Altova DiffDog 2024 Professional Edition

User & Reference Manual

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Table of Contents

1 Introduction 8

1.1 Support Notes 9
1.2 Product Features 10
1.3 DiffDog Terminology 12
1.4 Comparison Modes 14
1.5 The DiffDog Interface 16

2 File Comparison 18

2.1 Running a File Comparison 20
2.2 Modifying the File Comparison Options 23
2.2.1 Options for Text Comparison 24
2.2.2 Options for XML Comparison 25
2.2.3 Comparison Options for Whitespace Characters 33
2.3 Displaying Differences in Files 35
2.3.1 Text View 35
2.3.2 Grid View 39
2.4 Editing Files 43
2.4.1 Changing the Content 43
2.4.2 Changing the Structure 44
2.5 Finding and Replacing Text 45
2.5.1 Finding and Replacing in Text View 45
2.5.2 Finding and Replacing in Grid View 49
2.5.3 Example: Replacing Text Using Regular Expressions 50
2.6 Saving Files 54

3 Directory Comparison 55

3.1 Opening a Directory Comparison Window 58
3.2 Selecting Directories for Comparison 59

3.3 Modifying the Directory Comparison Options ... 60
3.4 Running a Directory Comparison ... 61
3.5 Configuring the View ... 62
3.6 Displaying Differences in Directories ... 64
3.7 Comparing Files from within a Directory Comparison ... 66
3.8 Synchronizing Directories ... 67
3.8.1 Full Synchronization ... 68
3.8.2 Changing the Synchronization Settings ... 68
3.8.3 Overriding the Synchronization Actions ... 69
3.8.4 Running a Directory Synchronization ... 71

4 Navigating Differences 73

5 Merging Differences 74

6 Exporting Differences 75

7 Saving and Loading Comparisons 76

8 Comparison Management Options 78

8.1 Automatic Comparison Functions ... 79
8.2 Recently Compared Pairs ... 80

9 Menu Commands 81

9.1 Toolbar Icons ... 82
9.2 File Menu ... 84
9.2.1 Compare Files ... 84
9.2.2 Compare Directories ... 84
9.2.3 Open ... 84
9.2.4 Close ... 84
9.2.5 Close All ... 85

9.2.6 Save ... 85
9.2.7 Save As ... 85
9.2.8 Export Differences ... 86
9.2.9 Print ... 86
9.2.10 Print Preview ... 86
9.2.11 Print Setup ... 86
9.2.12 Exit ... 86
9.3 Edit Menu ... 87
9.3.1 Undo ... 87
9.3.2 Redo ... 87
9.3.3 Cut ... 88
9.3.4 Copy ... 88
9.3.5 Paste ... 88
9.3.6 Delete ... 88
9.3.7 Select All ... 88
9.3.8 Find ... 89
9.3.9 Find next ... 89
9.3.10 Replace ... 89
9.4 View Menu ... 90
9.4.1 Text View ... 90
9.4.2 Grid View ... 90
9.4.3 Toolbars ... 90
9.4.4 Status Bar ... 90
9.4.5 Synchronized Scrolling ... 91
9.4.6 Go to line/char ... 91
9.5 Text View Menu ... 93
9.5.1 Word Wrap ... 93
9.5.2 Pretty-Print XML Text ... 93
9.5.3 Insert/Remove Bookmark ... 93
9.5.4 Go to Next Bookmark ... 93
9.5.5 Go to Previous Bookmark ... 94
9.5.6 Remove All Bookmarks ... 94
9.5.7 Toggle All Folds ... 94
9.5.8 Text View Settings ... 94
9.6 Grid View Menu ... 95

9.6.1 Insert ... 95
9.6.2 Append ... 98
9.6.3 Add Child ... 102
9.6.4 Convert to ... 104
9.6.5 Table ... 105
9.6.6 Move Left ... 106
9.6.7 Move Right ... 106
9.6.8 Enclose in Element ... 106
9.7 XML Menu ... 108
9.7.1 Check Well-Formedness ... 108
9.7.2 Validate ... 108
9.8 Diff and Merge Menu ... 109
9.8.1 Directory Comparison Commands ... 110
9.9 Tools Menu ... 112
9.9.1 DiffDog Options ... 112
9.9.2 Comparison Options ... 112
9.9.3 Comparison Document Options ... 112
9.9.4 Customize ... 113
9.9.5 Restore Toolbars and Windows ... 122
9.10 Window Menu ... 123
9.11 Help Menu ... 124
9.12 Status and Result Messages ... 129

10 DiffDog Options 130

10.1 Application ... 131
10.2 File Comparison ... 133
10.3 Directory Comparison ... 135
10.3.1 Defining a Filter ... 136
10.4 File Types ... 139
10.5 Network ... 141
10.6 Network Proxy Settings ... 143
10.7 Help ... 145

11 Command Line Options 146

11.1 Command Line Syntax 147
11.2 Command Line Examples 149

12 Version Control System Integration 150

12.1 Integrating DiffDog with Git 151
12.2 Integrating DiffDog with TortoiseSVN 154
12.3 Integrating DiffDog with SmartSVN 155
12.4 Other Version Control Systems 157

13 License Information 161

13.1 Electronic Software Distribution 162
13.2 Software Activation and License Metering 163
13.3 Altova End-User License Agreement 165

Index 166

1 Introduction

Altova website: Diff tool

Altova DiffDog 2024 Professional Edition is a powerful differencing application that intelligently finds differences between pairs of directories and between pairs of files. Three-way comparisons of files are also supported. Data can be compared on different bases and according to a variety of options that you can change quickly in the graphical user interface. In addition, DiffDog allows you to merge file differences, synchronize the content of two directories and copy or delete changed files with a mouse click.

DiffDog is a 32/64-bit Windows application that runs on Windows 10, Windows 11, and on Windows Server 2016 or newer, see also Support Notes 9.

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1.1 Support Notes

DiffDog runs on the following operating systems:

- Windows 10, Windows 11
- Windows Server 2016 or newer

Both the 32-bit and 64-bit platforms are supported.

1.2 Product Features

DiffDog provides the following main features.

File Comparison

A file comparison[18] 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[80].

Files can be compared as text or as structured XML. You can also compare binary files, however DiffDog cannot 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[73] enables you to move easily among differences.

A wide range of comparison options[23] 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[43] and saved[54] directly within File Comparison windows and you can specify whether and how backups of files[133] you edit should be kept. Comparisons can be done dynamically as you edit[79].

DiffDog provides high-level find-and-replace functionality, which also includes support for regular expressions. Differences between files can be merged[74], 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[55] 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[80]; as a result previously compared pairs can quickly be opened in a Directory Comparison window. You can define filters[136] 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

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expandable/collapsible trees and show details such as file size and last modification date. The view of the compared directories can be configured[62] 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[64] 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[67] 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[66] directly from within a Directory Comparison window by double-clicking a file in a directory.

Interface

Multiple comparison windows (directory and file) can be opened in DiffDog at a time. Directory synchronization[67] 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 and File Comparison windows, including the background colors[133] that are used to highlight differences. Files can be viewed in Text View[35] or Altova's Grid View[39].

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[139] 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[146]. The application can be integrated with any source control system which provides the possibility to set up a path to the DiffDog executable.

1.3 DiffDog Terminology

Terms used in this documentation are defined below.

Comparisons

DiffDog enables you to make the following kinds of comparisons: File Comparisons and Directory Comparisons.

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.

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.

Directories and Folders

These two terms are used interchangeably.

Difference

Two types of differences are distinguished: (1) differences between two compared files, and (2) differences between two compared directories.

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[23] 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

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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[13] and Non-Equal Files[13].

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[12] 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.

Merging

Differences found in a filecomparison can be merged, that is, copied from one file to the other. The block that is copied overwrites the corresponding block or space in the compared file. In file comparisons, merges are performed for the active (current) difference, and can be performed in either direction. Note that non-equal files in a Directory Comparison can also be copied from one pane (directory) to the other.

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.

1.4 Comparison Modes

Files and directories can be compared in DiffDog in several ways. The comparison mode is indicated by the icons in the Comparison Mode toolbar. 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 available comparison modes are described below.

File comparison

When a File Comparison[18] 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[139] 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[55] 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.

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 and directory), 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 and Directory Comparison window has a comparison mode.

When new comparison windows (file or directory) are opened, they have the current comparison mode for that type of comparison window (file or directory). 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.

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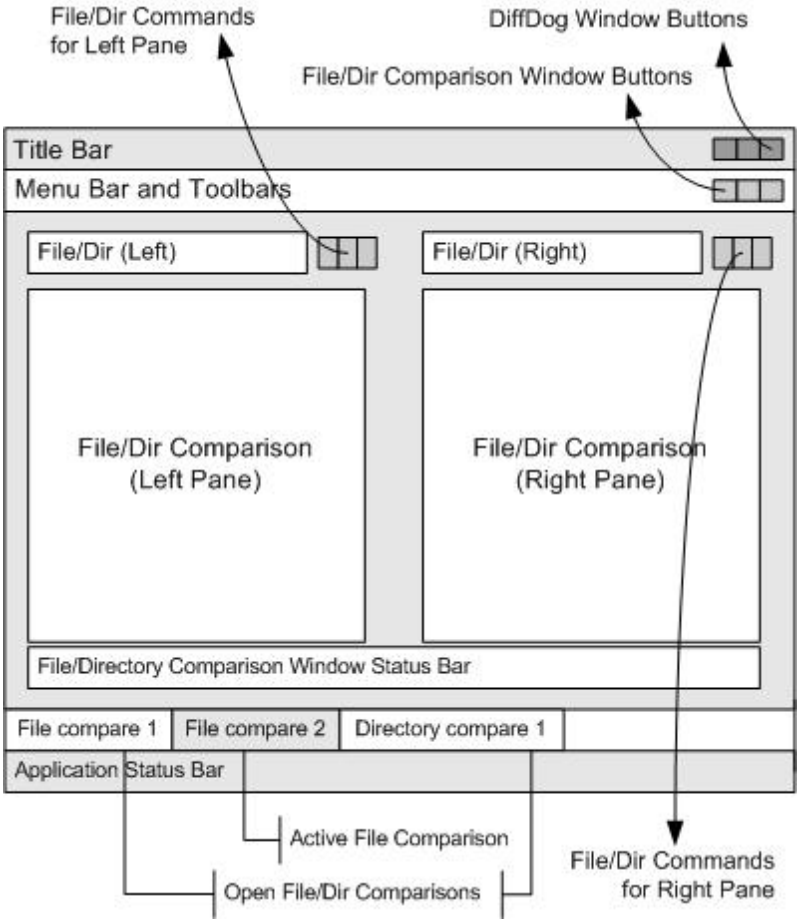
If you change the comparison mode of a comparison window, then that comparison mode applies to that particular comparison window. The comparison mode of other open comparison windows is not affected. However, the newly selected comparison mode becomes the current comparison mode and is applied to all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

1.5 The DiffDog Interface

The DiffDog interface displays multiple File Comparison windows and Directory Comparison windows within the DiffDog application window. The schematic diagram below illustrates the main parts of the interface. It is accompanied by a brief description of the various interface parts.



Title Bar

The Title Bar displays the application name (i.e., DiffDog) followed by the name of the active File Comparison window or Directory 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.

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File/Directory Comparison Window

Multiple File Comparison windows and/or Directory 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.

Comparison Window Status Bar

The status bar of a 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 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.

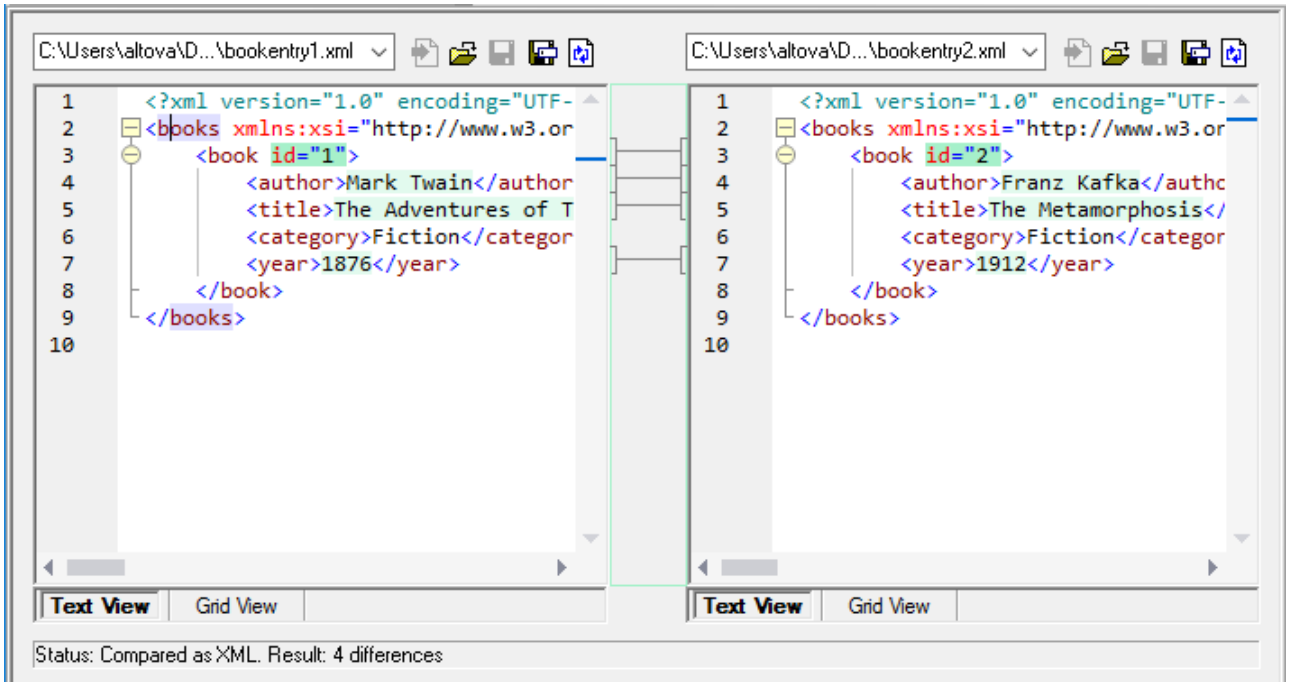
2 File Comparison

Altova website: File compare tool

This chapter provides instructions on how compare two files with DiffDog. The information enclosed here is applicable to most file types.

Note: To compare ZIP-conformant files and Office Open XML (OOXML) files, run a directory comparison instead of a file comparison (since ZIP and OOXML files contain multiple files). Otherwise, if you attempt to compare ZIP-conformant files using a file comparison, DiffDog will prompt you to run a directory comparison instead. For more information, see Comparing Directories 55.

A file comparison in DiffDog involves adding the files to the File Comparison window. The File Comparison window enables you to view file differences side by side. For step-by-step instructions, see Running a File Comparison 20.



File Comparison window

As illustrated above, the File Comparison window consists of two panes called Text View and Grid View. The Text View is the default editor for most file types. It displays the content of the file, while offering multiple navigation aids, such as word wrapping, code folding, line numbering, syntax highlighting for numerous file types, as well as the ability to find and replace text or search by regular expressions. In case of XML files, the Text View offers even more capabilities, such as automatic highlighting of start and end tags, and pretty-printing. For more information, see Text View 35.

The Grid View is applicable to well-formed files, typically XML documents. It is particularly useful if you want to see the structure of the document at a glance, easily expand or collapse specific sections, or modify content in table-like manner, without accidentally changing the XML tags. For more information, see Grid View 39.

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If necessary, you can edit files directly in either the Text View or the Grid View (see Editing Files [43]). Changes can be saved back to the original file, or reverted (either using Undo, or by reloading the original file from the disk). For information about merging differences from one file to another, see Merging Differences [74].

If you are frequently comparing the same or similar sets of files, you can save the comparison as a file and open it at a later time (see Saving and Loading Comparisons [76]).

Various comparison options can be customized (see Modifying the File Comparison Options [23]).

2.1 Running a File Comparison

There are two ways to start a file comparison in DiffDog:

1. From the DiffDog graphical user interface
2. From Windows Explorer, by right-clicking a file and using the **Compare with DiffDog** context menu command.

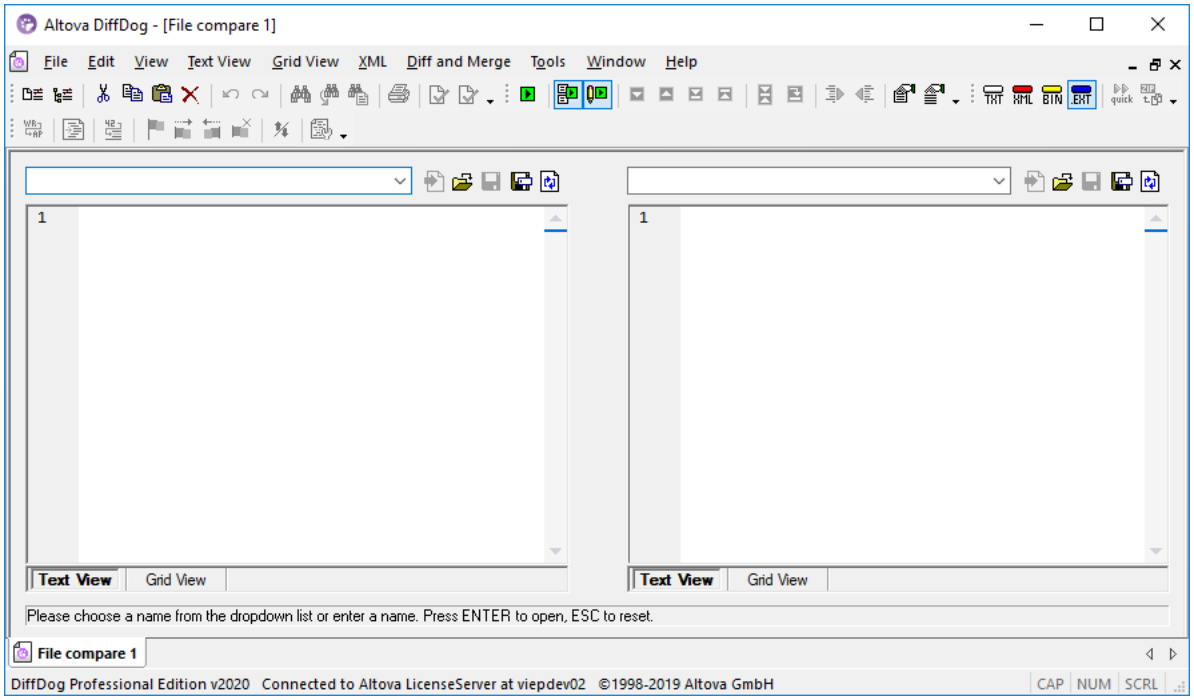
Depending on your preferences, comparisons may occur automatically immediately after you open both files. You can also choose to initiate comparisons only explicitly, with a button click.

All these subjects are described in more detail below.

Starting a comparison from DiffDog

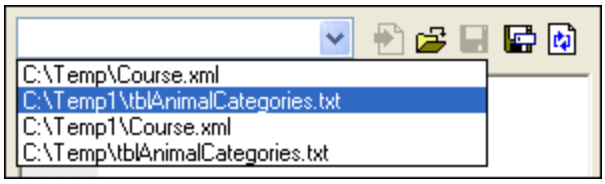
To run a file comparison with DiffDog:

1. Select the menu option **File | Compare Files** or click the **Compare files** toolbar button.



2. Choose a comparison mode that is appropriate for the file types being compared (binary, text, XML, or extension-based). For more information, see Comparison Modes 14.
3. Select the files to be compared. There are various ways to do this, as follows:
   - In the left pane of an existing File Comparison window, click the **Open** button and select a file in the Windows Open dialog box.
   - Enter the full path to a file and click the **Apply** button.

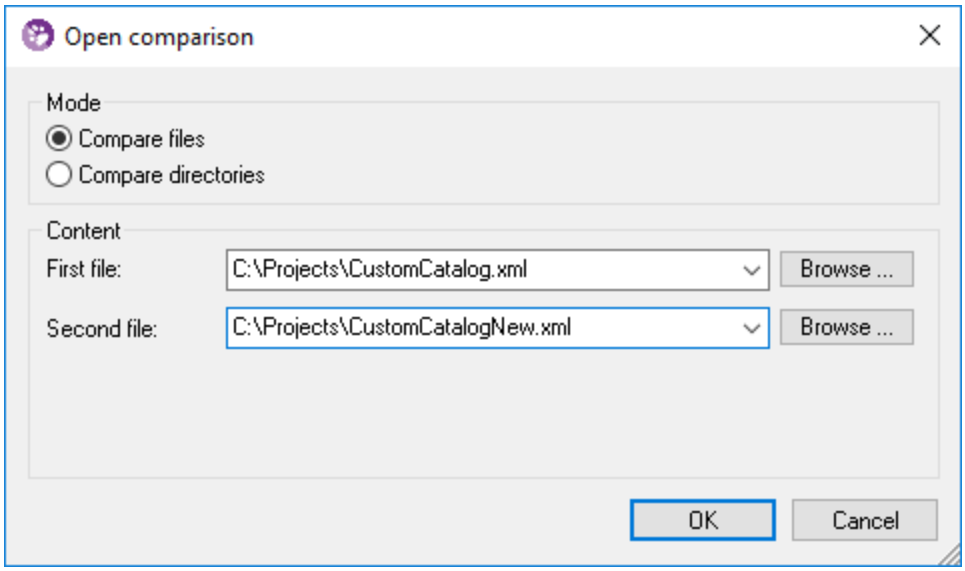
- Drag a file from the Windows Explorer into the pane.
- Select a previously compared file from the drop-down list.



4. Repeat any of the steps described in step 3 for the right pane.

Alternatively, you can run a file comparison as follows:

1. On the **File** menu, click **Open** (alternatively, press **Ctrl+O**).



2. In the Open comparison dialog box, select **Compare files** .
3. Browse for the files to be compared and click OK.

Starting a file comparison from Windows Explorer

Another way to run a file comparison is as follows:

1. In Windows Explorer, select the two files to be compared. To select multiple files in Windows Explorer, hold the **Ctrl** key pressed while selecting a file.
2. Right-click one of the files, and select **Compare with Altova DiffDog** from the context menu.

Automatic comparison

By default, when the two documents to be compared are loaded into the comparison window, a comparison is automatically carried out. To enable or disable automatic comparison, do one of the following:

- On the **Diff and Merge** menu, select the **Autostart Comparison** menu command.
- Click the **Autostart Comparison** toolbar button.

In addition, comparisons can be explicitly started any number of times. To start a comparison explicitly, do one of the following:

- On the **Diff and Merge** menu, select the **Start Comparison** command.
- Click the **Start Comparison** toolbar button.

When editing documents, they are compared dynamically as you type if the **Compare while Editing** command is toggled on. To toggle this option on or off, do one of the following:

- On the **Diff and Merge** menu, select the **Compare while Editing** command.
- Click the **Compare while Editing** toolbar button.

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. To toggle this option on or off, do the following:

- On the **Diff and Merge** menu, select the **Show Options Before Comparison** command.

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2.2 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. To open the Comparison Options dialog box:

- On the **Tools** menu, click **Comparison Options**.

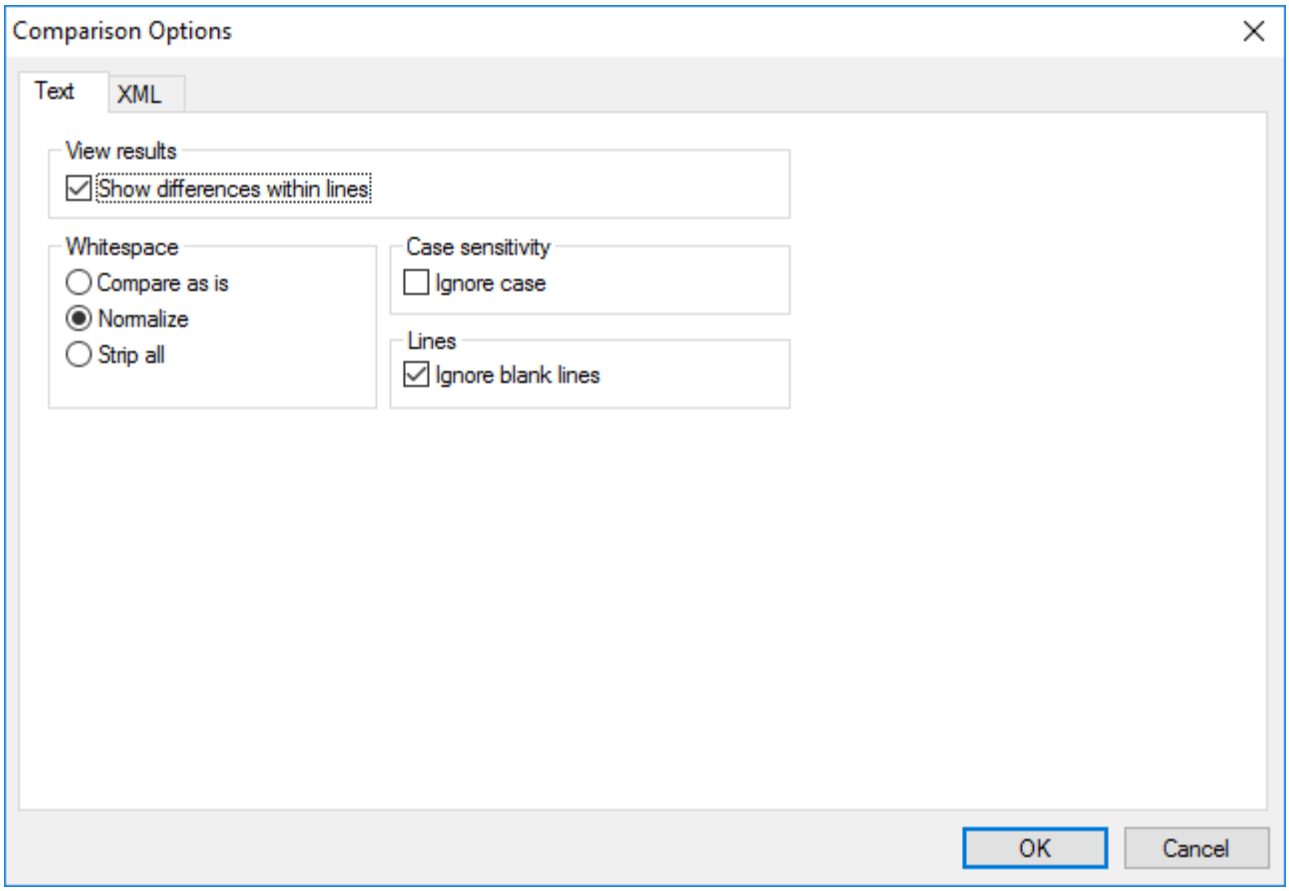
In addition, the **Diff and Merge** menu offers several toggle commands which can be switched on or off via the menu:

- Show Options Before Comparison 79
- Autostart Comparison 79
- Compare while Editing 79
- Support Recently Compared Pairs 80

General options for the comparison of files are furthermore available in the File comparison 133 tab of the DiffDog Options dialog box.

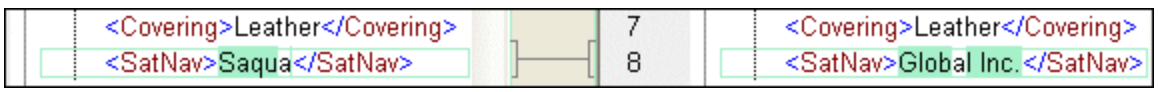
2.2.1 Options for Text Comparison

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

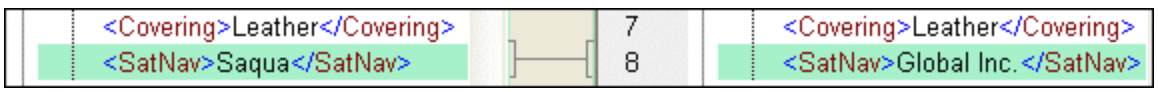


View results

By selecting 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 (see Comparison Modes 14).



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.



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Whitespace

See Comparison Options for Whitespace Characters 33.

