2008 Team Explorer or Visual Studio 2008) options, configure Altova DiffDog as new user tool
2. Choose Visual Studio Team Foundation Server source as the plug-in.
3. Configure a new user tool specifying: (i) the extensions of the files you wish to compare with DiffDog; and (ii) the DiffDog full file path.

Perforce P4V 2008.1

<http://www.perforce.com/>

The following steps will integrate Altova DiffDog into Perforce 2008:

1. Click the **Advanced** button of the Source Control tab.
2. Choose the tab Diff in the Preferences panel.
3. Check as default differencing application the field "Other application" and enter the DiffDog full file path.

PushOK CVS SCC NT 2.1.2.5**PushOK CVS SCC x64 version 2.2.0.4****PushOK SVN SCC 1.5.1.1****PushOK SVN SCC x64 version 1.6.3.1**

http://www.pushok.com/soft_cvs.php

The following steps will integrate Altova DiffDog into PushOK CVS NT and PushOK SVN SCC:

1. Click the **Advanced** button of the Source Control tab.
2. Choose the CVS Executables tab.
3. Select the value *External merge/compare tool* into the Diff/Merge field.
4. Insert the DiffDog full file path.
5. Edit the value %first %second into the "2 way diff cmd" field.

Warning: When using the default differencing editor CvsConflictEditor, you might have problems comparing files with excessively long lines. We recommended that you "pretty print" all files (particularly .ump files) before storing them in the repository. This limits the line length, thus avoiding problems with the CVSConflictEditor.

QSC Team Coherence Client 7.2.1.35

<http://www.teamcoherence.com>

The following steps will integrate Altova DiffDog into Team Coherence Version Manager:

1. Go to Team Coherence client Options "Difference Viewer".
2. Specify as the Default Difference Viewer application, the DiffDog full file path.
3. Specify as parameters: "\$LF \$RF".

Warning: It is possible that the new settings will only be applied after a Windows log off.

Seapine Surround SCM Client 2009.0.0

<http://www.seapine.com/surroundscm.html>

The following steps will integrate Altova DiffDog into Seapine Surround SCM:

1. Go to the Surround SCM client user options (Diff/Merge) section.
2. Edit the Diff/Merge settings to compare with a selected application.
3. Enter the DiffDog full path with the parameters "%1" "%2".
4. Restart the Surround SCM client and the Altova products.

Sergey Antonov HgSCC 1.0.1

http://www.newsupaplex.pp.ru/hgscs_news_eng.html

The following steps will integrate Altova DiffDog into Mercurial:

1. Click the **Advanced** button of the Source Control tab.
2. Select differencing tool "custom", and specify the DiffDog full path.

SourceGear Vault 4.1.4 Client

<http://www.sourcegear.com/vault>

The following steps will integrate Altova DiffDog into SourceGear Fortress and SourceGear Vault:

1. Click the **Advanced** button of the Source Control tab.
2. Set the Diff/Merge Vault options by specifying as the differencing program the DiffDog full path and using the Arguments:
`/ro1 /ro2 /title1:"%LEFT_LABEL%" /title2:"%RIGHT_LABEL%" "%LEFT_PATH%" "%RIGHT_PATH%"`

SourceGear SourceOffsite Client 4.2.0 (Windows)

<http://www.sourcegear.com/sos/>

The following steps will integrate DiffDog into SourceGear SourceOffsite:

1. Click the **Advanced** button of the Source Control tab.
2. Specify as "External Programs", "Application for comparing files" the DiffDog full path.

TamTam CVS SCC 1.2.40, TamTam SVN SCC 1.2.24

<http://www.fieldstonsoftware.com/software/tamtam/index.shtml>

The following steps will integrate Altova DiffDog into TamTam CVS SCC and TamTam SVN SCC:

1. Click the **Advanced** button of the Source Control tab.
2. Specify the DiffDog full file path as the external tool for Diff/Merge and Conflict.

Warning: The default differencing editor CvsConflictEditor, has problems comparing files with excessively long lines. We recommended that you "pretty print" all files (particularly .ump files) before storing them in the repository. This limits the line length, avoiding problems with the CVSConflictEditor.

Chapter 22

License Information

22 License Information

This section contains:

- Information about the [distribution of this software product](#)
- Information about [software activation and license metering](#)
- Information about the [intellectual property rights](#) related to this software product
- The [End-User License Agreement](#) governing the use of this software product

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(a) If you have not purchased SMP, you will receive the Software AS IS and will not receive any maintenance releases or updates. However, Altova, at its option and in its sole discretion on a case by case basis, may decide to offer maintenance releases to you as a courtesy, but these maintenance releases will not include any new features in excess of the feature set at the time of your purchase of the Software. In addition, Altova will provide free technical support to you for thirty (30) days after the date of your purchase (the "Support Period" for the purposes of this paragraph 6(a), and Altova, in its sole discretion on a case by case basis, may also provide free courtesy technical support during your thirty (30) day evaluation period. Technical support is provided via a Web-based support form only, and there is no guaranteed response time.

