



# ***PNFILE*** ***USER MANUAL***

***Version PNFile-2020.12***

VeriForma  
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# Preface

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## Printing Conventions

Text printed in the font ***Calibri Bold Italics*** is the **PNFile** platform or the component in **PNFile**.

Text printed with the first letter capitalized, especially when it is not necessary in terms of language syntax, is the proper name used in **PNFile**.

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## Getting Help

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# Introduction to *PNFile*

---

## 1.1 Overview

*PNFile* is a platform integrated with various powerful text file applications and tools. It is used to perform numerous operations on directories and any plain text files efficiently. The supported operations include navigating, previewing, advanced editing, multiple text files comparing, programming language compiling, advanced finding, advanced file/folder comparing etc.

- Navigating

*PNTree* navigates the directory tree from the user-specified root path. The root path can be changed whenever needed.

Rich file information is displayed, and various operations are supported in the *PNTree*, such as Filter, Copy To, Move To, Delete, New, Rename, Compress, Split/Join, Encrypt/Decrypt, Directory Print, sending files to *PNEdit* windows, launching *PNDiff*, etc.

One *PNTree* is embedded in the *PNFile* Main Window. *PNTree* is also an independent tool that can be launched from system terminals. Besides, multiple *PNTrees* can be launched from any existing *PNTrees*.

Please refer to sections [3.1.4](#) and [4](#) to get details about *PNTree*.

- Previewing

Launched along with *PNFile* and used together with the embedded *PNTree*, *PNPreview* quickly previews any plain text files. It provides a fast way of previewing any text files and supports simple edit operations, such as Insert, Remove, Cut, Copy, Paste, etc.

Please refer to sections [3.1.5](#) to get details about *PNPreview*.

- Editing

*PNEdit* is an important and powerful component of *PNFile*. It is an advanced text edit tool that runs in a stand-alone window.

**PNEdit** supports various efficient text editing operations, such as cutting/copying/pasting chars/words/lines, advanced searching and replacing, syntax detecting and highlighting, undoing/redoin, etc. There are three working modes, input mode, replace mode, and command modes, in **PNEdit**, and rich commands/hotkeys are supported in all the working modes. Besides, it supports selecting text for operating in both line and column modes.

**PNEdit** is also an independent tool that can be launched from system terminals.

Please refer to sections [3.3](#) and [5](#) to get details about **PNEdit**.

- Text Comparing

By comparing multiple plain text files and highlighting the differences in split windows, **PNDiff** helps locate and navigate the different parts rapidly. The comparison can be refreshed in-place if any of the candidate files are updated.

**PNDiff** is also an independent tool that can be launched from system terminals.

Please refer to sections [3.4](#) and [6](#) to get details about **PNDiff**.

- Compiling

**PNConsole** is a graphical Multi-Language Platform Console, which has four languages preset, including Shell, TCL, Python, and Perl. Besides, any language compilers available in the system can be well supported in **PNConsole**.

**PNConsole** is also an independent tool that can be launched from system terminals.

Please refer to sections [3.5](#) and [7](#) to get details about **PNConsole**.

- Advanced Finding

**PNFinder** is an efficient file (and its content) finding & replacing tool. Multiple searching modes and filtering configs make the tool more flexible and powerful. **PNFinder** supports both normal plain text and regex text expression searching & replacing. It manages to control the searching depth and filter files by multiple criteria like name, owner, access, time, and size. Locating and reviewing the finding result in **PNFinder** is quite easy.

**PNFinder** is also an independent tool that can be launched from system terminals.

Please refer to sections [3.6](#) and [8](#) to get details about **PNFinder**.

- Advanced Comparing

**PNCompare** is an efficient and practical file & directory comparing tool that aims to compare two directories and/or files inside. It supports to compare by multiple criteria, such

as owner, access, time, size, and content. Comparing depth control and multiple comparing modes like File-Folder, File-Only, and Folder-Only are supported. After comparing, **PNCompare** manages to review the results and to resolve the differences easily.

**PNCompare** is also an independent tool that can be launched from system terminals.

Please refer to sections [3.7](#) and [9](#) to get details about **PNCompare**.

**PNFile** also provides various tools to better support working with plain text files and directories. The tools include String Buffer, File Buffer, and Change Buffer in **PNEdit**, and others like Encrypt/Decrypt, System Information, Split/Join, and Directory Print, etc.

- String Buffer

String Buffer is one of the **PNEdit** tools which stores the strings. One set of String Buffer has three types of the buffer, including one general buffer, ten clipboard buffers, and twenty-six named buffers. All the strings stored in the String Buffer can be viewed and edited in the String Buffer window.

The general buffer stores the strings that are buffered by copy, or yank, or cut command. These strings can be accessed by paste command.

The clipboard buffer stores the strings that are copied by selecting or from another application. Ten clipboard buffers are recording the latest ten copy history. The latest one can be accessed via the special register "\*".

The twenty-six named buffers with names A-Z are one-one correspondent to the registers "a" to "z". They can be accessed by any registers "a" to "z" related copy, yank, cut, append, or paste commands.

Each **PNEdit** window owns one dedicated set of String Buffer. Tabs of one **PNEdit** window share one set of String Buffer.

Please refer to section [5.6.1](#) to get details about String Buffer.

- File Buffer

File Buffer is one of the **PNEdit** tools which records the last scene of each file that has once been opened in the current **PNEdit** window. The information of all the buffered files can be viewed in the File Buffer window, and the files listed in the window can be restored to either the current or a new tab.

Each **PNEdit** window owns one dedicated File Buffer. Tabs of one **PNEdit** window share one File Buffer.

Please refer to section [5.6.2](#) to get details about File Buffer.

- Change Buffer

Change Buffer is one of the **PNEdit** tools which records any change operations in the currently opened tab. The changes sequence can be viewed in the Change Buffer window. The Undo/Redo sequence is based on the Change Buffer, and it is supported to “goto” any steps in the change sequences directly.

Each tab in a **PNEdit** window owns one dedicated Change Buffer.

Please refer to section [5.6.3](#) to get details about Change Buffer.

- Other tools

There are some other tools like Encrypt/Decrypt, System Information, Split/Join, and Directory Print in **PNFile**.

Encrypt/Decrypt encrypt or decrypt the files in a dedicated way of **PNFile**. System Information prints the system information. Split/Join splits or joins the files selected. Director Print prints the verbose directory information as required.

Please refer to section [3.8](#) to get details.

## 1.2 Why use **PNFile**?

**PNFile** is a platform with various powerful text file tools integrated. It is easy to get, launch, and use.

**PNFile** provides a one-stop graphic solution to handle directories and text files. Most integrated applications, like **PNEdit**, **PNTree**, **PNDiff**, **PNConsole**, **PNFinder**, and **PNCompare**, are also quite handy for users to use separately. **PNTree** GUI window allows users to operate on directories and files efficiently in a graphic way. **PNEdit** provides powerful advanced text editing. **PNDiff** compares and highlights the differences between two or multiple text files quickly. **PNConsole** provides a robust multi-language console platform. **PNFinder** performs powerful file searching & replacing. **PNCompare** provides efficient file & directory comparing and differences resolving. Besides, multiple other tools are integrated to support the efficiently file or directory operation.

## 2 Getting Started

---

### 2.1 Installing *PNFile*

#### 2.1.1 Supported Operating Systems

Installing *PNFile* on Linux or Unix operating systems should be a relatively straightforward process as *PNFile* was developed under Linux. There is no unique setting required to get *PNFile* installed on Linux or Unix.

#### 2.1.2 Installing the Software

*PNFile* is packed as a stand-alone toolkit. There is no need to install any third-party packages but only the *PNFile* package itself. To get the package of *PNFile*, users can simply send a request to [support@veriforma.com](mailto:support@veriforma.com) or download from the website [www.veriforma.com](http://www.veriforma.com).

Users do NOT need to install or compile anything. Once the package is available, please simply decompress it to one of the local paths.

Usually, there are five directories and two shell setting files in the package ([Figure 2-1](#)). Users do NOT need to care about the directories. Simply configuring several lines in the setting shell file can get *PNFile* work.

**Figure 2-1 *PNFile* decompressed package**



```
/PNToolKit_latest> ls  
bin  doc  lib  lic  pn.bshrc  pn.cshrc  tools
```

- **bin/** contains the commands.
- **doc/** contains the documents in pdf, this user manual included.
- **lib/** contains the script library.
- **lic/** is where the license file should be by default.
- **tools/** contains compiler tools.
- **pn.cshrc** sets the path of the tool and the license in cshell.
- **pn.bshrc** sets the path of the tool and the license in bshell.

## 2.2 Setting Up *PNFile*

### 2.2.1 *PNFile* Licensing

The license file, "license.txt", can be put under <package\_path>/lic/ or any other valid paths. To get more information about licensing, please contact [sales@veriforma.com](mailto:sales@veriforma.com).

### 2.2.2 Setting the Environment

The only file users need to configure is pn.cshrc when it is in cshell ([Figure 2-2](#)) or pn.bshrc when it is in bshell ([Figure 2-3](#)).

In either of the setting shell files, there are two variables, LIC\_FILE\_PATH and PNFILE\_PATH, which should be configured correctly. LIC\_FILE\_PATH is the full path of the license file, and PNFILE\_PATH is the full path of the decompressed *PNFile* package.

When the setting shell file is ready, please source it in the terminal to make the setting into effect.

**Figure 2-2 setting environment in cshell**

```
/PNFileKit_latest> cat pn.cshrc
#!/bin/csh -f

#####
# License Server
#####
setenv LIC_FILE_PATH /home/user/veriforma/PNFileKit_latest/lic

#####
# PN File environment set
#####
setenv PNFILE_PATH /home/user/veriforma/PNFileKit_latest/
setenv PATH $PNFILE_PATH/bin:${PATH}
```

**Figure 2-3 setting environment in bshell**

```
/PNFileKit_latest> cat pn.bshrc
# .bashrc

#####
# License Server
#####
export LIC_FILE_PATH="/home/user/veriforma/PNFileKit_latest/lic"

#####
# PN File environment set
#####
export PNFILE_PATH="/home/user/veriforma/PNFileKit_latest/local"
export PATH="$PNFILE_PATH/bin:${PATH}"
```

## 2.3 Launching *PNFile*

### 2.3.1 Launching from shell

After setting up, *PNFile* can be launched from any path in the environments by simply entering the command **pnfile**. The current path is used as Home Path (section [4.2.1](#)) by default, but users can also specify the Home Path in the command line.

**PNFile** Main Window (section [3.1](#)) is launched after a quick license verifying. To get help on the command **pnfile**, please use the option “+h” ([Figure 2-4](#)).

**Figure 2-4 pnfile help information**

```
Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug          -- Display debug message
+proj <proj_name> -- Specify project directory for P&N File
+path <path_name> -- Specify start path for P&N Tree
+log <log_file>  -- Place the pnfile output into specified logfile

Example commands to invoke pnfile
pnfile
pnfile +path /home/user/test
pnfile +proj project
pnfile +proj project +path /home/user/test
pnfile +proj project +path /home/user/test +log pnfile.log
```

### 2.3.2 PNFile Log File

The running log of **PNFile** is recorded in the log file, as shown in [Figure 2-5](#). The default path of the log file is “./pnproj/pnfile.log” which can also be set with options while launching (refer to options in section [2.3.1](#)).

**Figure 2-5 Example Log File of PNFile**

```
P&N File V2020.09
Fri Sep 4 13:01:08 CST 2020
*****
pnfile
----- License Checking -----
>> license check pass

2020-09-04 13:01:08 P&N File Launch
pnfile, [INFO]: Start Path is </home/test>.
2020-09-04 13:01:18 P&N File: Launch Tool [P&N Diff]
2020-09-04 13:01:18 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_old.tcl>.
2020-09-04 13:01:18 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_new.tcl>.
pndiff, [INFO]: Diff file 0 is </home/test/diff_test/test_new.tcl>.
pndiff, [INFO]: Diff file 1 is </home/test/diff_test/test_old.tcl>.
pndiff, [INFO]: Diff line mode is <Auto>.
pndiff, [INFO]: Diff column mode is enable.
pndiff, [INFO]: Diff column mode is <Auto>.
pndiff, [INFO]: Diff range mode is <Line All>.
pndiff, [INFO]: Diff total number is <29>.
2020-09-04 13:03:13 pndedit: open file
pndedit, [INFO]: open file </home/test/file_test/print_1.txt>.
2020-09-04 13:03:16 pndedit: open file
pndedit, [INFO]: open file </home/test/file_test/test1.tcl>.
2020-09-04 13:03:24 pndedit: open file
pndedit, [INFO]: open file </home/test/file_test/_copy_soft_file1>.
2020-09-04 13:03:29 pndedit: open file
pndedit, [INFO]: open file </home/test/edit_test/new_2.tcl>.
2020-09-04 13:03:30 pndedit: open file
pndedit, [INFO]: open file </home/test/edit_test/new_1.tcl>.
2020-09-04 13:03:39 P&N File: Launch Tool [P&N Diff]
2020-09-04 13:03:39 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_old.tcl>.
2020-09-04 13:03:39 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_new.tcl>.
pndiff, [INFO]: Diff file 0 is </home/test/diff_test/test_new.tcl>.
pndiff, [INFO]: Diff file 1 is </home/test/diff_test/test_old.tcl>.
pndiff, [INFO]: Diff line mode is <Auto>.
pndiff, [INFO]: Diff column mode is enable.
pndiff, [INFO]: Diff column mode is <Auto>.
pndiff, [INFO]: Diff range mode is <Line All>.
pndiff, [INFO]: Diff total number is <29>.
2020-09-04 13:04:13 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_new.tcl>.
2020-09-04 13:04:13 pndedit: open file
pndedit, [INFO]: open file </home/test/diff_test/test_old.tcl>.
pndiff, [INFO]: Diff file 0 is </home/test/diff_test/test_new.tcl>.
pndiff, [INFO]: Diff file 1 is </home/test/diff_test/test_old.tcl>.
pndiff, [INFO]: Diff line mode is <Auto>.
```

### 2.3.3 Launching stand-alone tools of PNFile

**PNTree**, **PNEdit**, **PNDiff**, **PNConsole**, **PNFinder**, and **PNCompare** are the tools integrated into the **PNFile** platform which can also be launched from system terminals separately.

Sections [4.1.3](#), [5.1.3](#), [6.1.2](#), [7.1](#), [8.1](#), and [9.1](#), demonstrate the details about how to launch them respectively.

## PNFile User Interfaces

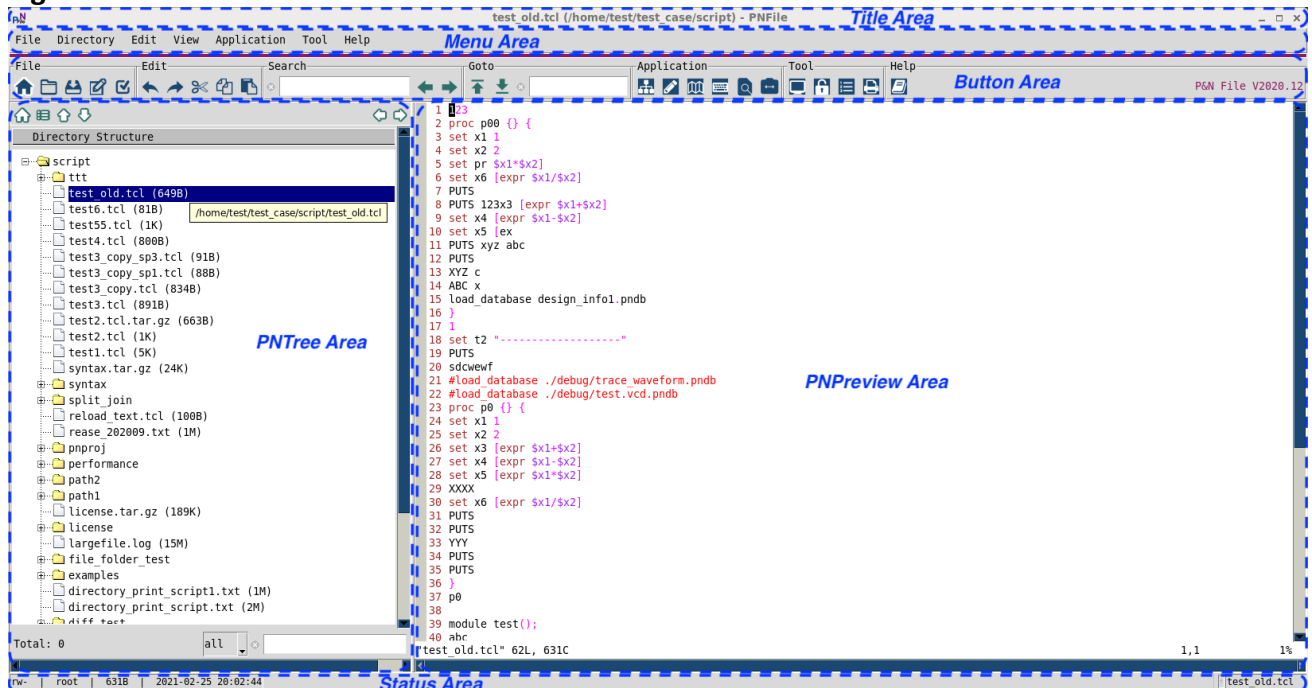
**PNFile** is a platform with the Main Window, the applications like **PNEdit**, **PNTree**, **PNDiff**, **PNConsole**, **PNFinder**, and **PNCompare**, and some other tools integrated. These are the user interfaces of **PNFile**.

This section demonstrates the Main Window interface of **PNFile** in which the **PNPreview** and **PNTree** are embedded and introduces some stand-alone windows like **PNEdit**, **PNTree**, **PNDiff**, **PNConsole**, **PNFinder**, and **PNCompare**.

### 3.1 PNFile Main Window

Once **PNFile** is launched successfully, the Main Window is shown. **PNFile** Main Window is the main user interface of **PNFile**, and there are six areas in the window ([Figure 3-1](#)).

Figure 3-1 Main Window of PNFile



### 3.1.1 Title Area

The Title Area ([Figure 3-2](#)) shows the full path and the name of the file opened in **PNPreview** Area.

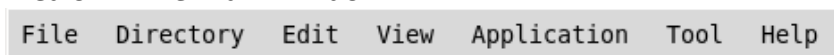
**Figure 3-2 Title Area of PNFile Main Window**



### 3.1.2 Menu Area

There are seven menus ([Figure 3-3](#)) in Menu Area, including File, Directory, Edit, View, Application, Tool, and Help Menu.

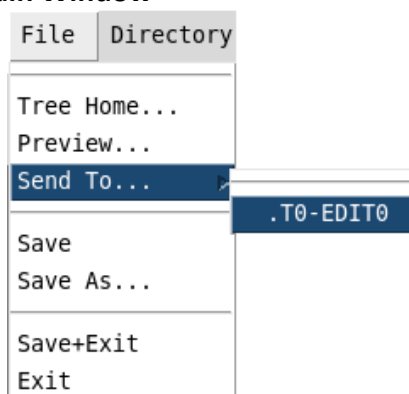
**Figure 3-3 Menu Area of PNFile Main Window**



#### 3.1.2.1 File Menu

The pull-down menu in File Menu is shown in [Figure 3-4](#).

**Figure 3-4 File Menu in PNFile Main Window**

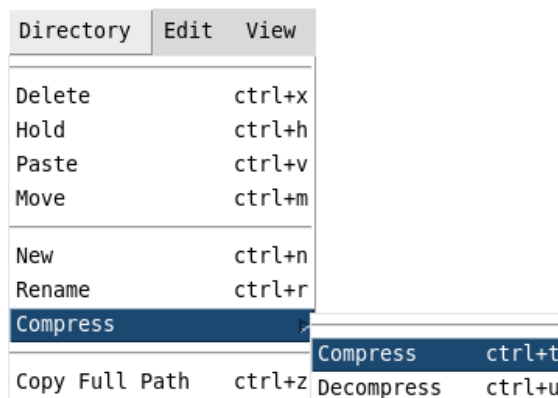


- **Tree Home ...** opens the directory selecting window for users to change the Home Path of the current **PNTree** (refer to section [4.2.1](#) for the concept of Home Path).
- **Preview...** launches a file-selecting window for users to select and open one file in **PNPreview**. (refer to section [3.1.5](#) for **PNPreview**)
- **Send To ...** opens the file selected in the embedded **PNTree** in a new tab of one existed **PNEdit** window.
- **Save** saves the file that is opened and edited in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**).
- **Save As ...** saves the file that is opened and edited in **PNPreview**, but to another path or with another name.
- **Save+Exit** saves the file that is opened and edited in **PNPreview** and quits **PNFile**.
- **Exit** quits **PNFile**.

#### 3.1.2.2 Directory Menu

The pull-down menu in Directory Menu is shown in [Figure 3-5](#). These operations are only available to the embedded **PNTree**. Please refer to sections [4.2.2](#) and [4.3.1](#) for details.

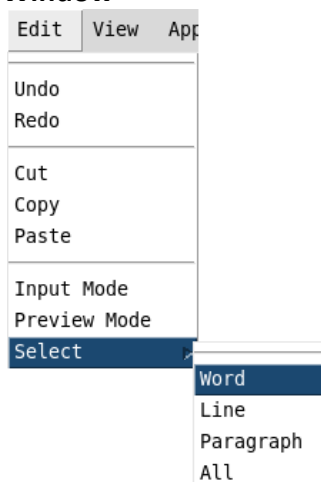
**Figure 3-5 Directory Menu in *PNFile* Main Window**



### 3.1.2.3 Edit Menu

The pull-down menu in Edit Menu is shown in [Figure 3-6](#). These operations are only available to the files opened in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**).