Case sensitivity

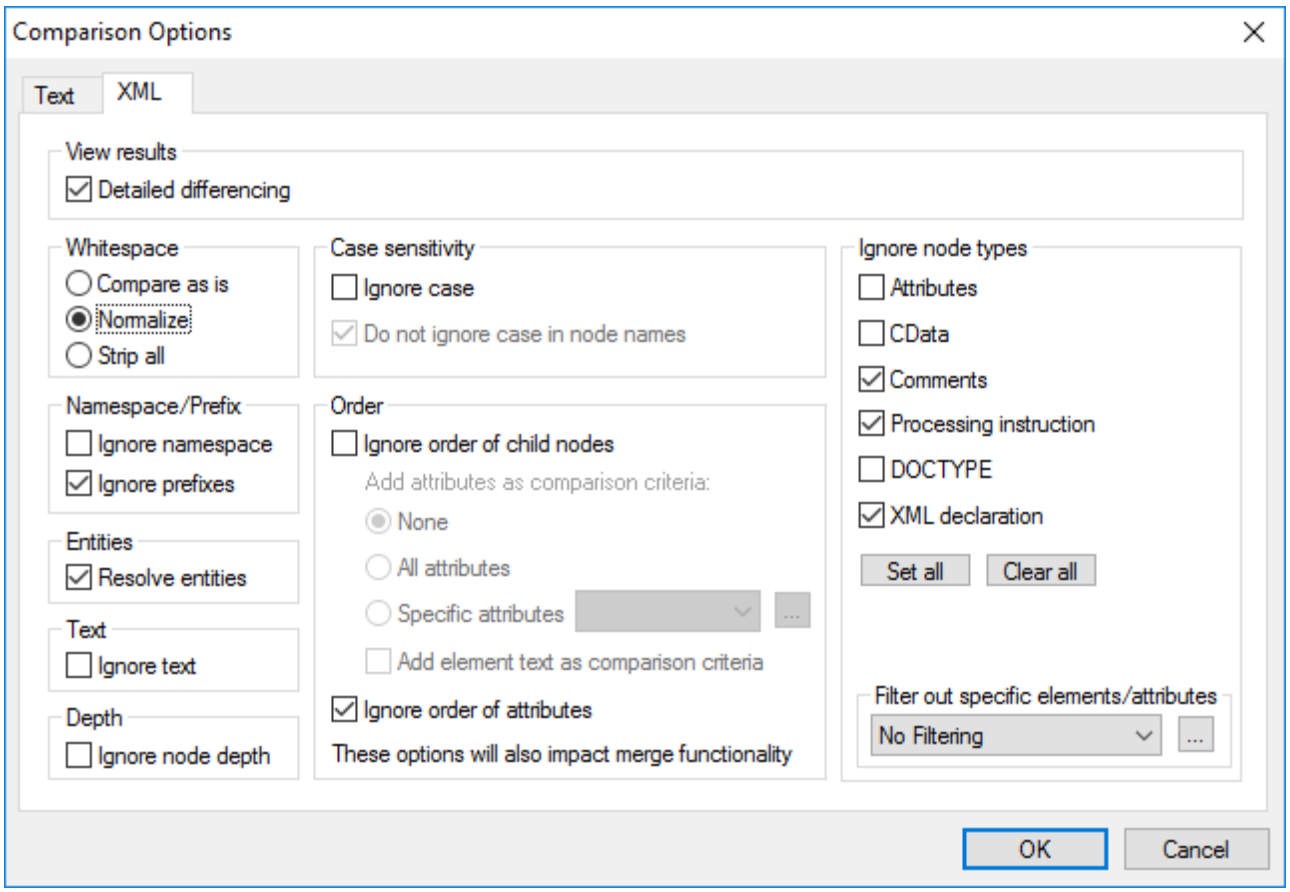
Activate the **Ignore case check** box if upper and lower casing should be ignored when checking for differences.

Lines

Here you define whether blank lines should be ignored.

2.2.2 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.

Note the following points:

- In Grid View, consecutive differences are counted together as one difference, whereas, in Text View, they are counted as separate differences. As a result, the count of differences in Text View might be higher.
- Detailed differencing must be selected to enable the merging and exporting of differences.

Whitespace

See Comparison Options for Whitespace Characters 33.

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. Only the XML structure is compared but not the text content. This is useful when you want to compare two XML structures and disregard the actual content. For example, let's assume that the **Ignore text** check box is selected. In this case, the following two XML files are equal (even though their content differs).

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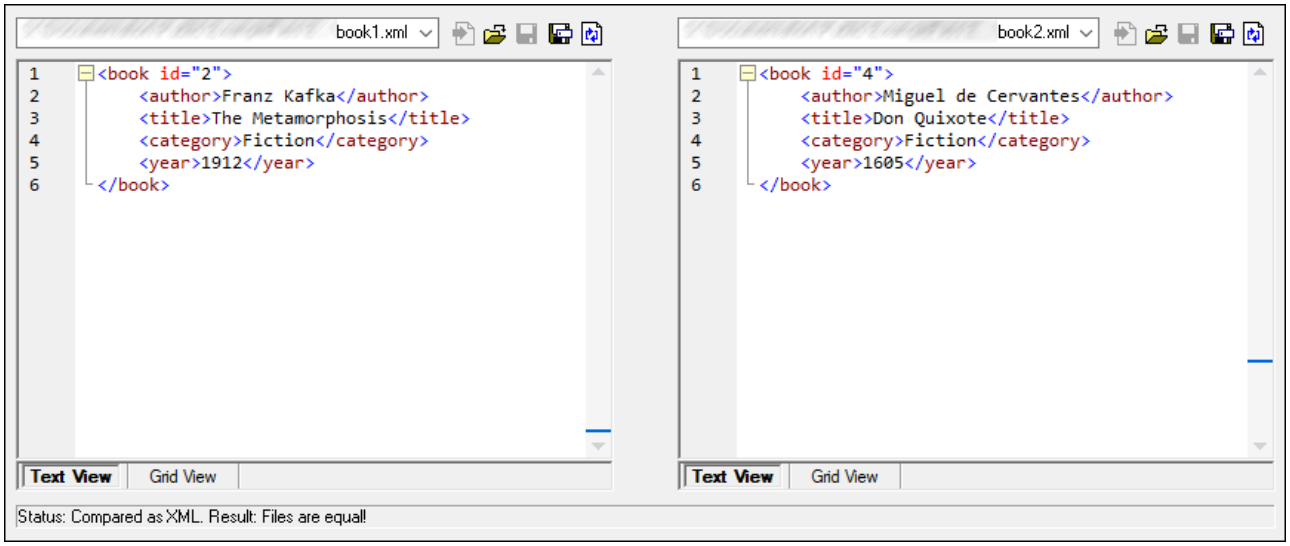
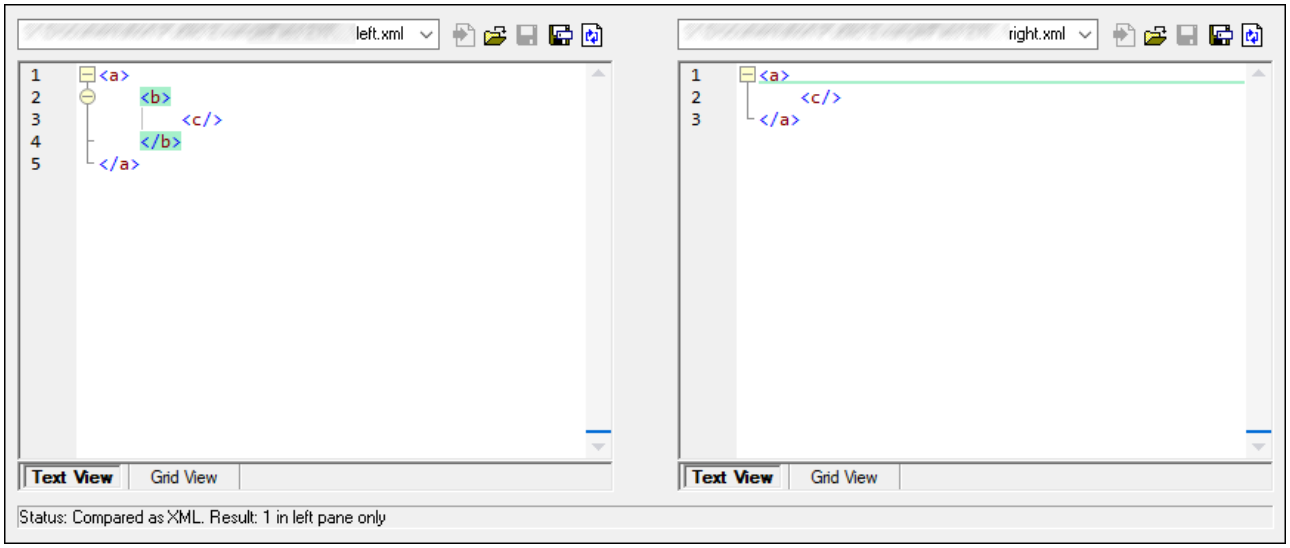


Depth

If **Ignore node depth** is selected, then elements are treated as equal without regard to their depth. For example, let's assume that the check box **Ignore node depth** is selected. In this case, in a comparison like the one below, element <c> is equal on both sides, even though it is nested deeper on the right side.



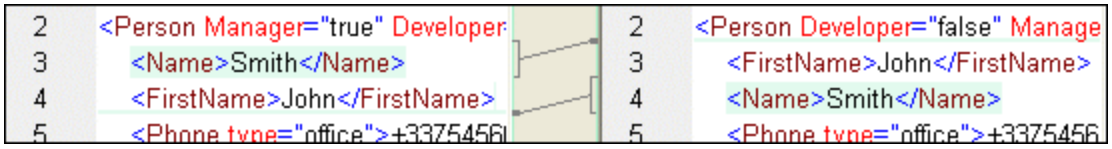
Note: When the **Ignore node depth** check box is selected, merging and exporting differences are not possible.

Case sensitivity

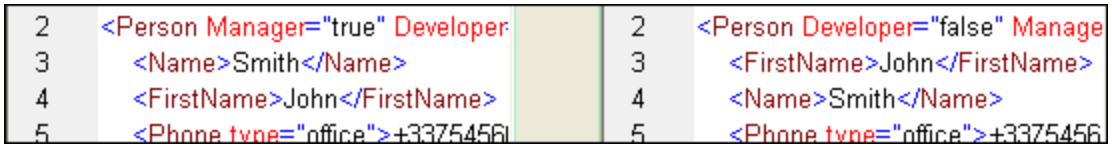
If the **Ignore case** check box is checked, then case is ignored, and you have the option of ignoring or not ignoring case in node names.

Order

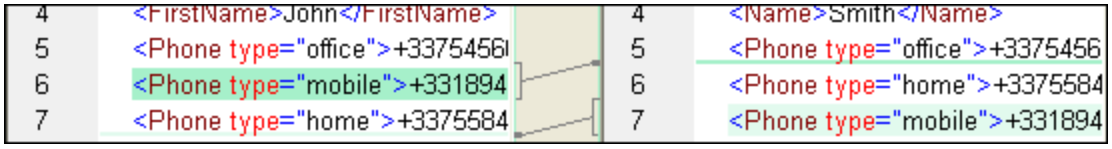
If **Ignore order of child nodes** is selected, then the relative position of the child nodes of an element is ignored, provided that the individual nodes within a node level have unique node names. As long as an element node with the same name exists in each of the two sets of sibling nodes, the two 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.



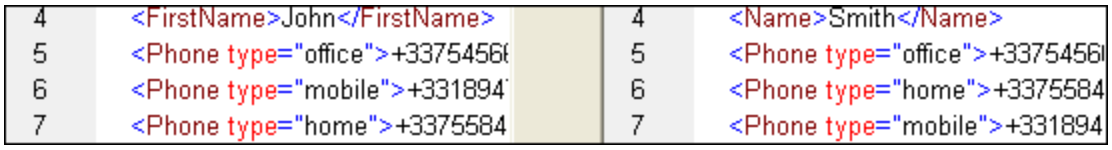
Checking the **Ignore order of child nodes** option will ignore this difference in the comparison window.



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.



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 29 accordingly.



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 image below, the **All attributes** radio button has been selected, however differences are still reported since two mobile phone numbers are listed.

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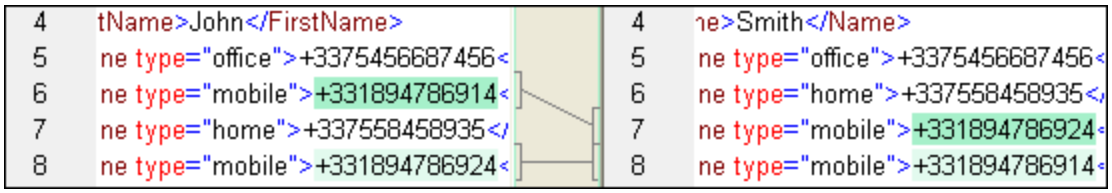
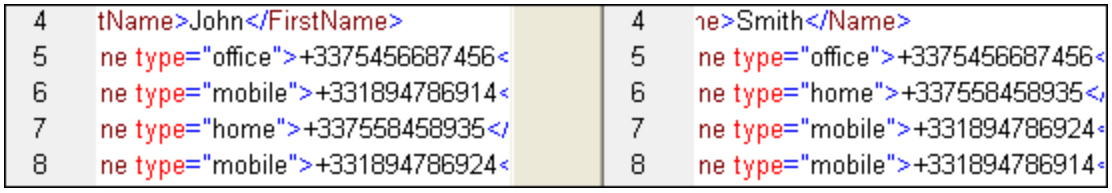
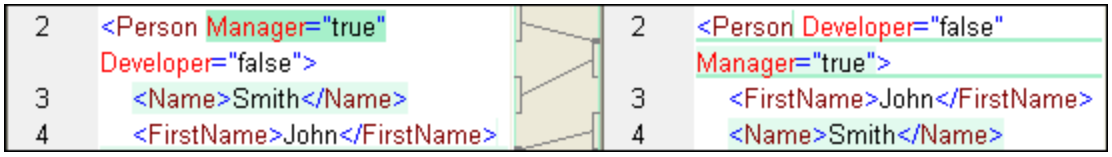


In DiffDog you can cope also with this scenario by activating the **Add element text as comparison criteria** check box. If element text, attribute value, and node name are identical and only the order of the nodes is different, no differences will be reported.



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.



Ignore node types

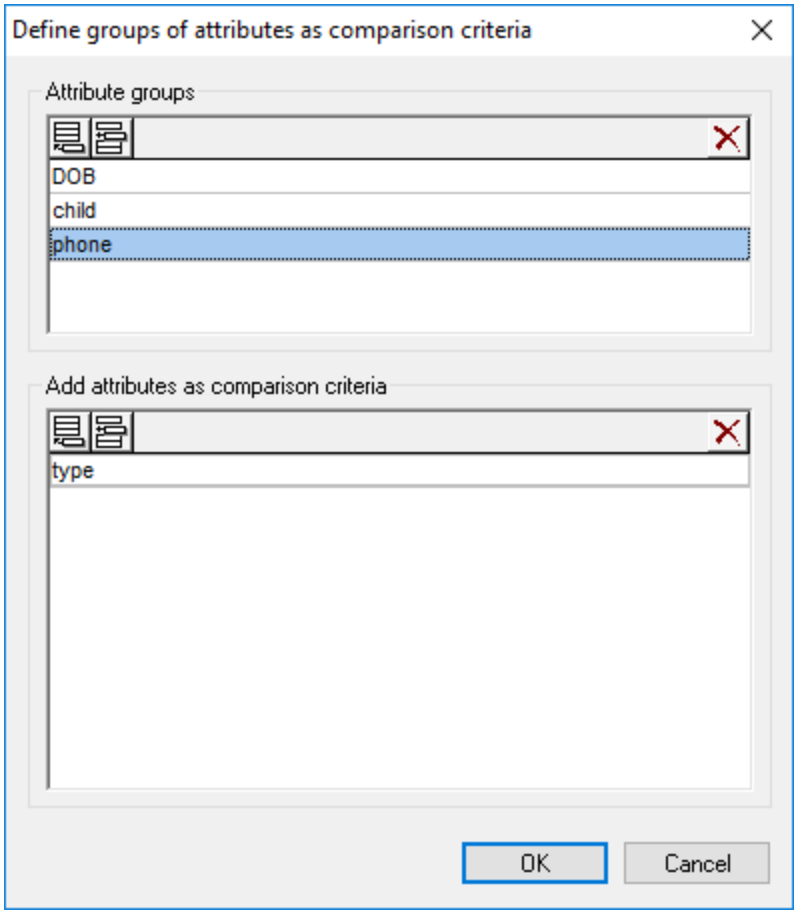
Check the node types that will not be compared in the Compare session. Node types that may be ignored are Attributes, CDATA, Comments, Processing Instructions, DOCTYPE statements, and XML declarations.

Filter out specific elements/attributes

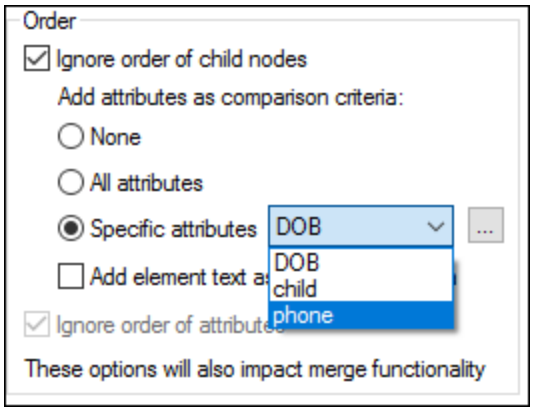
Enables you to define filters [31] to set what elements and/or attributes should not be considered for comparison. A filter is defined at the application level, which means that once a filter is defined, it is available for every comparison. More than one filter can be defined, and, for every comparison, the filter to be used is selected in the drop-down list in the Filter out specific elements/attributes group box.

2.2.2.1 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.



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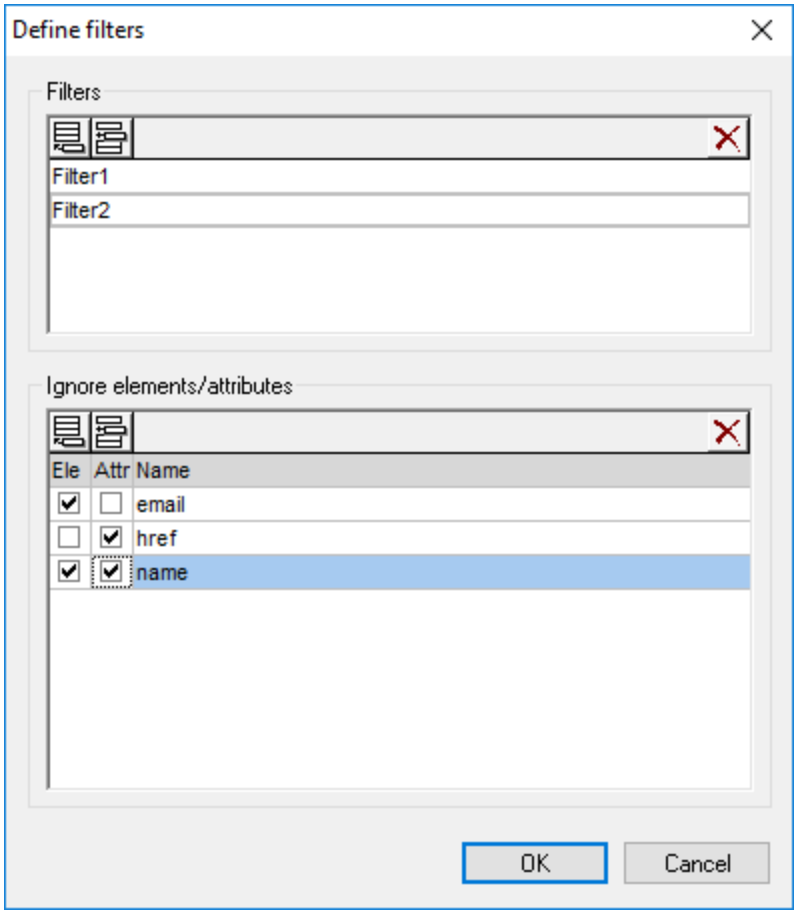
To define groups of attributes to be considered as comparison criteria:

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.

2.2.2.2 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 image above, two filters (`Filter1` and `Filter2`) have been defined. `Filter1` 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.

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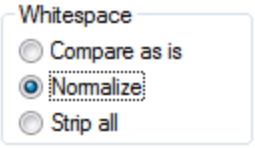
2.2.3 Comparison Options for Whitespace Characters

Whitespace characters are any of the following: space, tab, carriage return, and line feed. You can change the comparison options for whitespace characters from the **Tools | Comparison Options** menu.



Compare as is
When the **Compare as is** option is enabled, Text A is considered equal to Text B if characters in the two strings (including whitespace characters) match exactly. Whitespace characters are relevant for comparison.

Normalize
If the **Normalize** option is enabled, then the texts are compared after whitespace has been normalized in both texts. When whitespace is normalized, every sequence of consecutive whitespace characters is replaced by a single space character. Additionally, leading and trailing whitespace characters are trimmed for each line of text, that is, they are removed.

Note the following points about XML comparisons:

- Leading and trailing whitespace characters inside element and attribute values are trimmed.
- If an element has child elements, then, in Text View, whitespace between child elements counts as a difference, whereas in Grid View it does not.

Strip all
If the **Strip all** option is enabled, then the texts are compared after stripping whitespace characters from both texts. In XML comparisons in both Text View and Grid View, even whitespace characters outside elements will not count as a difference.

Examples

The following table illustrates differences when comparing text with each option, using Text or Word comparison.

Text A	Text B	As is	Normalize	Strip
"a"	"a "	not equal	equal	equal
"a"	" a"	not equal	equal	equal
"a a"	"a a"	not equal	equal	equal

The following table illustrates differences when comparing text with each option, using XML comparison.

Text A	Text B	As is	Normalize	Strip
`<?xml version="1.0"`	`<?xml  version="1.0"`	equal	equal	equal
`<book id="1">`	`<book id=" 1 ">`	not equal	equal	equal
`<author>Mark Twain</author>`	`<author>Mark Twain</author>`	not equal	equal	equal

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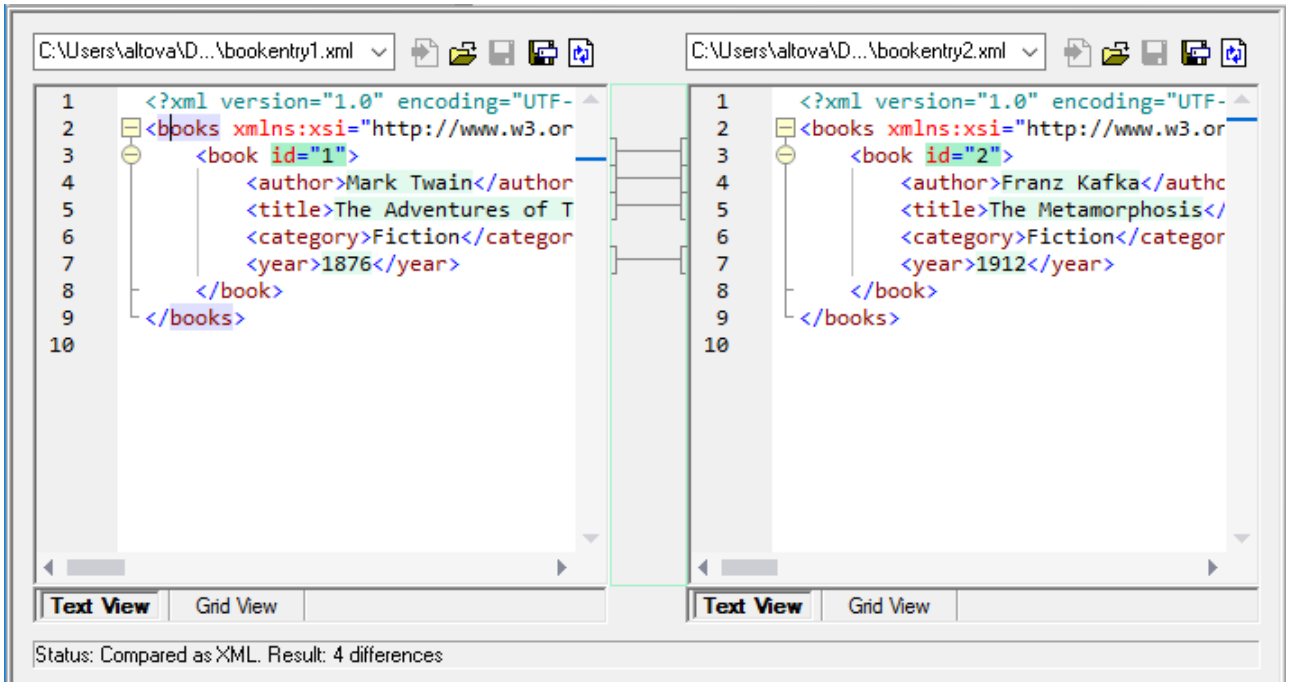
2.3 Displaying Differences in Files

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[35] is used for displaying differences, however if you compare well-formed files, you can also switch to Grid View[39].

2.3.1 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[91] 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[133]. It is important to know which difference is the current difference because merging[74] is always done for the current difference only. You can navigate[73] among the differences with the navigation commands that are available in the **Diff and Merge** menu and as toolbar icons.

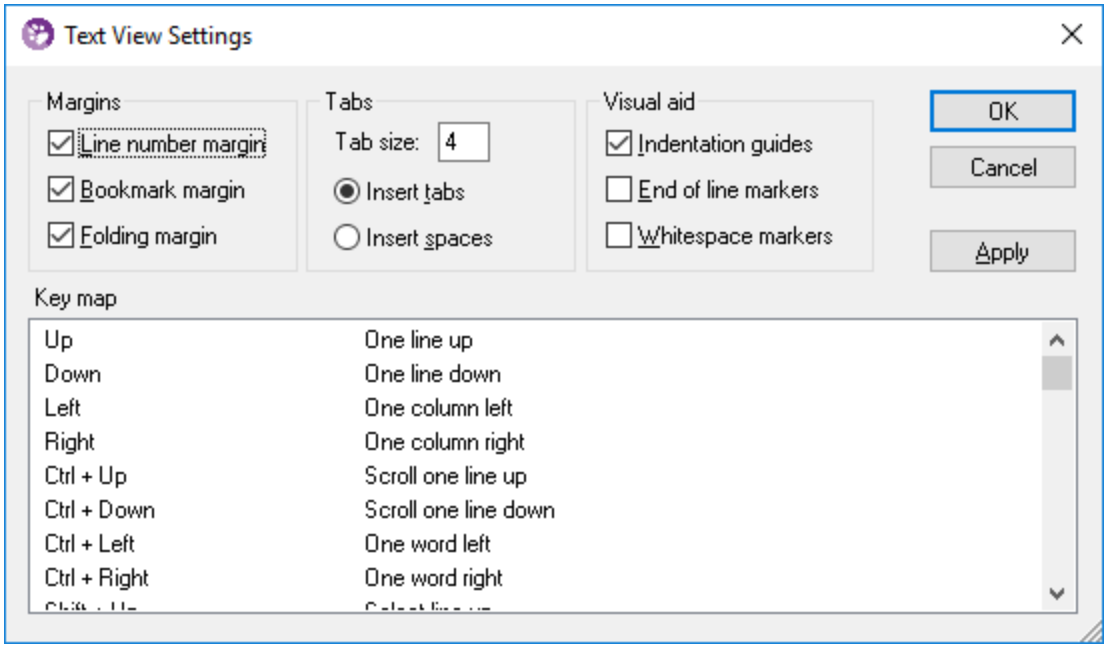
2.3.1.1 Using Visual Aids in Text View

Text View has multiple visual aids to make the display and editing of text easier. These include:

- Line Numbers[37]
- Syntax Coloring[37]

- Bookmarks 37
- Source Folding 37
- Indentation Guides 38
- End-of-Line and Whitespace Markers 38
- Zooming 38
- Go-to-Line/Character 35
- Pretty-printing 39
- Word wrapping 39
- Start and end tag matching 39
- Text highlighting 39

Where applicable, you can toggle or customize the features above from the Text View Settings dialog box. Settings in the Text View Settings dialog box apply to the entire application—not only to the active document.



Text View Settings dialog box

To open the **Text View settings** dialog box, do one of the following:

- On the **Text View menu, select Text View Settings**.
- Click the **Text View Settings** button in the Text toolbar.

Some of the navigation aids can also be toggled from the Text toolbar, the application menu, or keyboard shortcuts.

Text toolbar

For reference to all shortcuts applicable in the File Comparison window, see the "Key Map" section of the **Text View Settings** dialog box illustrated above.

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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[38] command.

Syntax coloring

Syntax coloring is applied according to the semantic value of the text. For example, in XML documents, depending on whether the XML node is an element, attribute, content, CDATA section, comment, or processing instruction, the node name (and in some cases the node's content) is colored differently. You can enable or disable syntax coloring for various file extensions (including custom extensions) from the **Tools | DiffDog Options** menu, **File Types**[139] tab.