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During the Support Period you may also report any Software problem or error to Altova. If Altova determines that a reported reproducible material error in the Software exists and significantly impairs the usability and utility of the Software, Altova agrees to use reasonable commercial efforts to correct or provide a usable work-around solution in an upcoming maintenance release or

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If Altova, in its discretion, requests written verification of an error or malfunction discovered by you or requests supporting example files that exhibit the Software problem, you shall promptly provide such verification or files, by email, telecopy, or overnight mail, setting forth in reasonable detail the respects in which the Software fails to perform. You shall use reasonable efforts to cooperate in diagnosis or study of errors. Altova may include error corrections in maintenance releases, updates, or new major releases of the Software. Altova is not obligated to fix errors that are immaterial. Immaterial errors are those that do not significantly impact use of the Software as determined by Altova in its sole discretion. Whether or not you have purchased the Support & Maintenance Package, technical support only covers issues or questions resulting directly out of the operation of the Software and Altova will not provide you with generic consultation, assistance, or advice under any circumstances.

Updating Software may require the updating of software not covered by this Agreement before installation. Updates of the operating system and application software not specifically covered by this Agreement are your responsibility and will not be provided by Altova under this Agreement. Altova's obligations under this Section 6 are contingent upon your proper use of the Software and your compliance with the terms and conditions of this Agreement at all times. Altova shall be under no obligation to provide the above technical support if, in Altova's opinion, the Software has failed due to the following conditions: (i) damage caused by the relocation of the Software to another location or CPU; (ii) alterations, modifications or attempts to change the Software without Altova's written approval; (iii) causes external to the Software, such as natural disasters, the failure or fluctuation of electrical power, or computer equipment failure; (iv) your failure to maintain the Software at Altova's specified release level; or (v) use of the Software with other software without Altova's prior written approval. It will be your sole responsibility to: (i) comply with all Altova-specified operating and troubleshooting procedures and then notify Altova immediately of Software malfunction and provide Altova with complete information thereof; (ii) provide for the security of your confidential information; (iii) establish and maintain backup systems and procedures necessary to reconstruct lost or altered files, data or programs.

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(a) License Metering. The Software includes a built-in license metering module that is designed to assist you with monitoring license compliance in small local area networks (LAN). The metering module attempts to communicate with other machines on your local area network (LAN). You permit Altova to use your internal network for license monitoring for this purpose. This license metering module may be used to assist with your license compliance but should not be the sole method. Should your firewall settings block said communications, you must deploy an accurate means of monitoring usage by the end user and preventing users from using the Software more than the Permitted Number.

(b) License Compliance Monitoring. You are required to utilize a process or tool to ensure that the Permitted Number is not exceeded. Without prejudice or waiver of any potential violations of the Agreement, Altova may provide you with additional compliance tools should you be unable to accurately account for license usage within your organization. If provided with such a tool by Altova, you (a) are required to use it in order to comply with the terms of this Agreement and (b) permit Altova to use your internal network for license monitoring and metering and to generate compliance reports that are communicated to Altova from time to time.

(c) Software Activation. The Software may use your internal network and Internet connection for the purpose of transmitting license-related data at the time of installation, registration, use, or update to an Altova Master License Server and validating the

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(e) **Use of Data.** The terms and conditions of the Privacy Policy are set out in full at <http://www.altova.com/privacy> and are incorporated by reference into this Agreement. By your acceptance of the terms of this Agreement and/or use of the Software, you authorize the collection, use and disclosure of information collected by Altova for the purposes provided for in this Agreement and/or the Privacy Policy. Altova has the right in its sole discretion to amend this provision of the Agreement and/or Privacy Policy at any time. You are encouraged to review the terms of the Privacy Policy as posted on the Altova Web site from time to time.

(f) **Audit Rights.** You agree that Altova may audit your use of the Software for compliance with the terms of this Agreement at any time, upon reasonable notice. In the event that such audit reveals any use of the Software by you other than in full compliance with the terms of this Agreement, you shall reimburse Altova for all reasonable expenses related to such audit in addition to any other liabilities you may incur as a result of such non-compliance.

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8. TERM AND TERMINATION

This Agreement may be terminated (a) by your giving Altova written notice of termination; (b) by Altova, at its option, giving you written notice of termination if you commit a breach of this Agreement and fail to cure such breach within ten (10) days after notice from Altova; or (c) at the

request of an authorized Altova reseller in the event that you fail to make your license payment or other monies due and payable. In addition the Agreement governing your use of a previous version of the Software that you have upgraded or updated is terminated upon your acceptance of the terms and conditions of the Agreement accompanying such upgrade or update. Upon any termination of the Agreement, you must cease all use of the Software that this Agreement governs, destroy all copies then in your possession or control and take such other actions as Altova may reasonably request to ensure that no copies of the Software remain in your possession or control. The terms and conditions set forth in Sections 1(h), 1(i), 1(j), 1(k), 1(l), 2, 5, 7, 9, 10, 11, and 11 survive termination as applicable.