**Figure 3-6 Edit Menu in *PNFile* Main Window**

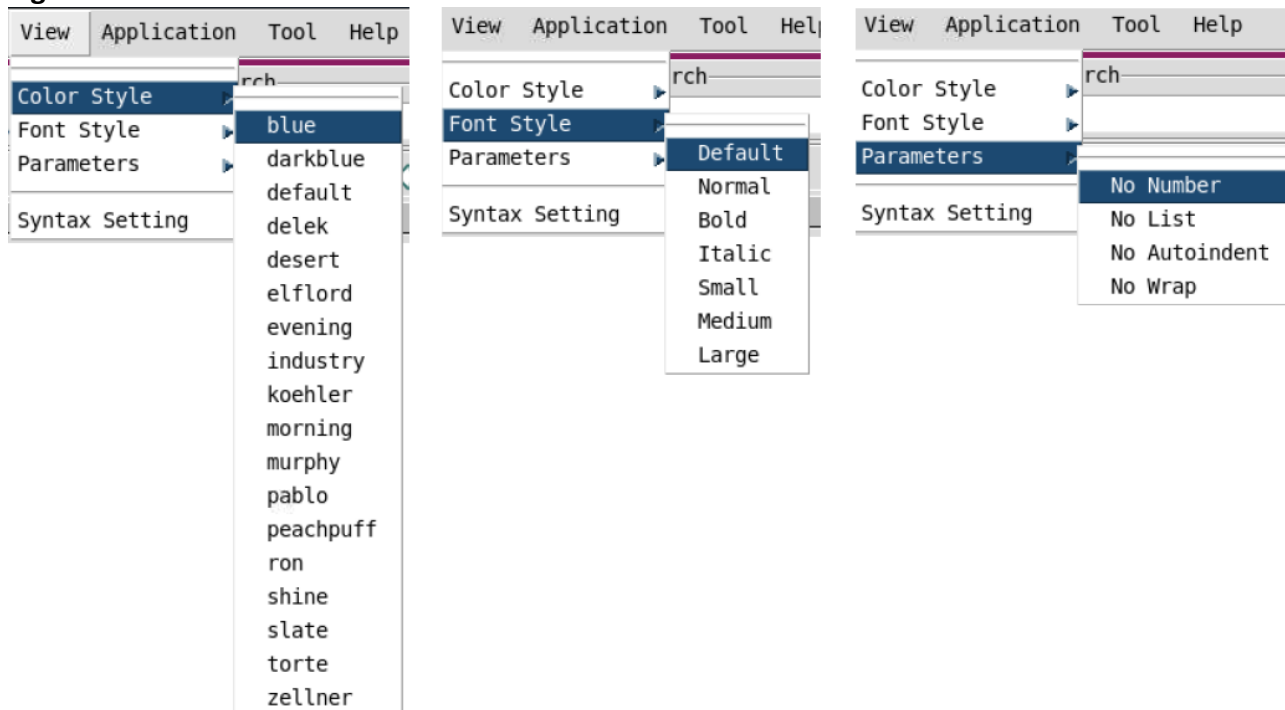


- **Undo** undoes the last change.
- **Redo** reverts the last undoing.
- **Cut** copies and then deletes the selected contents.
- **Copy** copies the selected contents.
- **Paste** pastes the latest cut or copied contents to the cursor's location.
- **Input Mode** enters the input mode.
- **Preview Mode** enters the default preview mode.
- **Select** selects contents by word, line, and paragraph, or selects all the contents.

### 3.1.2.4 View Menu

View Menu ([Figure 3-7](#)) configures the view settings for **PNPreview** Area. It is similar to the View Menu in **PNEdit** Window. Please refer to section [5.2.2.3](#) for details.

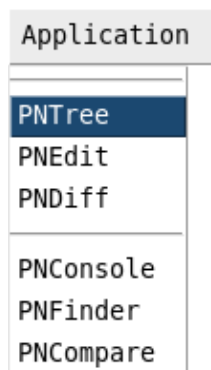
**Figure 3-7 View Menu in *PNFile* Main Window**



#### 3.1.2.5 Application Menu

Applications are listed in Application Menu ([Figure 3-8](#)).

**Figure 3-8 Application Menu in *PNFile* Main Window**

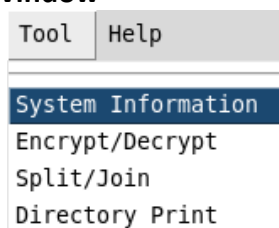


- **PNTree** launches a new **PNTree** and uses the path of the selected file or directory as its Home Path (refer to section [4.2.2](#) for multiple **PNTrees**).
- **PNEdit** opens the file selected in the embedded **PNTree** with a new **PNEdit** window (refer to section [5](#) for **PNEdit**).
- **PNDiff** launches **PNDiff** to compare the files selected in the embedded **PNTree** (refer to section [6.1.1](#)).
- **PNConsole** launches the **PNConsole** window (refer to section [7.1](#)).
- **PNFinder** launches **PNFinder** and uses the path of the selected file or directory as its initial home path (i.e., the starting hierarchy of the searching) (refer to section [8.1](#)).
- **PNCompare** launches **PNCompare** and uses the path of the selected file or directory as the initial Home Paths for the Left and Right sides of the embedded **PNTrees** (refer to section [9.1](#)).

### 3.1.2.6 Tool Menu

Multiple tools are listed in Tool Menu ([Figure 3-9](#)).

**Figure 3-9 Tool Menu in PNFile Main Window**

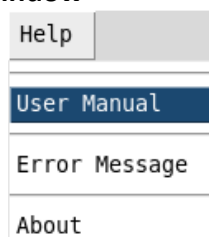


- **System Information** opens the window that prints system information (refer to section [3.8.2](#)).
- **Encrypt/Decrypt** opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
- **Split/Join** splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
- **Directory Print** opens the tool window of the directory information printer (refer to section [3.8.4](#)).

### 3.1.2.7 Help Menu

The pull-down menu in Help Menu is shown in [Figure 3-10](#).

**Figure 3-10 Help Menu in PNFile Main Window**

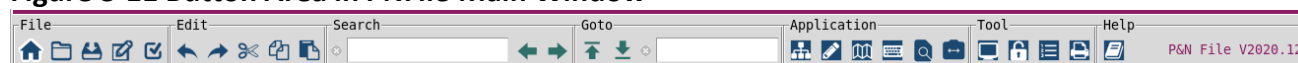


- **User Manual** opens this user manual.
- **Error Message** opens the error and warning help window (refer to [Appendix C: Error/Warning Message](#) for details).
- **About** shows the tool information.

## 3.1.3 Button Area



Button Bar is grouped as shown in [Figure 3-11](#).




**Figure 3-11 Button Area in PNFile Main Window**



### 3.1.3.1 File Bar






There are five buttons in File Bar.

-  sets the home path of the embedded **PNTree**.
-  launches a file-selecting window for users to select and open a file in **PNPreview**.

-  saves the file that is opened and edited in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**).
-  enters Input Mode to edit the file in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**). To back to the default preview mode, enter Escape (Esc).
-  enters Preview Mode.




#### 3.1.3.2 Edit Bar

There are five buttons in Edit Bar. These operations are only available for the files opened in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**).

-  undoes the last change.
-  reverts the latest undo.
-  cuts the selected contents and registers.
-  copies the selected contents and registers.
-  pastes the latest cut or copied contents to the cursor's location.




#### 3.1.3.3 Search Bar

There are one input text box and two buttons in Search Bar.

-  is an input text box for users to search keywords in **PNPreview** quickly. After entering the keywords in the box, users just need to click Enter to search. The little cross before the box is used to clear all the inputs from the box.
-  goes to the previous match.
-  goes to the next match.




#### 3.1.3.4 Goto Bar




There are two buttons and one input text box in Goto Bar.

-  goes to the top line of the file in **PNPreview**.
-  goes to the bottom line of the file in **PNPreview**.
-  is an input text box for users to set the line number to go to.

#### 3.1.3.5 Application Bar





There are six buttons in Application Bar.

-  launches a new **PNTree** and uses the path of the selected file or directory as its Home Path (refer to section [4.2.2](#) for multiple **PNTrees**).
-  opens the file selected in the embedded **PNTree** with a new **PNEdit** window (refer to section [5](#) for **PNEdit**).
-  launches **PNDiff** to compare the files selected in the embedded **PNTree** (refer to section [6.1.1](#)).

-  launches the **PNConsole** window (refer to section [7.1](#)).
-  launches **PNFinder** and uses the path of the selected file or directory as its initial home path (i.e., the starting hierarchy of the searching) (refer to section [8.1](#)).
-  launches **PNCompare** and uses the path of the selected file or directory as the initial Home Paths for the Left and Right sides of the embedded **PNTrees** (refer to section [9.1](#)).

#### 3.1.3.6 Tool Bar

There are four buttons in Tool Bar.

-  opens the window that prints system information (refer to section [3.8.2](#)).
-  opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
-  splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
-  opens the tool window of the directory information printer (refer to [3.8.4](#)).

#### 3.1.3.7 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

-  opens this user manual.
- **P&N File V2020.12** shows the tool information, like tool name, tool version, etc.

#### 3.1.4 PNTree Area


In this area, one **PNTree** is embedded. Please refer to section [4](#) for details about **PNTree**.

#### 3.1.5 PNPreview Area

**PNPreview** is a text preview window embedded in the **PNFile** main window ([Figure 3-1](#)) and the window of the application **PNFinder** ([Figure 8-4](#)). It provides a fast way of previewing any text files, and it supports simple edit operations.

##### 3.1.5.1 Opening file in PNPreview


There are four ways to open one file in **PNPreview**.

- To double-click the selected file in **PNTree**.
- To drag-and-drop the selected file from **PNTree** Area to **PNPreview**.
- To click the button  (“Preview”) to select one file for previewing (refer to section [3.1.3.1](#)).
- To click “Preview” in File Menu to select one file for previewing (refer to section [3.1.2.1](#) and [8.2.3.1](#))

To backward focus the file that is being previewed in **PNTree**, users only need to drag and drop from the **PNPreview** Area to **PNTree** Area. Please note that this backward focusing does not work unless the file is under the current home path of the tree or its subdirectories.

### 3.1.5.2 Simple operations supported in PNPreview

Usually, to edit files, users are recommended to open them in **PNEdit** (refer to section [5.1.1](#)). In some cases, only simple editing or small modification is desired, thus **PNFile** also supports quick edit & save for the file opened in **PNPreview**.

There are two modes in **PNPreview**, Input Mode and Preview Mode. Preview Mode is the default one. Users can enter Input Mode via button  or menu **Input Mode** in **PNFile** Edit Menu, and back to Preview Mode by entering ESC (Escape). In Input mode, the characters typed are inserted as text.

For more supported edit operations, please refer to sections [3.1.2.3](#) and [3.1.3.2](#).

### 3.1.5.3 Right-click Menu in PNPreview Area

The right-click menu is provided in **PNPreview**.

**Figure 3-12 Right-click Menu in PNPreview**

Undo
Redo
Cut
Copy
Paste
Select Word
Select Line
Select Paragraph
Select All
Copy Full Path

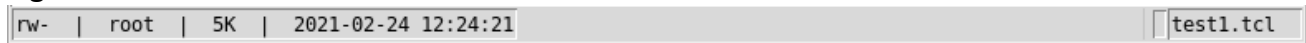
- **Undo** undoes the last change.
- **Redo** reverts the last undoing.
- **Cut** copies and then deletes the selected contents.
- **Copy** copies the selected contents.
- **Paste** pastes the latest cut or copied contents to the cursor's location.
- **Select Word** selects contents by word.
- **Select Line** selects contents by line.
- **Select Paragraph** selects contents by paragraph.
- **Select All** selects all the contents.
- **Copy Full Path** copies the full hierarchy path of the file opened in the **PNPreview** Area to the clipboard.

### 3.1.6 Status Area

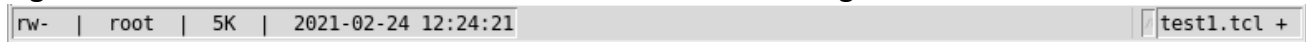
The Status Area is at the bottom of the **PNFile** Main Window showing the information and the status of the file opened in **PNPreview** ([Figure 3-13](#) and [Figure 3-14](#)).

The accessing mode, owner, file size, and the time when the file is updated are displayed on the left. The file's name and its modification status are displayed on the right.

**Figure 3-13 Status Area in *PNFile* Main Window**



**Figure 3-14 Status Area in *PNFile* Main Window when the change is not saved**

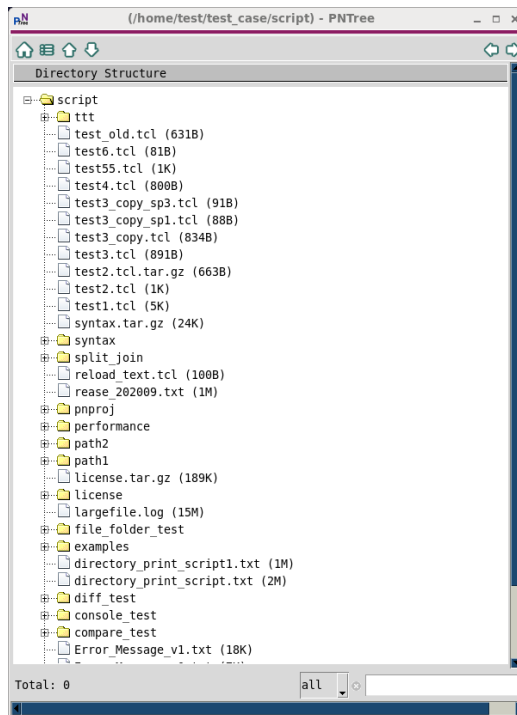


## 3.2 *PNTree* Window

*PNTree* provides a graphic interface for users to navigate and operate on directories or files efficiently. In the *PNFile* Main Window, there is one *PNTree* embedded ([Figure 3-1](#)), and multiple *PNTrees* can be launched from any existing *PNTrees*. A stand-alone *PNTree* Window is shown in [Figure 3-15](#).

Please refer to section [4](#) for details about *PNTree*.

**Figure 3-15 *PNTree* Window**

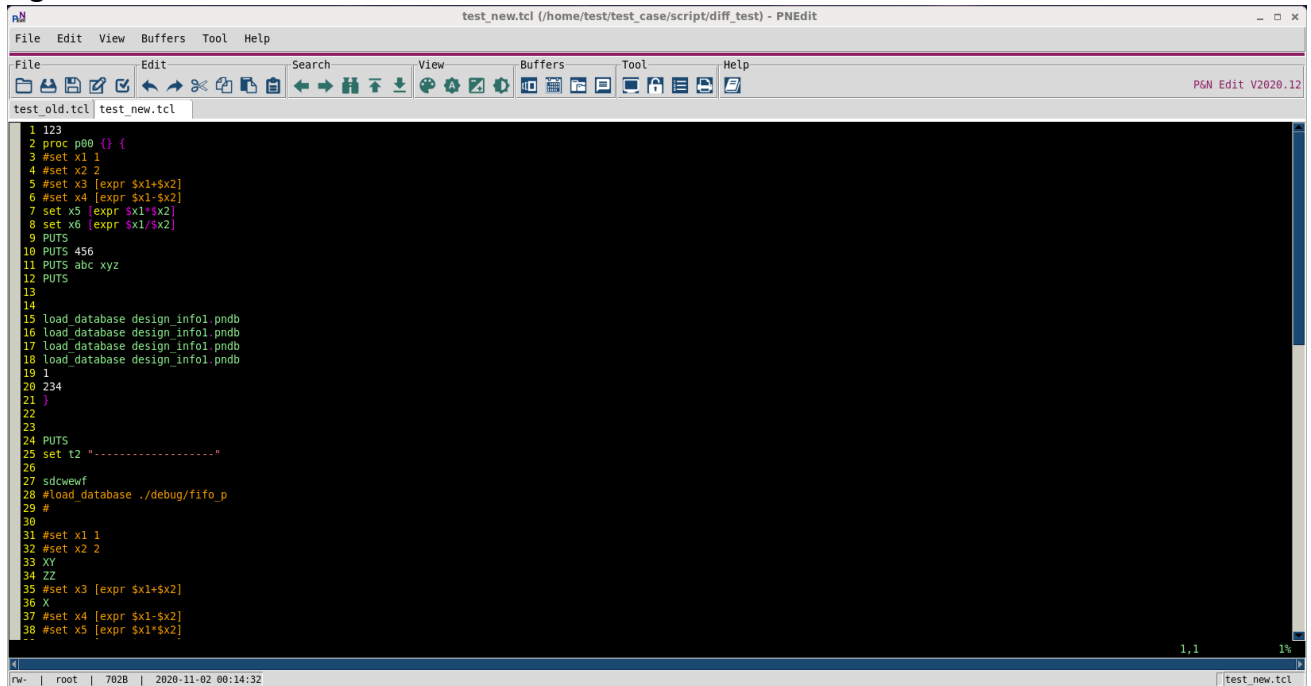


## 3.3 *PNEdit* Window

*PNEdit* is an efficient and powerful text editor. It supports the flexible editing of any text files. *PNEdit* Window is shown in [Figure 3-16](#).

Please refer to section [5](#) for details about *PNEdit*.

**Figure 3-16 PNEdit window**

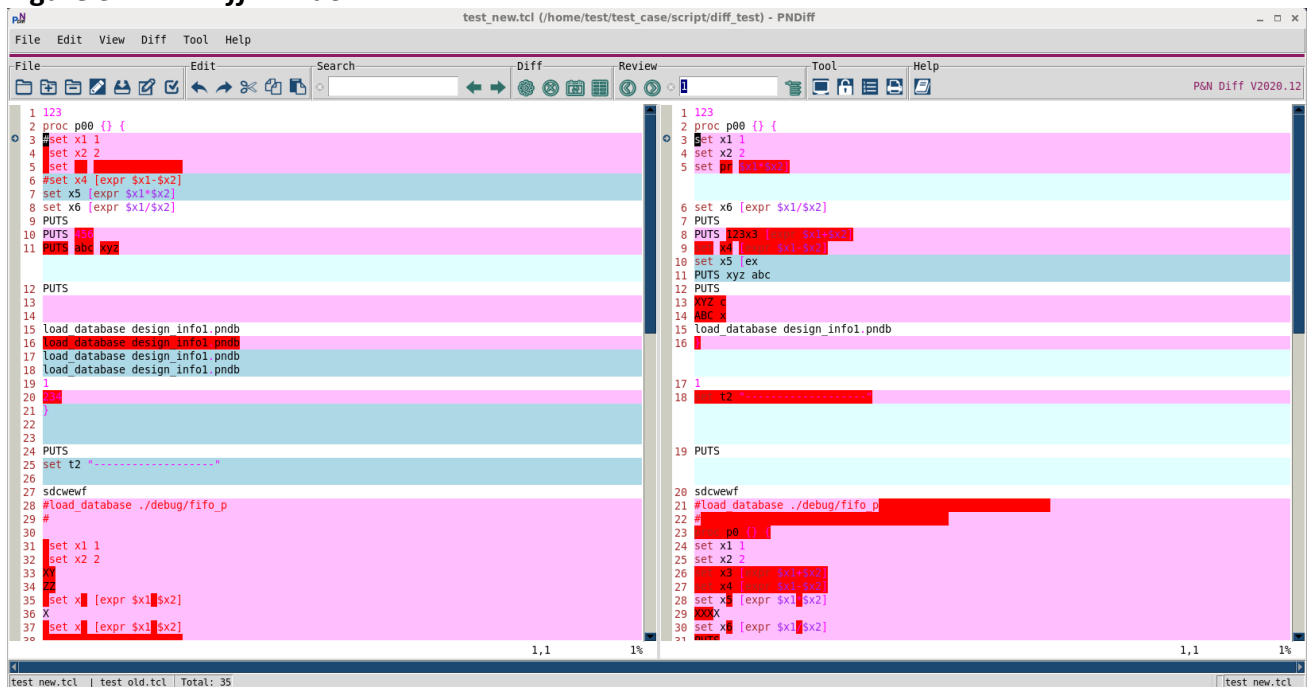


## 3.4 PNDiff Window

**PNDiff** compares multiple text files and shows the differences. It helps locate and navigate the differences rapidly. **PNDiff** Window is shown in [Figure 3-17](#).

Please refer to section [6](#) for details about **PNDiff**.