Bookmarks

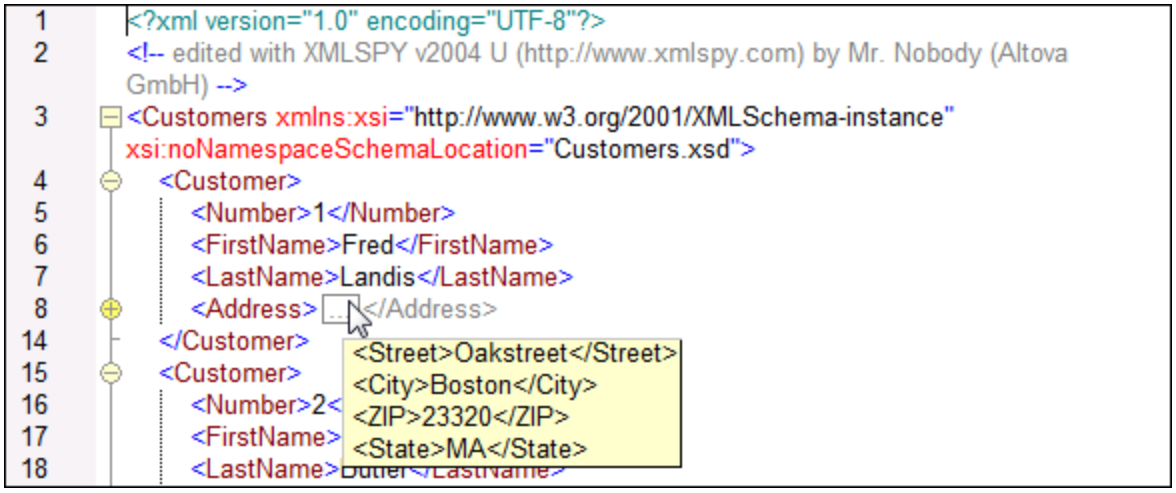
Lines in the document can be separately bookmarked for quick reference and access. If the bookmarks margin is toggled on, bookmarks are displayed in the bookmarks margin; otherwise, bookmarked lines are highlighted in cyan.

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. To expand or collapse portions of text, click the "+" and "-" nodes at the left side of the window. Any portions of collapsed code are displayed with an ellipsis symbol. To preview the collapsed code without expanding it, move the mouse cursor over the ellipsis. This opens a tooltip that displays the code being previewed, as shown in the image below. Note that, if the previewed text is too big to fit in the tooltip, an additional ellipsis appears at the end of the tooltip.



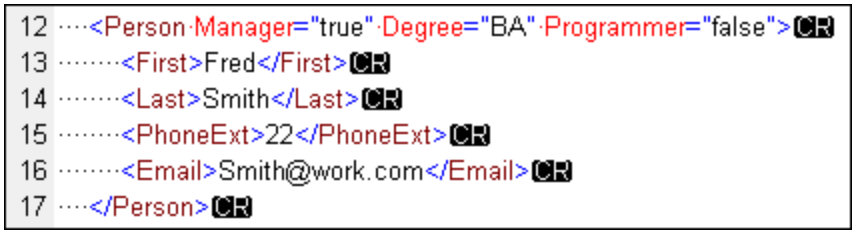
The **Toggle All Folds** command in the Text toolbar toggles all nodes together to their expanded or collapsed forms.

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 [134] 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.

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Pretty-printing

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.

To pretty-print an XML document, select the **Text View | Pretty-Print XML Text** menu command, or click the button in the Text toolbar

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, use the **Undo** [87] (**Ctrl+Z** or **Alt+Backspace**) command.

Word wrapping

To toggle word wrapping in the currently active document, select the **Text View | Word Wrap** menu command, or click the button in the Text toolbar.

Start and end tag matching

When you place the cursor inside a start or end tag of a markup element, the corresponding start or end tag is highlighted as well. When you edit the name of an element in a start tag, then the end tag will be automatically edited as well.

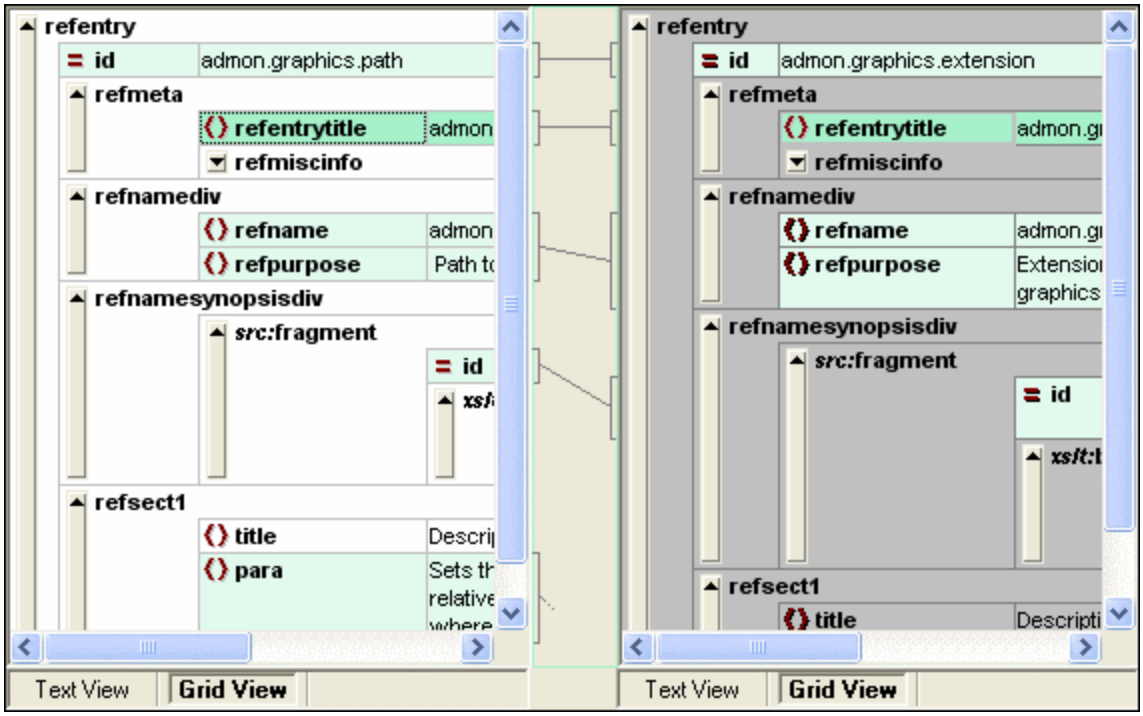
Text highlighting

When you select text, all matches in the document of the text selection that you make are highlighted automatically. The selection is highlighted in pale blue, and matches are highlighted in pale orange. The selection and its matches are indicated in the scroll bar by gray marker-squares. The current cursor position is given by the blue cursor-marker in the scroll bar.

2.3.2 Grid View

Altova website: 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[106] or moved right[106] 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[41], which is another mode of Grid View.

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

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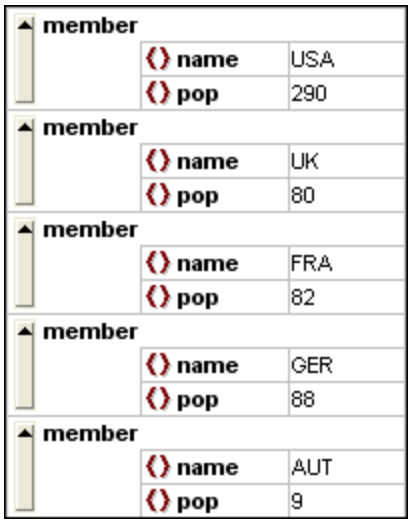
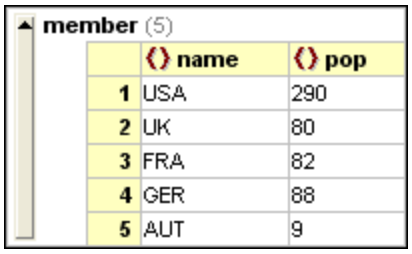
2.3.2.1 Displaying Repeating Elements as Table

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 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:

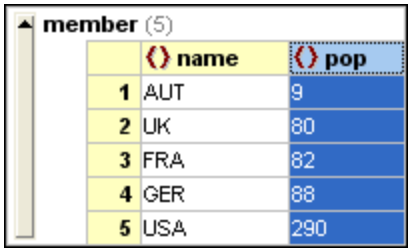
1. Select one of the occurrences of the element to be created as a table.
2. Select the menu option **Grid View | Table | Display as Table** or click the **Display as Table** button in the Grid toolbar.

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.



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**.)

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2.4 Editing Files

After you have run a comparison[20] and investigated the differences[35] 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.

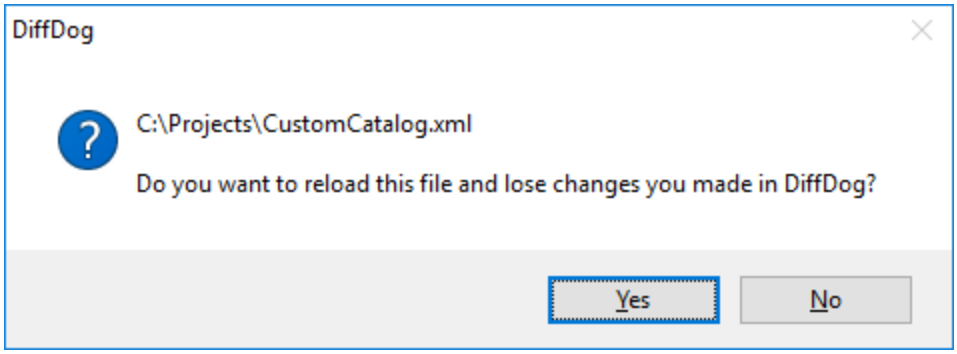
Changes to the content[43] of both text-based and XML-based files are made in Text View. When comparing well-formed XML-based files, DiffDog's Grid View allows you to also change the document structure[44] of the files.

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.

2.4.1 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 (see Using Visual Aids in Text View[35]). 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 made in a pane:

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

2.4.2 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. For example, 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.

To modify the file structure in Grid View:

1. Click to select the element or attribute where you want to make the change.
2. Use the commands available in the **Grid View** menu (for example, **GridView | Insert | New Element**). Alternatively, right-click an element and select the appropriate context menu commands.

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2.5 Finding and Replacing Text

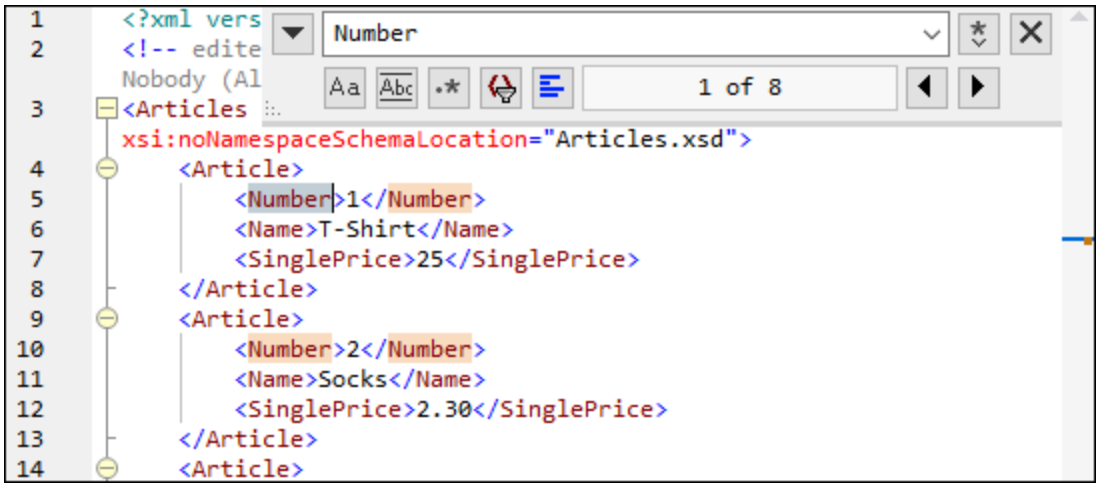
DiffDog offers powerful Find and Replace functionality that can help with editing. Please note that the scope of the **Find**, **Find next**, and **Replace** commands is the active document, and not both documents of a file comparison.

The Find and Replace options are different for Text View and Grid View. See Finding and Replacing in Text View 45 and Finding and Replacing in Grid View 49, respectively.

2.5.1 Finding and Replacing in Text View

You can search for a term in the entire document or within a text selection. To start a search in Text View mode, press **Ctrl+F** or select the menu command **Edit | Find**. You can enter a string or use the combo box to select a string from one of the last 10 strings. When you enter or select a string, all matches are highlighted, and the positions of the matches are indicated by orange markers in the scroll bar (*see screenshot below*). The position of the currently selected match (highlighted in gray) depends on where the cursor was last located.

You can see the total number of matches and the index position of the currently selected match. Use the (**Previous**) and (**Next**) buttons to switch between the matches. To switch between the **Find** and **Replace** modes, click the button.



Find options

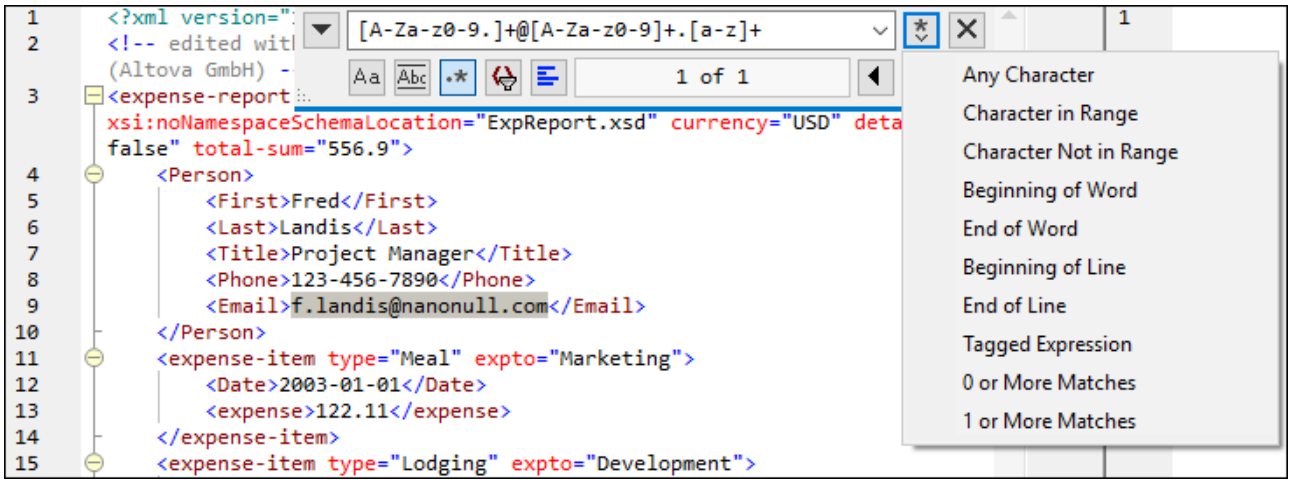
You can specify find criteria with the help of the buttons located under the search field. The list of the available options is given in the table below.

Option	Icon	Description
Match case	Aa	Does a case-sensitive search: e.g., *Address* is not the same as *address*.

Option	Icon	Description
Match whole word		Only identical words will match.
Use regular expression		If this option is toggled on, the search term will be read as a regular expression. See *Regular expressions* below.
Find anchor		The position of an anchor depends on the place where the cursor was last located. Clicking the **Previous** and **Next** buttons does not change the position of the anchor.
Find in selection		A selection is a marked piece of text. To find a term within a selection, mark a piece of text, press **Ctrl+F**, make sure the **Find in selection** button is pressed, and type the term in the search field.

Regular expressions

You can use regular expressions to find a text string. To do this, switch on the **Use regular expressions** option (*see table above*). Then enter a regular expression in the search field. Clicking (**Regular Expression Builder**) gives you a list of sample regular expressions (*see below*). The screenshot below shows a regular expression that helps find email addresses.



Regular expression metacharacters

The table below shows metacharacters that you can use to find and replace text. All the metacharacters except for the last two correspond to the menu items in **Regular Expression Builder** (*see above*).

Menu item	Metacharacters	Description
Any Character	`.`	Matches any character. This is a placeholder for a single character.
Character in Range	`[...]`	Matches any characters in this set. For example, **`[abc]`** matches any of the characters `a`, `b` or `c`. You can also use ranges: e.g., **`[a-z]`** for any lower case character.
Character Not in	`[^...]`	Matches any characters not in this set. For example, **`[^A-Za-z]`**

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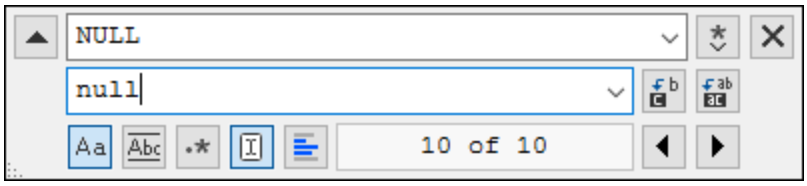
Menu item	Metacharacters	Description
Range		matches any character except an alphabetic character.
Beginning of Word	\<	Matches the beginning of a word.
End of Word	\>	Matches the end of a word.
Beginning of Line	^	Matches the beginning of a line unless it is used inside a set (*see above*).
End of Line	$	Matches the end of a line. For example, **A+$** matches one or more A's at the end of a line.
Tagged Expression	(abc)	The parentheses mark the start and end of a tagged expression. Tagged expressions may be useful when you need to tag ("remember") a matched region to refer to it later. Up to nine sub-expressions can be tagged and then back-referenced later. For example, **(the) \1** matches the string the the. This expression can be explained as follows: Match the string the and remember it as a tagged region; the expression must be followed by a space character and a back-reference to the tagged region matched previously.
0 or More Matches	*	Matches zero or more matches of the preceding expression. For example, **Sa*m** matches Sm, Sam, Saam, Saaam and so on.
1 or More Matches	+	Matches one or more occurrences of the preceding expression. For example, **Sa+m** matches Sam, Saam, Saaam and so on.
	\n	Where n is 1 through 9, n refers to the first through ninth tagged region (*see above*). For example, if the search string is **Fred\([1-9]\)XXX** and the replace string is **Sam\1YYY**, when applied to **Fred2XXX**, this will generate **Sam2YYY**.
	\x	Allows using a character x, which would otherwise have a special meaning. For example, \[would be interpreted as [and not as the start of a character set.

See also Example: Replacing Text Using Regular Expressions 50.

Replace text

To replace text, follow the instructions below:

1. Open the **Replace** dialog: Press **Ctrl+H** or select the menu command **Edit | Replace**. Alternatively, you can switch to **Replace** mode of the **Find/Replace** dialog by clicking the button in the top left corner of the dialog.



2. Enter the string you would like to replace in the **Find** field and enter the new string in the **Replace** field.
3. The **Replace Next** and **Replace All** buttons are located to the right of the **Replace** field. If you click **Replace Next**, one of the following happens: (i) If the cursor is located near a match or inside a match, the match is replaced; (ii) if the cursor is located outside a match, the cursor jumps to the next match. Click **Replace All** to replace all matches.

Replace text within a selection
To replace text within a selection, take the steps below:

1. Mark a piece of text.
2. Toggle on the **Find in selection** option.
3. Enter the **Find** and **Replace** text strings.
4. Click **Replace Next** or **Replace All** as required.

To undo the replace action, press **Ctrl+Z** or select **Edit | Undo**.

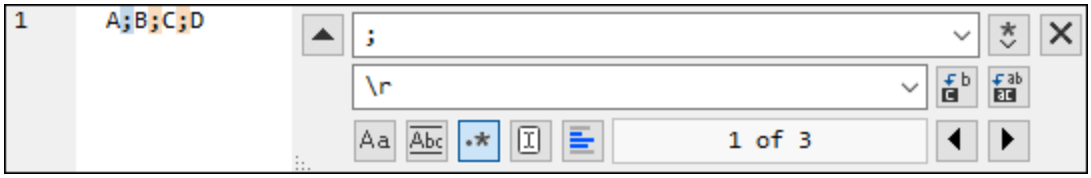
Find and replace special characters

If the **Use regular expressions** option is enabled, you can search for any of the following special characters within the text:

- `\t` (Tab)
- `\r` (Carriage Return)
- `\n` (New line)
- `\\` (Backslash)

For example, to find a tab character, press **Ctrl + F**, select the **Use regular expressions** option, and enter **`\t`** in the **Find** dialog box.

The special characters above can also be used as replacement text. For example, to replace all occurrences of semi-colons by carriage returns within the text `A;B;C;D`, use the following find and replace options:



The outcome is shown below:

```
A
B
C
D
```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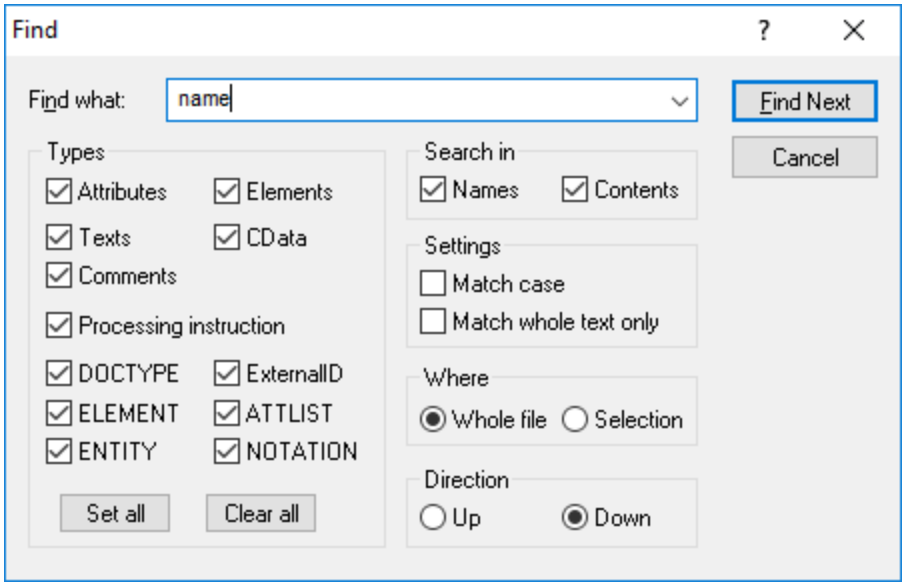
2.5.2 Finding and Replacing in Grid View

To search for text in Grid View:

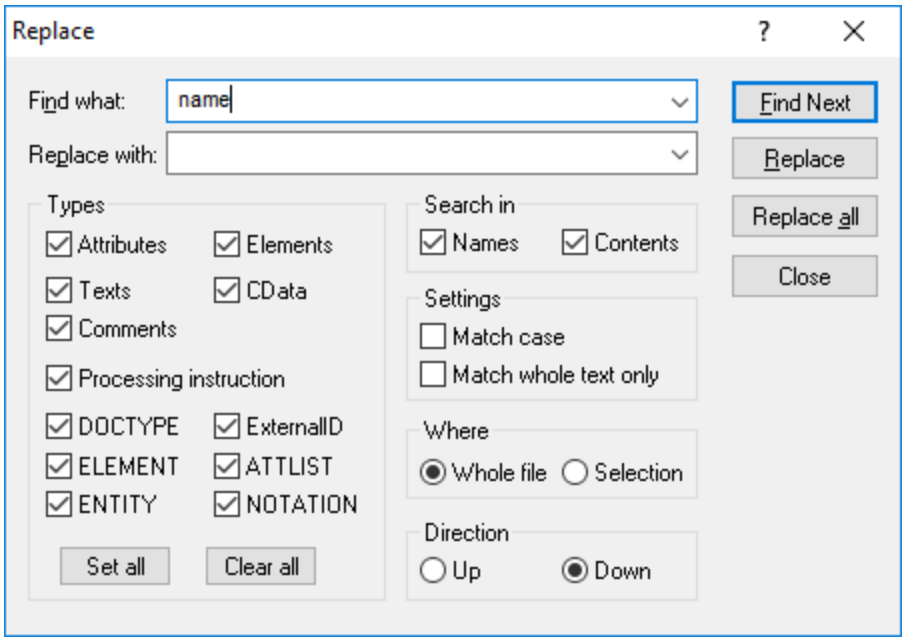
1. Place the cursor into the pane in which you want to search for text.
2. Select the menu option **Edit | Find** or press **Ctrl+F**.



3. Enter the text you want to search for into the **Find what** field.
4. To restrict your search, select the required XML node type or DTD declarations to be searched in the Types[50] group box.
5. Click **Find Next**.
6. To jump to the next found occurrence, press **F3**.

To replace text in Grid View:

1. Place the cursor into the pane in which you want to search for text.
2. Select the menu option **Edit | Replace** or press **Ctrl+H**.



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 **Up** and **Down** options define whether the search should progress upwards or downwards from the current selection or cursor location.

2.5.3 Example: Replacing Text Using Regular Expressions

This example illustrates how to find and replace text using regular expressions. In many cases, finding and replacing text is straightforward and does not require regular expressions at all. However, there may be instances where you need to manipulate text in a way that cannot be done with a standard find and replace

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operation. Consider, for example, that you have an XML file of several thousand lines where you need to rename certain elements in one operation, without affecting the content enclosed within them. Another example: you need to change the order of multiple attributes of an element. This is where regular expressions can help you, by eliminating a lot of work which would otherwise need to be done manually.

Example 1: Renaming elements

The sample XML code listing below contains a list of books. Let's suppose your goal is to replace the `<Category>` element of each book to `<Genre>`. One of the ways to achieve this goal is by using regular expressions.

```
<?xml version="1.0" encoding="UTF-8"?>
<books xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="books.xsd">
   <book id="1">
      <author>Mark Twain</author>
      <title>The Adventures of Tom Sawyer</title>
      <category>Fiction</category>
      <year>1876</year>
   </book>
   <book id="2">
      <author>Franz Kafka</author>
      <title>The Metamorphosis</title>
      <category>Fiction</category>
      <year>1912</year>
   </book>
   <book id="3">
      <author>Herman Melville</author>
      <title>Moby Dick</title>
      <category>Fiction</category>
      <year>1851</year>
   </book>
</books>
```

To solve the requirement, follow the steps below:

1. Press **Ctrl+H** to open the Find and Replace dialog box.
2. Click **Use regular expressions** .
3. In the Find field, enter the following text: **`<category>(.+)</category>`** . This regular expression matches all `category` elements, and they become highlighted.

To match the inner text of each element (which is not known in advance), we used the tagged expression **(.+)** . The tagged expression **(.+)** means "match one or more occurrences of any character, that is **.+** , and remember this match". As shown in the next step, we will need the reference to the tagged expression later.

4. In the Replace field, enter the following text: **<genre>\1</genre>** . This regular expression defines the replacement text. Notice it uses a back-reference **\1** to the previously tagged expression from the Find field. In other words, **\1** in this context means "the inner text of the currently matched <category> element".
5. Click **Replace All** and observe the results. All `category` elements have now been renamed to `genre`, which was the intended goal.

Example 2: Changing the order of attributes

The sample XML code listing below contains a list of products. Each product element has two attributes: `id` and a `size`. Let's suppose your goal is to change the order of `id` and `size` attributes in each `product` element (in other words, the `size` attribute should come before `id`). One of the ways to solve this requirement is by using regular expressions.

```
<?xml version="1.0" encoding="UTF-8"?>
<products xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="products.xsd">
   <product id="1" size="10"/>
   <product id="2" size="20"/>
   <product id="3" size="30"/>
   <product id="4" size="40"/>
   <product id="5" size="50"/>
   <product id="6" size="60"/>
</products>
```

To solve the requirement, follow the steps below:

1. Press **Ctrl+H** to open the Find and Replace dialog box.

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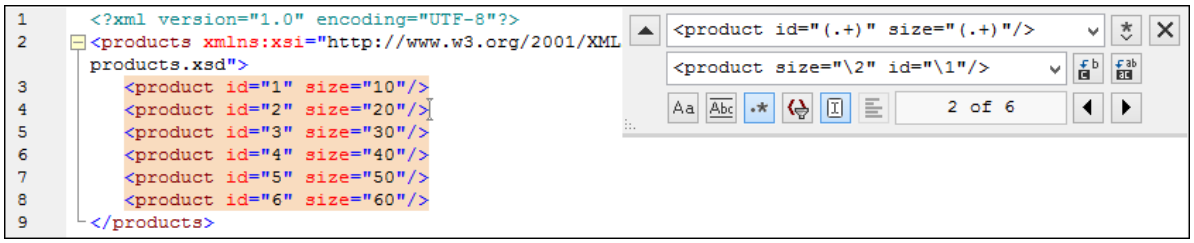
2. Click **Use regular expressions** .
3. In the Find field, enter the following: **<product id="(.+)" size="(.+)"/>** . This regular expression matches a product element in the XML document. Notice that, in order to match the value of each attribute (which is not known in advance), a tagged expression **(.+)** is used twice. The tagged expression **(.+)** matches the value of each attribute (assumed to be one or more occurrences of any character, that is **.+**).
4. In the Replace field, enter the following: **<product size="\2" id="\1"/>** . This regular expression contains the replacement text for each matched product element. Notice that it uses two references **\1** and **\2** . These correspond to the tagged expressions from the Find field. In other words, **\1** means "the value of attribute `id`" and **\2** means "the value of attribute `size`".



6. Click **Replace All** and observe the results. All `product` elements have now been updated so that attribute `size` comes before attribute `id`.

2.6 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.

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.