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Notwithstanding the foregoing, if you are an agency, instrumentality or department of the federal government of the United States, then this Agreement shall be governed in accordance with the laws of the United States of America, and in the absence of applicable federal law, the laws of the Commonwealth of Massachusetts will apply. Further, and notwithstanding anything to the contrary in this Agreement (including but not limited to Section 5 (Indemnification)), all claims, demands, complaints and disputes will be subject to the Contract Disputes Act (41 U.S.C. §§7101 *et seq.*), the Tucker Act (28 U.S.C. §1346(a) and §1491), or the Federal Tort Claims Act (28 U.S.C. §§1346(b), 2401-2402, 2671-2672, 2674-2680), FAR 1.601(a) and 43.102 (Contract Modifications); FAR 12.302(b), as applicable, or other applicable governing authority. For the avoidance of doubt, if you are an agency, instrumentality, or department of the federal, state or local government of the U.S. or a U.S. public and accredited educational institution, then your indemnification obligations are only applicable to the extent they would not cause you to violate any applicable law (e.g., the Anti-Deficiency Act), and you have any legally required authorization or authorizing statute.

11. THIRD PARTY SOFTWARE

The Software may contain third party software which requires notices and/or additional terms and conditions. Such required third party software notices and/or additional terms and conditions are located at our Website at http://www.altova.com/legal_3rdparty.html and are made a part of and incorporated by reference into this Agreement. By accepting this Agreement, you are also accepting the additional terms and conditions, if any, set forth therein.

12. JURISDICTION, CHOICE OF LAW, AND VENUE

If you are located in the European Union and are using the Software in the European Union and not in the United States, then this Agreement will be governed by and construed in accordance with the laws of the Republic of Austria (excluding its conflict of laws principles and the U.N. Convention on Contracts for the International Sale of Goods) and you expressly agree that exclusive jurisdiction for any claim or dispute with Altova or relating in any way to your use of the Software resides in the Handelsgericht, Wien (Commercial Court, Vienna) and you further agree and expressly consent to the exercise of personal jurisdiction in the Handelsgericht, Wien (Commercial Court, Vienna) in connection with any such dispute or claim.

If you are located in the United States or are using the Software in the United States then this Agreement will be governed by and construed in accordance with the laws of the Commonwealth of Massachusetts, USA (excluding its conflict of laws principles and the U.N. Convention on Contracts for the International Sale of Goods) and you expressly agree that exclusive jurisdiction for any claim or dispute with Altova or relating in any way to your use of the Software resides in the federal or state courts of the Commonwealth of Massachusetts and you further agree and expressly consent to the exercise of personal jurisdiction in the federal or state courts of the Commonwealth of Massachusetts in connection with any such dispute or claim.

If you are located outside of the European Union or the United States and are not using the Software in the United States, then this Agreement will be governed by and construed in accordance with the laws of the Republic of Austria (excluding its conflict of laws principles and the U.N. Convention on Contracts for the International Sale of Goods) and you expressly agree that exclusive jurisdiction for any claim or dispute with Altova or relating in any way to your use of the Software resides in the Handelsgericht, Wien (Commercial Court, Vienna) and you further agree and expressly consent to the exercise of personal jurisdiction in the Handelsgericht Wien (Commercial Court, Vienna) in connection with any such dispute or claim. This Agreement will not be governed by the conflict of law rules of any jurisdiction or the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded.

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Where Altova has provided you with a foreign translation of the English language version, you agree that the translation is provided for your convenience only and that the English language version will control. If there is any contradiction between the English language version and a translation, then the English language version shall take precedence.

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This Agreement contains the entire agreement and understanding of the parties with respect to the subject matter hereof, and supersedes all prior written and oral understandings of the parties with respect to the subject matter hereof. Any notice or other communication given under this Agreement shall be in writing and shall have been properly given by either of us to the other if sent by certified or registered mail, return receipt requested, or by overnight courier to the address shown on Altova's Web site for Altova and the address shown in Altova's records for you, or such other address as the parties may designate by notice given in the manner set forth above. This Agreement will bind and inure to the benefit of the parties and our respective heirs, personal and legal representatives, affiliates, successors and permitted assigns. The failure of either of us at any time to require performance of any provision hereof shall in no manner affect such party's right at a later time to enforce the same or any other term of this Agreement. This Agreement may be amended only by a document in writing signed by both of us. In the event of a breach or

threatened breach of this Agreement by either party, the other shall have all applicable equitable as well as legal remedies. Each party is duly authorized and empowered to enter into and perform this Agreement. If, for any reason, any provision of this Agreement is held invalid or otherwise unenforceable, such invalidity or unenforceability shall not affect the remainder of this Agreement, and this Agreement shall continue in full force and effect to the fullest extent allowed by law. The parties knowingly and expressly consent to the foregoing terms and conditions.

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