**Figure 3-17 PNDiff Window**



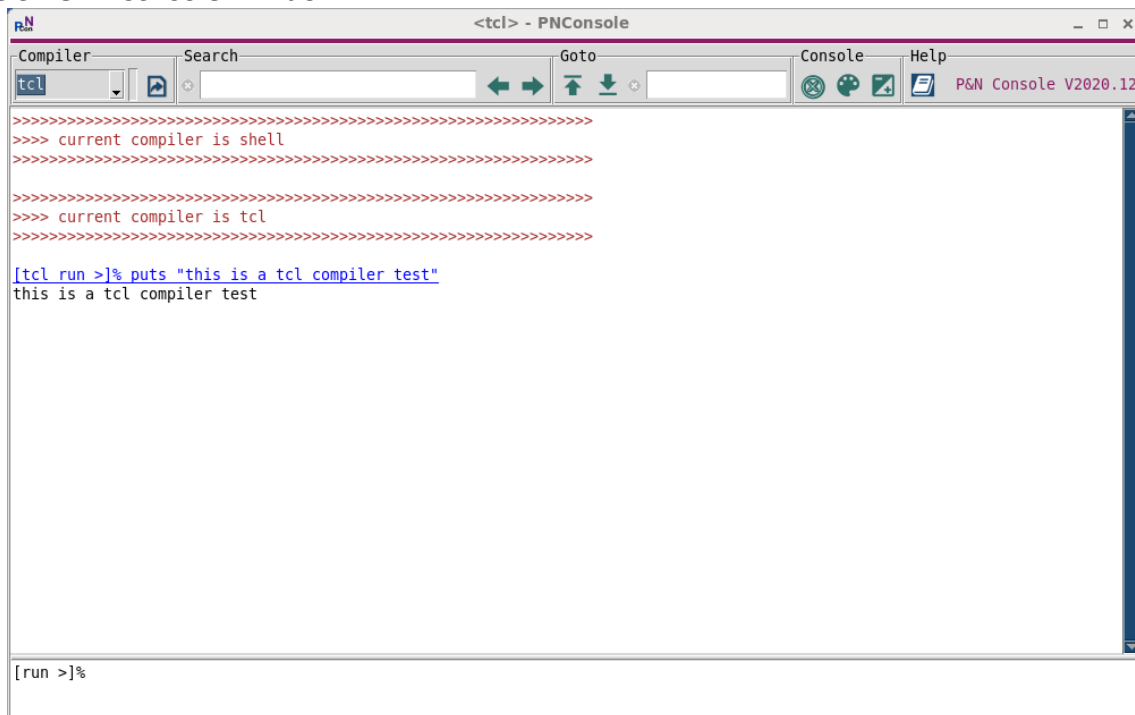
## 3.5 PNConsole Window

**PNConsole** is a graphical Multi-Language Platform Console, which has four languages preset, including Shell, TCL, Python, and Perl. After selecting the language compiler, any commands and scripts in this language can be well supported in the graphical **PNConsole**. Besides, any other language compilers available in the system can be well supported in **PNConsole** as well.

**PNConsole** window is shown in [Figure 3-18](#).

Please refer to section [7](#) for details about **PNConsole**.

**Figure 3-18 PNConsole Window**

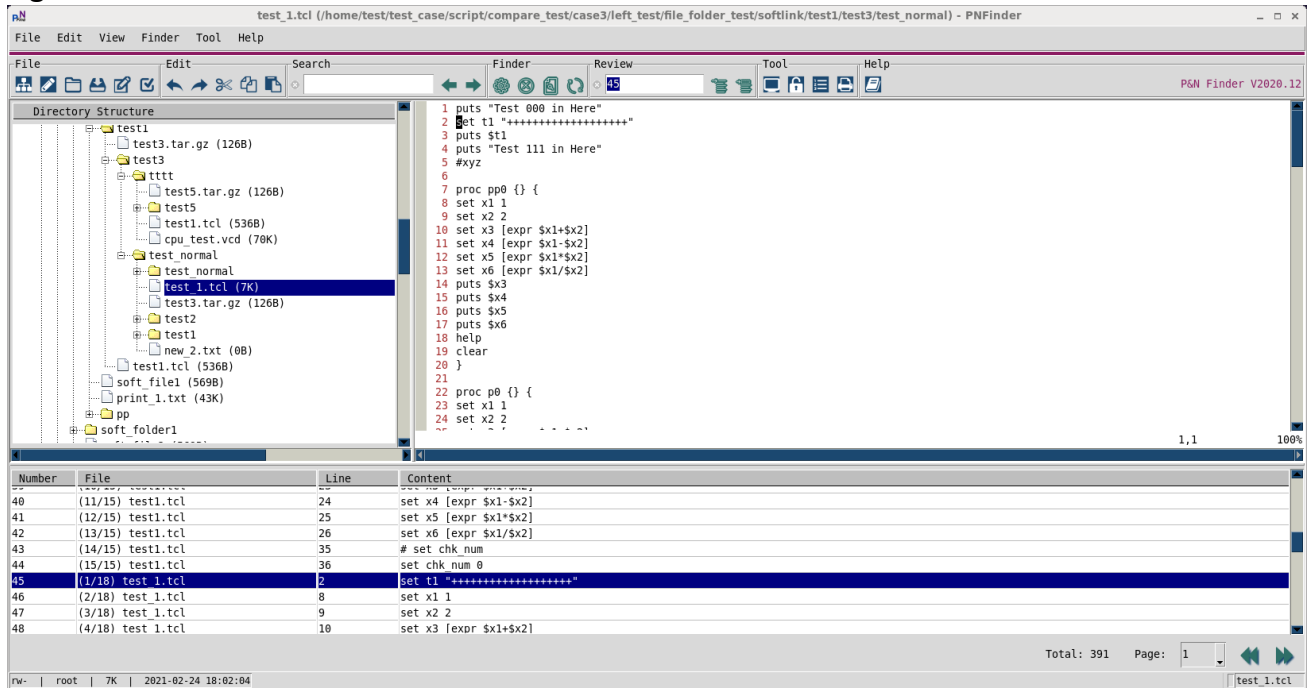


## 3.6 PNFinder Window

**PNFinder** is an efficient file (and its content) finding & replacing tool. Multiple searching modes and filtering configs make the tool more flexible and powerful. **PNFinder** supports both normal plain text and regex text expression searching & replacing. It manages to control the searching depth and filter files by multiple criteria like name, owner, access, time, and size. Locating and reviewing the finding result in **PNFinder** is quite easy. **PNFinder** window is shown in [Figure 3-19](#).

Please refer to section [8](#) for details about **PNFinder**.

**Figure 3-19 PNFinder Window**

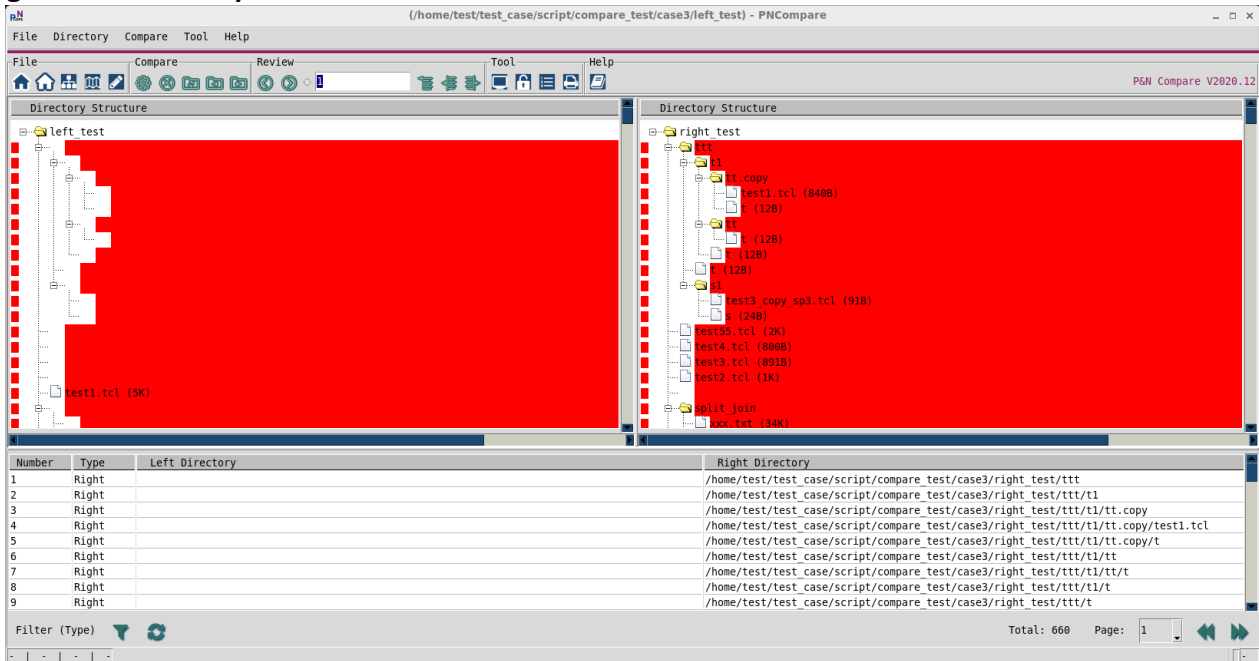


## 3.7 PNCompare Window

**PNCompare** is an efficient and practical file & directory comparing tool which aims to compare two directories and/or files inside. It supports to compare by multiple criteria, such as owner, access, time, size, and content. It also supports comparing depth control and multiple comparing modes like File-Folder, File-Only, and Folder-Only. After comparing, **PNCompare** manages to review the results and resolving the differences easily. **PNCompare** window is shown in [Figure 3-20](#).

Please refer to section [9](#) for details about **PNCompare**.

**Figure 3-20 PNCompare Window**



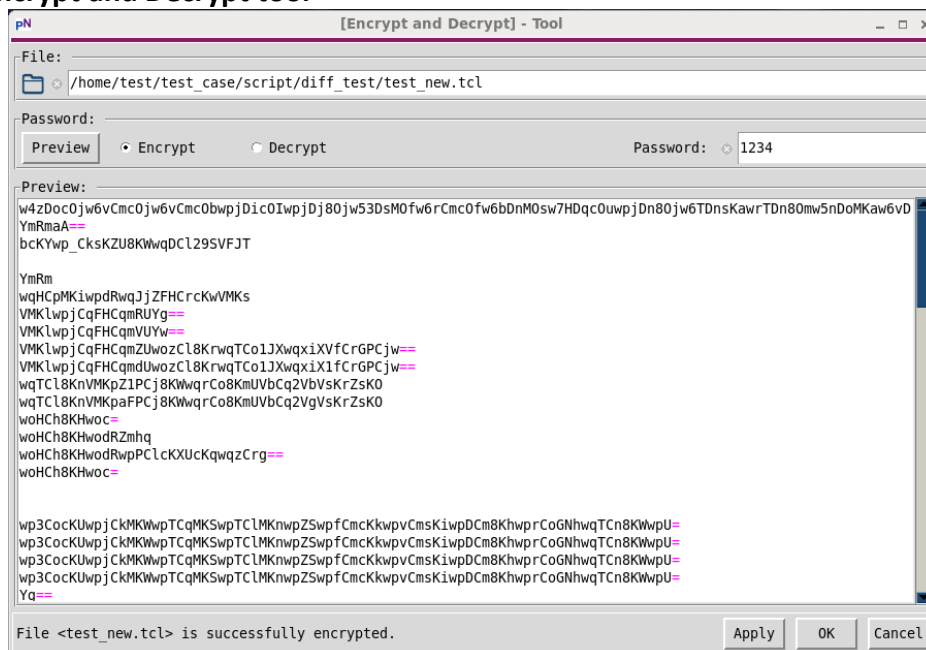
## 3.8 Other Tools

Four other tools can be launched from either Tool Menu or Tool Button, including Encrypt/Decrypt, System Information, Split/Join, and Directory Print.

### 3.8.1 Encrypt and Decrypt

Users can type the password in the input text box in [Figure 3-21](#) to either encrypt the file or decrypt it later with the correct password. After conducting either Encrypt or Decrypt, the result can be previewed via the Preview button. Please note that the result is not saved until pressing the Apply button.

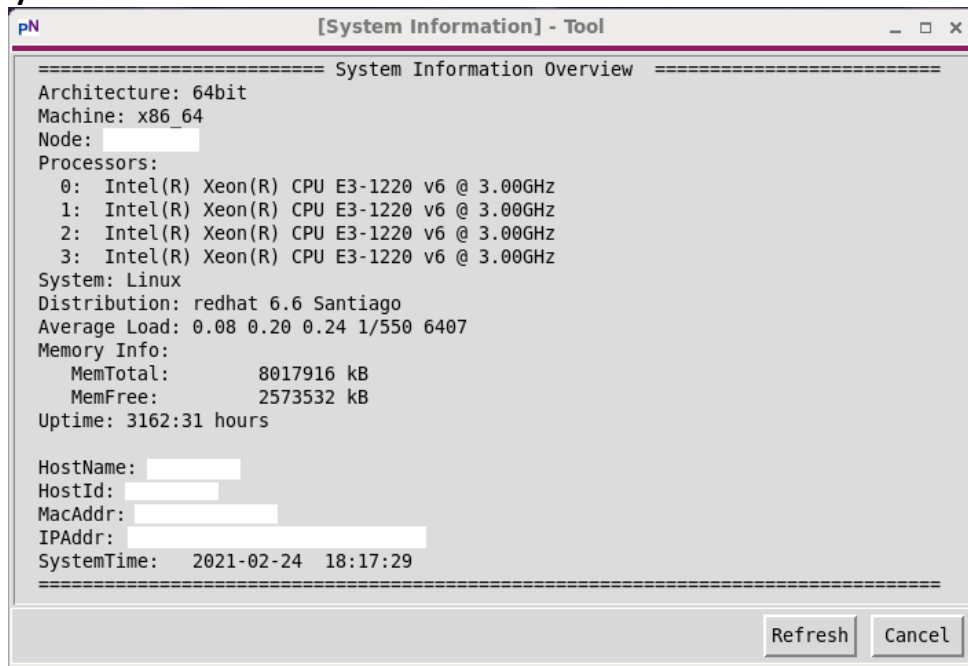
**Figure 3-21 Encrypt and Decrypt tool**



### 3.8.2 System Information

The detailed system information is printed via this tool ([Figure 3-22](#)).

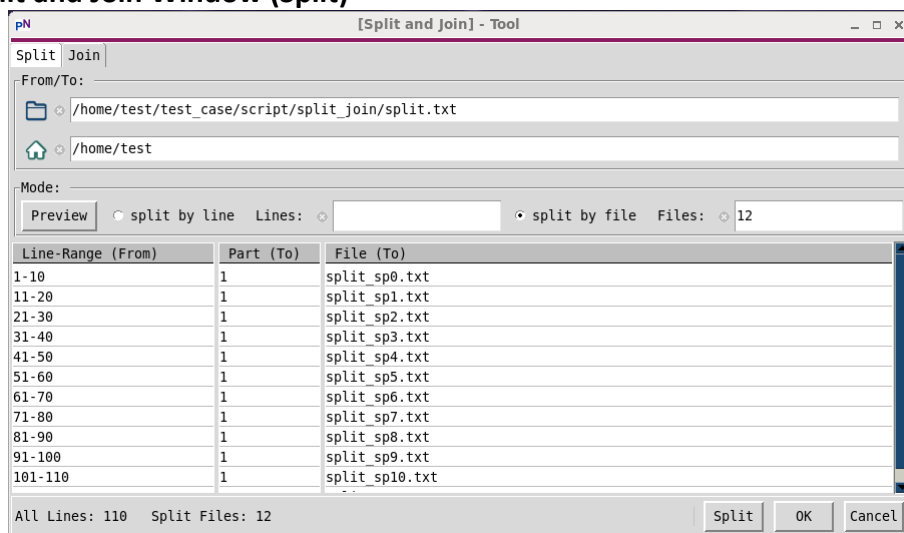
**Figure 3-22 System Information Tool**



### 3.8.3 Split and Join

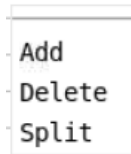
With the tool Split/Join, the file selected can be split by the number of lines or files ([Figure 3-23](#)).

**Figure 3-23 Split and Join Window (Split)**



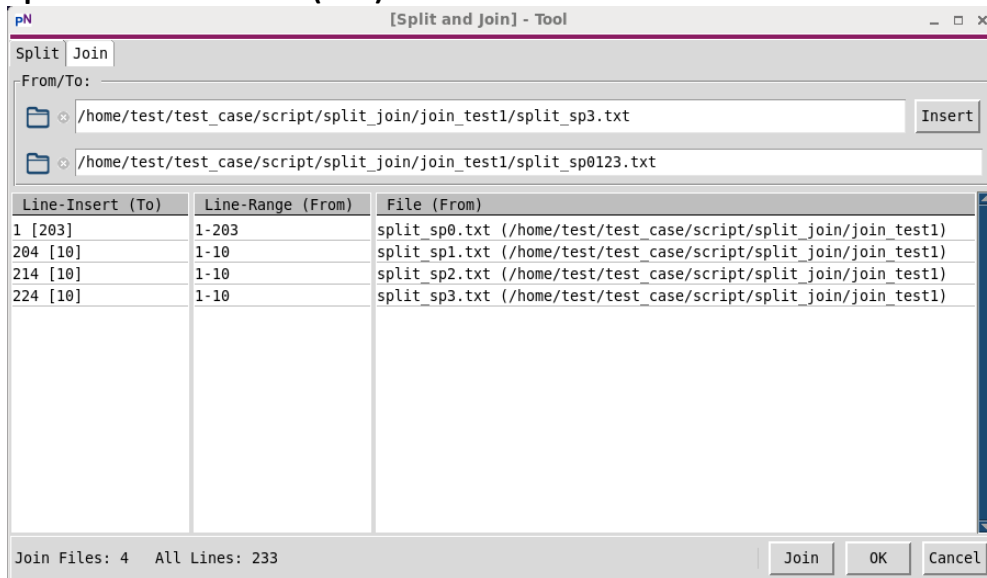
The right-click menu is provided in the Split window ([Figure 3-24](#)) to add, delete, or split the files selected.

**Figure 3-24 The right-click menu in Split window**



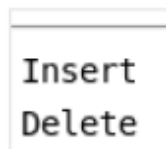
With the tool, the files selected can also be joined as one ([Figure 3-25](#)). The button "Insert" is used to add one valid file path to the to-be-joined file list.

**Figure 3-25 Split and Join Window (Join)**



The right-click menu is provided in the Join window ([Figure 3-26](#)) to insert files or delete the files selected.

**Figure 3-26 The right-click menu in Join window**



### 3.8.4 Directory Print

Directory Print prints the verbose information of any selected directory as required in [Figure 3-27](#).

**Figure 3-27 Directory Print Tool**

The screenshot shows a window titled "[Directory Print] - Tool" with a standard macOS-style title bar (red, yellow, green buttons). The window contains several sections of controls:

- Scope:** A group box containing four radio buttons: "Level All" (selected), "Level 1", "Level 1-?" (with a small 'x' icon), and "Level ?" (with a small 'x' icon). Below these are two empty text input fields.
- Path:** A text input field with a home icon on the left and the text "/home/test".
- Information:** A group box containing two checkboxes: "Summary Info" (checked) and "Detail Info".
- File/Folder:** A group box containing three radio buttons: "File-Folder" (selected), "File Only", and "Folder Only".
- Flatten/Hierarchy:** A group box containing two radio buttons: "Flatten Mode" (selected) and "Hierarchy Mode".
- Sort By:** A group box containing three radio buttons: "File Name" (selected), "File Size", and "Update Time".
- Total:** A label "Total: 0" followed by three buttons: "Print", "Search", and "Cancel".

# 4

## *PNTree*

---

***PNTree*** is a directory tree navigation tool. It navigates the directories and files from the user-specified home path. The home path of the tree can be changed whenever needed.

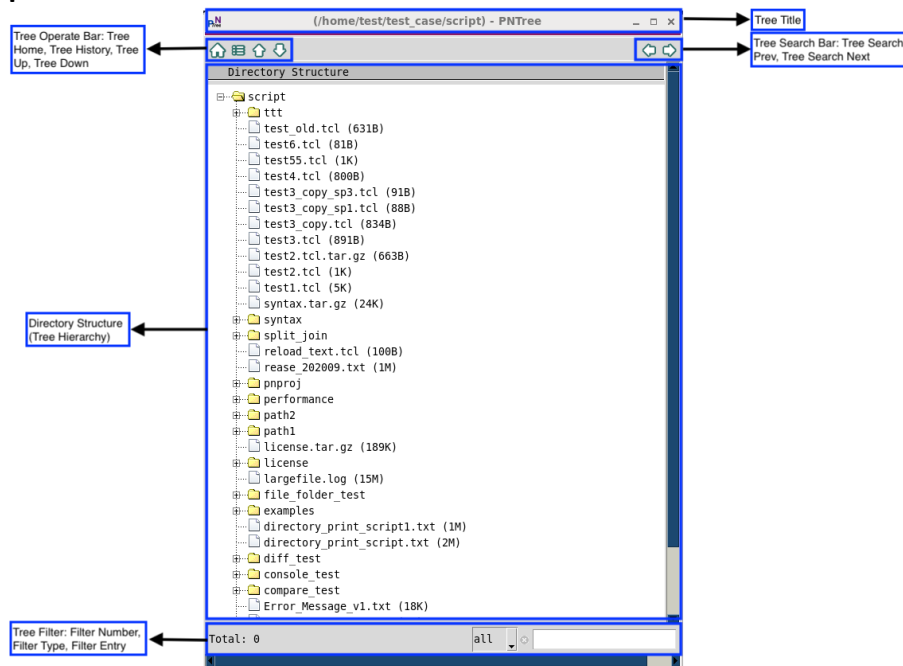
Rich file information is displayed, and various operations are supported in the ***PNTree***, such as Filter, Copy To, Move To, Delete, New, Rename, Compress, Split/Join, Encrypt/Decrypt, Directory Print, sending files to the bonded ***PNEdit*** windows, launching ***PNDiff***, etc.

This section introduces the ways to launch ***PNTree*** and the interfaces of ***PNTree***. Besides, the concept of the Home Path, multiple ***PNTrees***, and the bonding between ***PNTree*** and ***PNEdit*** windows are introduced as well.