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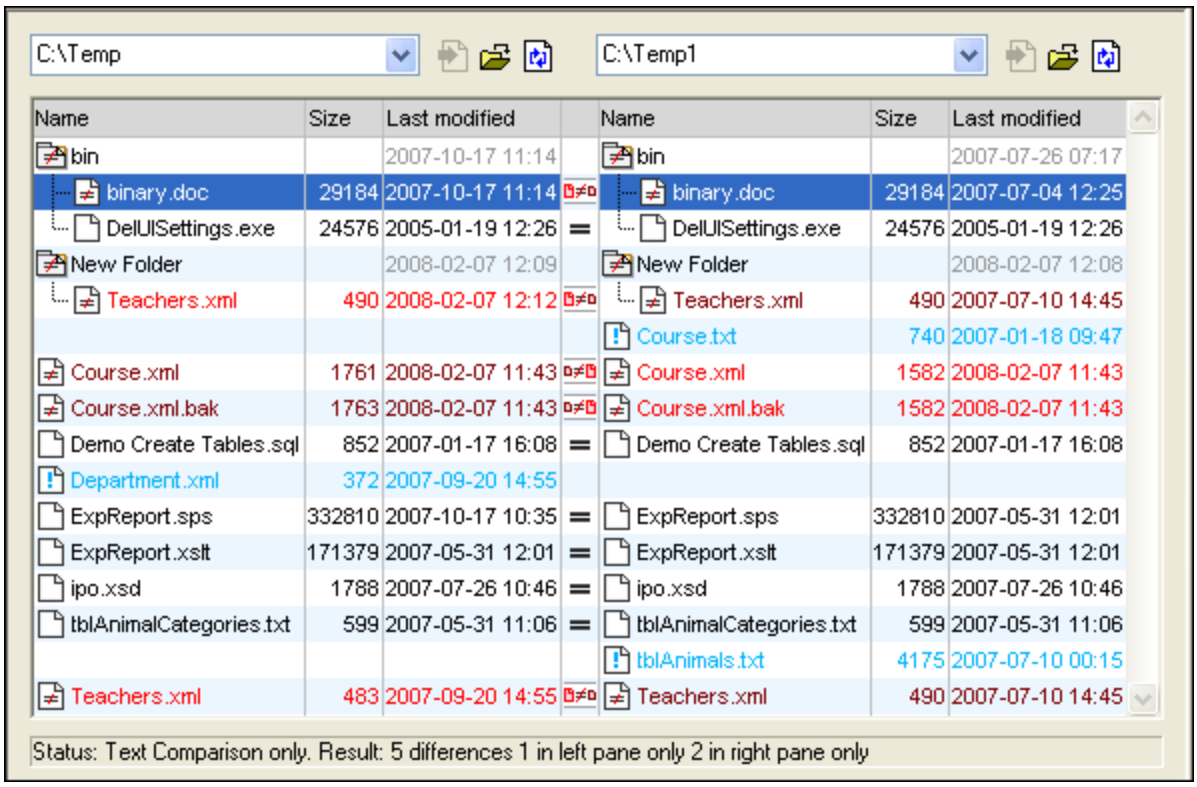
3 Directory Comparison

Altova website: Folder compare tool

In DiffDog, directories and, optionally, their sub-directories are compared in Directory Comparison windows. Here you can compare[61], merge[74], or synchronize[67] directories. There are two ways in which DiffDog compares directories:

- By comparing the sizes and timestamps of files in the directories. This comparison mode[14] 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[59] or first open an empty Directory Comparison window and then select the directories to be compared[59]. Alternatively, you can also select two directories in Windows Explorer[59], 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[14] as desired and restart the comparison. In addition, to eliminate differences, DiffDog allows you to copy files from one pane to the other[74].

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[139] 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[66] window.

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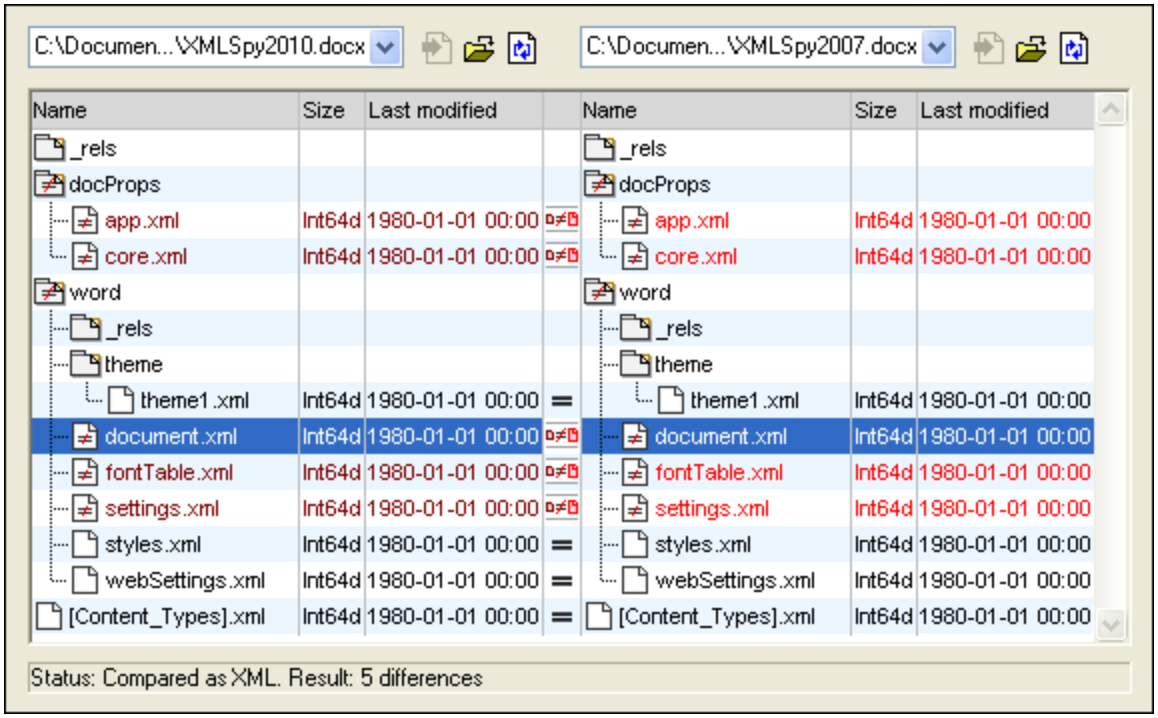
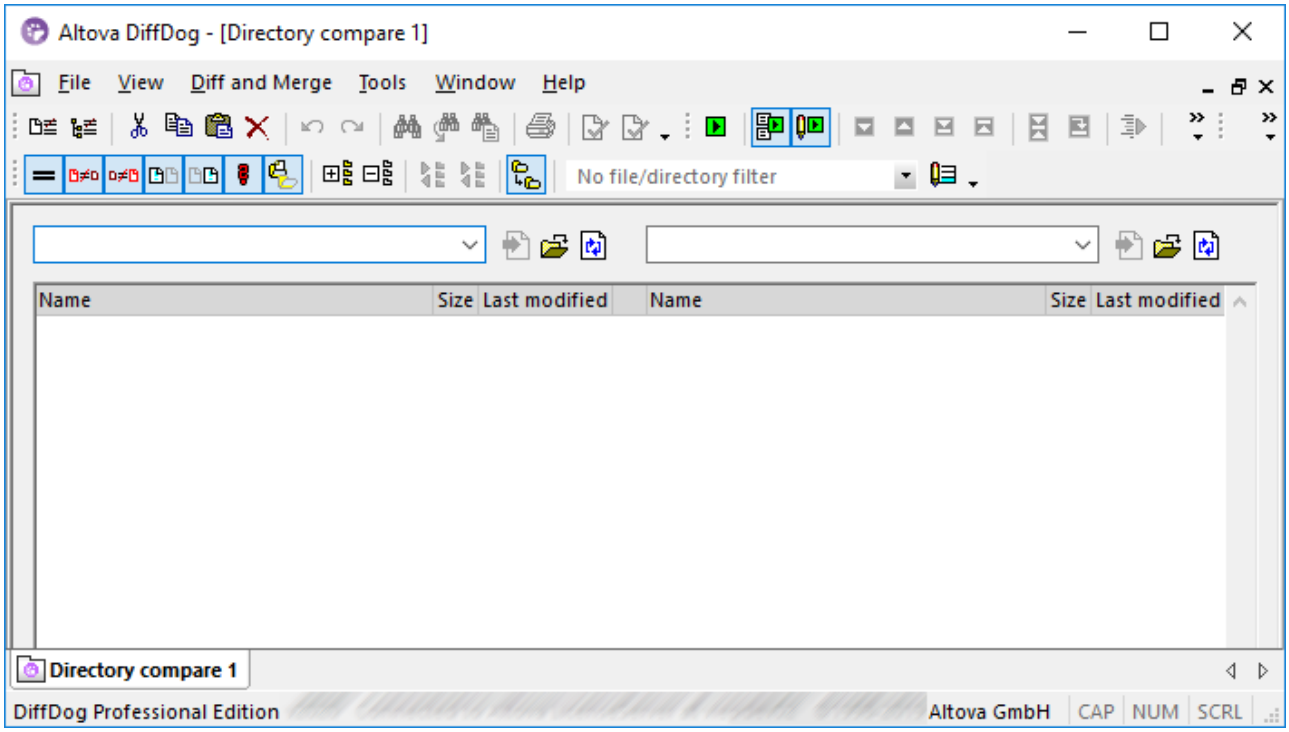

C:\Documen...\XMLSpy2010.docx
C:\Documen...\XMLSpy2007.docx
Name Size Last modified
Name Size Last modified
_rels
docProps
app.xml Int64d 1980-01-01 00:00
core.xml Int64d 1980-01-01 00:00
word
_rels
theme
theme1.xml Int64d 1980-01-01 00:00
document.xml Int64d 1980-01-01 00:00
fontTable.xml Int64d 1980-01-01 00:00
settings.xml Int64d 1980-01-01 00:00
styles.xml Int64d 1980-01-01 00:00
webSettings.xml Int64d 1980-01-01 00:00
[Content_Types].xml Int64d 1980-01-01 00:00
Status: Compared as XML. Result: 5 differences

3.1 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[59] 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 Directories** or click the **Compare directories** button in the Standard toolbar.

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3.2 Selecting Directories for Comparison

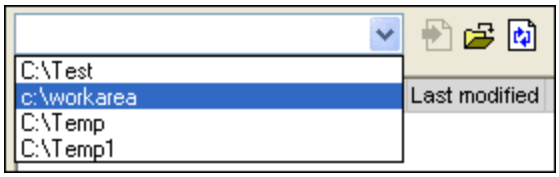
Directories can be selected for comparison in various ways. You can open the directories in a new Directory Comparison window, re-open a previous comparison[80], or change the directories in the currently open Directory Comparison window.

To open directories in a new Directory Comparison window:

1. Select the menu option File | Open or press **Ctrl+O**.
2. Select **Compare directories**.
3. Enter the path to the first and the second directory, or click **Browse** and select a folder from the system.
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, select 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 or right 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.



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.

3.3 Modifying the Directory Comparison Options

When comparing directories, the comparison mode[14] 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[61]. 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[79]
- Autostart Comparison[79]
- Compare while Editing[79]
- Support Recently Compared Pairs[80]

General options for the comparison of directories are furthermore available in the Directory comparison[135] 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**

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3.4 Running a Directory Comparison

When the two directories to be compared are loaded into the Directory Comparison window, a comparison is automatically carried out[110] 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[109] any number of times with the **Start Comparison** command.

If you double-click a file[66] 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.

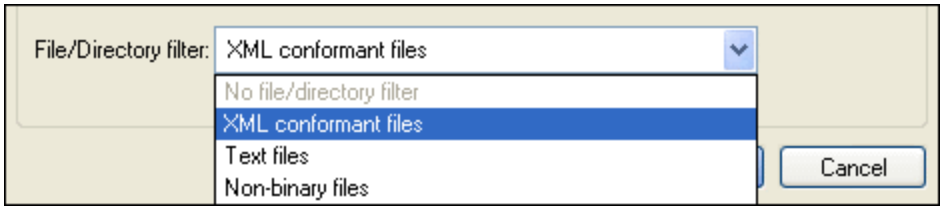
Filtering the content of compared directories

The Directory content toolbar contains a drop-down list from which you can select a filter[136] 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.

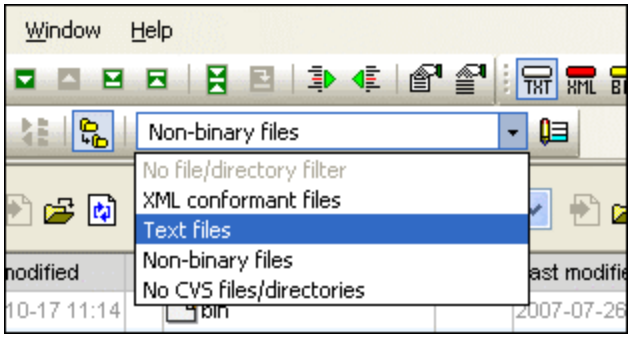
To run a filtered directory comparison:

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.



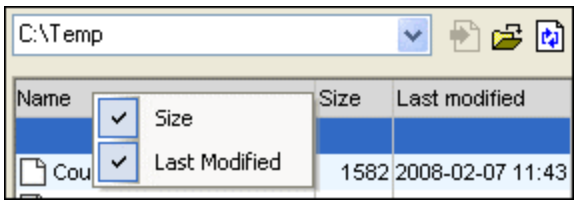
- If you have already opened a Directory Comparison window, select a filter from the drop-down list that is available in the Directory content toolbar.



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

3.5 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 never version of the file is located in the left pane.
- **Show/Hide right newer**: Shows or hides files that are unequal, and where the never 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[14]. For example, in XML Comparison Mode, file types that have been specified as not being XML-conformant[139] 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:

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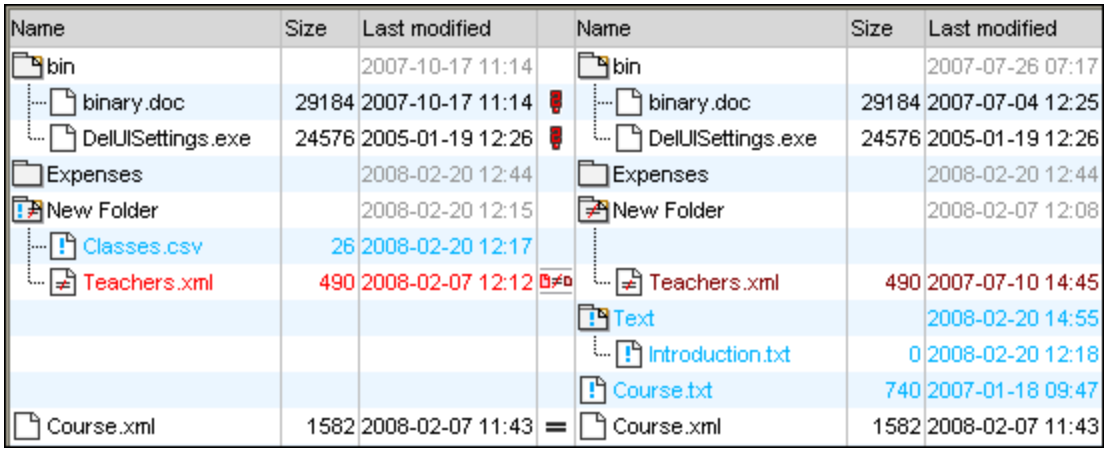
- **Collapse**: Collapses all directories that have subdirectories. Note that this command will collapse all sub-directories in both panes. To collapse a single sub-directory, double-click on it.
- **Expand**: Expands all directories that have subdirectories.

3.6 Displaying Differences in Directories

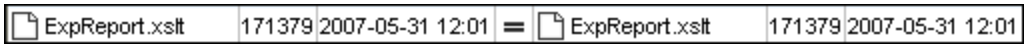
The directory comparison results are displayed as trees in both panes. If sub-directories are displayed, they can be collapsed and expanded by double-clicking the icons for them. The comparison results are indicated with colors and icons as described below.



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				
Teachers.xml	490	2008-02-07 12:12		Teachers.xml	490	2007-07-10 14:45
				Text		2008-02-20 14:55
				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.

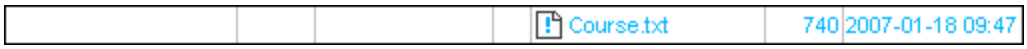
  

ExpReport.xslt	171379	2007-05-31 12:01	=	ExpReport.xslt	171379	2007-05-31 12:01

  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.

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- 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.

3.7 Comparing Files from within a Directory Comparison

Double-clicking a file in either the left or right pane of the **Directory Comparison** window opens that file and its corresponding sibling in a new **File Comparison** window. This is applicable only for files that have a sibling on the left or right side; otherwise, only the left or right pane of the **File Comparison** window is populated.

The new file comparison is opened in the current comparison mode[14] 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[18].

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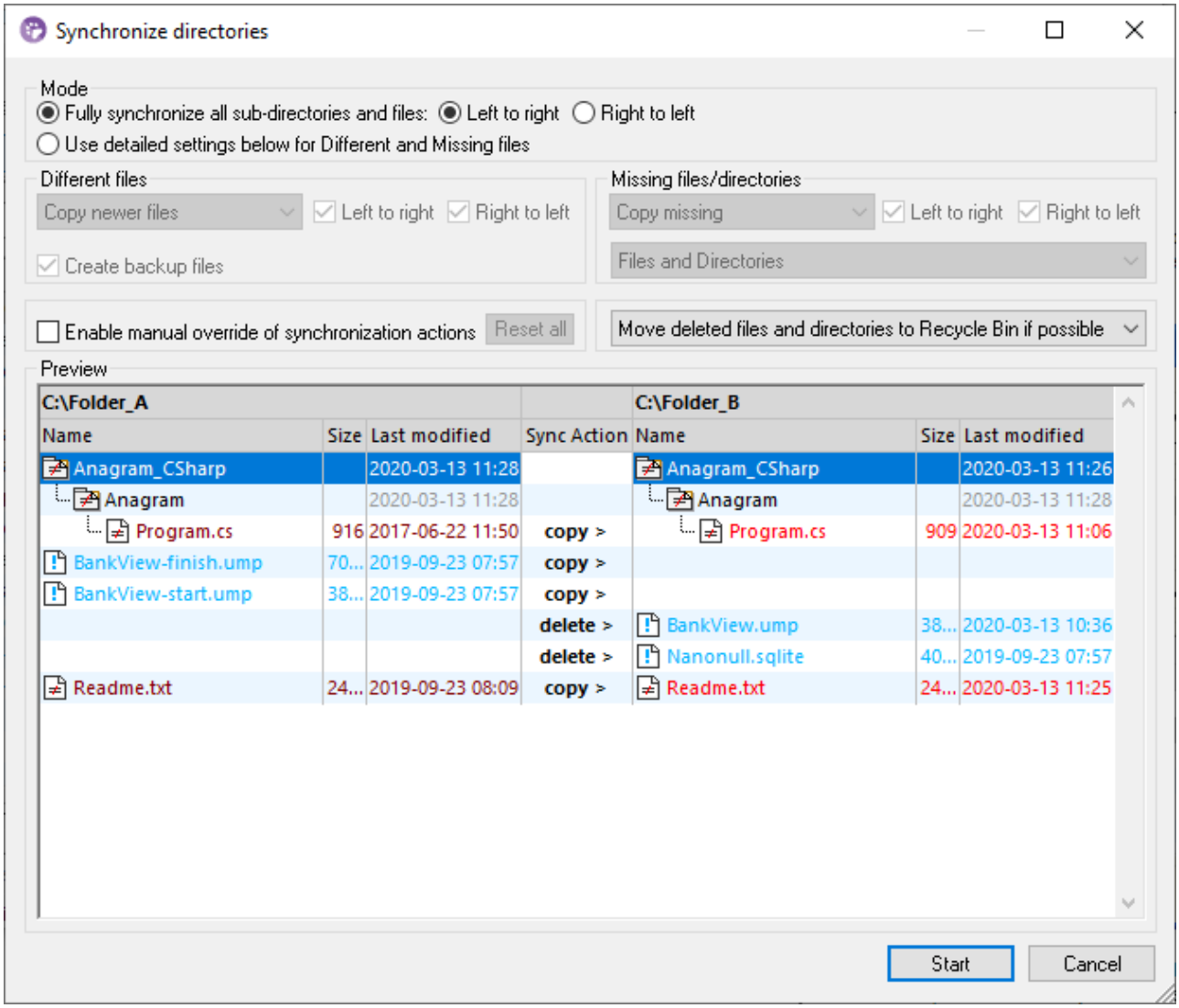
3.8 Synchronizing Directories

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[59] first. After two directories have been compared[61] 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

You can further choose from two options: (i) Fully synchronize [68] all sub-directories and files (left to right or right to left), or (ii) change the synchronization settings [68]. You can also manually override the synchronizations actions (such as "copy", "delete", "ignore") for individual files or sub-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.

3.8.1 Full Synchronization

If you have selected the **Fully synchronize all sub-directories and files** check box, you can choose the synchronization direction either from left to right or from right to left, by selecting the corresponding radio button. Therefore, the source and target directories are either on the left or on the right, depending on your choice.

A full synchronization will perform the following actions:

- Files that are different in the source and target directories will be overwritten so that they become equal. For example, if you synchronize from left to right, the file on the left will overwrite the one on the right.
- Files that exist only in the source directory will be copied to the target directory.
- Files that exist in the target directory but don't exist in the source directory will be deleted permanently (or moved to the recycle bin, if possible). For example, if a file is missing on the left side of the comparison, and if you synchronize from left to right, the right file will be deleted.
- No backup files will be created.

3.8.2 Changing 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.

The options grouped under **Different files** let 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.

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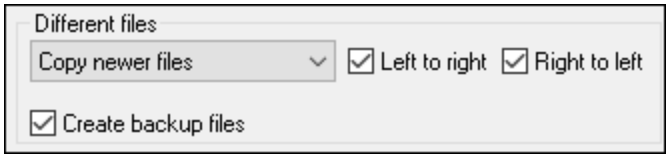


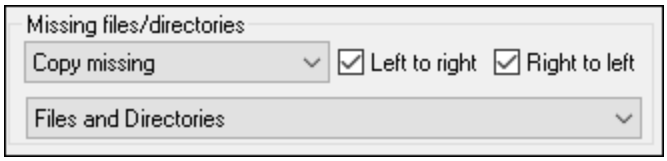
You can choose from among the following options:

- **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 files or sub-directories, see Overriding the Synchronization Actions 69.

The options grouped under **Missing files/directories** determine 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:

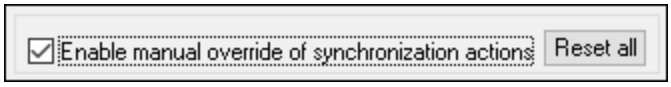
- **No action**: No synchronization for files that are present in only one of the directories.
- **Copy missing**: Missing files are copied to the opposite directory. You can use the Left to right and Right to left check boxes to limit the update to one particular directory. Check both boxes to copy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

3.8.3 Overriding the Synchronization Actions

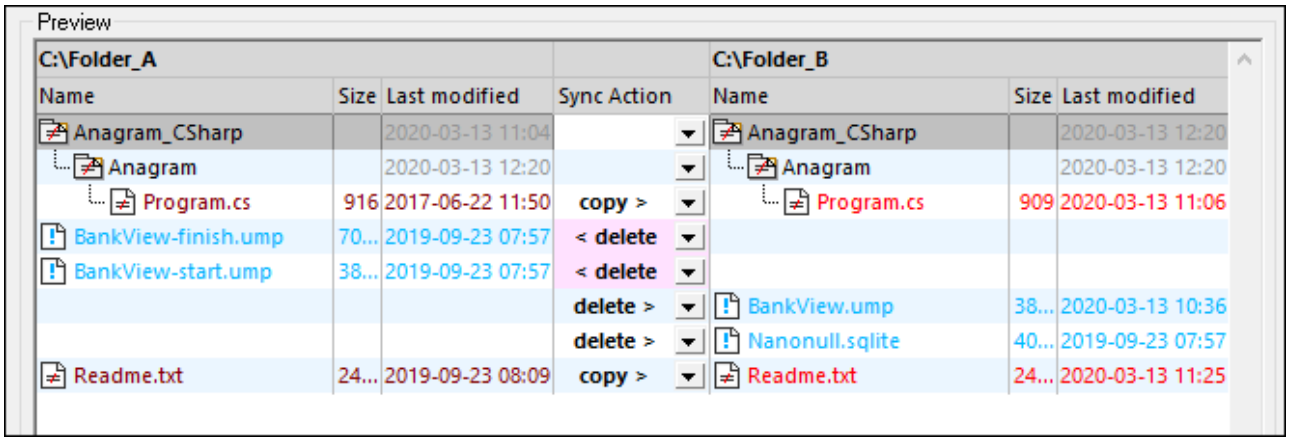
When you perform a full synchronization 68, synchronization actions (such as "ignore", "copy", or "delete") are determined based on the direction of the synchronization. For example, if a file is missing on the left side of the comparison, and if you synchronize from left to right, the default synchronization action for that file is "delete".

On the other hand, if you changed synchronization settings [68] at directory level, those will apply instead when you run a directory synchronization.

If you need even more control, you can override the synchronization actions for one or more individual files or sub-directories manually. To do this, select the **Enable manual override of synchronization actions** check box.



If this check box is selected, 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.



Warning:
Synchronization actions that were overridden manually take precedence over other synchronization options.

To define synchronization actions manually for individual files or sub-directories:

1. Make sure that the **Enable manual override of synchronization actions** check box is selected.
2. Optionally, change the default synchronization options for the directories, see Changing the Synchronization Settings [68].
3. Select one of the following options from the "Sync Action" column:

   - *<blank>*: No synchronization for this file or sub-directory.
   - **copy >**: The file or sub-directory will be copied from the left side to the right side without considering which file is newer.
   - **< copy**: The file or sub-directory will be copied from the right side to the left side without considering which file is newer.
   - **delete >**: The file or sub-directory will be deleted on the right side.
   - **< delete**: The file or sub-directory will be deleted on the left side.
   - **< delete >**: The file or sub-directory will be deleted on both sides.

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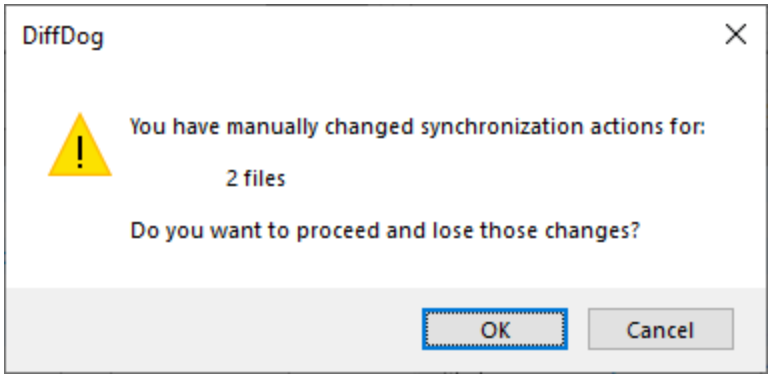
> **Warning:**
> If you apply a delete action to a sub-directory, all files that are contained in this directory will be deleted also, on the chosen side. Since equal files are not displayed in the Synchronize directories dialog, DiffDog displays a warning so as to alert you to this fact.

4. 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.
   - Clear the **Enable manual override of synchronization actions** check box.
2. Click **OK** in the message box that appears.

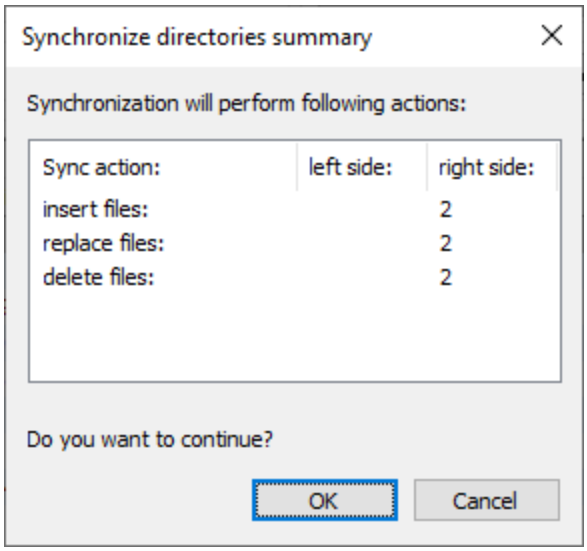


3.8.4 Running a Directory Synchronization

After you have configured the synchronization settings[68] and, if applicable, any manual overrides[69], you can run a directory synchronization.

To run a directory synchronization:

1. Open[59] a Directory Comparison window and run[61] the comparison.
2. On the **Diff and Merge** menu, click **Synchronize directories**.
3. Choose either full synchronization[68] or define detailed settings[68] for different and missing files.
4. Optionally, override the synchronization actions[69] for individual files or sub-directories.
5. Click **Start**. DiffDog displays a summary that lists actions that will be performed during the synchronization.



6. Click **OK** to commit the changes. If you choose not to run the synchronization and discard the synchronization settings, click **Cancel** to return to the Directory Comparison window.

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4 Navigating Differences

When the results of a comparison are first displayed it is always the first difference that is the current difference. 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.

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[114] of the Customize dialog box.

Note: The navigation commands move the selection of the current difference in **both** documents. If you wish to edit[43] 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**[110] 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. 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.

5 Merging Differences

After running a file [20] or directory [61] comparison in a comparison window, you can merge differences that exist between the directories/files in the two panes.