### 4.1 Launching *PNTree*

In the ***PNFile*** Main Window (Figure 3-1), ***PNFinder*** (Figure 8-4) and ***PNCompare*** window ([Figure 9-4](#)), there is one ***PNTree*** embedded in the ***PNTree*** Area. Multiple ***PNTrees*** can be launched from any existing ***PNTrees*** independently ([Figure 4-1](#)). There are entries to launching a new ***PNTree*** in both ***PNFile*** and the applications like ***PNFinder*** and ***PNCompare***. Besides, ***PNTree*** is also an independent tool that can be launched from system terminals.

**Figure 4-1 Independent PNTree Window**



#### 4.1.1 Launching together with PNFile/PNFinder/PNCompare

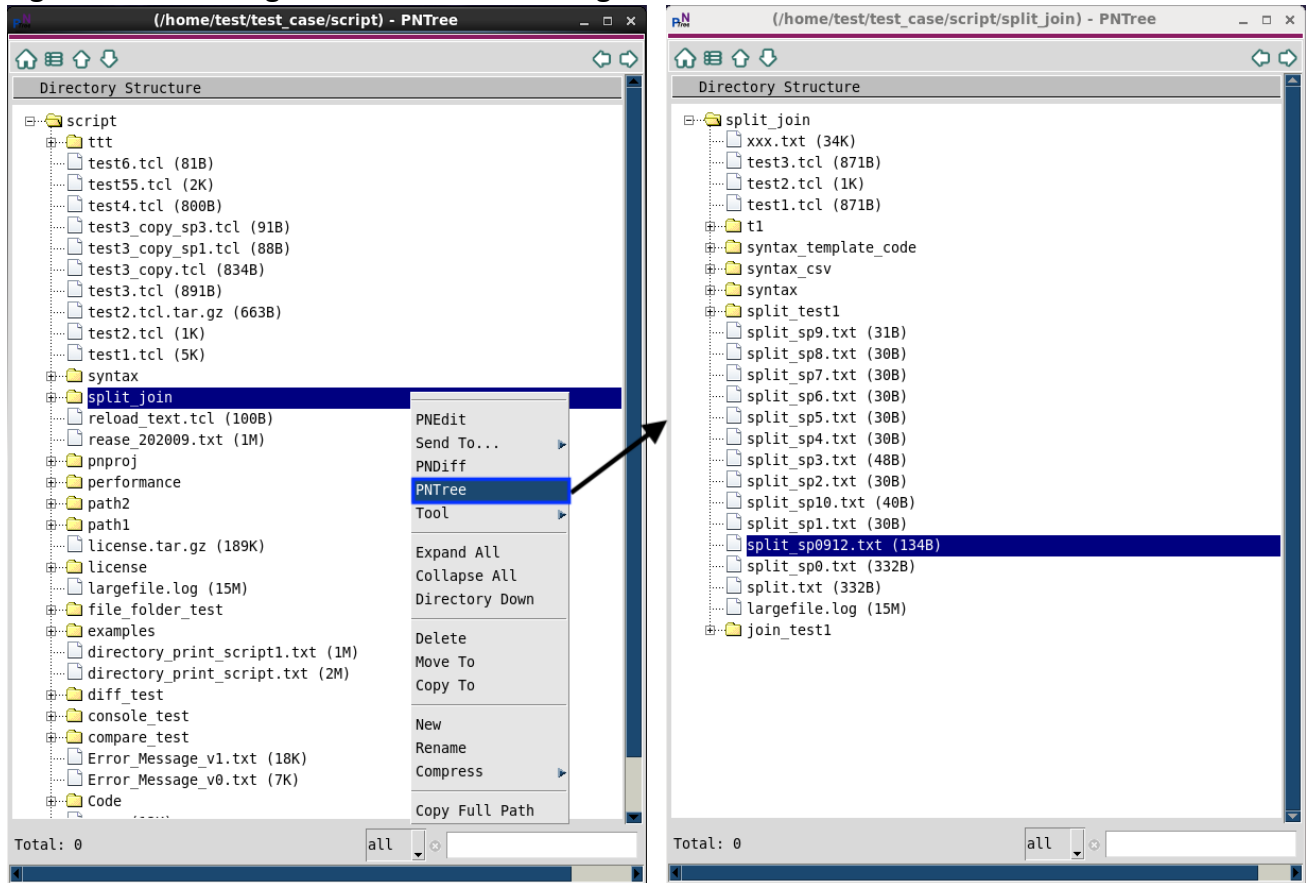
Once **PNFile**, **PNFinder**, or **PNCompare** is launched, the embedded **PNTree** is available (refer to section [3.1](#), [8.2](#), and [9.2](#)).


#### 4.1.2 Launching from one existing PNTree

There are three ways to launch a new **PNTree** from existing **PNTrees**. The new **PNTree** is launched with the Home Path of the selected directory or file (refer to section [4.2.1](#) for the concept of Home Path in **PNTree**).

The first one is to use the right-click menu ([Figure 4-2](#)) after selecting either directory or file in the existing **PNTree**. This way is available to any existing **PNTree**, either embedded or independent one.

**Figure 4-2 Launching a new *PNTree* via the right-click menu**



The second one is to use one of the buttons,  ("Launch *PNTree*"), in *PNFile* (section [3.1.3.5](#)), *PNFinder* (section [8.2.3.1](#)) or *PNCompare* (section [9.2.3.1](#)). This way is only valid to the embedded *PNTree*.

The last one is to use one of the menus, "*PNTree*", in *PNFile* (section [3.1.2.5](#)), *PNFinder* (section [8.2.2.1](#)) or *PNCompare* (section [9.2.2.1](#)). This way is only valid to the embedded *PNTree* too.

### 4.1.3 Launching from terminals as an independent tool

Assuming the *PNFile* Toolkit is installed and configured properly, to launch the *PNTree* from system terminals, users just need to fire the command **pnmtree** followed by one directory path. The path followed is the Home Path of this *PNTree*. The current path where the tool is launched is used as Home Path if no option is followed. When there is more than one path followed, the last one is the Home Path. If the specified path is not available, the current path is used as Home Path.

Example: > pnmtree test\_home\_folder

To get the help information of the **pnmtree** command, please use the option "+h" ([Figure 4-3](#)).

**Figure 4-3 pntree help information**

```
Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug          -- Display debug message

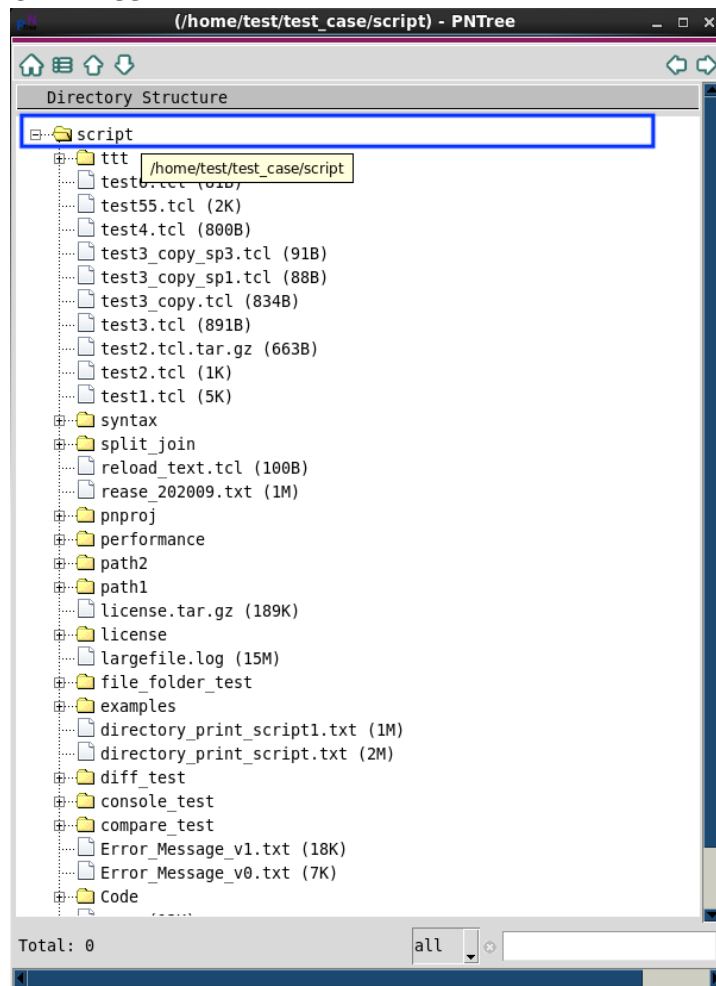
Example commands to invoke pntree
pntree
pntree directory
```

## 4.2 Concepts in *PNTree*

### 4.2.1 Home Path of one *PNTree*

Every *PNTree* has its root, which is called Home Path. Home Path is displayed at the top of each tree ([Figure 4-4](#)).

**Figure 4-4 Home Path of *PNTree***

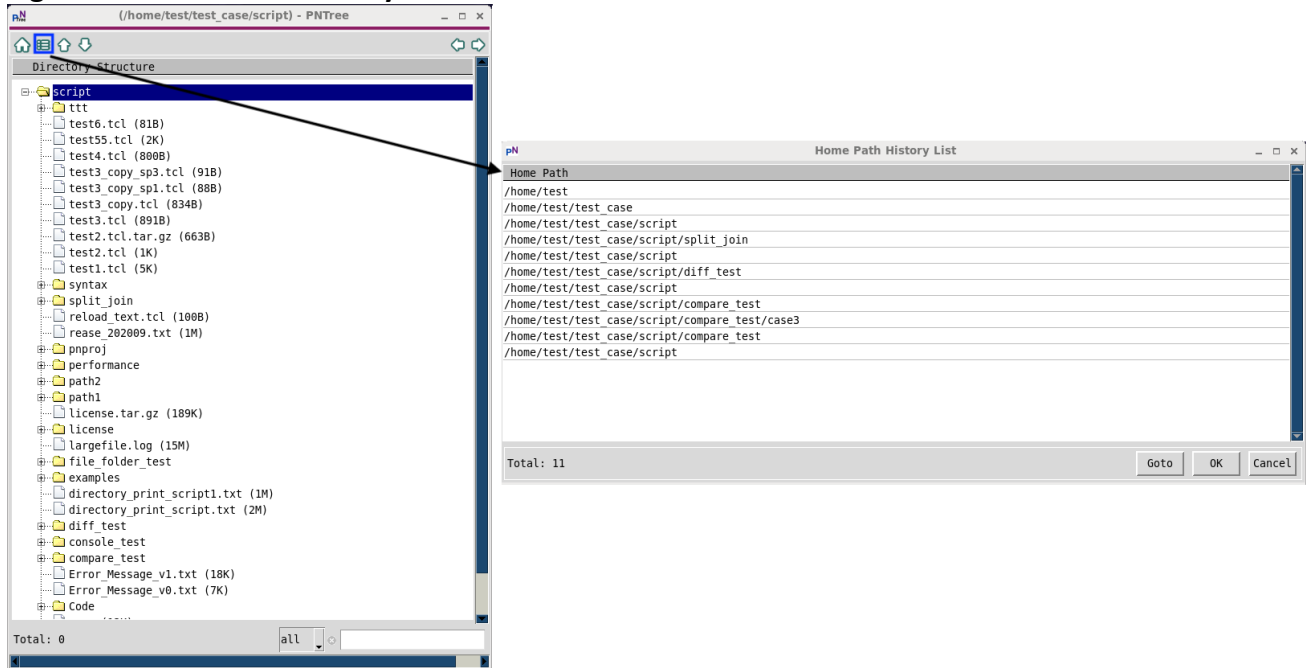


Each *PNTree* navigates directories and files starting from its Home Path. The directory selected in *PNTree* or the Home Path (when no directory is selected) is the starting point of searching in either the Tree-Filter Bar or the Advanced Tree Search & Replace.

Home Path can be set to any available directories. It is determined when *PNTree* is launched, but it can also be changed whenever needed.

All the Home Paths ever set are recorded, which can be viewed in the Home Path History List window (Figure 4-5). By selecting and jumping to any item from the history list, the Home Path of associated **PNTree** can be changed back.

**Figure 4-5 Home Path History List Window**



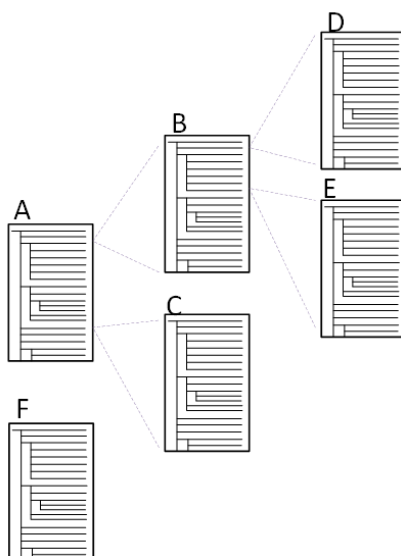
### 4.2.2 Multiple **PNTrees**

There are two types of **PNTree**, embedded and stand-alone. The embedded **PNTree** is in the **PNFile** Main Window (Figure 3-1). The stand-alone **PNTree** is launched from system terminals with command “**pn-tree** [home path directory]” directly, and it is supported to launch new stand-alone **PNTrees** from any existing **PNTrees**.

Those **PNTrees** which are launched from other **PNTrees** are called the descendant **PNTree**, and the **PNTrees** where other **PNTrees** are launched from are called ancestor **PNTree**. Any stand-alone **PNTree** can be an ancestor and descendant. The first ancestor **PNTree** of its family is either launched from terminals directly or embedded in **PNFile** Main Window.

The example in Figure 4-6 demonstrates the relations among multiple **PNTrees**. A is the first ancestor of the family of A, B, C, D, and E. B is an ancestor **PNTree** of D and E, but it is also a descendent **PNTree** of A. F is also the first ancestor, but with no descendent.

**Figure 4-6 Example of Ancestor and Descendant *PNTrees***



Closing one ***PNTree*** closes all its descendant ***PNTrees*** as well. Take the example in [Figure 4-6](#), when A is closed, all its descendant B, C, D, and E are closed simultaneously. Closing C has no impact on the D or E.

#### 4.2.3 Bonded *PNEdit* and *PNDiff* Windows

There can be multiple ***PNTrees***, and starting from each ***PNTree***, new ***PNEdit*** or ***PNDiff*** windows can be launched. These new ***PNEdit*** and ***PNDiff*** windows are bonded to the ***PNTree*** where they are launched from, and this ***PNTree*** is called the parent of its bonded ***PNEdit*** and ***PNDiff*** windows.

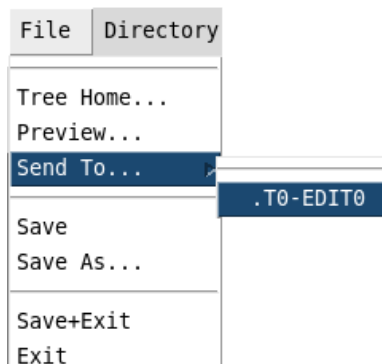
After closing one ***PNTree***, all the bonded ***PNEdit*** and ***PNDiff*** windows are closed too.

## 4.3 Interfaces of *PNTree*

### 4.3.1 Menus

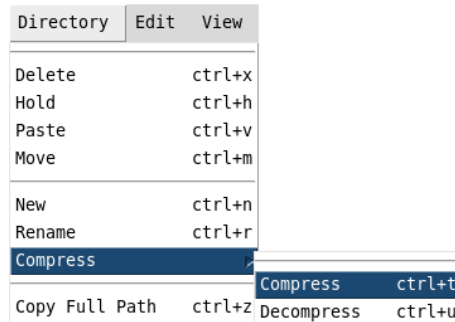
Menus are only available for the ***PNTree*** embedded in ***PNFile*** Main Window ([Figure 4-7](#), [Figure 4-8](#), and [Figure 4-9](#)). There is no menu in any stand-alone ***PNTrees***. Please note that the shortcut commands associated with those operations in Directory Menu in ***PNFile*** Main Window ([Figure 4-8](#)) are available to both types of ***PNTree***.

**Figure 4-7 *PNTree* related File Menu in *PNFile* Main Window**



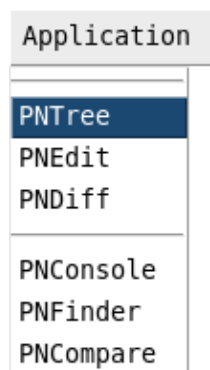
- **Tree Home...** opens the directory selecting window for users to change the Home Path of the embedded **PNTree**.
- **Preview...** launches a file-selecting window for users to select and open one file in **PNPreview**. (refer to section [3.1.5](#) for **PNPreview**)
- **Send To...** opens the file selected in the embedded **PNTree** in a new tab of one existed **PNEdit** window.

**Figure 4-8 PNTree related Directory Menu in PNFile and PNCompare Window**



- **Delete** removes the selected files or directories (refer to section [4.4](#)). The shortcut command is ctrl+x.
- **Hold** corresponds to selecting files or/and directories in **PNTree** and treating them as the source of the operations copy or move. The shortcut command is ctrl+h. It is supported to accumulate the held files or directories by applying multiple **Hold**.
- **Paste** corresponds to selecting files or/and directories in **PNTree** and treating them as the destination of the operation Copy (refer to section [4.4](#)). The shortcut command is ctrl+v. **Hold** and **Paste** here is similar to **Copy To** described in section [4.3.3](#).
- **Move** corresponds to selecting files or/and directories in **PNTree** and treating them as the destination of the operation Move (refer to section [4.4](#)). The shortcut command is ctrl+m. **Hold** and **Move** here is similar to **Move To** described in section [4.3.3](#).
- **New** creates a new file or directory (refer to section [4.4](#)). The shortcut command is ctrl+n.
- **Rename** changes the name of the selected file or directory (refer to section [4.4](#)). The shortcut command is ctrl+r.
- **Compress** compresses the selected files and/or directories (refer to section [4.4](#)). The shortcut command is ctrl+t.
- **Copy Full Path** copies the full hierarchy path of the selected file or directory to the clipboard. The shortcut command is ctrl+z.

**Figure 4-9 PNTree related Application Menu in PNFile Main Window**









- **PNTree** launches a new **PNTree** and uses the path of the selected file or directory as its Home Path.

### 4.3.2 Buttons

There are six buttons available for both embedded and stand-alone **PNTree** ([Figure 4-10](#)).

**Figure 4-10 Buttons in PNTree**

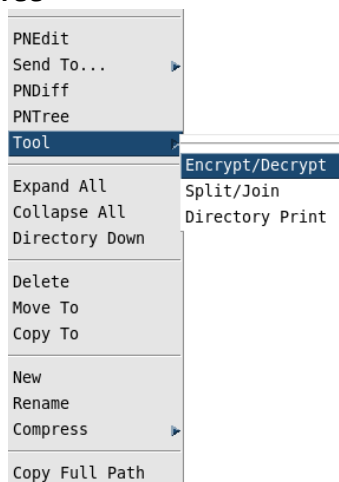


-  opens the directory selecting window for users to change the Home Path of the current **PNTree**.
-  opens the list of Home Path history. Users can view the Home Path history in the list and set the current Home Path back to one of the paths listed.
-  goes to the parent path of the current Home Path and set the parent path as the new Home Path.
-  dives down to the selected directory and sets it as the current Home Path.
-  goes to the previous match in the results of Tree-Filter (refer to section [4.3.4](#) for Tree-Filter Bar).
-  goes to the next match in the results of Tree-Filter (refer to section [4.3.4](#) for Tree-Filter Bar).

### 4.3.3 Right-click Menu

Right-click Menu is available in **PNTree** ([Figure 4-11](#)).

**Figure 4-11 Right-click Menu of PNTree**



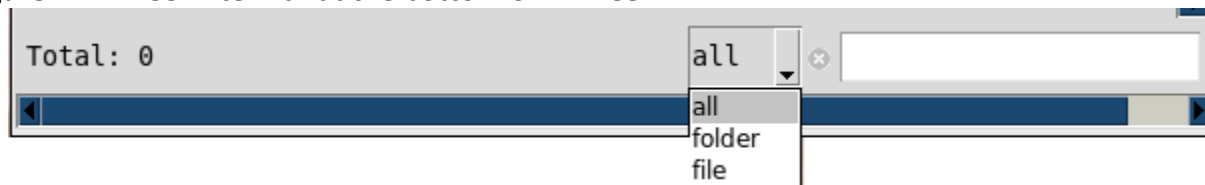
- **PNEdit** opens the selected file or directory in a new **PNEdit** window (refer to section [5](#) for **PNEdit**).
- **Send To...** opens the selected file or directory in a new tab of an existing and bonded **PNEdit** window.
- **PNDiff** compares the files selected in a new **PNDiff** window (refer to section [6](#) for **PNDiff**).
- **PNTree** launches a new **PNTree** and uses the path of the selected file or directory as its Home Path.

- **Tool** launches tools like Encrypt/Decrypt, Split/Join, and Directory Print for the file or directory selected.
- **Expand All** expands all the hierarchies from the selected directory node all the way down to the deepest sub-paths. Please use caution with this operation since this can take a longer time when the hierarchies under the current Home Path are relatively deep or the files under some of the hierarchies are massive.
- **Collapse All** collapses all the hierarchies if they are expanded.
- **Directory Down** dives down to the selected directory and sets it as the current Home Path.
- **Delete** removes the selected files or directories (refer to section [4.4](#)).
- **Move To** moves the selected files or directories to the currently focused directory (refer to section [4.4](#)).
- **Copy To** copies the selected files or directories to the currently focused directory (refer to section [4.4](#)).
- **New** creates a new file or directory (refer to section [4.4](#)).
- **Rename** changes the name of the selected file or directory (refer to section [4.4](#)).
- **Compress** compresses the selected files and/or directories (refer to section [4.4](#)).
- **Copy Full Path** copies the full hierarchy path of the selected file or directory to the clipboard.