In **File 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.

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.

You use the following commands to merge a difference:

Copy from Left to Right (Alt+Right)

- For the selected difference in a file 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.

Copy from Right to Left (Alt+Left)

- For the selected difference in a file 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.

In file 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 comparisons can be shown in a different background color. This setting is made in the File Comparison tab [133] of the **DiffDog Options** dialog box.

To merge a 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. 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.
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.

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6 Exporting Differences

For file and directory comparisons, you can export the differences in XML, text, and HTML formats. HTML exports are supported for XML files (2- and 3-way comparisons), text files (2- and 3-way comparisons), and directory comparisons.

The available export formats depend on the selected comparison mode[14] (*see table below*):

File comparison	XML, Text, HTML	XML, HTML	n.a.	XML	n.a.
Directory comparison	XML, Text, HTML	XML, Text, HTML	XML, Text	XML, Text	XML, Text

To export differences, take the steps below:

1. Run a file or directory comparison.
2. Click **Export differences** in the **File** menu.
3. Enter a destination file name, select the desired format, and click **Save**.

If you are comparing files in XML mode, a certain combination of options causes the **Export Differences** command to be disabled. To enable the command, do the following:

1. Click **Comparison Options** in the **Tools** menu.
2. Click the **XML** tab.
3. Select the **Detailed differencing** check box.
4. Clear the **Ignore node depth** check box.

7 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 also use the command line 146 to open one comparison file at a time, for example:

```
DiffDog.exe C:\test1.filedif
DiffDog.exe C:\test*.filedif
DiffDog.exe C:\test.*dif
```

The asterisk (*) wildcard is allowed when opening .filedif or .dirdif files.

Running Comparisons with DiffDog Server

If you have licensed DiffDog Server, you can run .filedif or .dirdif comparisons at the command line with DiffDog Server. To do this, supply the .filedif or .dirdif file path as argument to the `import` command.

> Running *.filedif and *.dirdif files with DiffDog Server is supported only on Windows. For the comparison to be successful, all the file or directory paths that were valid on the desktop machine must be valid on the server machine. If you set up the comparison jobs directly in DiffDog Server (as opposed to using *.filedif or *.dirdif files), you can run them regardless of the platform.

If you need to redirect the comparison output to a file in XML or text format, take the following steps:

1. Open an existing .dirdif or .filedif file (or create a new comparison) in DiffDog.

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2. On the **Tools** menu, click **Comparison Document Options**.
3. Do one of the following:
   a. To use no redirection to a file, click **No Export** (this is the default option).
   b. To redirect the report to a text file, click **Text file**, and then enter the path in the adjacent text box.
   c. To redirect the report to an XML file, click **XML file**, and then enter the path in the adjacent text box.
4. On the **File** menu, click **Save As**, and then save the comparison as .filedif (or .dirdif, if applicable).

For more information, refer to DiffDog Server documentation (https://www.altova.com/documentation).

8 Comparison Management Options

The **Diff and Merge** menu includes a series of commands that are used to customize the file and directory 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[79] as well as to facilitate the selection of recently compared pairs[80] are available.

Starting a comparison

The **Start Comparison** command in the **Diff and Merge** menu applies to File Comparison as well as Directory 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[79] or Compare while Editing[79] 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.

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8.1 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 78.

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 78.

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

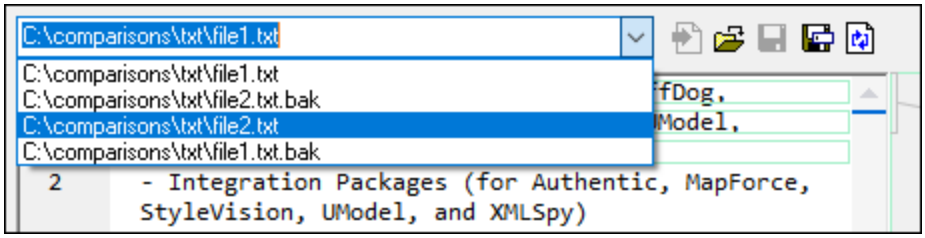
This command is toggled either on or off for individual comparison windows. When toggled on for a comparison window, the Comparison Options dialog box is displayed each time a comparison is made in that window. Note that the Comparison Options dialog box is not displayed before comparisons made dynamically by DiffDog while you edit a document.

To show the options before comparison:

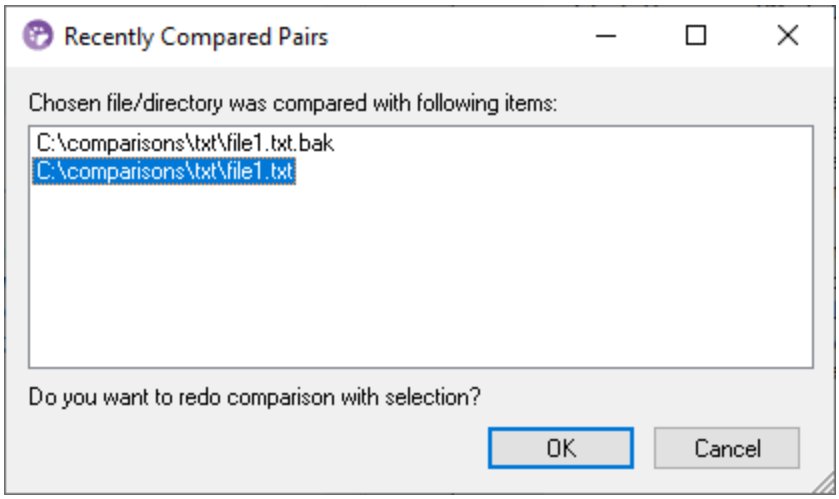
- Activate the menu option **Diff and Merge | Show Options Before Comparison** or activate the corresponding toolbar icon in the Diff and Merge toolbar.

8.2 Recently Compared Pairs

The menu item **Diff and Merge | Support Recently Compared Pairs** lets you enable or disable the "recently compared pairs" feature. More specifically, if this option is on, a history of the most recently compared files or directories is kept whenever you compare a pair of files or directories. You can select any recently compared file or directory from the drop-down list at the top of the comparison window, for example:



Selecting an item from the list above causes the "Recently Compared Pairs" dialog box to appear. This dialog box lists all the files (or directories, if applicable) with which the selected entry was compared recently, for example:



To compare the file or directory with any of the recently compared items, select the corresponding item, and click **OK**.

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 do not wish to have the "Recently Compared Pairs" dialog box appear each time you open a document, then toggle the **Support Recently Compared Pairs** option off.

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9 Menu Commands

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** 84 and **Edit** 87 menus, all standard Windows commands are supported, as well as DiffDog-related commands.

9.1 Toolbar Icons

Icons in the toolbar are shortcuts for various commands, most of which are also available as menu commands. You can make any toolbars visible/invisible using the Toolbars tab[114] of the **Customize** dialog (**Tools | Customize**). To move a toolbar, drag its handle to the desired location. The available toolbars are described below.

Standard toolbar

The **Standard** toolbar (*see screenshot below*) contains file and general editing commands, which can also be accessed in the **File**[84], **Edit**[87], and **XML**[108] menus.

Comparison toolbars

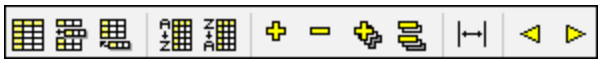
The **Comparison Mode** toolbar (*see screenshot below*) enables you to select a comparison mode for files and directories. This group of commands is available in the **Diff and Merge** menu.

The **Diff and Merge** toolbar (*see screenshot below*) 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** toolbar (*see screenshot below*) 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—these commands are available only as toolbar buttons. To find out more about commands in the **Directory Content** toolbar, see Configuring the View[62] and Running a Directory Comparison[61].

Text/grid view

The **Grid** toolbar (*see screenshot below*) is enabled in Grid View[39] in File Comparison windows. With the Grid commands, you can make structural editing changes and modify the Grid View of your XML document. Only well-formed XML documents can be seen in Grid View mode.



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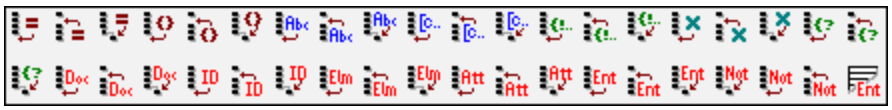
The commands below, which are available only as toolbar buttons, enable you to take the following actions in Grid View mode:

- (**Expand all selected**): Expands one or more selected nodes in Grid View.
- (**Collapse all selected**): Collapses the selected nodes.
- (**Fully expand all selected**): Expands all selected nodes and their descendant nodes.
- (**Collapse unselected**): Collapses all selected nodes and their descendant nodes.
- (**Optimal widths**): Sets columns to optimal widths.

The **Text** toolbar (*see screenshot below*) enables you to configure the display and navigation features of Text View[35]. All these commands are available as Text View menu commands[93].

Icons in the **Grid Edit** toolbar (*see screenshot below*) are used for editing in Grid View[39]. For information about these commands, see Grid View Menu[95]. This toolbar is deactivated by default. If you want to make the toolbar visible in the interface, select the menu command **Tools | Customize** and check the box *Grid Edit* in the Toolbars[114] tab.



9.2 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[84], Save[85], Print[86], Print Setup[86], and Exit[86] commands, DiffDog offers a range of application-specific commands. Note that 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.

9.2.1 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. See Running a File Comparison[20].

9.2.2 Compare Directories

The **Compare Directories** command opens a new empty window[58] for directory comparison. The two directories to be compared must be opened[59] separately in each pane.

9.2.3 Open

The **Open** (**Ctrl+O**) 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**[84] and **Compare Directories**[84] 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.

9.2.4 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. Both files in the file comparison are displayed, as well as the comparison document itself. If a file contains unsaved changes, it is checked.

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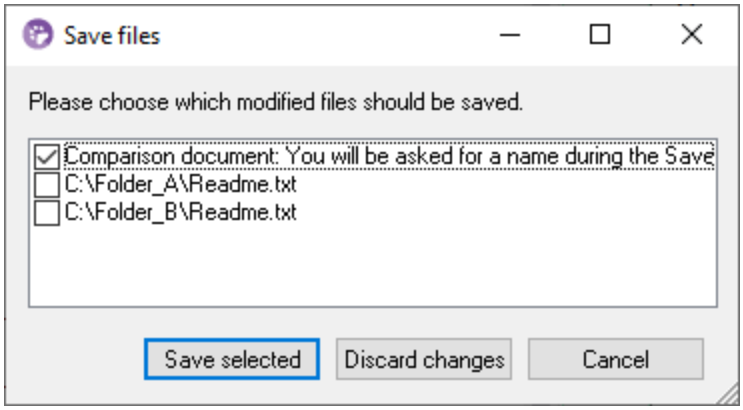

9.2.5 Close All

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* 84 *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.

9.2.6 Save

The **Save** **(Ctrl+S)** command is available only for file comparisons. It pops up the Save files dialog box, where you can decide whether to save or discard the changes for each individual file, including the comparison file itself.

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 file name.

9.2.7 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.

9.2.8 Export Differences

The **Export differences** command allows you to export differences to a file[75]. This menu option is available for file and directory comparisons.

9.2.9 Print

The **Print** (**Ctrl+P**) 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[35] and Grid View[39]. The output will be a printout of the selected view.

9.2.10 Print Preview

The **Print Preview** command displays a preview of how the active document will be printed.

9.2.11 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.

9.2.12 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. After you have answered the prompts, DiffDog closes.

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9.3 Edit Menu

In DiffDog, you can edit documents [43] 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 [87], Cut [88], Copy [88], Paste [88], and a powerful Find [89] and Replace [89] function. These commands are described in the sub-sections of this section.

Note: Editing commands are document-specific and that **Edit** menu commands are not available when a directory comparison is active.

9.3.1 Undo

The **Undo** (**Alt+Backspace**, **Ctrl+Z**) 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** [87] 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 windows.

9.3.2 Redo

The **Redo** (**Ctrl+Y**) command reverses a previous **Undo** [87] 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 windows.

9.3.3 Cut

The **Cut** (**Shift+Delete**, **Ctrl+X**) 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 windows.

9.3.4 Copy

The **Copy** (**Ctrl+C**) 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 windows.

9.3.5 Paste

The **Paste** (**Ctrl+V**) 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 windows.

9.3.6 Delete

The **Delete** (**Del**) 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 windows.

9.3.7 Select All

The **Select All** command enables you to select all the content of a file in one of the file comparison panes [16]. Place the mouse cursor inside the pane with the file you would like to select and click **Select All** in the **Edit** menu.

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9.3.8 Find

The **Find** (**Ctrl+F**) command pops up the **Find** 45 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 windows.

9.3.9 Find next

The **Find next** (**F3**) command repeats the last **Find...** 89 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 windows.

9.3.10 Replace

The **Replace** (**Ctrl+H**) command enables you to find and replace one text string with another text string. It features the same options as the **Find...** 89 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 windows.

9.4 View Menu

The **View** menu contains the following commands:

- Text View 90
- Grid View 90
- Toolbars 90
- Status Bar 90
- Synchronized Scrolling 91
- Go to line/char 91

9.4.1 Text View

The **Text View** command is available in File Comparison windows (not Directory 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.

9.4.2 Grid View

The **Grid View** command is available in File Comparison windows (not Directory 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.

9.4.3 Toolbars

The **Toolbars** menu item contains a submenu with commands that show or hide the respective application toolbars.

Toolbar settings take effect depending on the current comparison mode. For example, 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. You can restore all toolbars to their default state by running the menu command **Tools | Restore Toolbars and Windows**.

The **Customize** submenu item is a shortcut for the **Tools | Customize...** 113 command.

9.4.4 Status Bar

The Status Bar, located at the bottom of the DiffDog application window, displays the following application-level information:

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- 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 (lower-right corner)
- Status of the Caps Lock, Num Lock and Scroll Lock keys (lower-right corner)
- 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 both File Comparison and Directory 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[17] section.

9.4.5 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.

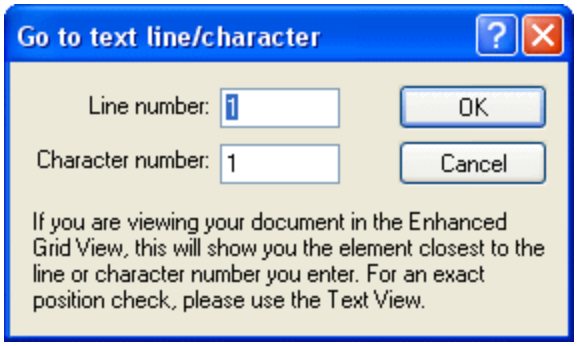
If you scroll through one document (by moving the scrollbar, clicking the scroll arrows, or using the mouse wheel) when synchronized scrolling is toggled on, the document in the other pane will also scroll (horizontally or vertically) so that the corresponding part of the document is displayed.

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.

9.4.6 Go to line/char

The **Go to line/char** (**Ctrl+G**) 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.

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9.5 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.

9.5.1 Word Wrap

The **Word Wrap** command enables or disables word wrapping in Text View[35].

9.5.2 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**[87] (**Ctrl+Z** or **Alt+Backspace**) command.

9.5.3 Insert/Remove Bookmark

The **Insert/Remove Bookmark** command is available in Text View[35] 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[117] of the Customize dialog box.

9.5.4 Go to Next Bookmark

The **Go to Next Bookmark** command is available in Text View[35] 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[117] of the Customize dialog box.

9.5.5 Go to Previous Bookmark

The **Go to Previous Bookmark** command is available in Text View[35] 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[117] of the Customize dialog box.

9.5.6 Remove All Bookmarks

The **Remove All Bookmarks** command is available in Text View[35] only. It removes all currently defined bookmarks in the active document. Note that the **Undo**[87] command does not undo the effects of this command.

Tip: You can assign a keyboard shortcut for this command in the Keyboard tab[117] of the Customize dialog box.

9.5.7 Toggle All Folds

The **Toggle All Folds** command toggles the active document between two states: (i) all nodes expanded, and (ii) all nodes collapsed.

9.5.8 Text View Settings

The **Text View Settings** command opens the Text View Settings dialog box where you can define settings[35] 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.

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9.6 Grid View Menu

The **Grid View** Menu contains commands for working with documents in the Grid View[39] of File Comparison windows. These commands are not available in Text View.

9.6.1 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[39]. 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[96] and node types (Attribute[95], Element[95], Text[95], CDATA[96], Comment[96], Processing Instruction[96]) in XML documents, (ii) DOCTYPE[96] declarations and external DTD declarations[97] in XML documents, and (iii) DTD declarations (ELEMENT[98], ATTLIST[98], ENTITY[98], and NOTATION[98]) in DTD documents and internal DTD declarations of XML documents.

9.6.1.1 Insert | Attribute

The **Insert | Attribute** command is available in Grid View[39] 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.

9.6.1.2 Insert | Element

The **Insert | Element** command is available in Grid View[39] 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.

9.6.1.3 Insert | Text

The **Insert | Text** command is available in Grid View[39] 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.

9.6.1.4 Insert | CData

The **Insert | CData** command is available in Grid View[39] 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.

9.6.1.5 Insert | Comment

The **Insert | Comment** command is available in Grid View[39] 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.

9.6.1.6 Insert | XML

The **Insert | XML** command is available in Grid View[39] 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.

9.6.1.7 Insert | Processing Instruction

The **Insert | Processing Instruction** command is available in Grid View[20] 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.

9.6.1.8 Insert | DOCTYPE

The **Insert | DOCTYPE** command is available in the Grid View[39] 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.

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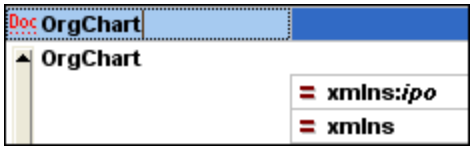


After you have entered the name of the DOCTYPE, you can enter the declarations you wish to use in the internal DTD subset.

Note: A DOCTYPE declaration may only appear between the XML declaration and the XML document element.

9.6.1.9 Insert | ExternalID

The **Insert | ExternalID** command is available when a child item of the DOCTYPE [96] declaration in an XML file is selected in Grid View [39]. 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 [103] when the DOCTYPE item is selected, or it can be inserted or appended [101] 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">
```

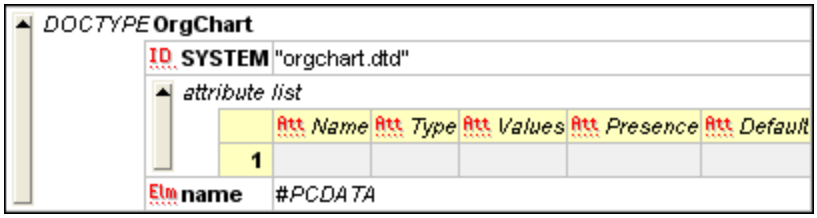
A system identifier is a URI that identifies the external resource. A public identifier is location-independent and can be used to dereference the location of an external resource. For example, in your <%SPY-GEN%> installation, URIs for popular DTDs and XML Schemas are listed in a catalog file called MainCatalog.xml. A public identifier in an XML document can be used to dereference a DTD listed in MainCatalog.xml.

9.6.1.10 Insert | ELEMENT

The **Insert | ELEMENT** command is available in Grid View[39] only, for DTD documents or when an item in the DOCTYPE[96] declaration of an XML document is selected. It inserts an ELEMENT declaration before the selected declaration.

9.6.1.11 Insert | ATTLIST

The **Insert | ATTLIST** command is available in Grid View[39] only, for DTD documents or when an item in the DOCTYPE[96] declaration of an XML document is selected. It inserts an ATTLIST declaration before the selected declaration.



9.6.1.12 Insert | ENTITY

The **Insert | ENTITY** command is available in Grid View[39] only, for DTD documents or when an item in the DOCTYPE[96] declaration of an XML document is selected. It inserts an ENTITY declaration before the selected declaration.

9.6.1.13 Insert | NOTATION

The **Insert | NOTATION** command is available in Grid View[39] only, for DTD documents or when an item in the DOCTYPE[96] declaration of an XML document is selected. It inserts a NOTATION declaration before the selected declaration.

9.6.2 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[39]. Items that cannot be inserted for the current selection are grayed out.

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The commands of the **Append** sub-menu can be used to append (i) the XML declaration[100] and node types (Attribute[99], Element[99], Text[99], CDATA[99], Comment[99], Processing Instruction[100]) in XML documents, (ii) DOCTYPE[100] declarations and external DTD declarations[101] in XML documents, and (iii) DTD declarations (ELEMENT[101], ATTLIST[101], ENTITY[101], and NOTATION[102]) in DTD documents and internal DTD declarations of XML documents.

9.6.2.1 Append | Attribute

The **Append | Attribute** command is available in Grid View[39] only, and appends a new attribute.

9.6.2.2 Append | Element

The **Append | Element** command is available in Grid View[39] 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.

9.6.2.3 Append | Text

The **Append | Text** command is available in Grid View[39] 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.

9.6.2.4 Append | CData

The **Append | CData** command is available in Grid View[39] 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.

9.6.2.5 Append | Comment

The **Append | Comment** command is available in Grid View[39] 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.

9.6.2.6 Append | XML

The **Append | XML** command is available in Grid View[39] 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"?>
```

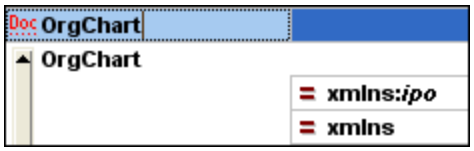
Note: Since an XML document may only contain one XML declaration at the very top of the file, this command should only be used with the topmost row selected and if an XML declaration does not already exist.

9.6.2.7 Append | Processing Instruction

The **Append | Processing Instruction** command is available in Grid View[20] 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.

9.6.2.8 Append | DOCTYPE

The **Append | DOCTYPE** command is available in the Grid View[39] 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.

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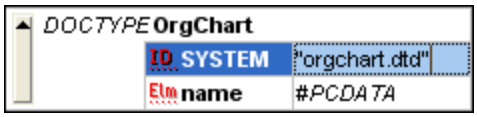
9.6.2.9 Append | ExternalID

The **Append | ExternalID** command is available when a child item of the DOCTYPE 96 declaration in an XML file is selected in Grid View 39. This command inserts a Grid View row for an external identifier 97 (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 103 when the DOCTYPE item is selected, or it can be inserted 97 or appended when one of the child items of the DOCTYPE item is selected, for example, the ELEMENT declaration `name` in the example above.

9.6.2.10 Append | ELEMENT

The **Append | ELEMENT** command is available in Grid View 39 only, for DTD documents or when an item in the DOCTYPE 96 declaration of an XML document is selected. It appends an ELEMENT declaration to the list of declarations.

9.6.2.11 Append | ATTLIST

The **Append | ATTLIST** command is available in Grid View 39 only, for DTD documents or when an item in the DOCTYPE 96 declaration of an XML document is selected. It appends an ATTLIST declaration to the list of declarations.

9.6.2.12 Append | ENTITY

The **Append | ENTITY** command is available in Grid View 39 only, for DTD documents or when an item in the DOCTYPE 96 declaration of an XML document is selected. It appends an ENTITY declaration to the list of declarations.

9.6.2.13 Append | NOTATION

The **Append | NOTATION** command is available in Grid View[39] only, for DTD documents or when an item in the DOCTYPE[96] declaration of an XML document is selected. It appends a NOTATION declaration to the list of declarations.

9.6.3 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[39]. 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[103] and node types (Attribute[102], Element[102], Text[102], CDATA[102], Comment[103], Processing Instruction[103]) in XML documents, (ii) DOCTYPE[103] declarations and external DTD declarations[103] in XML documents, and (iii) DTD declarations (ELEMENT[104], ATTLIST[104], ENTITY[104], and NOTATION[104]) in DTD documents and internal DTD declarations of XML documents.

9.6.3.1 Add Child | Attribute

The **Add Child | Attribute** command is available in Grid View[39] only and when an element node is selected. It inserts a new attribute as a child of the selected element node.

9.6.3.2 Add Child | Element

The **Add Child | Element** command is available in Grid View[39] only. It inserts a new element as a child of the selected node.

9.6.3.3 Add Child | Text

The **Add Child | Text** command is available in Grid View[39] only, and inserts new text content as a child of the selected item.

9.6.3.4 Add Child | CData

The **Add Child | CData** command is available in Grid View[39] only, and inserts a new CDATA section as a child of the selected item.

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9.6.3.5 Add Child | Comment

The **Add Child | Comment** command is available in Grid View[39] only, and inserts a new Comment node as a child of the selected item.