#### 4.3.4 Tree-Filter Bar

**PNTree** has a Tree-Filter Bar at the bottom of the window to allow users to quickly find and locate the files or/and directories that match the keywords ([Figure 4-12](#)).

**Figure 4-12 Tree-Filter Bar at the bottom of PNTree**

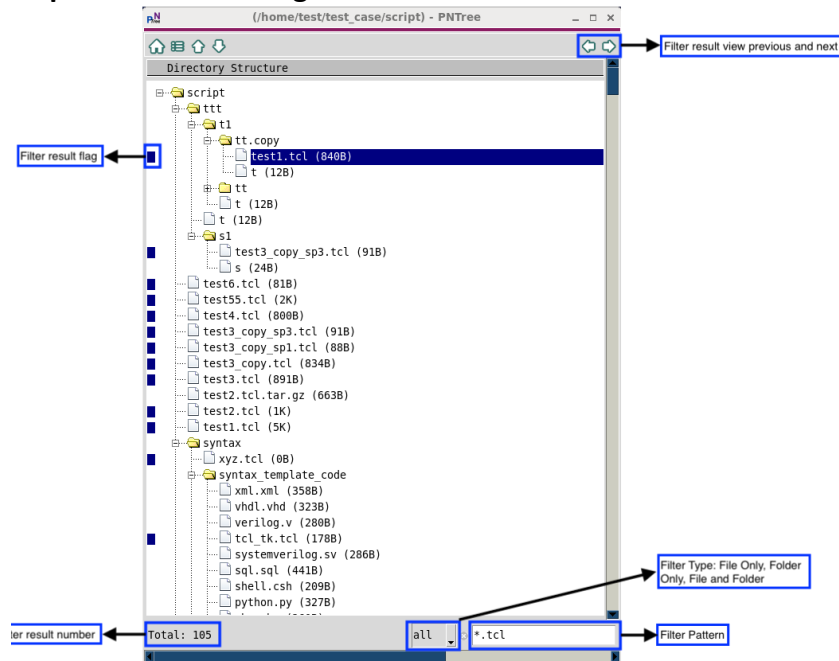


There are three types of quick search supported, all, folder, and file. “all” means all files and directories that match the keywords will be located and highlighted in **PNTree** if there is any. “folder” means it only searches for the matched directories while “file” means the searching is performed on files only.

The directory selected in **PNTree** or the Home Path (when no directory is selected) is the starting point of searching.

Please note that the wildcard is supported in the keyword box to match any characters. [Figure 4-13](#) shows one of the examples of how a Tree-Filter Bar works.

**Figure 4-13 An Example of Tree Filtering**



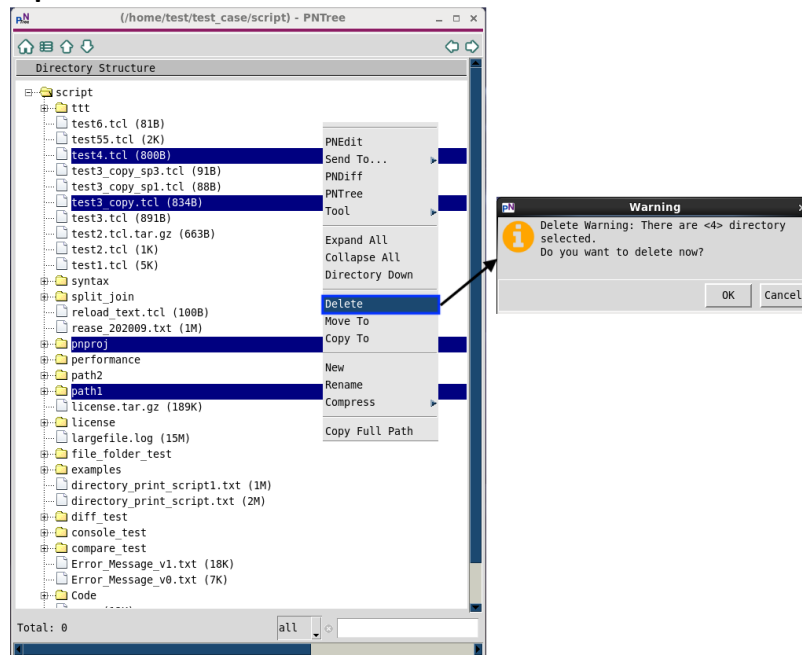
## 4.4 Operations on Directories and Files in *PNTree*

The operations on directories and files in *PNTree* are accomplished via either the Directory Menu ([Figure 4-8](#)) when it's the embedded *PNTree* or the Right-click Menu ([Figure 4-11](#)) on any *PNTree*. The associated shortcut commands are available to any *PNTree*.

- **Delete**

The files and directories selected can be removed from *PNTree*. After performing the Delete operation, the selected files or directories are not available in the system either ([Figure 4-14](#)).

**Figure 4-14 Delete Operation in *PNTree***

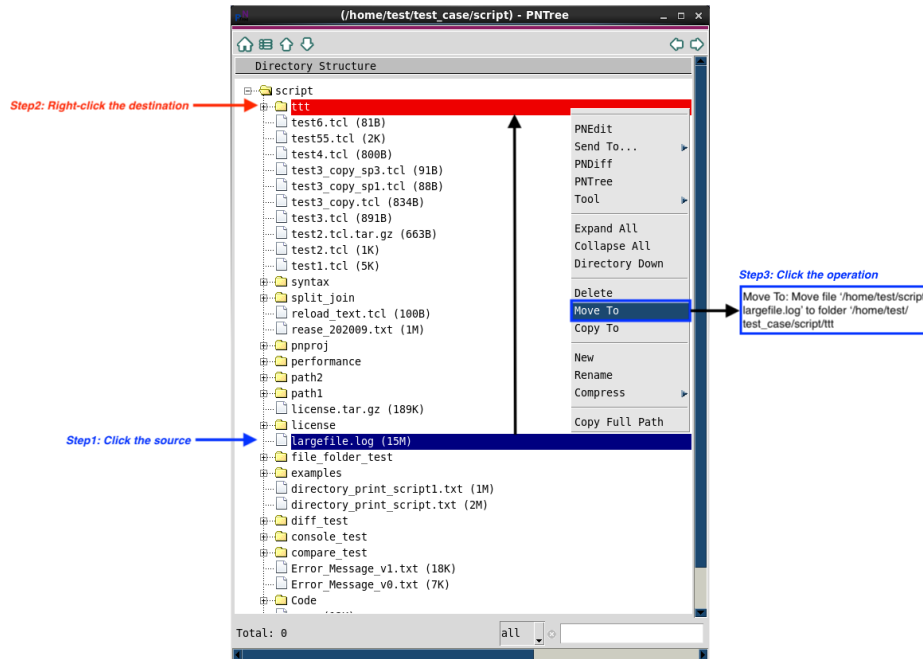


- **Move**

To move files or directories from one path to another in **PNTree**, there are three ways.

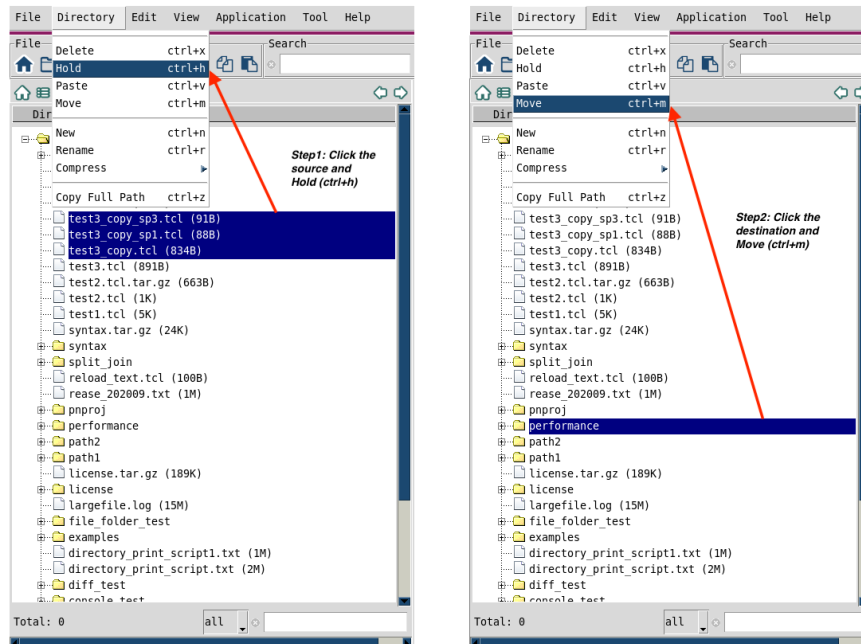
Firstly, moving with the right-click menu. There are three steps ([Figure 4-15](#)). First, click the files or directories on **PNTree** to select them as the source. Second, right-click the destination directory to open the right-click menu (the destination will turn red after right-clicking it). The last step is to click on the menu to select the desired operation, such as Move To in this case.

**Figure 4-15 Split Steps to move or copy in *PNTree* with Right-Click menu**



Secondly, if the **PNTree** is the one embedded in the **PNFile** Main Window, it is also feasible to move with the Directory Menu in **PNFile** Main Window (or the associated shortcut command). There are two steps ([Figure 4-16](#)).

**Figure 4-16 Split Steps to move or copy in *PNTree* with Directory Menu of *PNFile* Main Window**



Lastly, and also most efficiently, moving by mouse clicking, dragging, and dropping the source to the destination.

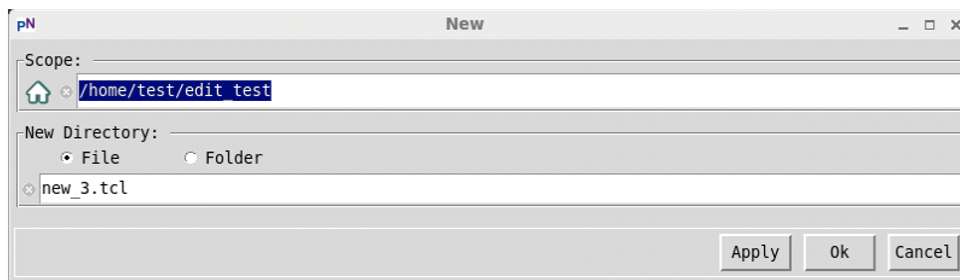
- **Copy**

To copy files or directories from one path to another in **PNTree**, there are three ways too. The steps of the first two ways are similar to Move ([Figure 4-15](#) and [Figure 4-16](#)). The last way is similar too, but by mouse middle-clicking, dragging, and dropping the source to the destination.

- **New**

To create a new file or directory, New Window is launched. Users can create new files or folders with the names typed under paths specified ([Figure 4-17](#)).

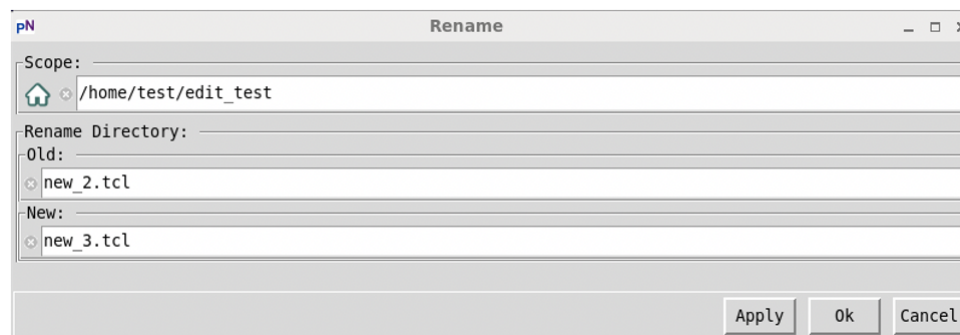
**Figure 4-17 New in PNTree**



- **Rename**

It is supported to rename both file and directory via Rename Window ([Figure 4-18](#)).

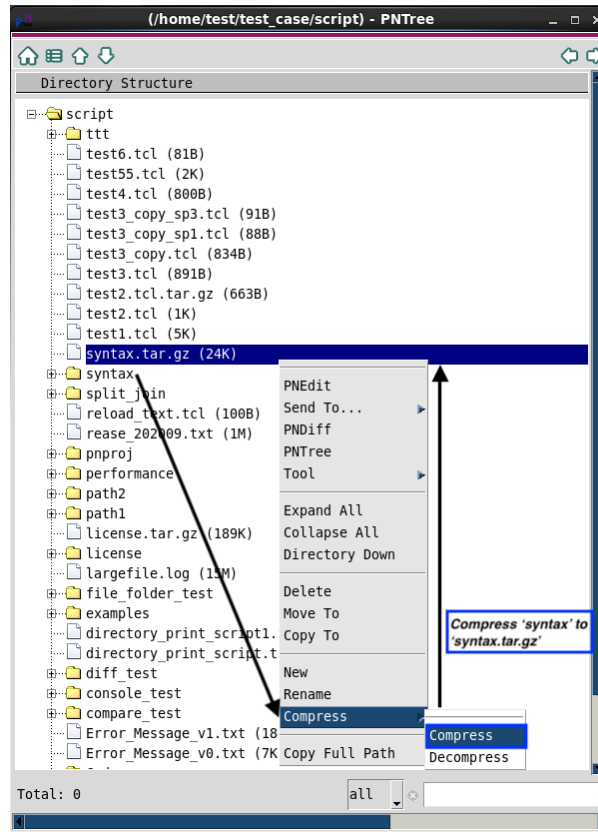
**Figure 4-18 Rename in PNTree**



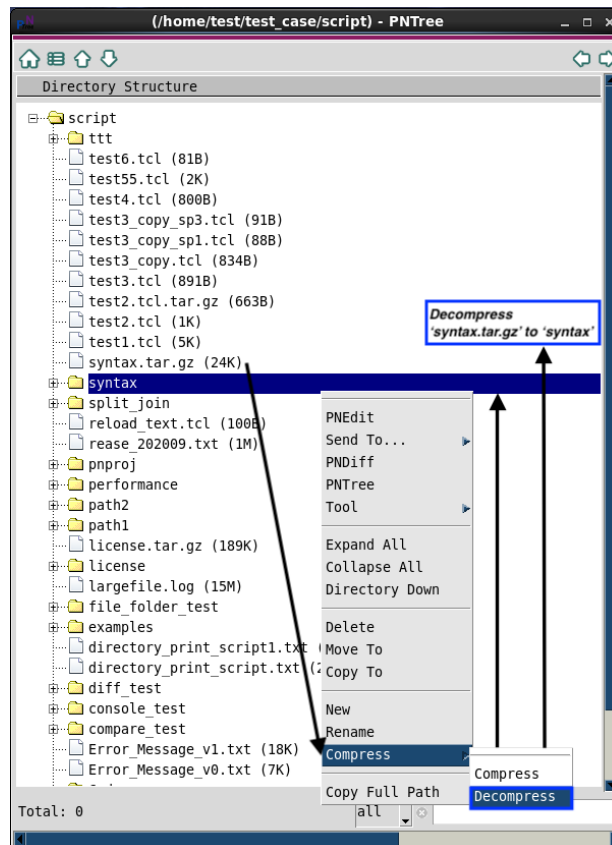
- **Compress and Decompress**

The Compress Menu helps users to either compress or Decompress files or directories ([Figure 4-19](#) and [Figure 4-20](#)).

**Figure 4-19 Compress in PNTree**



**Figure 4-20 Decompress in PNTree**



## 5 *PNEdit*

---

**PNEdit** is an advanced text edit tool. It is an important, efficient, and powerful component of **PNFile**.

**PNEdit** supports various efficient text editing operations, such as cutting/copying/pasting chars/words/lines, advanced searching and replacing, syntax detecting and highlighting, undoing/redoin, etc. There are three working modes, input mode, replace mode, and command modes in **PNEdit**, and rich commands/hotkeys are supported in all the working modes. Besides, it supports selecting text for operating in both line and column modes.

**PNEdit** can be launched from **PNTree**, **PNDiff**, **PNFinder**, and **PNCompare**. It is also an independent tool that can be launched from system terminals.

This section introduces the ways to launch **PNEdit**, the interfaces of **PNEdit**, the supported operations & edit modes, and the helpful tools in **PNEdit**.

### 5.1 Launching *PNEdit*

**PNEdit** can be launched from **PNTree**, including independent **PNTrees** and those embedded in **PNFile**, **PNFinder** and **PNCompare**, or system terminals directly. Please refer to section [4.2.2](#) to understand independent and embedded **PNTree**.


#### 5.1.1 Launching from independent *PNTree*

There are two ways to launch **PNEdit** from independent **PNTree**. Please noted that these two methods are available in any embedded **PNTree** as well.

- The first one is to right-click on the selected text file in **PNTree** and open it with **PNEdit** (section [4.3.3](#)).
- Secondly, if there are existing **PNEdit** windows bonded with the current **PNTree** (refer to section [4.2.3](#) for the concept of bonding), the selected file can also be sent to any bonded **PNEdit** windows through the menu “Send To...” in the right-click menu of **PNTree** (section [4.3.3](#)).

### 5.1.2 Launching from Embedded *PNTree*

Apart from the two ways accessible in the independent *PNTree* (section [5.1.1](#)), there are three more ways to launch *PNEdit* from the embedded *PNTree*.

- Firstly, to click one of the buttons,  (“Launch *PNEdit*”), in *PNFile* main window (section [3.1.3.5](#)), *PNDiff* (section [6.2.3.1](#)), *PNFinder* (section [8.2.3.1](#)) or *PNCompare* (section [9.2.3.1](#)) to open the selected file in a new *PNEdit* window.
- Secondly, to open the selected file in a new *PNEdit* window through one of the menus, “*PNEdit*”, in *PNFile* main window (section [3.1.2.5](#)), *PNDiff* (section [6.2.2.1](#)), *PNFinder* (section [8.2.2.1](#)) or *PNCompare* (section [9.2.2.1](#)).
- The last one, if there are *PNEdit* windows bonded with the current *PNTree* (refer to section [4.2.3](#) for the concept of bonding), the selected file can also be sent to any bonded *PNEdit* windows through the menu “Send To...” in the File Menu of *PNFile* (section [3.1.2.1](#)), *PNFinder* (section [8.2.2.1](#)) or *PNCompare* (section [9.2.2.1](#)).

### 5.1.3 Launching from terminals as an independent tool

Assuming the *PNFile* Toolkit is installed and configured properly, to launch the *PNEdit* from system terminals, users just need to fire the command ***pnedit***. The file or directories followed will be opened. Multiple files or directories split by blank will be opened in different tabs in on *PNEdit* window. A blank tab will be opened if no option follows the command “***pnedit***”.

Example: > pnedit test\_file1 test\_folder1 test\_file2 test\_folder2

To get the help information of the ***pnedit*** command, please use the option “+h” ([Figure 5-1](#)).

**Figure 5-1 pnedit help information**

```
Valid Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug           -- Display debug message

Example commands to invoke pnedit
pnedit
pnedit file1 file2
```

## 5.2 Interfaces of *PNEdit*

The *PNEdit* window is shown in [Figure 5-2](#). There are five areas in the *PNEdit* window, including Title Area, Menu Area, Button Area, Edit Area, and Status Area.

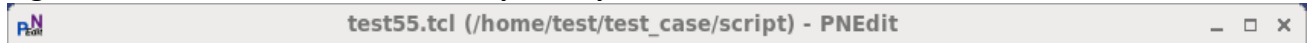
**Figure 5-2 Main areas in *PNEdit* window**



### 5.2.1 Title Area

The title area ([Figure 5-3](#)) shows the name of the current file (or of the directory when the current *PNEdit* is used as a directory browser) and its parent path.

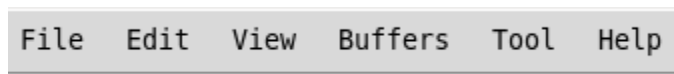
**Figure 5-3 current file's name and its parent path in the title area**



### 5.2.2 Menu Area

There are six main menus in the *PNEdit* window, including File, Edit, View, Buffers, Tool, and Help Menu ([Figure 5-4](#)).

**Figure 5-4 Menus in *PNEdit* window**



#### 5.2.2.1 File Menu

The pull-down menu in File Menu is shown in [Figure 5-5](#).

**Figure 5-5 File Menu in *PNEdit* window**

File	Edit	View	Buffers
Open...			:e
Open Tab...			:tabnew
New			:enew
Close			:q
Split Horizontal...			:sp
Split Vertical...			:vsp
Save			:w
Save As...			:sav
Save+Exit			:wqa
Exit			:qa

- **Open...** opens a selected file in the current tab.
- **Open Tab...** opens a selected file in a new tab in the current **PNEdit** window.
- **New** closes the file in the current tab and creates a new empty file in the current tab.
- **Close** closes the current file.
- **Split Horizontal...** splits the current edit area of the tab horizontally and opens a selected file in the new split edit area.
- **Split Vertical...** splits the current edit area of the tab vertically and opens a selected file in the new split edit area.
- **Save** saves the file in the current tab under its name.
- **Save As...** saves the file in the current tab under another specified name.
- **Save+Exit** saves the files in all tabs of the current **PNEdit** window and quits the current **PNEdit** window.
- **Exit** quits the current **PNEdit** window.

#### 5.2.2.2 Edit Menu

The pull-down menu in Edit Menu is shown in [Figure 5-6](#).