9.6.3.6 Add Child | XML

The **Add Child | XML** command is available in Grid View[39] 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"?>
```

9.6.3.7 Add Child | Processing Instruction

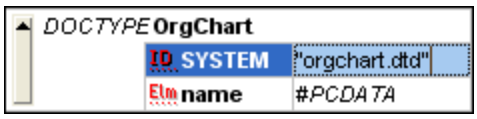
The **Add Child | Processing Instruction** command is available in Grid View[20] only and inserts a new Processing Instruction (PI) as a child of the selected item.

9.6.3.8 Add Child | DOCTYPE

The **Add Child | DOCTYPE** command is available in the Grid View[39] 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.

9.6.3.9 Add Child | ExternalID

The **Add Child | ExternalID** command is available when the DOCTYPE[96] declaration in an XML file is selected in Grid View[39]. This command inserts a Grid View row for an external identifier[97] (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[97] or appended[101] when one of the child items of the DOCTYPE item is selected, for example, the ELEMENT declaration `name` in the example above.

9.6.3.10 Add Child | ELEMENT

The **Add Child | ELEMENT** command is available in Grid View[39] only, for DTD documents or when the DOCTYPE[96] declaration of an XML document is selected. It appends an ELEMENT declaration to the list of declarations.

9.6.3.11 Add Child | ATTLIST

The **Add Child | ATTLIST** command is available in Grid View[39] only, for DTD documents or when the DOCTYPE[96] declaration of an XML document is selected. It appends an ATTLIST declaration to the list of declarations.

9.6.3.12 Add Child | ENTITY

The **Add Child | ENTITY** command is available in Grid View[39] only, for DTD documents or when the DOCTYPE[96] declaration of an XML document is selected. It appends an ENTITY declaration to the list of declarations.

9.6.3.13 Add Child | NOTATION

The **Add Child | NOTATION** command is available in Grid View[39] only, for DTD documents or when the DOCTYPE[96] declaration of an XML document is selected. It appends a NOTATION declaration to the list of declarations.

9.6.4 Convert to

The **Convert to** command converts a selected item in Grid View[39] 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

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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.

9.6.5 Table

The **Table** menu command can be used only in Grid View[39]. It pops out a sub-menu with commands that enable you to edit the selection as a table.

9.6.5.1 Display as Table

The **Display as Table** command allows you to switch between the standard Grid View[39] and Table View[41] of an element in the document.

9.6.5.2 Insert Row

The **Insert Row** command is enabled in Table View[41] 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.

9.6.5.3 Append Row

The **Append Row** command is enabled in Table View[41] 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.

9.6.5.4 Ascending Sort

The **Ascending Sort** command is enabled in Table View[41] 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.

9.6.5.5 Descending Sort

The **Descending Sort** command is enabled in Table View[41] 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.

9.6.6 Move Left

The **Move Left** command is available in Grid View[39] only. It moves the selected node to the left by one level, thereby changing a child element into a sibling of its parent.

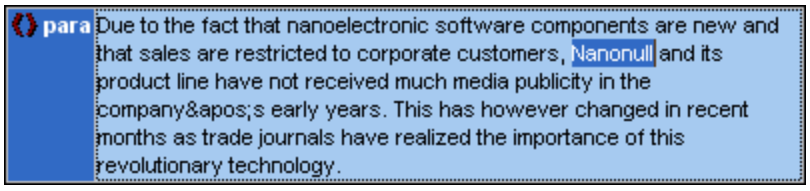
9.6.7 Move Right

The **Move Right** command is available in Grid View[39] only. It moves the selected node to the right by one level, thereby turning it into a child element of the preceding sibling element.

9.6.8 Enclose in Element

The **Enclose in Element** command is enabled in Grid View[39] 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.

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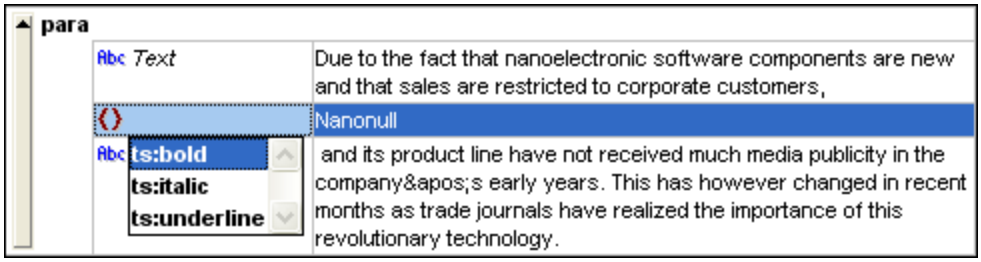

The selection you make will be the name of the new element. Alternatively, you can enter some other name for the element.

9.7 XML Menu

The **XML** menu contains commands that relate to XML documents opened in File Comparison windows.

9.7.1 Check Well-Formedness

The **Check Well-Formedness** (**F7**) 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[35] and Grid View[39] 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[139] tab of the DiffDog Options dialog box.

9.7.2 Validate

The **Validate** (**F8**) command is available in both the Text View[35] and Grid View[39] 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[139] tab of the DiffDog Options dialog box.

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9.8 Diff and Merge Menu

The **Diff and Merge Menu** lists commands to manage file[18] and directory[55] comparisons. Depending on the active comparison window, commands to set the comparison mode[14], navigate[73] compared documents in the comparison windows and merge[74] differences in them are also available in this menu.

Please note that the content of the **Diff and Merge** menu changes dynamically, depending on the type of comparison.

Diff and Merge general settings

This subsection describes general commands available in the **Diff and Merge** menu. To find out more about commands specific to comparison types, see Directory Comparison Commands[110].

Compare as

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[110] mode is active. To change to the Text Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

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[110] mode is active. To change to the XML Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

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[110] mode is active. To change to the Binary Comparison mode in that case, you have to deactivate the Quick Comparison mode first.

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[139] tab of the DiffDog Options dialog box. Note that this command is not available if the Quick Comparison[110] mode is active. To change to the File Extension mode in that case, you have to deactivate the Quick Comparison mode first.

Start comparison

The **Start Comparison** (**F5**) command starts comparison[78] for the active comparison window.

Next/last

The **Next Difference** (**Alt+Down**) command selects the next difference as the current difference[73].

The **Previous Difference** (**Alt+Up**) command selects the previous difference as the current difference[73].

The **Last Difference** (**Alt+End**) command selects the last difference as the current difference[73].

The **First Difference** (**Alt+Home**) command selects the first difference as the current difference[73].

Current difference

The **Display Current Difference** (**Ctrl+Enter**) command scrolls through the document to display the current difference[73].

The **Make Current Difference** (**Alt+Enter**) command makes the selected difference the current difference, and sets it as the difference from which to navigate.

Copy

The **Copy from Left to Right** (**Alt+Right**) command copies text of the selected difference from the document in the left pane to the document in the right pane.

The **Copy from Right to Left** (**Alt+Left**) command copies text of the selected difference from the document in the right pane to the document in the left pane.

Other options

When the **Show Options Before Comparison** 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.

When toggled on, the **Autostart Comparison** 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 (see the **Start Comparison** command above).

The **Compare while Editing** 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 (see the **Start Comparison** command above).

The **Support Recently Compared Pairs** 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.

9.8.1 Directory Comparison Commands

This topic describes menu commands that are specific to directory comparisons.

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.

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[14] 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.

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The **Synchronize Directories** command opens the Synchronize directories [67] dialog box and populates it with all non-equal files that are present in at least one of the directories.

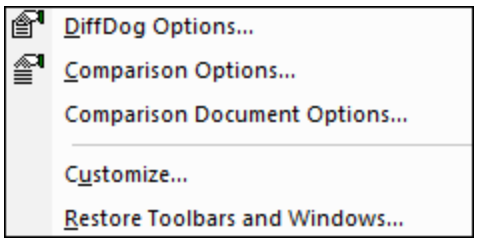
The **Synchronize Selected Directory** command is available when the following conditions are true:

- At least one of the compared directories contains a sub-directory which is selected.
- The selected sub-directory contains one or more non-equal files.

The command opens the Synchronize directories [67] dialog box and populates it with all non-equal files that are present in the selected sub-directory.

9.9 Tools Menu

The **Tools Menu** contains commands that enable you to set the application[112] and comparison[112] options and to customize[113] the appearance of DiffDog.



9.9.1 DiffDog Options

The **DiffDog Options** dialog box enables you to define settings for the application[131], file comparison[133], directory comparison[135], You can also define network settings[141] and network proxy settings[143], specify file types[139] that can be compared, and the default Help format to use[145]..

9.9.2 Comparison Options

The **Comparison Options** dialog box allows you to define text comparison options[24] and XML comparison options[25].

9.9.3 Comparison Document Options

This command is applicable if you have licensed DiffDog Server and intend to run with it comparison files (.filedif and .dirdif) created with DiffDog, see also Running comparisons with DiffDog Server[76].

When you run .filedif or .dirdif files with DiffDog Server, you might want to optionally redirect the report with the comparison results to an XML or text file. The dialog below lets you specify the format and path of the output report.

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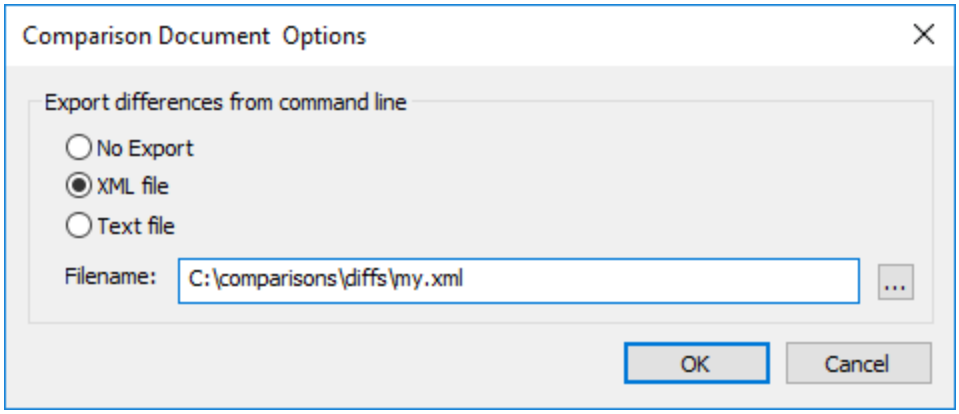
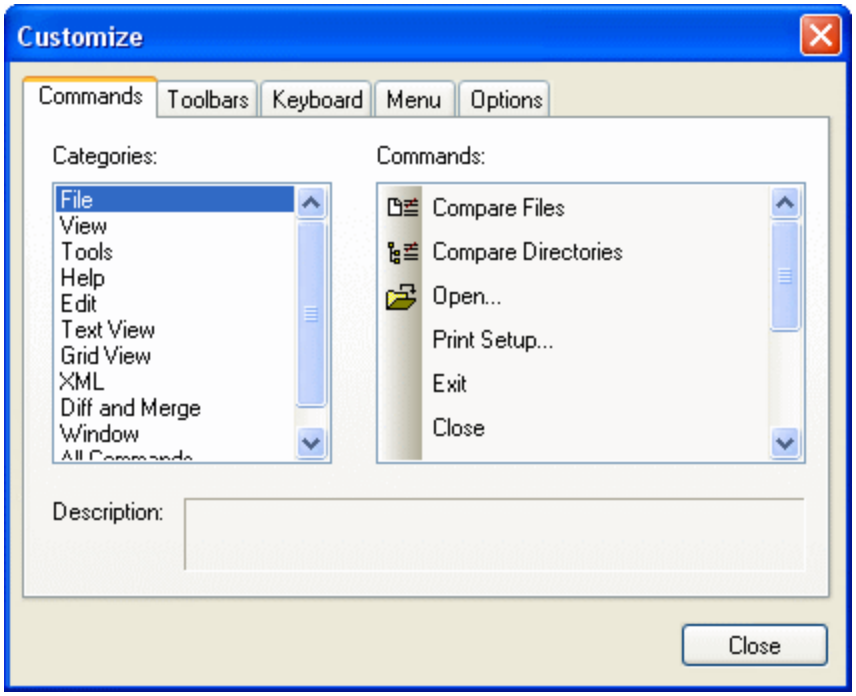


9.9.4 Customize

The **Customize** command lets you customize DiffDog to suit your personal needs.

9.9.4.1 Commands

The **Commands** tab allows you 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 you own toolbar you can populate it with your own commands/icons.

Note: You can also edit the commands in the context menus [120] (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.

9.9.4.2 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.

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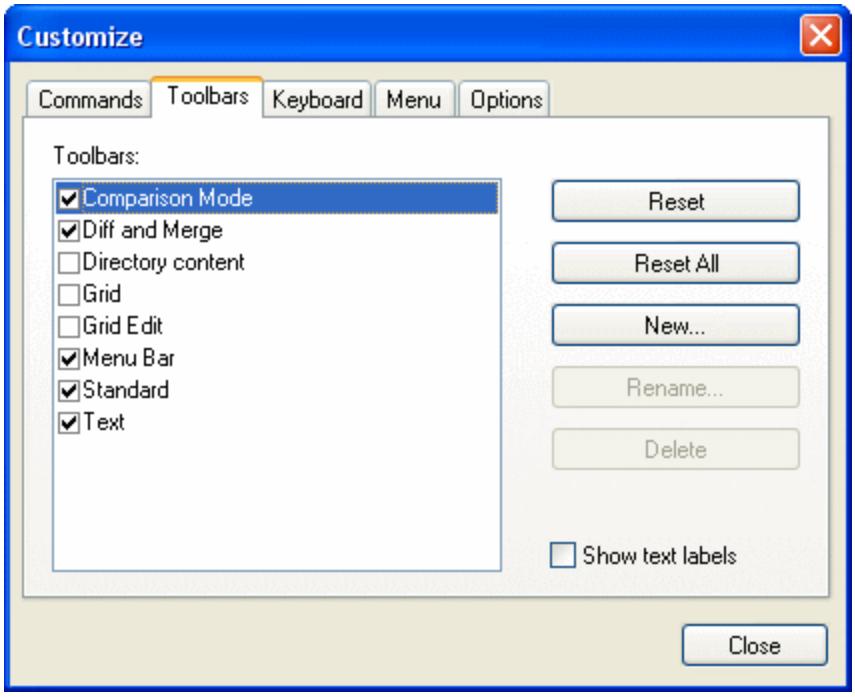

Show text labels

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 113 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.

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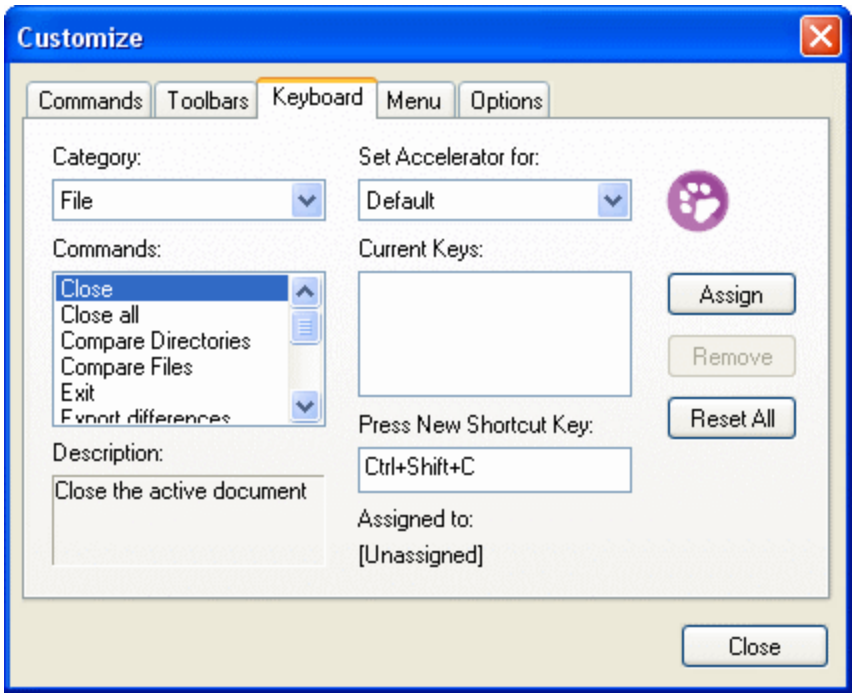
9.9.4.3 Keyboard

The **Keyboard** tab allows you to define (or change) keyboard shortcuts for any DiffDog command.



To assign a new Shortcut to a command:

1. Select a command menu from the **Category** list, for example, "File". (Alternatively, select **All Commands** to view commands from all menus).
2. Select the command to which you want to assign a new shortcut from the **Commands** list.
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. (To clear this text box, press any of the control keys, **CTRL**, **ALT** or **SHIFT**).
4. Click **Assign**. The shortcut now appears in the Current Keys list box.

Note: The only supported value in the **Set Accelerator for** drop-down list is **Default**.

To de-assign or delete a shortcut:

1. In the **Current Keys** list, click the shortcut you want to delete.
2. Click **Remove**.
3. Click **Close** 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 message box appears stating that all keyboard assignments 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

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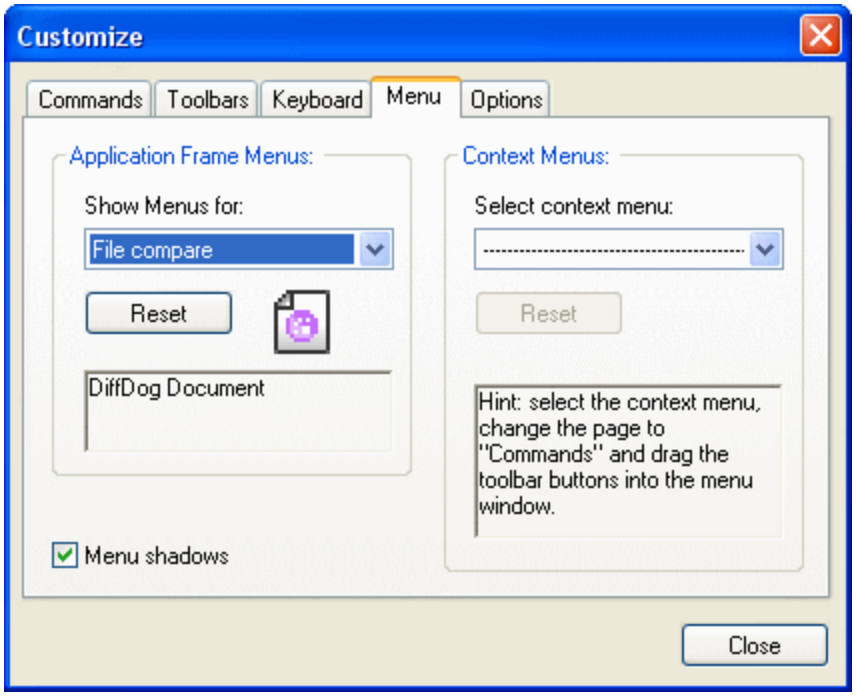
Hotkeys by key	
Alt+Backspace	Undo
Ctrl+Insert	Copy
Shift+Insert	Paste
Alt+Down	Next Difference
Alt+Up	Previous Difference
Alt+Home	First Difference
Alt+End	Last Difference
Alt+Left	Copy from Right to Left
Alt+Right	Copy from Left to Right

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	

Hotkeys by function		
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	

9.9.4.4 Menu

The **Menu** tab allows you to customize menu bars as well as context menus.



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Customizing menus

The **Default Menu** bar is the menu bar that is displayed when no document is open in the main window. Other menu bars are as follows:

- The **File compare** menu bar is the menu bar visible when at least one File Comparison window has been opened and is active.
- The **Directory compare** menu bar is the menu bar visible when at least one Directory Comparison window has been opened and is active.

To customize a menu bar, select it from the **Show Menus For** drop-down list. Then switch to the **Commands** tab and drag commands from the **Commands** list box to the menu bar or into any of the menus.

Deleting commands from menus and resetting the menu bars

To delete an entire menu or a command inside a menu, do the following:

1. Select a menu bar from the **Show Menus for** drop-down list.
2. With the Customize dialog open, select (i) the menu you want to delete from the application's menu bar, or (ii) the command you want to delete from one of these menus.
3. Either (i) drag the menu from the menu bar or the menu command from the menu, or (ii) right-click the menu or menu command and select **Delete**.

You can reset any menu bar to its original installation state by selecting it from the **Show Menus For** drop-down list and then clicking the **Reset** button.

Customizing the application's context menus

Context menus are the menus that appear when you right-click certain objects in the application's interface. Each of these context menus can be customized by doing the following:

1. Select the context menu from the **Select context menu** drop-down list. This pops up the context menu.
2. Click the **Commands** tab.
3. Drag a command from the **Commands** list box into the context menu.
4. To delete a command from the context menu, right-click that command in the context menu, and select **Delete**. Alternatively, drag the command out of the context menu.

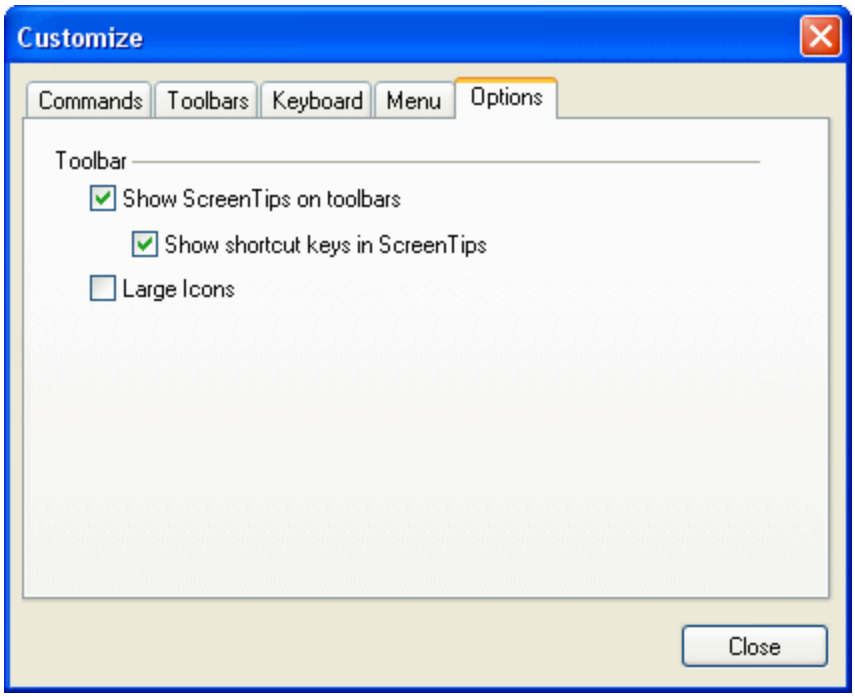
You can reset any context menu to its original installation state by selecting it in the **Select context menu** drop-down list and then clicking the **Reset** button.

Menu shadows

Select the **Menu shadows** check box to give all menus shadows.

9.9.4.5 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.

9.9.5 Restore Toolbars and Windows

This menu command resets the toolbars, entry helper windows, docked windows etc. to their defaults. DiffDog needs to be restarted for the changes to take effect.

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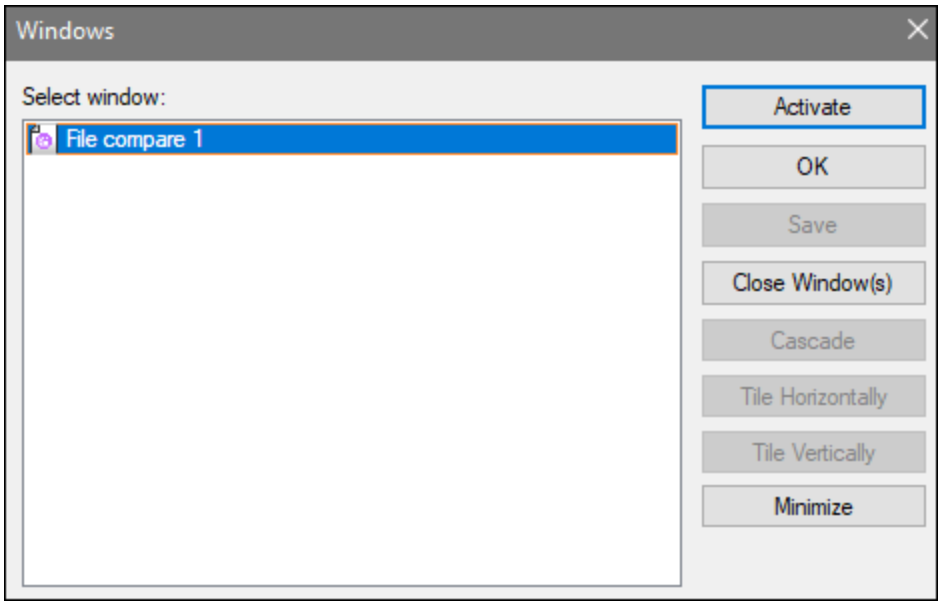
9.10 Window Menu

The **Windows** menu provides commands to arrange and organize the display of open windows and set a theme. You can cascade open windows, tile them horizontally or vertically, and arrange document icons once you have minimized them. You can also switch to an open document window directly from the menu.

Themes
DiffDog offers the following themes: *Classic* (default option), *Light*, and *Dark*. When you select a theme, it is applied immediately.

Windows
Clicking the **Windows** command opens the **Windows** dialog box (*see screenshot below*), which displays a list of all open windows and provides commands that can be applied to the selected window(s). You can select a window 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.

Note: 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.

9.11 Help Menu

Help (F1)

The **Help (F1)** command opens the application's Help documentation (its user manual). By default, the Online Help in HTML format at the Altova website will be opened.

If you do not have Internet access or do not want, for some other reason, to access the Online Help, you can use the locally stored version of the user manual. The local version is a PDF file named **DiffDog.pdf** that is stored in the application folder (in the Program Files folder).

If you want to change the default format to open (Online Help or local PDF), do this in the Help section of the Options dialog (menu command **Tools | Options**).

Software Activation

License your product
After you download your Altova product software, you can license—or activate—it using either a free evaluation key or a purchased permanent license key.

- ***Free evaluation license.*** When you first start the software after downloading and installing it, the **Software Activation** dialog will pop up. In it is a button to request a free evaluation license. Click it to get your license. When you click this button, your machine-ID will be hashed and sent to Altova via HTTPS. The license information will be sent back to the machine via an HTTP response. If the license is created successfully, a dialog to this effect will appear in your Altova application. On clicking **OK** in this dialog, the software will be activated for a period of 30 days **on this particular machine**.

- ***Permanent license key.*** The **Software Activation** dialog allows you 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. Your license will be sent to you by e-mail in the form of a license file, which contains your license-data.

  There are three types of permanent license: *installed*, *concurrent user*, and *named user*. An installed license unlocks the software on a single computer. If you buy an installed license for *N* computers, then the license allows use of the software on up to *N* computers. A concurrent-user license for *N* concurrent users allows *N* users to run the software concurrently. (The software may be installed on 10N computers.) A named-user license authorizes a specific user to use the software on up to 5 different computers. To activate your software, click **Upload a New License**, and, in the dialog that appears, enter the path to the license file, and click **OK**.

Note: For multi-user licenses, each user will be prompted to enter his or her own name.

Your license email and the different ways to license (activate) your Altova product
The license email that you receive from Altova will contain your license file as an attachment. The license file has a **.altova_licenses** file extension.

To activate your Altova product, you can do one of the following:

- Save the license file (**.altova_licenses**) to a suitable location, double-click the

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license file, enter any requested details in the dialog that appears, and finish by clicking **Apply Keys**.

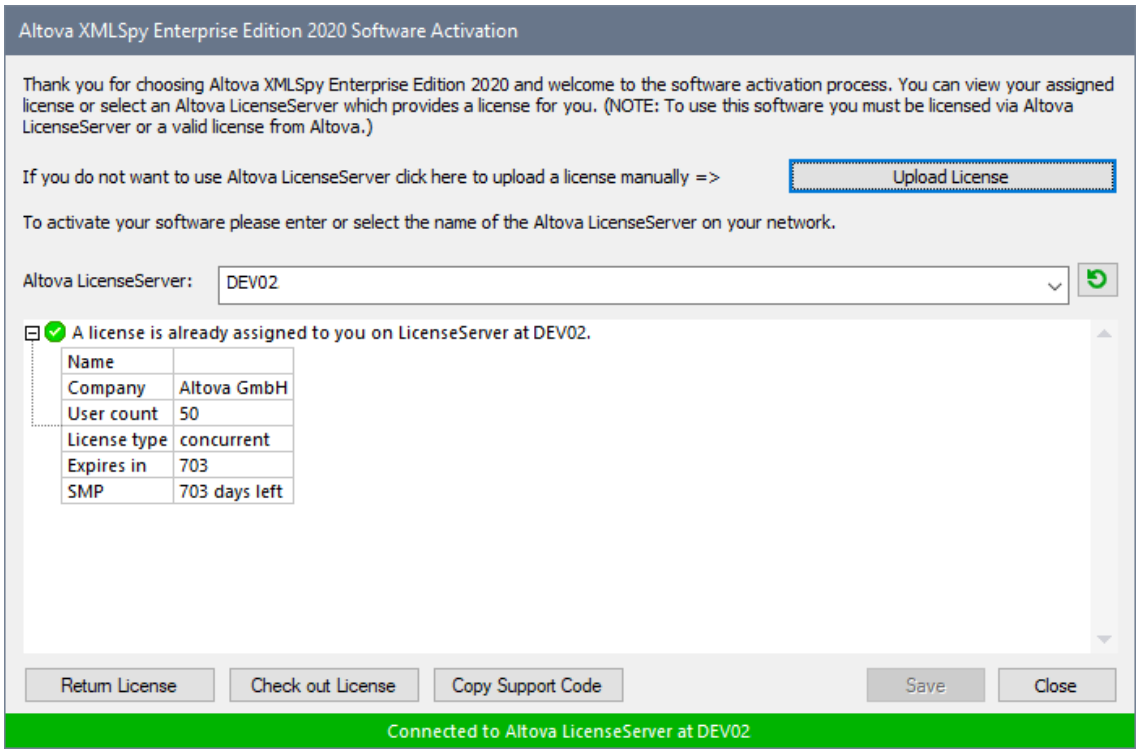
- Save the license file (**.altova_licenses**) to a suitable location. In your Altova product, select the menu command **Help | Software Activation**, and then **Upload a New License**. Browse for or enter the path to the license file, and click **OK**.
- Save the license file (**.altova_licenses**) to any suitable location, and upload it from this location to the license pool of your Altova LicenseServer. You can then either: (i) acquire the license from your Altova product via the product's Software Activation dialog (*see below*) or (ii) assign the license to the product from Altova LicenseServer. *For more information about licensing via LicenseServer, read the rest of this topic.*

You can access the **Software Activation** dialog (*screenshot below*) at any time by clicking the **Help | Software Activation** command.

Activate your software
You can activate the software by registering the license in the Software Activation dialog or by licensing via Altova LicenseServer (*see details below*).

- *Registering the license in the Software Activation dialog*. In the dialog, click **Upload a New License** and browse for the license file. Click **OK** to confirm the path to the license file and to confirm any data you entered (your name in the case of multi-user licenses). Finish by clicking **Save**.

- *Licensing via Altova LicenseServer on your network:* To acquire a license via an Altova LicenseServer on your network, click **Use Altova LicenseServer**, located at the bottom of the **Software Activation** dialog. Select the machine on which the LicenseServer you want to use has been installed. Note that the auto-discovery of License Servers works by means of a broadcast sent out on the LAN. As these broadcasts are limited to a subnet, License Server must be on the same subnet as the client machine for auto-discovery to work. If auto-discovery does not work, then type in the name of the server. The Altova LicenseServer must have a license for your Altova product in its license pool. If a license is available in the LicenseServer pool, this is indicated in the **Software Activation** dialog (*see screenshot below showing the dialog in Altova XMLSpy*). Click **Save** to acquire the license.



After a machine-specific (aka installed) license has been acquired from LicenseServer, it cannot be returned to LicenseServer for a period of seven days. After that time, you can return the machine license to LicenseServer (click **Return License**) so that this license can be acquired from LicenseServer by another client. (A LicenseServer administrator, however, can unassign an acquired license at any time via the administrator's Web UI of LicenseServer.) Note that the returning of licenses applies only to machine-specific licenses, not to concurrent licenses.

Check out license

You can check out a license from the license pool for a period of up to 30 days so that the license is stored on the product machine. This enables you to work offline, which is useful, for example, if you wish to work in an environment where there is no access to your Altova LicenseServer (such as when your Altova product is installed on a laptop and you are traveling). While the license is checked out, LicenseServer displays the license as being in use, and the license cannot be used by any other machine. The license automatically reverts to the checked-in state when the check-out period ends. Alternatively, a checked-out license can be checked in at any time via the **Check in** button of the **Software Activation** dialog.

To check out a license, do the following: (i) In the **Software Activation** dialog, click **Check out License** (*see screenshot above*); (ii) In the **License Check-out** dialog that appears, select the check-out period you want and click **Check out**. The license will be checked out. After checking out a license, two things happen: (i) The **Software Activation** dialog will display the check-out information, including the time when the check-out period ends; (ii) The **Check out License** button in the dialog changes to a **Check In** button. You can check the license in again at any time by clicking **Check In**. Because the license automatically reverts to the checked-in status after the check-out period elapses, make sure that the check-out period you select adequately covers the period during which you will be working offline.

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If the license being checked out is a Installed User license or Concurrent User license, then the license is checked out to the machine and is available to the user who checked out the license. If the license being checked out is a Named User license, then the license is checked out to the Windows account of the named user. License check-out will work for virtual machines, but not for virtual desktop (in a VDI). Note that, when a Named User license is checked out, the data to identify that license check-out is stored in the user's profile. For license check-out to work, the user's profile must be stored on the local machine that will be used for offline work. If the user's profile is stored at a non-local location (such as a file-share), then the checkout will be reported as invalid when the user tries to start the Altova application.

License check-ins must be to the same major version of the Altova product from which the license was checked out. So make sure to check in a license before you upgrade your Altova product to the next major version.

Note: For license check-outs to be possible, the check-out functionality must be enabled on LicenseServer. If this functionality has not been enabled, you will get an error message to this effect when you try to check out. In this event, contact your LicenseServer administrator.

Copy Support Code
Click **Copy Support Code** to copy license details to the clipboard. This is the data that you will need to provide when requesting support via the online support form.

Altova LicenseServer provides IT administrators with a real-time overview of all Altova licenses on a network, together with the details of each license as well as client assignments and client usage of licenses. The advantage of using LicenseServer therefore lies in administrative features it offers for large-volume Altova license management. Altova LicenseServer is available free of cost from the Altova website. For more information about Altova LicenseServer and licensing via Altova LicenseServer, see the Altova LicenseServer documentation.

- Order Form

  When you are ready to order a licensed version of the software product, you can use either the **Purchase a Permanent License Key** button in the **Software Activation** dialog (*see previous section*) or the **Order Form** command to proceed to the secure Altova Online Shop.

- Registration

  Opens the Altova Product Registration page in a tab of your browser. Registering your Altova software will help ensure that you are always kept up to date with the latest product information.

- Check for Updates

  Checks with the Altova server whether a newer version than yours is currently available and displays a message accordingly.

- Product Comparison

  Clicking the **Product Comparison** command redirects you to the Altova website, where you can get an overview of features supported in the Professional and Enterprise editions.

- Support Center

  A link to the Altova Support Center on the Internet. The Support Center provides FAQs, discussion forums

where problems are discussed, and access to Altova's technical support staff.

- Download Components and Free Tools

  A link to Altova's Component Download Center on the Internet. From here you can download a variety of companion software to use with Altova products. Such software ranges from XSLT and XSL-FO processors to Application Server Platforms. The software available at the Component Download Center is typically free of charge.

- DiffDog on the Internet

  A link to the Altova website on the Internet. You can learn more about DiffDog, related technologies and products on the Altova website.

- About DiffDog

  Displays the splash window and version number of your product. 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.

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9.12 Status and Result Messages

Status and result messages for comparisons appear in the Comparison Window Status Bar, which is located at the bottom of each 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 [24] 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.

10 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 131
   - File Comparison 133
   - Directory Comparison 135
   - File Types 139
   - Network Settings 141
   - Network Proxy Settings 143
   - Help 145

3. Make the desired changes and click **OK**.

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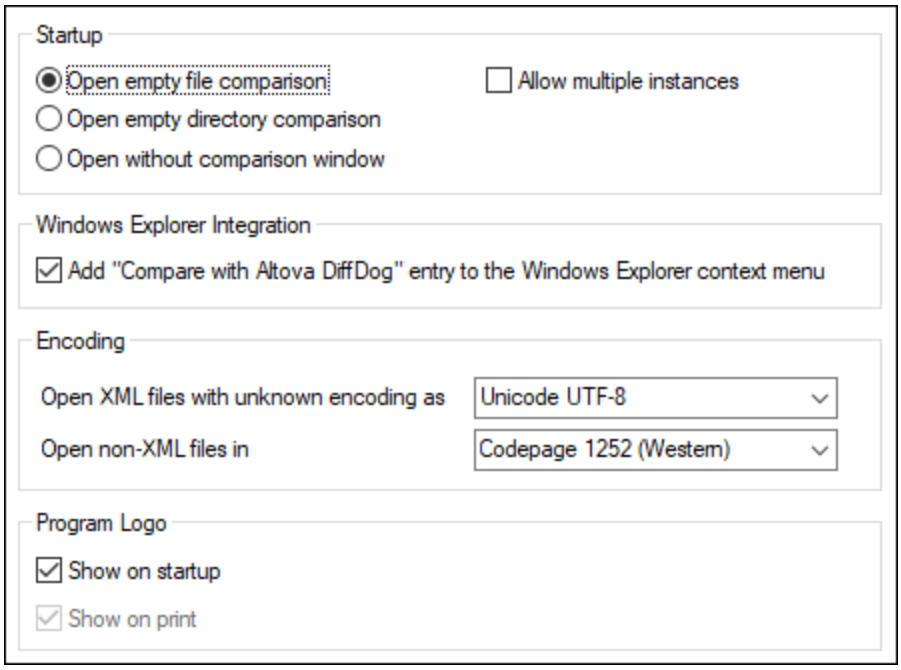
10.1 Application

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.

Windows Explorer Integration

If the **Add "Compare with Altova DiffDog" entry to the Windows Explorer context menu** check box is selected, 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 on startup** option—if checked—displays the splash screen (logo) when DiffDog starts. The **Show on print** option is read-only; it prints the program logo when a comparison result is printed.

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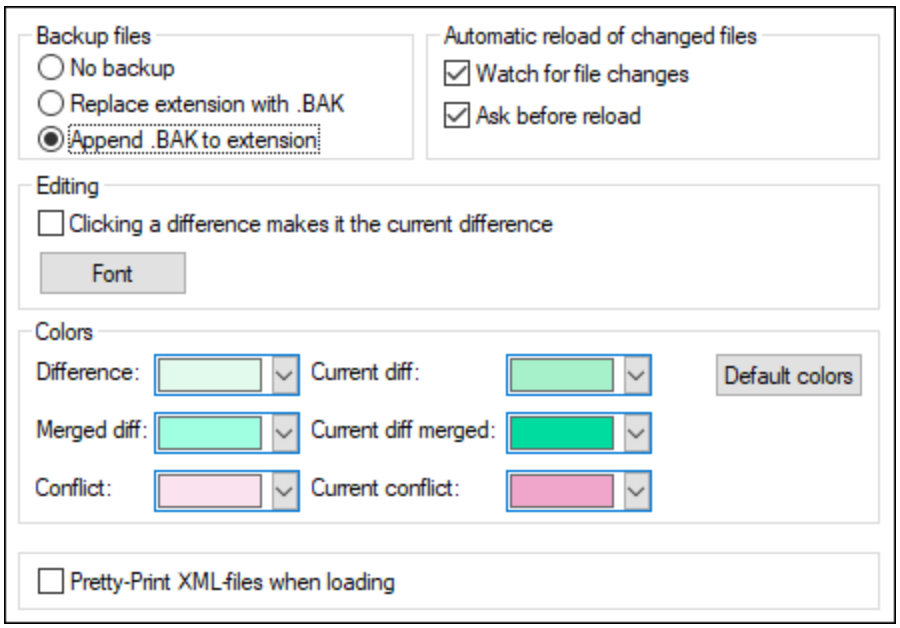
10.2 File Comparison

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 [139], 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, including:

- the current difference (that is, the difference that is currently in focus, or selected)
- merged differences (that is, all merged differences that have not been saved as yet)
- the current merged difference (a merged difference that is currently selected)
- any conflict or the currently selected conflict (this option is applicable only when comparing files 3-way; *Enterprise Edition* only)

To reset the default colors, click the **Default colors** button.

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.

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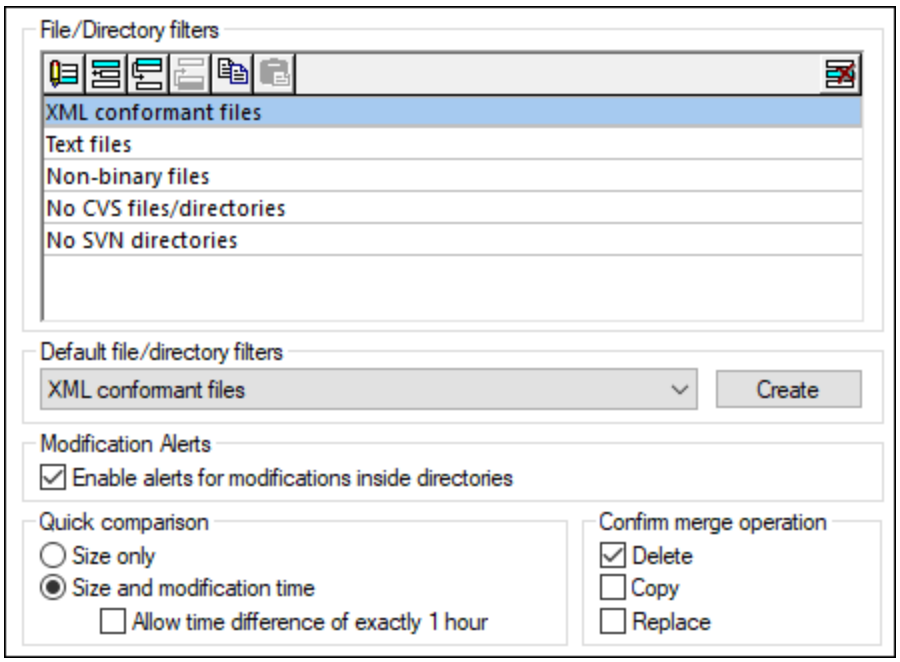
10.3 Directory Comparison

The **Directory comparison** tab enables you to create filters [136] 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

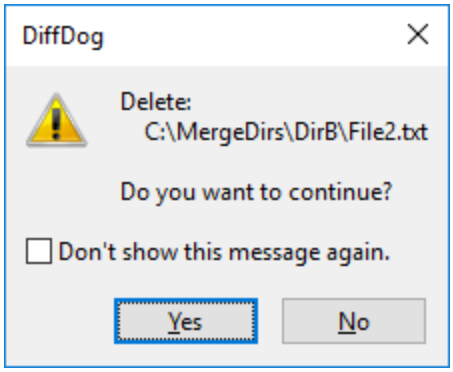
If the **Enable alerts for modifications inside directories** check box is activated, DiffDog displays a warning message when the content of the displayed folders is changed outside of DiffDog. You can then decide whether or not you want to update the display.

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.

10.3.1 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

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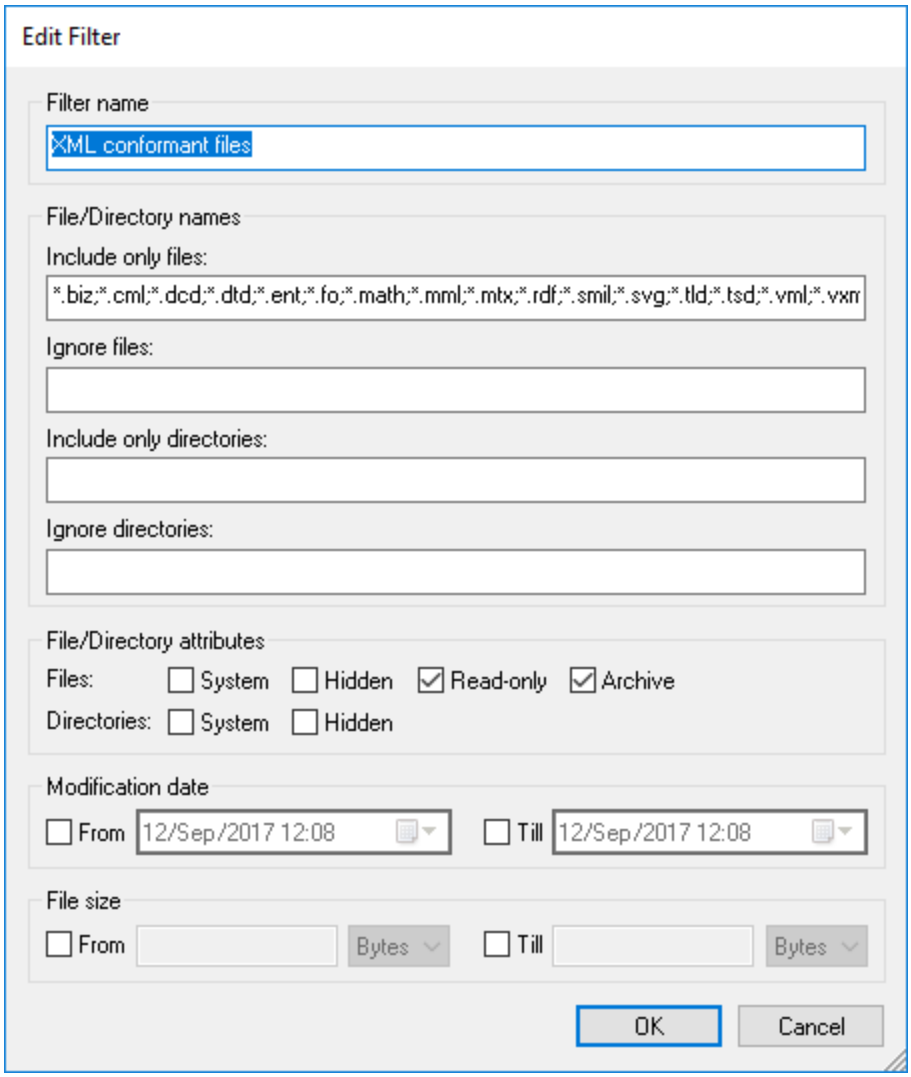
- Define a date range for files/directories to be compared
- Restrict files to a certain file size



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.

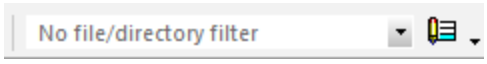
For Directory Comparison windows that were opened before a new filter is selected, you must reload both directories so that the new filters are applied to these comparison windows.

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, select only the corresponding check box (**From** or **Till**, respectively) and leave the second check box unchecked. After you select the **From** or **Till** check box, you can either type or select the part of the date that you want to change.

To define a filter for directory comparison:

1. Do one of the following:
   a. Select the menu option **Tools | DiffDog Options** and click the **Directory Comparison** tab.
   b. Click the **Edit Filter** button in the toolbar of a Directory Comparison window. Note that, if a filter is already selected from the drop-down list, then you will be editing that filter instead of creating a new one.



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.
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.

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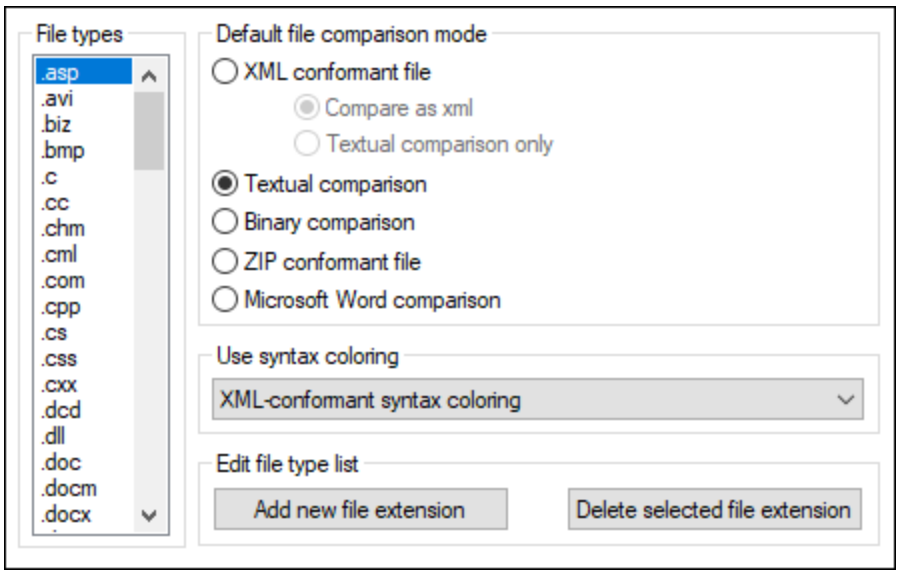
10.4 File Types

In the **File types** tab, you can set the default comparison mode of various file types. File types are identified by their extension (`.asp`, `.biz`, etc.), and the comparison mode[14] can be XML, text, binary, ZIP-conformant, or Microsoft Word.



File types

This pane is used to select the file extension for which the options in the group boxes **Default file 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 (*Enterprise Edition*)
  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.

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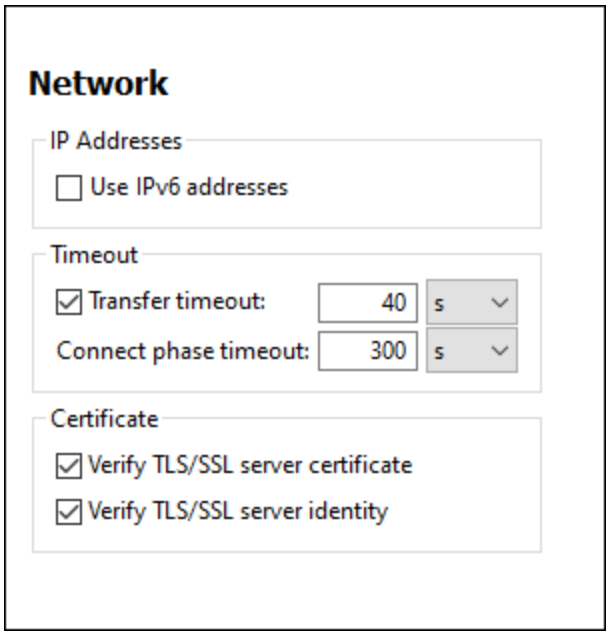
10.5 Network

The **Network** section (*screenshot below*) enables you to configure important network settings.



IP addresses
When host names resolve to more than one address in mixed IPv4/IPv6 networks, selecting this option causes the IPv6 addresses to be used. If the option is not selected in such environments and IPv4 addresses are available, then IPv4 addresses are used.

Timeout

- *Transfer timeout:* If this limit is reached for the transfer of any two consecutive data packages of a transfer (sent or received), then the entire transfer is aborted. Values can be specified in seconds [s] or milliseconds [ms], with the default being 40 seconds. If the option is not selected, then there is no time limit for aborting a transfer.
- *Connection phase timeout:* This is the time limit within which the connection has to be established, including the time taken for security handshakes. Values can be specified in seconds [s] or milliseconds [ms], with the default being 300 seconds. This timeout cannot be disabled.

Certificate

- *Verify TLS/SSL server certificate:* If selected, then the authenticity of the server's certificate is checked by verifying the chain of digital signatures until a trusted root certificate is reached. This option is enabled by default. If this option is not selected, then the communication is insecure, and attacks (for example, a man-in-the-middle attack) would not be detected. Note that this option does not verify that the certificate is actually for the server that is communicated with. To enable full security, both the certificate and the identity must be checked (*see next option*).
- *Verify TLS/SSL server identity:* If selected, then the server's certificate is verified to belong to the server we intend to communicate with. This is done by checking that the server name in the URL is the same as the name in the certificate. This option is enabled by default. If this option is not selected, then the server's identify is not checked. Note that this option does not enable verification of the server's certificate. To enable full security, both the certificate as well as the identity must be checked (*see*

previous option).

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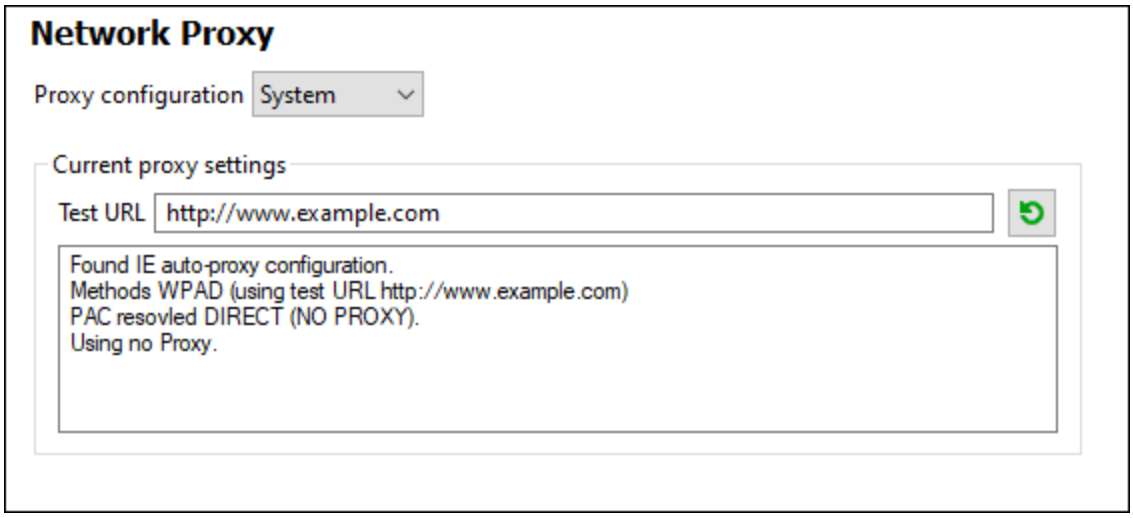
10.6 Network Proxy Settings

The *Network Proxy* section enables you to configure custom proxy settings. These settings affect how the application connects to the Internet (for XML validation purposes, for example). By default, the application uses the system's proxy settings, so you should not need to change the proxy settings in most cases. If necessary, however, you can set an alternative network proxy by selecting, in the *Proxy Configuration* combo box, either *Automatic* or *Manual* to configure the settings accordingly.

Note: The network proxy settings are shared among all Altova MissionKit applications. So, if you change the settings in one application, all MissionKit applications will be affected.

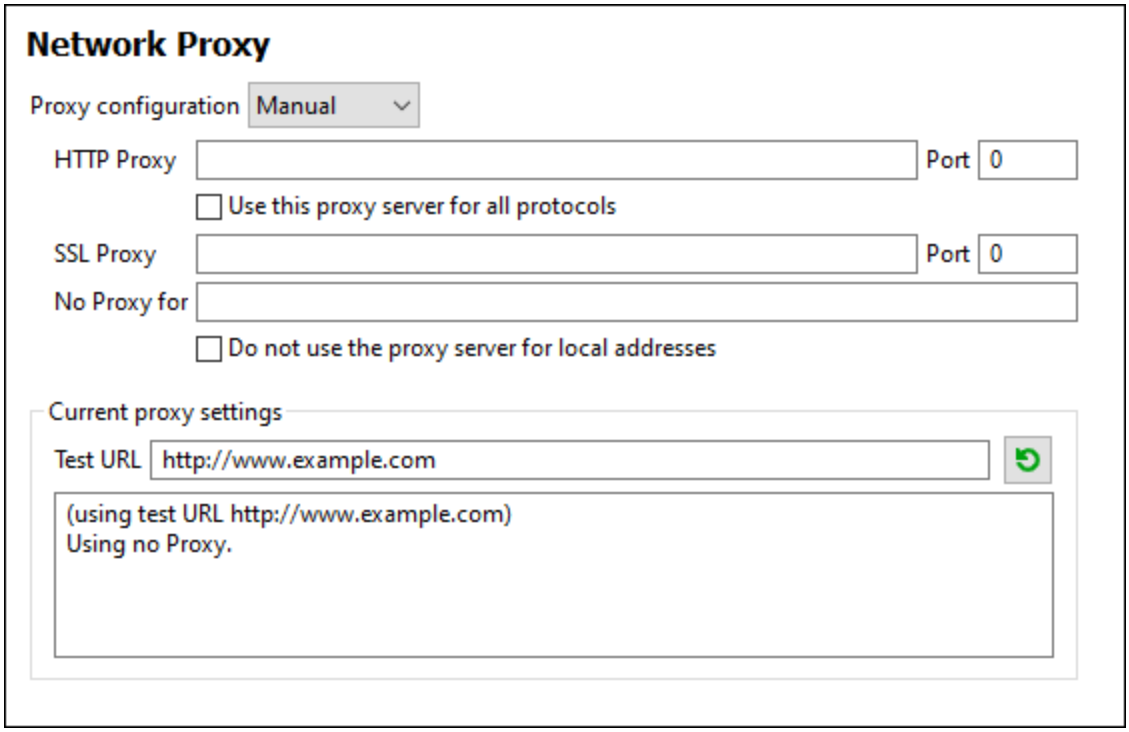


Use system proxy settings
Uses the Internet Explorer (IE) settings configurable via the system proxy settings. It also queries the settings configured with **`netsh.exe winhttp`**.

Automatic proxy configuration
The following options are provided:

- *Auto-detect settings:* Looks up a WPAD script (**`http://wpad.LOCALDOMAIN/wpad.dat`**) via DHCP or DNS, and uses this script for proxy setup.
- *Script URL:* Specify an HTTP URL to a proxy-auto-configuration (**`.pac`**) script that is to be used for proxy setup.
- *Reload:* Resets and reloads the current auto-proxy-configuration. This action requires Windows 8 or newer, and may need up to 30s to take effect.

Manual proxy configuration
Manually specify the fully qualified host name and port for the proxies of the respective protocols. A supported scheme may be included in the host name (for example: **`http://hostname`**). It is not required that the scheme is the same as the respective protocol if the proxy supports the scheme.



The following options are provided:

- *HTTP Proxy:* Uses the specified host name and port for the HTTP protocol. If *Use this proxy server for all protocols* is selected, then the specified HTTP proxy is used for all protocols.
- *SSL Proxy:* Uses the specified host name and port for the SSL protocol.
- *No Proxy for:* A semi-colon (`;`) separated list of fully qualified host names, domain names, or IP addresses for hosts that should be used without a proxy. IP addresses may not be truncated and IPv6 addresses have to be enclosed by square brackets (for example: `[2606:2800:220:1:248:1893:25c8:1946]`). Domain names must start with a leading dot (for example: `.example.com`).
- *Do not use the proxy server for local addresses:* If checked, adds **<local>** to the *No Proxy for* list. If this option is selected, then the following will not use the proxy: (i) **127.0.0.1**, (ii) **[::1]**, (iii) all host names not containing a dot character (`.`).

Current proxy settings
Provides a verbose log of the proxy detection. It can be refreshed with the **Refresh** button to the right of the *Test URL* field (for example, when changing the test URL, or when the proxy settings have been changed).

- *Test URL:* A test URL can be used to see which proxy is used for that specific URL. No I/O is done with this URL. This field must not be empty if proxy-auto-configuration is used (either through *Use system proxy settings* or *Authomatic proxy configuration*).

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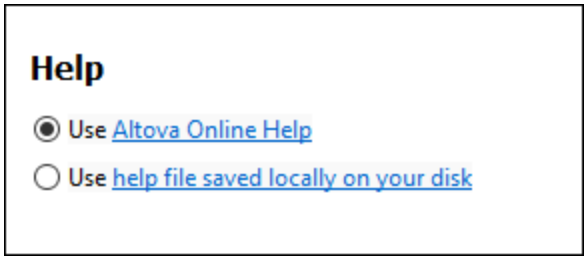
10.7 Help

DiffDog provides Help (the user manual) in two formats:

- Online Help, in HTML format, which is available at the Altova website. In order to access the Online Help you will need Internet access.
- A Help file in PDF format, which is installed on your machine when you install DiffDog. It is named `DiffDog.pdf` and is located in the application folder (in the Program Files folder). If you do not have Internet access, you can always open this locally saved Help fie.

The Help option (*screenshot below*) enables you to select which of the two formats is opened when you click the **Help (F1)** command in the **Help** menu.



You can change this option at any time for the new selection to take effect. The links in this section (*see screenshot above*) open the respective Help format.

11 Command Line Options

In addition to running DiffDog from the graphical user interface, you can also trigger comparisons from a command line window. The file or directory paths to be compared can be supplied to the DiffDog executable as arguments. Additional comparison options (further described below) can also be supplied. When the command is executed, DiffDog starts, opens the directories or files in the appropriate comparison window, carries out a comparison, and displays the results.

Note: Calling the DiffDog executable at the command line will open the DiffDog graphical user interface with the options you specified. It is not possible to display the comparison outcome in the command line window, or to export the comparison results from the command line. These capabilities are available in DiffDog Server (https://www.altova.com/diffdog-server).

To run DiffDog from the command line interface:

1. Type `cmd` in the Windows search box, and press **Enter** to open a new command line window.
2. Change the current directory to the directory where DiffDog is installed, for example:

```
cd C:\Program Files (x86)\Altova\DiffDog2024\
```

3. Call **DiffDog.exe** and supply the file or directory names to be compared as arguments, as well as any optional command line options. For example, in the command below, two text files are compared so the options `/cF /mT` are explicitly set:

```
DiffDog.exe /cF /mT file1.txt file2.txt
```

For reference to all available options, see Command Line Syntax 147.

If DiffDog is already running when you start it from the command line, it will start as a new instance, provided that the option **Allow Multiple Instances** is enabled in the **Tools | DiffDog Options | Application** 131 tab. If **Allow Multiple Instances** is disabled, then the new comparison is opened in a new comparison window of an already running DiffDog instance.

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11.1 Command Line Syntax

The command line options are simple switches and are optional. If not specified, the option is off. For best results, it is recommended that you specify the /cD or /cF option, to explicitly instruct DiffDog that you are comparing either files or directories. Note, however, that, if you use DiffDog as a differencing tool for a source control system, some control systems will not accept additional arguments except the file names.

Although they are organized into groups, the options listed below can appear in any order. The options are not case-sensitive, and you can use either the minus sign (-) or the slash (/) before options. The command line syntax is as follows:

```
DiffDog.exe [source name1 name2 [name3]] [general options] [compare mode] [compare
options] [filter filtername] [directory compare options] [file-filter file filtername]
```

source:

/cd compare directories 55
/cf compare files 18

name1 name2:

names of files or directories to compare

general options

/h opens the help file

compare mode:

/mE compare according to extension 14 settings
/mX compare as XML 14
/mT compare as text 14
/mB compare binary 14

compare options:

/dD detailed 26 differencing
/dL show differences within lines 24
/iB ignore blank lines 25
/iC ignore case 27 but not in node names
/iCN ignore case
/iD ignore node depth 27
/iN ignore namespace 26
/iNT A CD C PI D X
ignore node types 29 (**A**ttributes, **CD**ata, **C**omments, **P**rocessing **I**nstructions, **D**octype, **X**ML declaration)
/iOA ignore order 28 of attributes
/iOC ignore order of child nodes
/iOC A G groupname T
ignore order of child nodes and add attributes as comparison criteria (**A**ll Attributes, Specific Attributes as defined 29 in **G**roup groupname, Add Element **T**ext as Comparison Criteria)

/iP ignore prefixes 26
/iT ignore text 26 (XML)
/e resolve entities 25
/wN normalize whitespaces 26
/wS strip all whitespaces

filter:

/f filter out specific elements/attributes 31

filtername:

name of predefined filter

directory compare options:

/iS ignore sub-directories 62

file-filter:

/fD filter out specific files/directories 61 in directory comparison

file filtername:

name of predefined file-filter

Note: Some Comparison Options apply to XML Comparison Mode only (for example, `/dD`, `/iN` and `/iNT`). These options will therefore be ignored if the `[compare mode]` option is not `/mX`.

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11.2 Command Line Examples

In the examples below, it is assumed that the current working directory is the directory where DiffDog is installed; therefore, all commands start with **DiffDog.exe**. If your working directory is different, make sure to enter the full path to the DiffDog executable instead (for example, "C:\Program Files (x86)\Altova\DiffDog2024\DiffDog.exe"). If the path to the executable contains spaces, do not forget to enclose it within quotes. The same applies for any referenced file or directory names which include spaces in their name.

To compare two files according to file extension, use:

```
DiffDog.exe /cF c:\work\Alice.txt c:\work\Bob.txt /mE
```

To compare two XML files in XML mode, with detailed differencing enabled (so that merge from right to left, or left to right is possible), use:

```
DiffDog.exe /cF c:\work\Alice.xml c:\work\Bob.xml /mX /dD
```

To compare only the XML structure of the files and ignore text, use:

```
DiffDog.exe /cF c:\work\Alice.xml c:\work\Bob.xml /mX /iT
```

To compare two directories, use:

```
DiffDog.exe /cD c:\work1 c:\work2
```

To compare two directories ignoring subdirectories, use:

```
DiffDog.exe /cD c:\work1 c:\work2 /iS
```

The following command compares XML files in two directories by applying a predefined filter (created previously from the graphical user interface), see also Filtering the content of compared directories 61. Notice that quotes were used since the filter name contains spaces.