**Figure 5-6 Edit Menu in *PNEdit* window**

Edit	View	Buffers	Tool	t
Undo			u	
Redo			^r	
Cut			x	
Copy			y	
Paste			p	
Input			i	
Command			Esc	
Select				
Advanced Search Replace				
Advanced Edit				

Word
Line
Paragraph
All ggVG

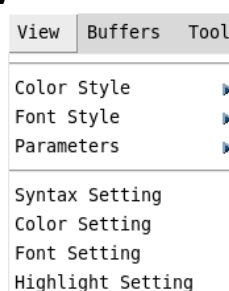
- **Undo** undoes the last change.
- **Redo** reverts the last undoing.
- **Cut** copies and then deletes the selected contents.

- **Copy** copies the selected contents to clipboard buffers.
- **Paste** gets the contents from the latest clipboard buffer and pastes to the position where the cursor locates.
- **Input** enters the input mode.
- **Command** enters the command mode.
- **Select** selects contents by word, line, and paragraph, or selects all the contents.
- **Advanced Search Replace** opens the advanced search&replace window. Please refer to section [5.3](#) for details.
- **Advanced Edit** opens the advanced edit window. Please refer to section [5.4](#) for details.

### 5.2.2.3 View Menu

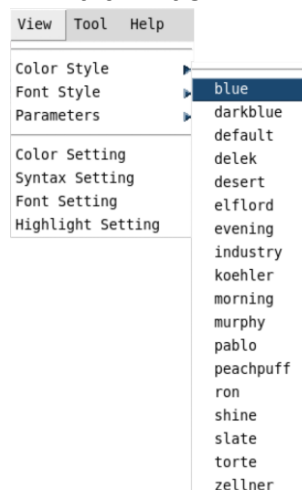
The pull-down menu in Edit Menu is shown in [Figure 5-7](#).

**Figure 5-7 View Menu in *PNEdit* window**



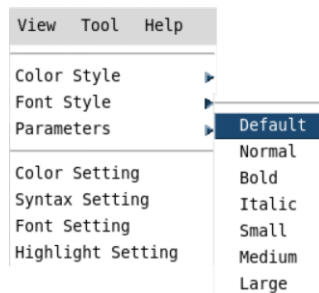
- **Color Style** lists eighteen preset color styles for users to choose from ([Figure 5-8](#)). Choosing one of them sets the specific color scheme for the current **PNEdit** windows. All tabs in one **PNEdit** window share a uniform color scheme. Different **PNEdit** windows can have different color schemes set.

**Figure 5-8 Color Style in View Menu in *PNEdit* window**



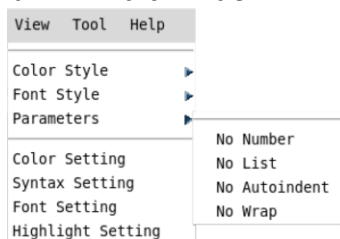
- **Font Style** lists seven preset font styles ([Figure 5-9](#)). Choosing one of them sets the specific font scheme. All tabs in one **PNEdit** window share a uniform font scheme. Different **PNEdit** windows can have different font schemes set.

**Figure 5-9 Font Style in View Menu in PNEdit window**



- **Parameters** lists four supported parameters ([Figure 5-10](#)). *Parameter Number/No Number* configures if the line number is printed in front of each line. *Parameter List/No List* configures if \$ is displayed after each end of the line. *Parameter Autoindent/No Autoindent* configures if indent is applied automatically while editing. *Parameter Wrap/No Wrap* configures if lines longer than the width of the window wrap, and displaying continues on the next line.

**Figure 5-10 Parameters in View Menu in PNEdit window**

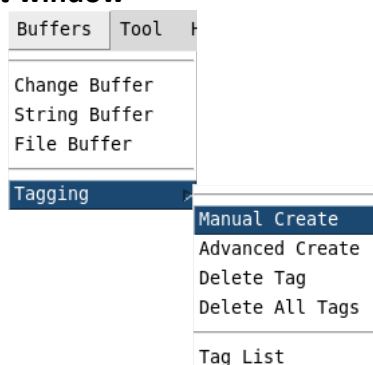


- **Color Settings** opens the color selection window (refer to section [5.2.3.4](#)).
- **Syntax Settings** opens the syntax selection window (refer to section [5.2.3.4](#)).
- **Font Settings** opens the font selection window (refer to section [5.2.3.4](#)).
- **Highlight Settings** opens the highlight selection window (refer to section [5.2.3.4](#)).

#### 5.2.2.4 Buffers Menu

The pull-down menu in Buffers Menu is shown in [Figure 5-11](#).

**Figure 5-11 Buffers Menu in PNEdit window**



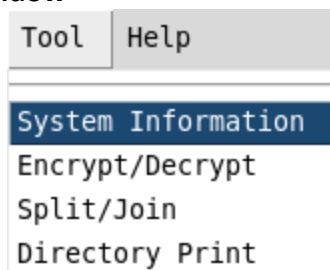
- **Change Buffer** opens the tool window of Change Buffer (refer to section [5.6.3](#)).
- **String Buffer** opens the tool window of String Buffer (refer to section [5.6.1](#)).
- **File Buffer** opens the tool window of File Buffer (refer to section [5.6.2](#)).

- **Tagging** adds or deletes tags (refer to section [5.6.4](#)).

#### 5.2.2.5 Tool Menu

The pull-down menu in Tool Menu is shown in [Figure 5-12](#).

**Figure 5-12 Tool Menu in *PNEdit* window**

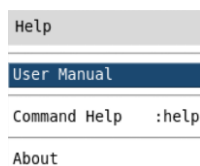


- **System Information** opens the window that prints system information (refer to section [3.8.2](#)).
- **Encrypt/Decrypt** opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
- **Split/Join** splits or joins the file(s) selected (refer to section [3.8.3](#)).
- **Directory Print** opens the tool window of the directory information printer (refer to section [3.8.4](#)).

#### 5.2.2.6 Help Menu

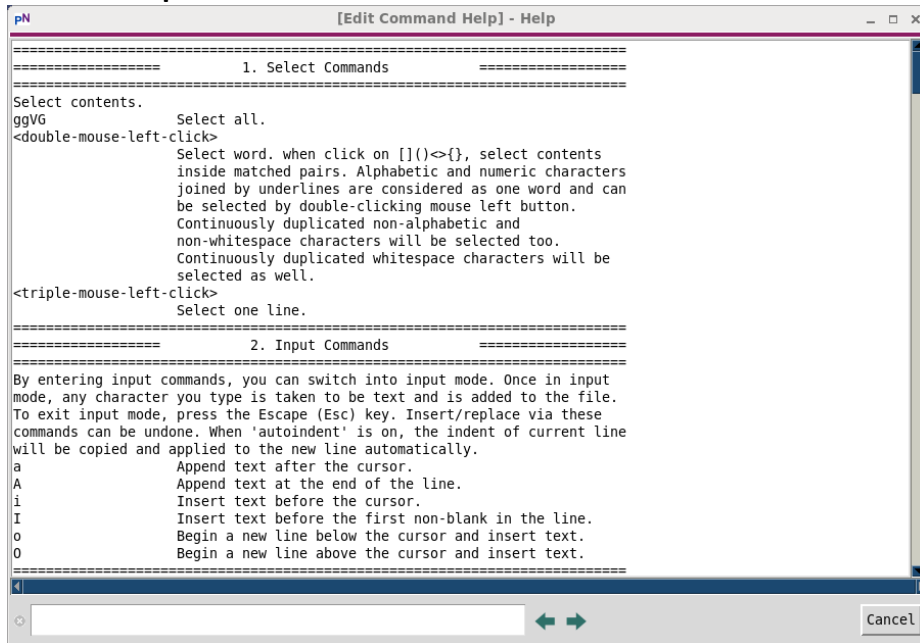
The pull-down menu in Help Menu is shown in [Figure 5-13](#).

**Figure 5-13 Help Menu in *PNEdit* window**



- **User Manual** opens this user manual.
- **Command Help** opens the commands/shortcuts help window. ([Figure 5-14](#), and details in [Appendix A: Commands in PNEdit](#))
- **About** shows the tool information.

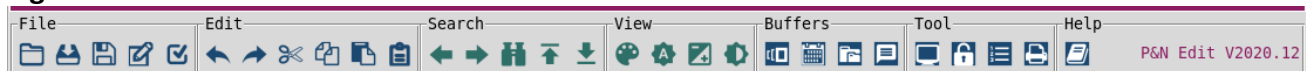
**Figure 5-14 Command Help Window**



### 5.2.3 Button Area

Button Bar is grouped as shown in [Figure 5-15](#).

**Figure 5-15 Button Bar in *PNEdit***



#### 5.2.3.1 File Bar

There are five buttons in the File Bar.

- opens the selected file in the current tab in the current **PNEdit** window.
- saves the file that is opened in the current tab.
- saves all the files opened in all the tabs of the current **PNEdit** window.
- enters input (insert) mode. (refer to section [5.5.1](#) for edit modes.)
- enters command mode. (refer to section [5.5.1](#) for edit modes.)






#### 5.2.3.2 Edit Bar

There are six buttons in the Edit Bar.

- undoes the last change.
- reverts the latest undo.
- cuts the selected contents and registers in the clipboard buffer.
- copies the selected contents and registers in the clipboard buffer.
- pastes the latest cut or copied contents to the cursor's location.
- opens the advance edit window (refer to section [5.4](#)).

### 5.2.3.3 Search Bar

There are five buttons in the Search Bar.

-  goes to the previous match.
-  goes to the next match.
-  open the Advanced Search & Replace window (refer to section [5.3](#)).
-  goes to the top of the text.
-  goes to the bottom of the text.

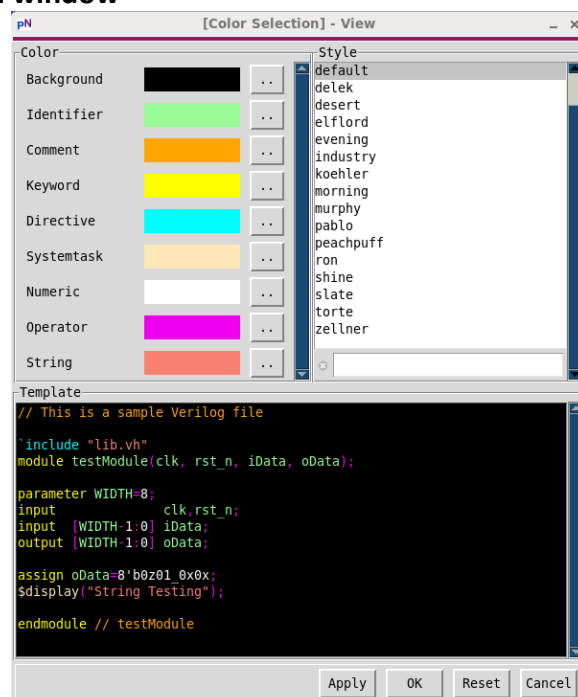
### 5.2.3.4 View Bar

There are four buttons in the View Bar.

-  opens the color selection window ([Figure 5-16](#)).

There are 18 preset color schemes for users to choose from, and each of the nine color categories can be customized respectively.

**Figure 5-16 Color Selection window**

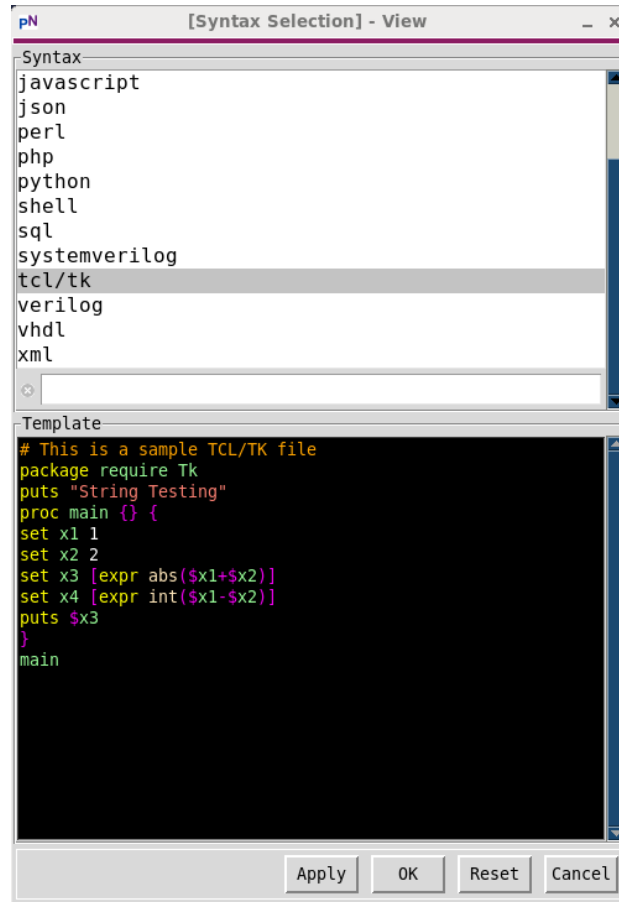


The color style can also be set for all **PNEdit** windows via the config file .pnrc (refer to [Appendix B: Config File .pnrc](#))

-  opens the syntax selection window ([Figure 5-17](#)).

The supported syntax highlight schemes are listed in the Syntax Selection window. By default, the syntax is automatically determined by the file extension, but it's also supported to apply any supported syntaxes. The syntax list can be extended (please email to [support@veriforma.com](mailto:support@veriforma.com) to get details).

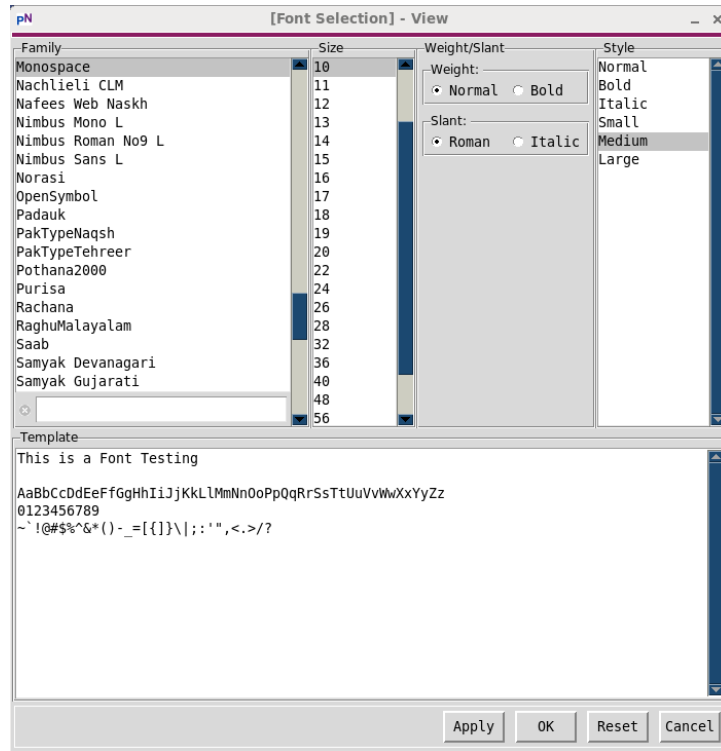
**Figure 5-17 Syntax Selection window**



-  opens the font selection window ([Figure 5-18](#)).

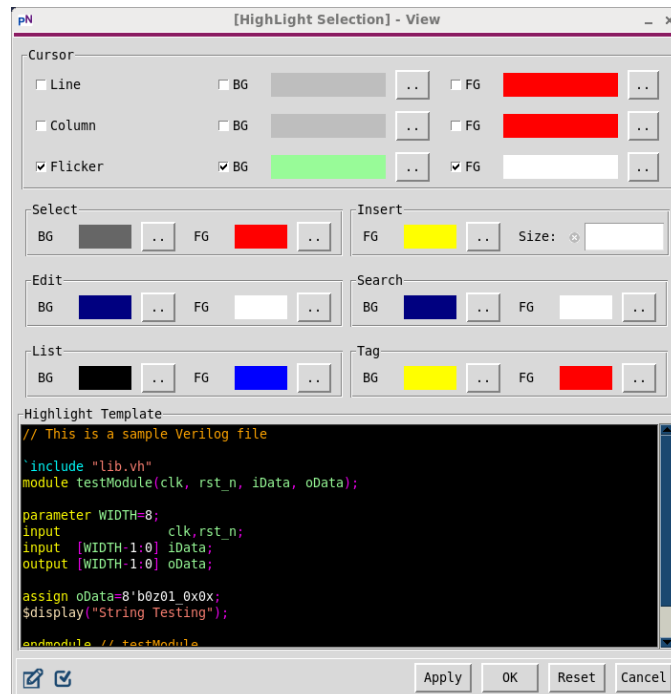
There are six preset font styles. It's also supported to customize the font.

**Figure 5-18 Font Selection window**



-  opens the highlight selection window ([Figure 5-19](#)).

**Figure 5-19 Highlight Selection window**







- **Cursor** sets the type and color of the cursor. For better editing view, there are three kinds of cursor supported, which can be enabled at the same time, including Line Cursor, Column Cursor, and Flicker Cursor.
- **Select** sets the background and foreground color of selection.

- **Edit** sets the background and foreground color of the context highlighted by the operation in the advanced edit window (refer to section [5.4](#)).
- **Insert** sets the color and width of the inserting cursor.
- **Search** sets the background and foreground color of the matched context after searching.
- **List** sets the background and foreground color of the \$ after end of line if “:set list” is enabled.
- **Tag** sets the background and foreground color of the tagged text (refer to section [5.6.4](#) for Tagging).





#### 5.2.3.5 Buffers Bar

There are four buttons in the Buffers Bar.

-  opens the tool window of Change Buffer (refer to section [5.6.3](#)).
-  opens the tool window of String Buffer (refer to section [5.6.1](#)).
-  opens the tool window of File Buffer (refer to section [5.6.2](#)).
-  opens the tool window of Tag List (refer to section [5.6.4.3](#))


#### 5.2.3.6 Tool Bar

There are four buttons in the Tool Bar.

-  opens the window that prints system information (refer to section [3.8.2](#)).
-  opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
-  splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
-  opens the tool window of the directory information printer (refer to [3.8.4](#)).

#### 5.2.3.7 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

-  opens the opens the commands/shortcuts help window. ([Figure 5-14](#), and details in [Appendix A: Commands in PNEdit](#))
- **P&N Edit V2020.12** shows the tool information, like tool name, tool version, etc.

### 5.2.4 Edit Area

Edit Area in the **PNEdit** window is the main area for text editing.

In Edit Area, there are three edit modes supported, including command mode, input mode, and replace mode. In command mode, most commands execute as soon as they are typed except for “colon” commands which execute after pressing the return key. In input mode, any character typed is taken to be text and is added to the file. To exit input mode, press the Escape (Esc) key. In Replace mode, each character typed replaces the one under the cursor. This continues until pressing <Esc>. (refer to section [5.5.1](#) for the edit modes)

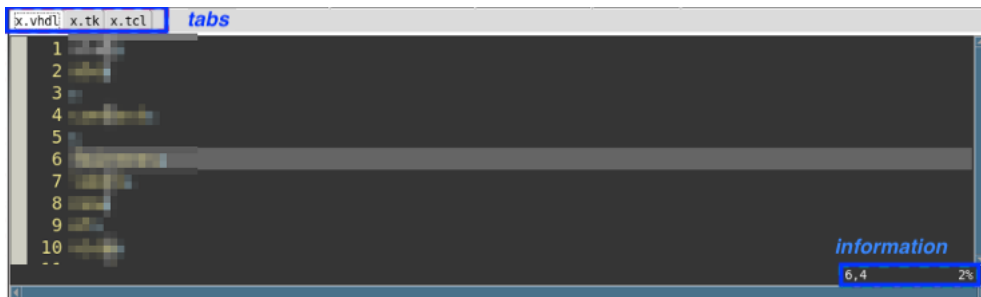
Right-clicking the Edit Area invokes the right-click menu ([Figure 5-20](#)).

**Figure 5-20 Right-click Menu in Edit Area**

Undo
Redo
Cut
Copy
Paste
Select Word
Select Line
Select Paragraph
Select All
Copy Full Path

Multiple tabs are supported in one **PNEdit** window and the horizontal tab navigation bar locates above the Edit Area ([Figure 5-21](#)).

**Figure 5-21 Edit Area in *PNEdit* window**



In the bottom right of the Edit Area, the real-time position of the cursor is displayed. In the bottom left, either the colon command ([Figure 5-22](#), and refer to [Appendix A: Commands in \*PNEdit\*](#)) or the information, like the change sequence ([Figure 5-23](#)), warnings, errors ([Figure 5-24](#)), etc., are displayed.

**Figure 5-22 The bottom of Edit Area (example: colon command)**



**Figure 5-23 The bottom of Edit Area (example: change sequence information)**



**Figure 5-24 The bottom of Edit Area (example: error information)**



### 5.2.5 Status Area

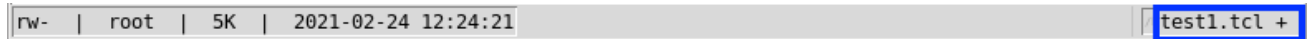
The Status Area is at the bottom of each **PNEdit** window showing the information and the status of the file opened in the currently active tab in this **PNEdit** window ([Figure 5-25](#)).

**Figure 5-25 Status Area in *PNEdit* window**



The accessing mode, owner, file size, and the time when the file is updated are displayed on the left. The file's name and its modification status are displayed on the right ([Figure 5-26](#)).

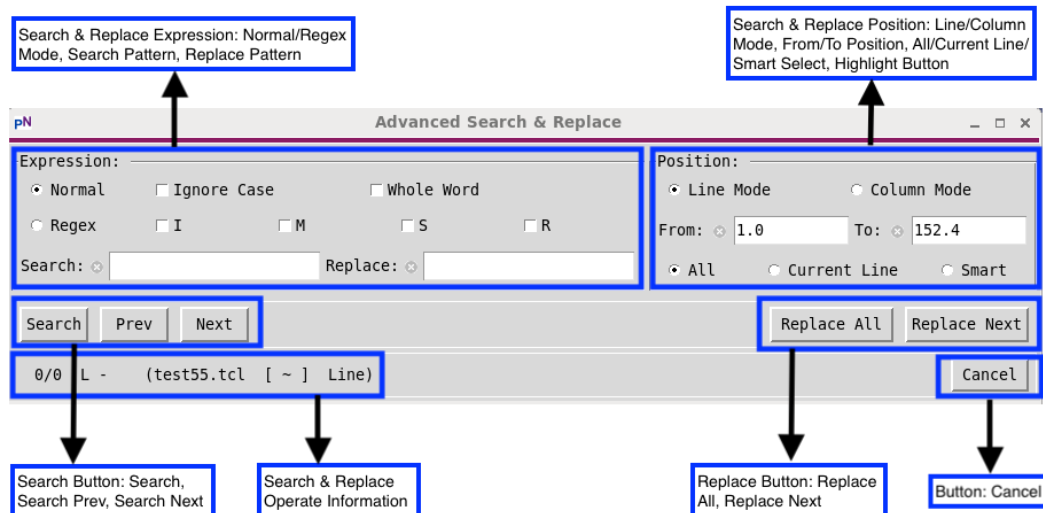
**Figure 5-26 Status Area in *PNEdit* window when the change is not saved**



## 5.3 Advanced Search & Replace Window

Search & Replace is supported efficiently with the command line in Edit Area (refer to 8. *Replace using regex* in [Appendix A: Commands in \*PNEdit\*](#)). Meanwhile, *PNEdit* supports the other powerful way of Advanced Search & Replace with the GUI window ([Figure 5-27](#)).

**Figure 5-27 Advanced Search & Replace window**

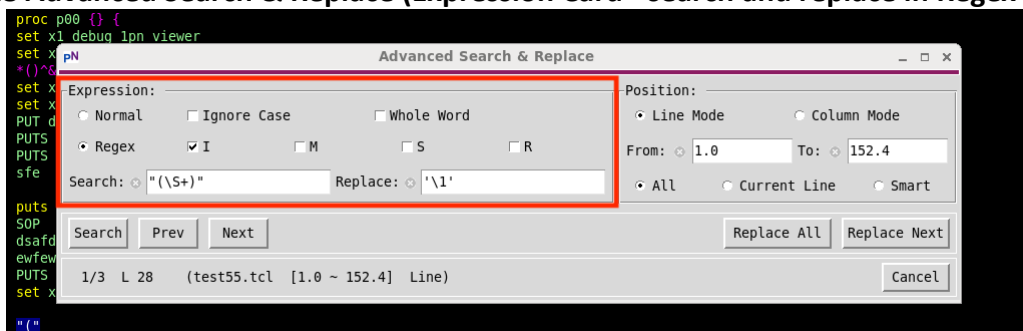


Advanced Search & Replace window and Advanced Edit window of one tab in the *PNEdit* window are mutually exclusive to each other, which means for one same tab, only Advanced Search & Replace or Advanced Edit window can be launched at a time.

### 5.3.1 Expression Card

In the Expression Card in this window, there are two modes, Normal and Regex ([Figure 5-28](#)).

**Figure 5-28 Advanced Search & Replace (Expression Card - search and replace in Regex mode)**



In Normal mode, anything typed in the Search Box and Replace Box is treated as literal characters with no special meanings. In this mode, any characters, even like a backslash, a dollar, or square brackets, mean things literally. There are two searching options supported in Normal mode, Ignore Case and Whole Word. Ticking the Ignore Case performs case-insensitive searching, and expressions like [A-Z] will also match lowercase letters. Ticking the Whole Word searching the string as a whole word.

In Regex mode, anything typed in the Search Box and Replace Box is treated as regular expressions ([Figure 5-28](#)). There are four searching options in this mode, including I (ignore cases), M (multi-line matching), S (dot matches all), and R (raw string matching), which are corresponding to the flags in the command line “:[range]s/[regex\_search]/[regex\_replace]/[flags]”. Ticking I performs case-insensitive searching. Ticking M performs multi-line matching; the default is single-line matching. Ticking S makes the dot '.' special character match any character at all, including a newline; without this, '.' matches anything except a newline. Ticking R makes similar literal searching and replacing in Normal mode.

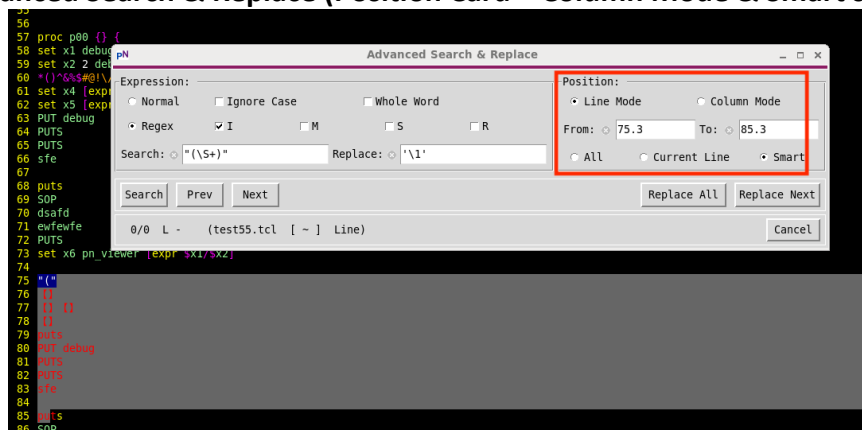
### 5.3.2 Position Card

Position Card allows users to specify the line/column range for the tool to only search inside the range. It is supported to select range in both Line Mode and Column Mode ([Figure 5-29](#)).

The format of both From Box and To Box is the line and column numbers joined by one dot, “<line>.<column>”. The range of line is from 1 to the max line number of the current file, and the range of column is from 0 to the max column number of the specified line (“end” can also be used here to indicate the last column, like 25.end means the last column of the twenty-fifth line).

For example, from “19.0” to “25.8” specifies the range from the line nineteen and column zero to the line twenty-five and column seven (not eight).

**Figure 5-29 Advanced Search & Replace (Position Card – Column Mode & Smart selection)**



There are three options at the bottom of Position Card, “All”, “Current Line” and “Smart”. Clicking “All” sets the searching range to the whole file. Clicking “Current Line” indicates the searching will only cover the line where the cursor is. “All” and “Current Line” work in Line Mode only. Clicking “Smart” automatically fills the From and To Box based on the current selection and mode in the associated tab of the **PNEdit** window.

### 5.3.3 Buttons

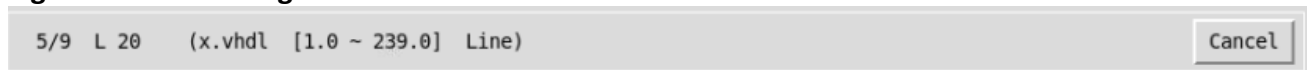
There are six buttons on the panel, “Search”, “Prev”, “Next”, “Replace All”, “Replace Next”, and “Cancel”.

“Search” button is to search and go to the first match in the range. “Prev” goes to the previous match while “Next” goes to the next one. “Replace All” is to replace all the matches with the content or regex in the Replace Box while “Replace Next” means literally to replace the next match. “Cancel” is to close the current Advanced Search & Replace window.

### 5.3.4 Results Panel

The searching result is displayed as shown in [Figure 5-30](#). Take this as an example, the two numbers in “5/9” are the current match and the total match numbers respectively. “L 20” is the line number where the current match is. “x.vhdl” inside the brackets is the file name, “[1.0~239.0]” is the current searching range, and “Line” is the current searching mode.

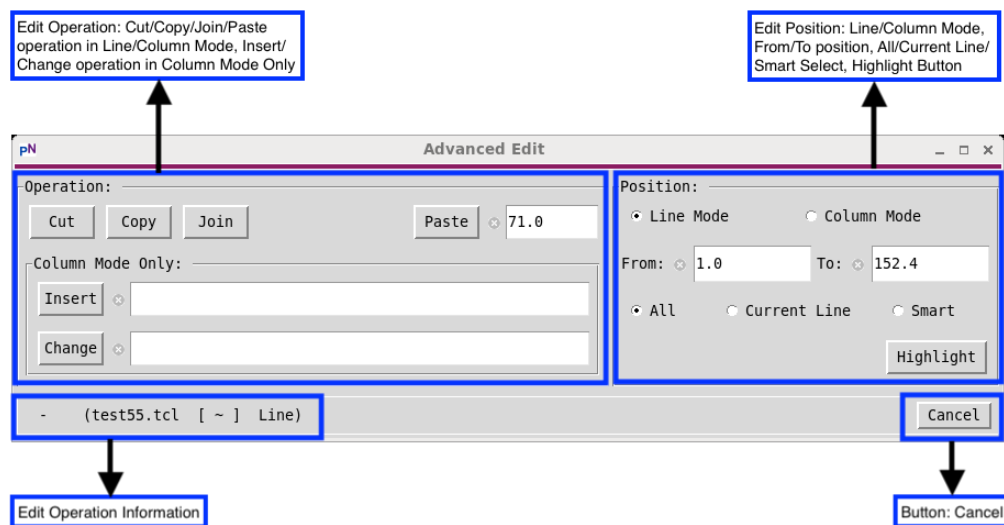
**Figure 5-30 Searching Results**



## 5.4 Advanced Edit Window

**PNEdit** provides a powerful set of commands and shortcuts to support editing (refer to [Appendix A: Commands in PNEdit](#)), meanwhile, it has the Advanced Edit window supporting flexible and advanced editing with GUI ([Figure 5-31](#)).

**Figure 5-31 Advanced Edit window**



### 5.4.1 Position Card

Position Card allows users to set the line/column range, and operations only take effect in the specified range. It is supported to select range in both Line Mode and Column Mode.

The format is similar to that described in [section 5.3.2](#).

The button “Highlight” in the Position Card is used to highlight the selection in the associated tab of **PNEdit** before actual operating. It is helpful, especially, when users want to confirm the operation that is going to be applied is upon the desired context.

### 5.4.2 Operation Card

Six supported operations are shown on the Operation Card.

- **Cut** cuts the selection.
- **Copy** copies the selection.
- **Join** joins the selected lines to the first line with one space inserted in between. It removes the indent and inserts one space when joining.
- **Paste** pastes the cut or copied selection before the specified position.
- **Insert** is only active in Column Mode. It inserts the characters of the Insert Box before the minimal column number of the position range for all the specified lines.
- **Change** is only active in Column Mode. It changes the content inside the specified position range with the characters in the Change Box.

### 5.4.3 Information Panel

The information on the current operation is displayed at the bottom of the Advanced Edit window ([Figure 5-32](#)). The leading word in the Information Panel shows the type of the current operation, which is followed by the file name, operating range, and Line/Column mode inside the brackets.

**Figure 5-32 The information of the operation**



## 5.5 Operation Modes

**PNEdit** is a modal editor. That means that the editor behaves differently, depending on which mode it is in.

### 5.5.1 Editing Modes

In terms of the way of editing, there are command mode, input mode, and replace mode.

#### 5.5.1.1 Command Mode

In Command mode, any characters typed are seen as commands. This is the default mode when **PNEdit** starts. In this mode, rich commands and shortcuts are supported, such as the colon commands, change commands, navigation commands, etc.. (Refer to [Appendix A: Commands in PNEdit](#)).

#### 5.5.1.2 Input Mode

In Insert mode, the characters typed are inserted as text. Users can press the <Esc> key to stop Insert mode and go back to Command mode. There are multiple commands to enter Input Mode from Command Mode, such as i (insert before the cursor), a (insert after the cursor), o

(new a line and insert), s (delete the character under the cursor and insert), etc... (Refer to [Appendix A: Commands in PNEdit](#))

### 5.5.1.3 Replace Mode

In Replace mode, each character typed replaces the one under the cursor. This continues until pressing <Esc>. To enter Replace Mode from Command Mode, users just need to press R.

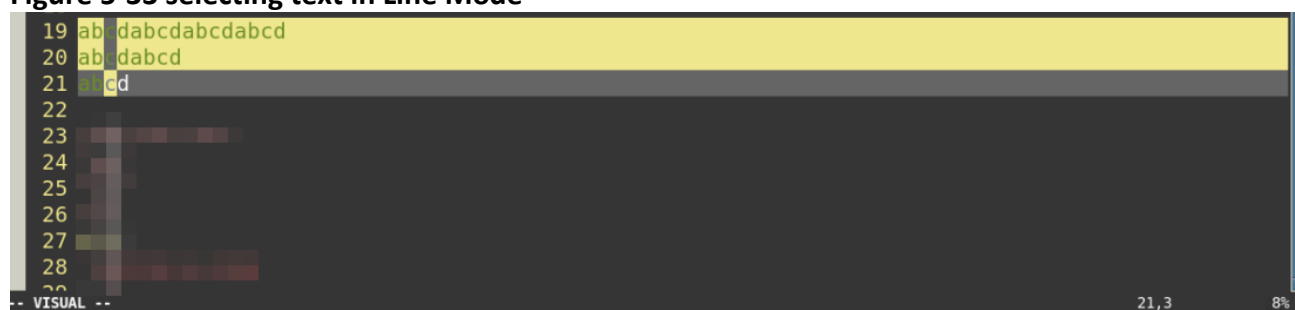
## 5.5.2 Text-Selecting Modes

In terms of the way of text-selecting, there are line mode and column mode.

### 5.5.2.1 Line Mode

Line mode is the default mode when **PNEdit** starts. It is the common way to select a certain line(s) of the text ([Figure 5-33](#)).

**Figure 5-33 selecting text in Line Mode**

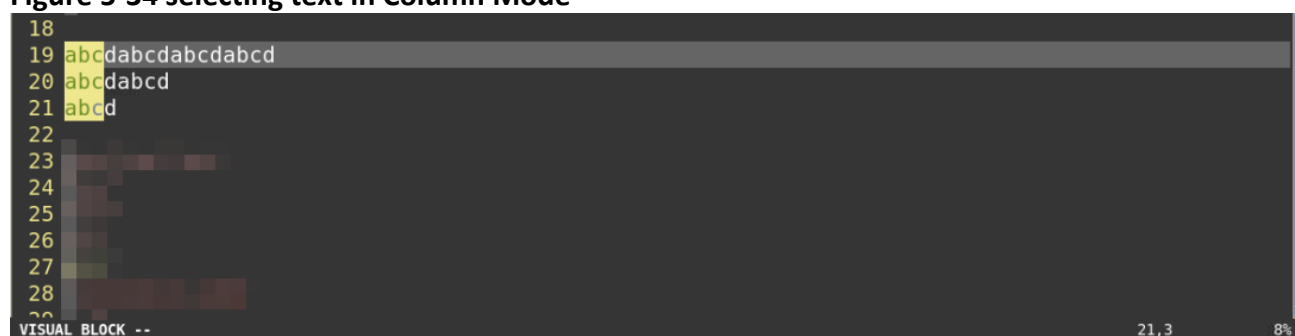


### 5.5.2.2 Column Mode

Column mode is a flexible and easy way to select a rectangle of text for an operator ([Figure 5-34](#)). Column mode is extremely useful, especially when users want to work with tables.

To enter Column mode, users just need to press <ctrl>v. There are multiple operations supported in Column mode (Refer to [Appendix A: Commands in PNEdit](#)).

**Figure 5-34 selecting text in Column Mode**



## 5.5.3 Commands and Keyboard shortcuts

The supported commands and keyboard shortcuts are listed in [Appendix A: Commands in PNEdit](#).

## 5.6 Tools in *PNEdit*

### 5.6.1 String Buffer

String Buffer stores the strings. One full set of String Buffer has three types of the buffer, including one general buffer, ten clipboard buffers, and twenty-six named buffers. All the strings stored in String Buffer can be viewed and edited in the String Buffer window ([Figure 5-35](#)).

Each **PNEdit** window has one dedicated set of String Buffer. Tabs of one **PNEdit** window share one set of String Buffer.

#### 5.6.1.1 One General Buffer

The General buffer registers the strings operated by most change commands ([Figure 5-35](#)).

**Figure 5-35 String Buffer: General buffer**



The commands that update the General buffer are listed below (For more commands, please refer to [Appendix A: Commands in PNEdit](#)). The removed or copied strings while executing these commands are registered.

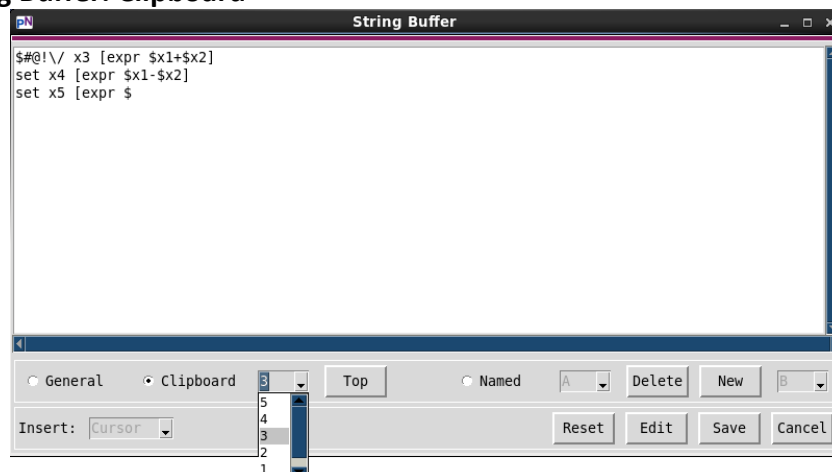
- ✓ s: Delete char and insert.
- ✓ S: Same as command 'cc'. If 'autoindent' is on, preserve the indent.
- ✓ cw: Change (replace) to the end of the word.
- ✓ ciw: Change (replace) entire word.
- ✓ cc: Change (replace) entire line. If 'autoindent' is on, preserve the indent.
- ✓ c\$: Change (replace) to the end of the line,
- ✓ C: Change (replace) to the end of the line. (same as c\$),
- ✓ x: Delete (Cut) a character to General buffer.
- ✓ nx: Delete (Cut) n characters to General buffer.
- ✓ X: Back (Cut) a character to General buffer.
- ✓ nX: Back (Cut) n characters to General buffer.
- ✓ dd: Delete (Cut) a whole line to General buffer.
- ✓ ndd: Delete (Cut) n lines to General buffer.
- ✓ dw: Delete (Cut) word (counting from cursor) to General buffer.
- ✓ dnw: Delete (Cut) n words (counting from cursor) to General buffer.
- ✓ d): Delete (Cut) to the end of the sentence.

- ✓ db: Delete (Cut) previous word to General buffer.
- ✓ دنب: Delete (Cut) previous n words to General buffer.
- ✓ D: Delete (Cut) to the end of the line to General buffer.
- ✓ d\$: Delete (Cut) to the end of the line to General buffer.
- ✓ y: yank (copy) the selected chars to General buffer.
- ✓ yy: yank (copy) a line to General buffer.
- ✓ Y: yank (copy) a line to General buffer.
- ✓ nyy: yank (copy) n lines to General buffer.
- ✓ nY: yank (copy) n lines to General buffer.
- ✓ yw: yank (copy) a word to General buffer.
- ✓ ynw: yank (copy) n words to General buffer.
- ✓ s: in column mode, cut to General buffer and insert.
- ✓ d: in column mode, delete (cut) to the General buffer.
- ✓ x: in column mode, delete (cut) to the General buffer.
- ✓ y: in column mode, yank (copy) to the General buffer.

#### 5.6.1.2 Ten Clipboard Buffers

Clipboard buffer stores the strings copied by selecting or from another application ([Figure 5-36](#)). AT most ten Clipboard buffers are available recording the latest ten selection history.

**Figure 5-36 String Buffer: Clipboard**



In the Edit Area in **PNEdit**, users can paste the content of the latest (top) Clipboard buffer by clicking the middle mouse button. Similarly, users can paste it to another application as well.

There is a button beside the Clipboard sequence, **Top**, which can change the sequence and make any one of the available Clipboard buffers top. Please note that the Top action only takes effect after clicking the Save button.

The latest (top) Clipboard buffer can also be accessed via the special register `"*`. For example, in the Command mode in **PNEdit**, the command `"*y` copies one line, news one Clipboard buffer as the latest one, and stores copied one line to the latest Clipboard buffer. Similarly, the command `"*p` pastes the content of the latest Clipboard buffer.