```
DiffDog.exe /cD c:\work1 c:\work2 /mX /fD "xml conformant files"
```

12 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 provides 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 151
- Integrating DiffDog with TortoiseSVN 154
- Integrating DiffDog with SmartSVN 155
- Other Version Control Systems 157

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12.1 Integrating DiffDog with Git

If you are using Git (https://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:

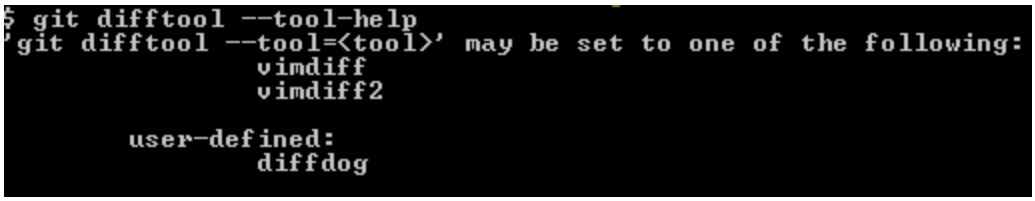
- Add or edit the following lines in the **.gitconfig** file (this file is located in the user home directory, typically: **C:\Users\<username>\.gitconfig**):

```
[diff]
   tool = diffdog
[difftool "diffdog"]
   cmd = "'C:/Program Files/Altova/DiffDog2024/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.



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:

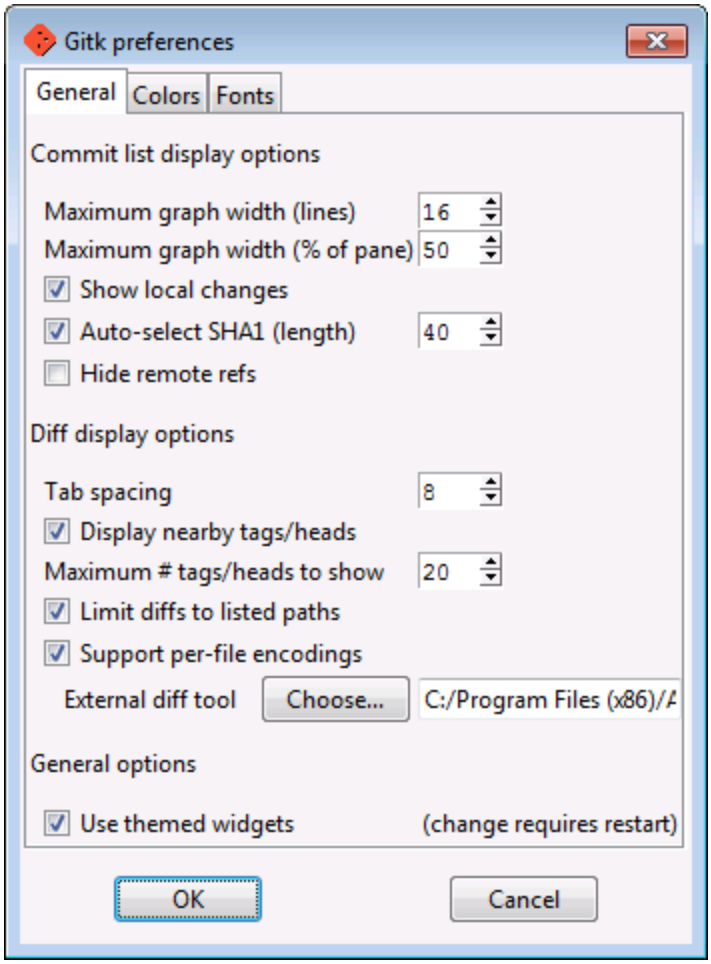
```
git difftool MyFile.txt
```

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/DiffDog2024/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.

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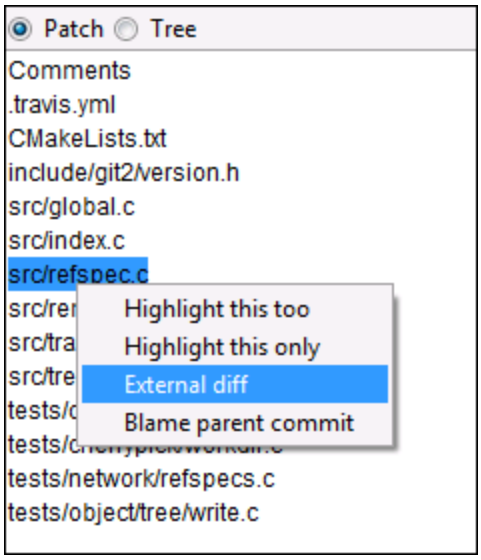

Patch
Tree
Comments
.travis.yml
CMakeLists.txt
include/git2/version.h
src/global.c
src/index.c
src/refspec.c
Highlight this too
Highlight this only
External diff
Blame parent commit
tests/network/refspecs.c
tests/object/tree/write.c

12.2 Integrating DiffDog with TortoiseSVN

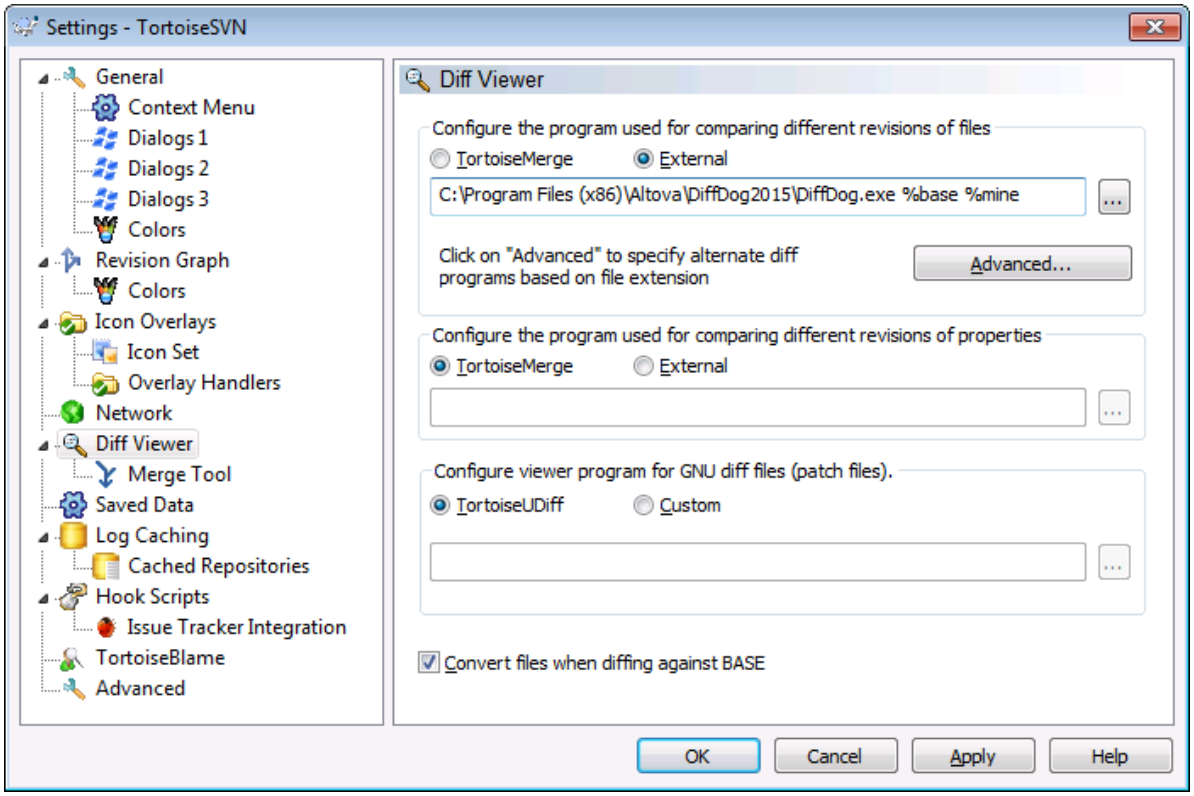
If you are using TortoiseSVN (https://tortoisesvn.net/) as Subversion client, you can set DiffDog as the program used for comparing different revisions of files. Although the configuration instructions below apply for TortoiseSVN 1.8.8, they are likely to be similar for other versions. For further information, refer to the TortoiseSVN user's manual.

To set DiffDog as the TortoiseSVN differencing tool:

1. Right-click 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/DiffDog2024/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`.



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12.3 Integrating DiffDog with SmartSVN

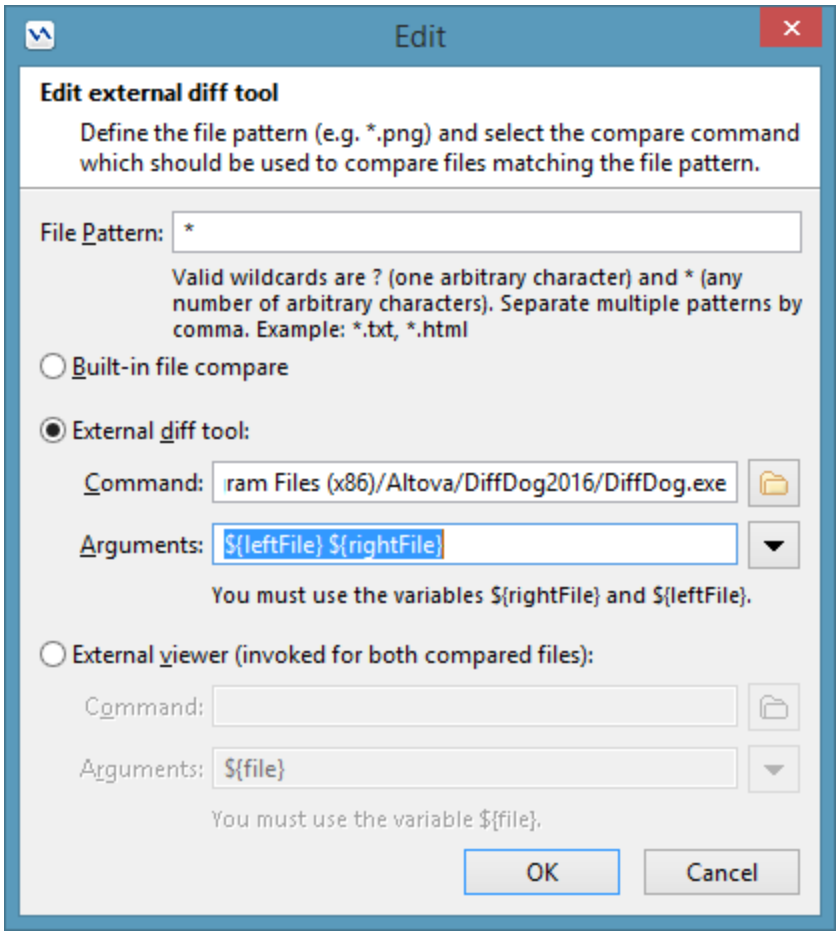
If you are using SmartSVN (https://www.smartsvn.com/) as Subversion client, you can add DiffDog as file comparison tool, in addition to the built-in comparison tool. The configuration instructions below apply for SmartSVN 8.5, but they are likely to be similar for other versions.

To set DiffDog as the comparison tool:

1. Run SmartSVN.
2. On the **Edit** menu, click **Preferences**.
3. Under **Tools**, click **File Compare**.
4. Click **Add**, and select **External diff tool**.
5. Next to **File Pattern**, enter a pattern that matches file types that you wish to compare with DiffDog, for example ***.xml**.
6. Next to **Command**, enter the path to the DiffDog executable, for example **C:/Program Files/Altova/DiffDog2024/DiffDog.exe**.

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`.

7. Next to **Arguments**, enter **`${leftFile} ${rightFile}`**.



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12.4 Other Version Control Systems

Borland StarTeam Cross-Platform Client 2008 R2

https://www.microfocus.com/products/change-management/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%`.

Note: 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.

Note: 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)

https://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.

Microsoft Visual Source Safe 2005 with CTP

https://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\DiffDog2024\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

https://www.microsoft.com/en-us/download

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

https://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.

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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.

Note: 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"`.

Note: It is possible that the new settings will only be applied after a Windows log off.

Surround SCM Client 2009.0.0

https://www.perforce.com/products/surround-scm

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.

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

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.

Note: 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.

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Multi-user license

If more than one instance of the application is used within the same LAN, these instances will briefly communicate with each other on startup. These instances exchange key-codes in order to help you to better determine that the number of concurrent licenses purchased is not accidentally violated. This is the same kind of license metering technology that is common in the Unix world and with a number of database development tools. It allows Altova customers to purchase reasonably-priced concurrent-use multi-user licenses.

We have also designed the applications so that they send few and small network packets so as to not put a burden on your network. The TCP/IP ports (2799) used by your Altova product are officially registered with the IANA (*see the IANA Service Name Registry for details*) and our license-metering module is tested and proven technology.

If you are using a firewall, you may notice communications on port 2799 between the computers that are running Altova products. You are, of course, free to block such traffic between different groups in your organization, as long as you can ensure by other means, that your license agreement is not violated.

Note about certificates

Your Altova application contacts the Altova licensing server (`link.altova.com`) via HTTPS. For this communication, Altova uses a registered SSL certificate. If this certificate is replaced (for example, by your IT department or an external agency), then your Altova application will warn you about the connection being insecure. You could use the replacement certificate to start your Altova application, but you would be doing this at your own risk. If you see a *Non-secure connection* warning message, check the origin of the certificate and consult your IT team (who would be able to decide whether the interception and replacement of the Altova certificate should continue or not).

If your organization needs to use its own certificate (for example, to monitor communication to and from client machines), then we recommend that you install Altova's free license management software, Altova LicenseServer, on your network. Under this setup, client machines can continue to use your organization's certificates, while Altova LicenseServer can be allowed to use the Altova certificate for communication with Altova.

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13.3 Altova End-User License Agreement

- The Altova End-User License Agreement is available here: https://www.altova.com/legal/eula
- Altova's Privacy Policy is available here: https://www.altova.com/privacy

Index

A

Adding,
commands to menus, 113
commands to toolbars, 113
Application status bar, 16
Application window,
description, 16
Assigning,
keyboard shortcuts, 117
shortcuts, 117

B

Binary comparison mode,
definition, 14
Blank lines, 24, 25
Bookmark margin, 35

C

Case sensitivity, 24, 25
Changing,
comparison mode, 60
content of compared files, 43
structure of compared files, 44
synchronization actions, 69
synchronization settings, 68
Collapsing,
all selected nodes, 82
sub-directories, 62
unselected nodes, 82
Command line,
GUI mode, 146
quiet mode, 146
syntax, 147
Commands,
Add Child | ATTLIST, 104
Add Child | Attribute, 102
Add Child | CData, 102
Add Child | Comment, 103
Add Child | DOCTYPE, 103
Add Child | ELEMENT, 102, 104
Add Child | ENTITY, 104
Add Child | ExternalID, 103
Add Child | NOTATION, 104
Add Child | Processing Instruction, 103
Add Child | Text, 102
Add Child | XML, 103
Append | ATTLIST, 101
Append | Attribute, 99
Append | CData, 99
Append | Comment, 99
Append | DOCTYPE, 100
Append | ELEMENT, 99, 101
Append | ENTITY, 101
Append | ExternalID, 101
Append | NOTATION, 102
Append | Processing Instruction, 100
Append | Text, 99
Append | XML, 100
Append Row, 105
Ascending Sort, 105
Autostart Comparison, 109
CData, 96
Check Well-Formedness, 108
Close, 84
Close all, 85
Compare According to File Extension Settings, 109
Compare as Binary, 109
Compare as XML, 109
Compare Directories, 84
Compare Files, 84
Compare Only Size and Modification Date, 110
Compare while Editing, 109
Comparison Options..., 112
Copy, 88
Copy from Left to Right (files), 109
Customize..., 113
Cut, 88
Delete, 88
Descending Sort, 106
DiffDog Options..., 112
Display as Table, 105
Display Current Difference, 109
Enclose in Element, 106
Exit, 86

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Commands,
Export differences..., 86
Find next, 89
Find..., 89
First Difference, 109
Go to line/char, 91
Go to Next Bookmark, 93
Go to Previous Bookmark, 94
Grid View, 90
Insert | ATTLIST, 98
Insert | Attribute, 95
Insert | Comment, 96
Insert | DOCTYPE, 96
Insert | ELEMENT, 95, 98
Insert | ENTITY, 98
Insert | ExternalID, 97
Insert | NOTATION, 98
Insert | Processing Instruction, 96
Insert | Text, 95
Insert | XML, 96
Insert Row, 105
Insert/Remove Bookmark, 93
Last Difference, 109
Make Current Difference, 109
Move Left, 106
Move Right, 106
Next Difference, 109
Open..., 84
Paste, 88
Pretty-Print XML Text, 93
Previous Difference, 109
Print Preview, 86
Print Setup..., 86
Print..., 86
Redo, 87
Remove All Bookmarks, 94
Replace..., 89
Save, 85
Show Options Before Comparison, 109
Start Comparision, 109
Status Bar, 90
Support Recently Compared Pairs, 109
Synchronize Directories, 110
Synchronize Selected Directory, 110
Synchronized Scrolling, 91
Text View, 90
Textual Comparison Only, 109
Toggle All Folds, 94
Toolbars, 90
Undo, 87
Validate, 108
Word Wrap, 93
Comparing,
directories, 55
files, 18
Office Open XML, 18, 55
OOXML, 18, 55
ZIP archives, 18, 55
Comparing directories,
see Directory comparison, 55
Comparing files,
see File comparison, 18
Comparison,
autostart, 79
definition, 12
selecting directories, 59
showing options before comparing, 79
Comparison management, 78
Comparison mode,
Binary, 14
changing, 60
current, 14
Extensions, 14
Quick comparison, 14
Text, 14
XML, 14
Comparison Mode toolbar, 82
Comparison window status bar, 16
Comparisons,
saving, 76
Context menus,
customizing, 120
Copying,
file content, 74
Copyright information, 161
Creating,
attribute groups, 29
attributes filter, 31
elements filter, 31
groups of attributes, 29
Current comparison mode,
definition, 14
Customizing,
Commands, 113
context menus, 120
Keyboard, 117

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Customizing,
Menu, 120
Options, 122
tables, 41
Toolbars, 114

D

Default comparison mode, 139
Defining,
file extensions, 139
file types, 139
Deleting,
file extensions, 139
file types, 139
Diff and Merge menu, 109
Diff and Merge toolbar, 82
DiffDog,
allowing multiple instances, 131
application window, 16
as Git differencing tool, 151
as TortoiseSVN differencing tool, 154
features, 10
GUI, 16
interface, 16
introduction to, 8
main features, 10
options, 130
settings, 130
terminology, 12
User Reference, 81
Differences,
colors, 133
copying content, 74
definition, 12
exporting, 75
in directories, 64
in files, 35
in Grid View, 39
in Text View, 35
in ZIP files, 64
merging, 74
navigating, 73
within lines, 24
Directories,
comparing, 55
selecting for comparison, 59
synchronizing, 67
Directory comparison,
changing the comparison mode, 60
changing the synchronization actions, 69
changing the synchronization settings, 68
colors, 64
comparing files, 66
comparison mode, 14
comparison symbols, 64
configuring the view, 62
definition, 12
displaying differences, 64
displaying sub-directories, 62
features, 10
file icons, 64
filtering, 61
folder icons, 64
opening, 55
opening comparison window, 58
options, 60
running, 61
selecting directories, 59
starting, 61
starting a synchronization, 71
synchronizing directories, 67
ZIP icons, 64
Directory Comparison window,
filtering a comparison, 61
opening, 58
running a comparison, 61
selecting directories, 59
Directory Content toolbar, 82
Directory synchronization,
options, 68
running, 71
settings, 68
starting, 71
synchronization actions, 69
Displaying,
repeating elements, 41
sub-directories, 62
table, 41
Displaying differences,
in directories, 64
in files, 35
in Grid View, 39
in Text View, 35

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Displaying differences,
in ZIP archives, 64
Distribution,
of Altova's software products, 161, 162

E

Edit menu, 87
Editing,
comparing while editing, 79
content, 43
files, 43
finding text, 45
replacing text, 45
structure, 44
Encoding, 131
End of line markers, 35
End User License Agreement, 161, 165
Entities,
resolving, 25
Equal files,
definition, 12
hiding, 62
showing, 62
Evaluation period,
of Altova's software products, 161, 162
Expanding,
all selected nodes, 82
selected and child nodes, 82
sub-directories, 62
Exporting,
differences, 75
to HTML, 75
to text, 75
to XML, 75

F

Features, 10
File comparison,
changing structure, 44
comparing files in directory comparison, 66
comparing while editing, 79
comparison mode, 14
definition, 12
displaying differences, 35
editing content, 43
editing files, 43
features, 10
filter for XML comparison, 31
finding text, 45
Grid View, 39
opening, 18
options, 23
reloading files, 43
replacing text, 45
running, 20
saving files, 54
searching Grid View, 49
starting, 20
Table View, 41
text comparison options, 24
Text View, 35
Text View Settings, 35
XML comparison options, 25
File Comparison window,
running a comparison, 20
File menu, 84
Files,
automatic reloading, 133
backup options, 133
default comparison mode, 139
Filter,
creating, 136
default filters, 136
Filtering,
attributes, 31
directories, 61
elements, 31
XML comparisons, 31
Find,
using regular expressions, 50
Finding,
content in Grid View, 49
names in Grid View, 49
text in file comparisons, 45
text in Grid View, 49
XML node types, 49
Folding margin, 35

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G

Git,
Integrating DiffDog with, 151
Grid Edit toolbar, 82
Grid toolbar, 82
Grid View,
collapsing nodes, 82
displaying differences, 39
expanding nodes, 82
finding text, 49
optimal widths, 82
replacing text, 49
Grid View menu, 95
Add Child sub-Menu, 102
Append sub-menu, 98
Convert to submenu, 104
Insert sub-menu, 95
Table sub-menu, 105
GUI,
description, 16

H

Help menu, 124
Hiding,
equal files, 62
missing files left/right, 62
newer files left/right, 62
non-comparable files, 62
sub-directories, 62

I

Ignoring,
attribute order, 25
blank lines, 24, 25
case, 24, 25
namespace, 25
node depth, 25
node types, 25
node types order, 25
prefixes, 25
text, 25
Indentation guides, 35
Interface,
description, 16
Introduction, 8

K

Keyboard shortcuts, 117

L

Legal information, 161
License, 165
information about, 161
License metering,
in Altova products, 163
Line number margin, 35

M

Margins,
bookmarks, 35
folding, 35
line numbers, 35
Menu bars,
customizing, 120
Menus,
adding commands, 113
Diff and Merge, 109
Edit, 87
File, 84
Grid View, 95
Help, 124
Text View, 93
Tools, 112
View, 90
Window, 123
XML, 108
Merging,
definition, 12
differences, 74

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Missing files left/right,
hiding, 62
showing, 62
Modifying,
default comparison mode, 139
directory synchronization actions, 69
Grid View, 39
options for directory comparison, 60
options for file comparison, 23
settings for directory synchronization, 68
Multiple instances, 131

N

Navigation,
current difference, 73
differences, 73
Newer files left/right,
hiding, 62
showing, 62
Non-comparable files,
hiding, 62
showing, 62
Non-equal files,
definition, 12

O

Office Open XML,
comparing, 55
OOXML,
comparing, 55
Opening,
directory comparison, 55
Directory Comparison window, 58
empty directory comparison, 58
file comparison, 18
Options,
application, 131
backup files, 133
colors, 133
comparison management, 78
directory comparison, 60, 135
directory filters, 135
directory synchronization, 68
encoding, 131
file comparison, 23, 133
file filters, 135
file types, 139
recently compared pairs, 80
showing before comparing, 79
startup options, 131
text comparison, 24
Windows Explorer integration, 131
XML comparison, 25

P

Product features, 10

Q

Quick comparison mode,
definition, 14

R

Recently compared pairs, 80
Regular expressions,
find and replace using, 50
Reloading,
automatic reload, 133
files, 43
Replace,
using regular expressions, 50
Replacing,
text in file comparisons, 45
text in Grid View, 49
Resetting,
context menus, 120
menu bars, 120
Resolving entities, 25
Result messages, 129
Running,
directory comparison, 61
directory synchronization, 71
file comparison, 20

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S

Saving,
files, 54
Saving comparisons, 76
Selecting,
directories for comparison, 59
directories in Windows Explorer, 59
folders in Windows Explorer, 59
recently compared pairs, 80
Shortcuts, 117
Showing,
blank lines, 24, 25
differences within lines, 24
equal files, 62
large icons, 122
missing files left/right, 62
newer files left/right, 62
non-comparable files, 62
options before comparing, 79
recently compared pairs, 80
screen tips, 122
shortcut keys, 122
sub-directories, 62
text labels on toolbars, 114
Software product license, 165
Sorting,
tables, 41
Standard toolbar, 82
Starting,
directory comparison, 61
directory synchronization, 71
file comparison, 20
Startup options, 131
Status bar,
application, 16
comparison windows, 16
result message, 129
status messages, 129
Status messages, 129
Sub-directories,
collapsing, 62
displaying, 62
expanding, 62
hiding, 62
including, 62
Synchonizing,
directories, 67
Synchronizing,
definition, 12
Syntax coloring, 139

T

Tab size, 35
Table View,
customizing, 41
displaying, 41
sorting, 41
Terminology, 12
Text comparison,
options, 24
showing differences within lines, 24
Text comparison mode,
definition, 14
Text toolbar, 82
Text View,
displaying differences, 35
Text View menu, 93
Text View Settings, 35
Toolbars, 82
adding commands, 113
Tools menu, 112
TortoiseSVN,
Integrating DiffDog with, 154

U

User Reference, 81

V

View menu, 90
Visual aid,
end of line markers, 35
indentation guides, 35
whitespace markers, 35

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W

Whitespace, 24, 25
Whitespace markers, 35
Window menu, 123
Windows Explorer integration, 131

X

XML comparison,
attribute groups, 29
detailed differencing, 25
filtering, 31
groups of attributes, 29
options, 25
XML comparison mode,
definition, 14
XML menu, 108

Z

ZIP archives,
comparing, 55
Zooming,
in Text View, 35

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