The commands related to the `"*` buffer are listed below. (For more commands, please refer to [Appendix A: Commands in PNEdit](#))

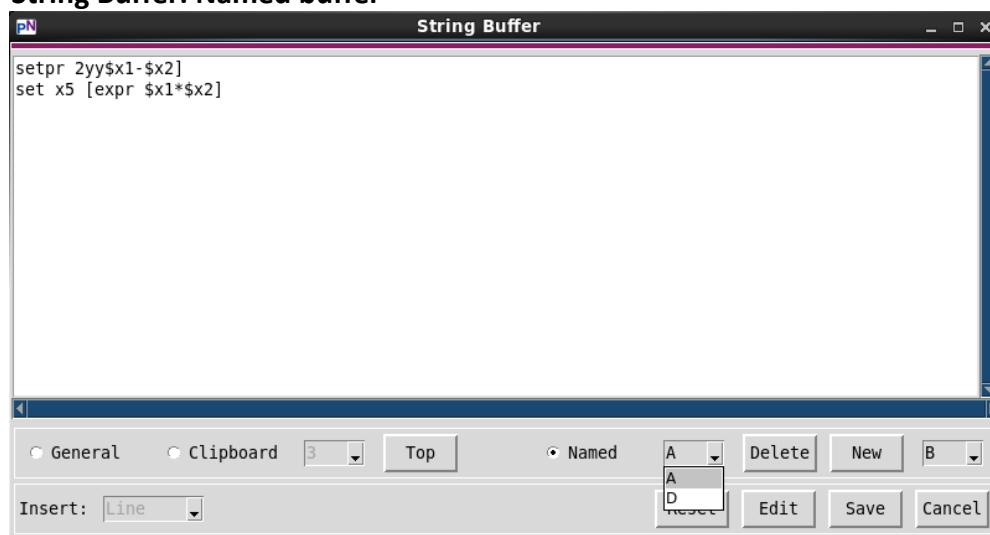
- ✓ `"*ndd`: Delete (cut) n lines to buffer `"*`.
- ✓ `"*nyy`: yank (copy) n lines to buffer `"*`.
- ✓ `"*nY`: yank (copy) n lines to buffer `"*`.
- ✓ `"*p`: put (paste) text from buffer `"*` after the cursor.
- ✓ `"*P`: put (paste) text from buffer `"*` before the cursor.
- ✓ `"*np`: put (paste) text from buffer `"*` after the cursor by n times.
- ✓ `"*nP`: put (paste) text from buffer `"*` before the cursor by n times.

### 5.6.1.3 Twenty-six Named Buffers

The twenty-six Named buffers with names A-Z are one-one correspondent to the registers "a to "z ([Figure 5-37](#)). They can be accessed by any copy, or yank, or cut, or append, or paste commands which are related to registers "a to "z.

For example, in the Command mode in **PNEdit**, the command "ay copies one line and stores to the Named buffer A. The command "Ay copies one line and appends to the Named buffer A. Similarly, the command "bp pastes the content of the Named buffer B.

**Figure 5-37 String Buffer: Named buffer**



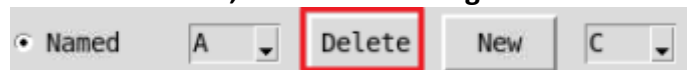
The following commands access the Named buffers. (For more commands, please refer to [Appendix A: Commands in PNEdit](#)).

- ✓ `" [a-z]ndd`: Delete (cut) n lines to buffer `[a-z]`.
- ✓ `" [A-Z]ndd`: Delete (cut) n lines and append to buffer `[a-z]`.
- ✓ `" [a-z]nyy`: yank (copy) n lines to buffer `[a-z]`.
- ✓ `" [A-Z]nyy`: yank (copy) n lines and append to buffer `[a-z]`.
- ✓ `" [a-z]nY`: yank (copy) n lines to buffer `[a-z]`.
- ✓ `" [A-Z]nY`: yank (copy) n lines and append to buffer `[a-z]`.
- ✓ `" [a-z]p`: put (paste) text from buffer `[a-z]` after cursor.
- ✓ `" [a-z]P`: put (paste) text from buffer `[a-z]` before cursor.
- ✓ `" [a-z]np`: put (paste) text from buffer `[a-z]` after cursor by n times.
- ✓ `" [a-z]nP`: put (paste) text from buffer `[a-z]` before cursor by n times.

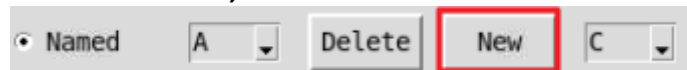
There is no space reserved for any of the Named buffers at the starting of **PNEdit**. Once users store some content to any of the Named buffers via delete or yank command, the space for this specific buffer is reserved and available.

On the String Buffer panel, any existing Named buffers can be “deleted” from the space by clicking the Delete button for the selected Named buffer ([Figure 5-38](#)). Meanwhile, any unoccupied Named buffers can be created by clicking the New button ([Figure 5-39](#)). Please note that the Delete and New only take effect after clicking the Save button.

**Figure 5-38 String Buffer: Named buffer, delete an existing Named buffer**



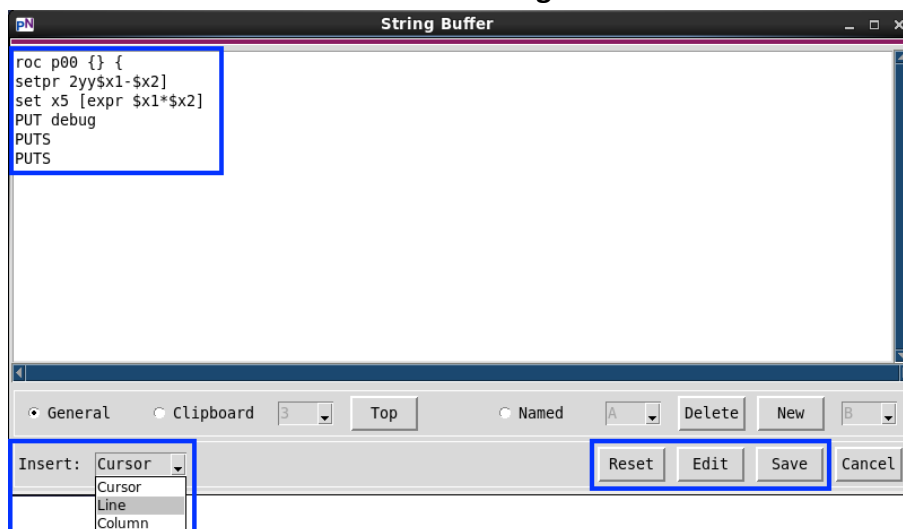
**Figure 5-39 String Buffer: Named buffer, new a Named buffer with unoccupied name**



#### 5.6.1.4 Edit String Buffer

All three types of String Buffer can be edited, saved, and fetched later ([Figure 5-40](#)).

**Figure 5-40 Edit the content and the insert mode in String Buffer**



Once clicking the Edit button, the content in the selected buffer can be modified. After Save, the updated content can be fetched via the commands listed in section [5.6.1.1](#), [5.6.1.2](#), or [5.6.1.3](#).

Besides the content in the buffer, the insert mode can be shifted too. There are three insert modes supported for General and Clipboard buffer, Cursor mode, Line mode, and Column mode. For the twenty-six Named buffers, the previous two modes are supported. Inserting in Cursor mode puts the content right after the current cursor. Inserting in Line mode puts the content from the following line. Inserting in Column mode means the contents in the selected buffer are seen as that in Column mode and will be inserted into the text vertically.

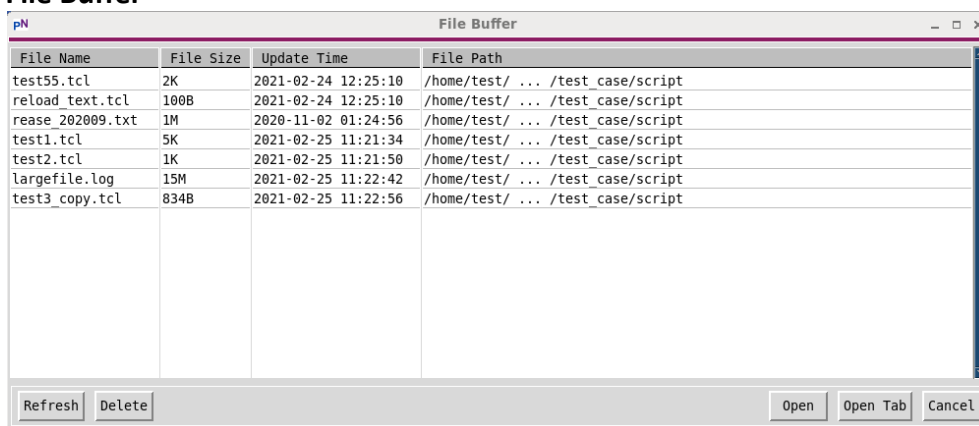
The Reset button on the panel's bottom right reverts all the current modifications on both contents and insert mode for all the buffers.

### 5.6.2 File Buffer

File Buffer registers the last scene of every file that has once been opened in the current **PNEdit** window ([Figure 5-41](#)). For example, if one quits a file without saving the changes, then the scene of the file at the moment of quitting is registered in the File Buffer. When any buffered files have been changed outside of the current **PNEdit**, users will be asked if reloading is desired or not.

Each **PNEdit** window has one dedicated File Buffer. Tabs of one **PNEdit** window share one File Buffer.

**Figure 5-41 File Buffer**



The screenshot shows a window titled "File Buffer" with a table containing the following data:

File Name	File Size	Update Time	File Path
test55.tcl	2K	2021-02-24 12:25:10	/home/test/ ... /test_case/script
reload_text.tcl	100B	2021-02-24 12:25:10	/home/test/ ... /test_case/script
rease_202009.txt	1M	2020-11-02 01:24:56	/home/test/ ... /test_case/script
test1.tcl	5K	2021-02-25 11:21:34	/home/test/ ... /test_case/script
test2.tcl	1K	2021-02-25 11:21:50	/home/test/ ... /test_case/script
largefile.log	15M	2021-02-25 11:22:42	/home/test/ ... /test_case/script
test3_copy.tcl	834B	2021-02-25 11:22:56	/home/test/ ... /test_case/script

At the bottom of the window, there are buttons for "Refresh", "Delete", "Open", "Open Tab", and "Cancel".

The information of all the buffered files can be viewed in the File Buffer window. The displayed file information in the File Buffer includes the file name, size, updated time, and the file path.

The buffered files listed in the File Buffer window can be restored to either the current or a new tab.

There are several buttons at the bottom of the panel, including Refresh, Delete, Open, Open Tab, and Cancel.

- **Refresh** refreshes the File Buffer in-place. (To refresh the other String Buffer or Change Buffer, users need to reopen the window after closing it.)
- **Delete** removes one or more buffered files from the File Buffer.
- **Open** opens one or more buffered files in the current tab.
- **Open Tab** opens one or more buffered files in new tabs.
- **Cancel** closes the File Buffer.

### 5.6.3 Change Buffer

Change Buffer registers the scenes after any change operations in the currently opened tab. The change sequence can be viewed in the Change Buffer window ([Figure 5-42](#)).

Each tab in a **PNEdit** window owns one dedicated Change Buffer.

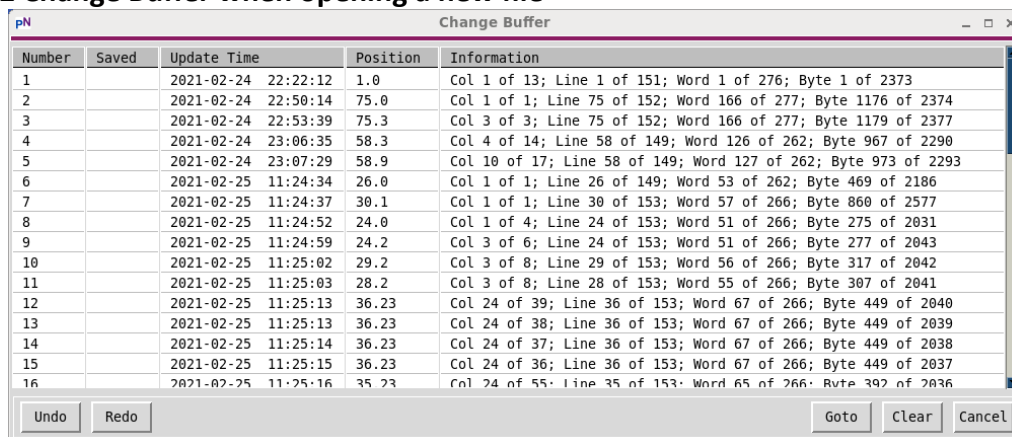
### 5.6.3.1 Metrics in Change Buffer

[Figure 5-42](#), [Figure 5-43](#), and [Figure 5-44](#) demonstrate what Change Buffer looks like when opening a new file in the tab, applying change operations, and saving the file in between changes. Five metrics are displayed, including Number, Saved, Update Time, Position, Information.

- **Number** is the sequence number of each change operation.
- **Saved** marks the scene that is saved. For example, at the time when the file is just opened, the first scene is the one.
- **Update Time** is the time when the change operations are applied.
- **Position** records the <Line Number>.<Column Number> of the cursor when the change operations are applied.
- **Information** shows a more detailed position of the cursor when the change operations are applied. It shows the same as what is displayed via the command g<ctrl>g in the Command mode.

When one file is opened in one of the tabs in **PNEdit** and no change has been made yet, the Change Buffer of this tab only contains one item ([Figure 5-42](#)).

**Figure 5-42 Change Buffer when opening a new file**



Number	Saved	Update Time	Position	Information
1		2021-02-24 22:22:12	1.0	Col 1 of 13; Line 1 of 151; Word 1 of 276; Byte 1 of 2373
2		2021-02-24 22:50:14	75.0	Col 1 of 1; Line 75 of 152; Word 166 of 277; Byte 1176 of 2374
3		2021-02-24 22:53:39	75.3	Col 3 of 3; Line 75 of 152; Word 166 of 277; Byte 1179 of 2377
4		2021-02-24 23:06:35	58.3	Col 4 of 14; Line 58 of 149; Word 126 of 262; Byte 967 of 2290
5		2021-02-24 23:07:29	58.9	Col 10 of 17; Line 58 of 149; Word 127 of 262; Byte 973 of 2293
6		2021-02-25 11:24:34	26.0	Col 1 of 1; Line 26 of 149; Word 53 of 262; Byte 469 of 2186
7		2021-02-25 11:24:37	30.1	Col 1 of 1; Line 30 of 153; Word 57 of 266; Byte 860 of 2577
8		2021-02-25 11:24:52	24.0	Col 1 of 4; Line 24 of 153; Word 51 of 266; Byte 275 of 2031
9		2021-02-25 11:24:59	24.2	Col 3 of 6; Line 24 of 153; Word 51 of 266; Byte 277 of 2043
10		2021-02-25 11:25:02	29.2	Col 3 of 8; Line 29 of 153; Word 56 of 266; Byte 317 of 2042
11		2021-02-25 11:25:03	28.2	Col 3 of 8; Line 28 of 153; Word 55 of 266; Byte 307 of 2041
12		2021-02-25 11:25:13	36.23	Col 24 of 39; Line 36 of 153; Word 67 of 266; Byte 449 of 2040
13		2021-02-25 11:25:13	36.23	Col 24 of 38; Line 36 of 153; Word 67 of 266; Byte 449 of 2039
14		2021-02-25 11:25:14	36.23	Col 24 of 37; Line 36 of 153; Word 67 of 266; Byte 449 of 2038
15		2021-02-25 11:25:15	36.23	Col 24 of 36; Line 36 of 153; Word 67 of 266; Byte 449 of 2037
16		2021-02-25 11:25:16	35.23	Col 24 of 55; Line 35 of 153; Word 65 of 266; Byte 392 of 2036

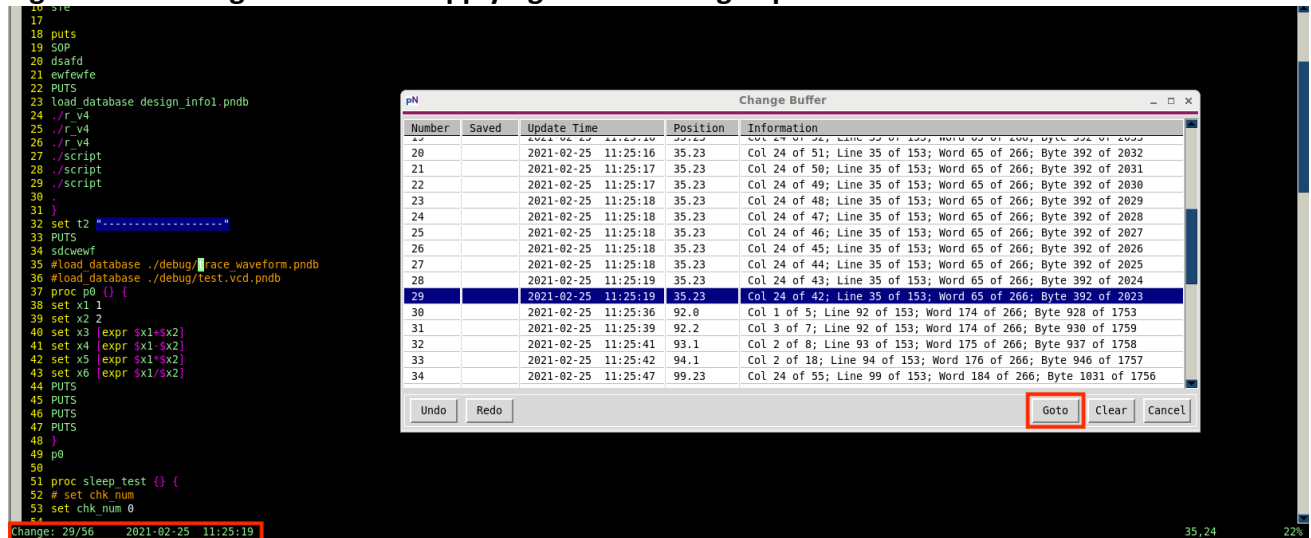
### 5.6.3.2 Undo, Redo, and Goto

After applying several change operations, each operation is registered in the Change Buffer. The Undo/Redo sequence is based on the Change Buffer. There are four commands in the Command mode in **PNEdit** to support undoing and redoing (For more commands, please refer to [Appendix A: Commands in PNEdit](#)).

- ✓ u: Undo the last edit. It has the same function as the button Undo in the Change Buffer panel.
- ✓ <ctrl>r: Redo changes which were undone. It has the same function as the button Redo in the Change Buffer panel.
- ✓ :changeb[uffer]: Open Change Buffer window (GUI).
- ✓ :change <change number in change buffer>: Go to a change listed in Change Buffer. It has the same function as the button Goto in the Change Buffer panel. [Figure 5-43](#) shows an example when going to the eighth change.

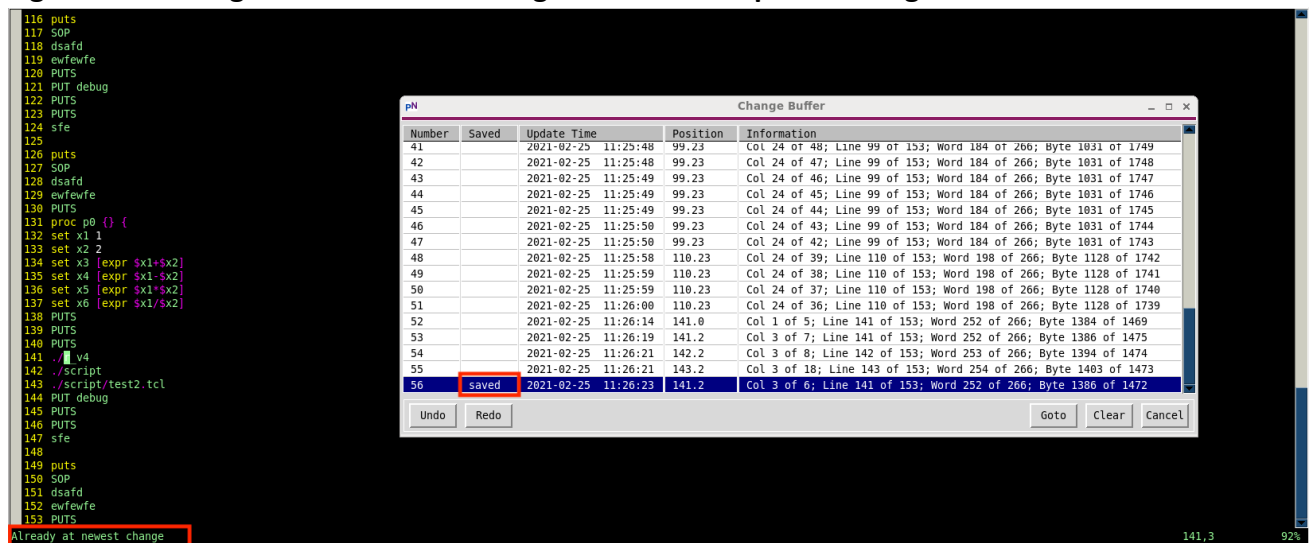
The button Clear on the bottom right clears all the changes listed. Please use this button with caution since this action is not reversible.

**Figure 5-43 Change Buffer after applying several change operations**



The change in Change Buffer is marked as “saved” after saving the file at that step ([Figure 5-44](#)). Only one change in the sequence can be marked as “saved” at a time.

**Figure 5-44 Change Buffer when undoing to a certain step and saving**



### 5.6.4 Tagging

Tags are identifiers set in a file ([Figure 5-45](#)). They are also labels that can be jumped to. Tags can be quite helpful to highlight, record, and fast locate certain lines in a file.

**Figure 5-45 Example Tagged File**

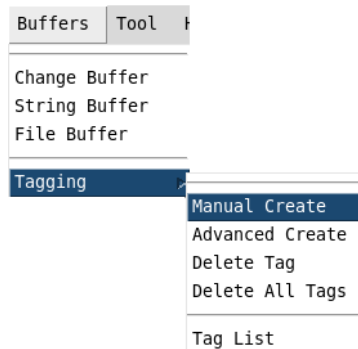
```

1 proc p00 () {
2   set x1 debug ipn viewer
3   set x2 2 debug pn viewer
4   $!~$!$!$!~ x3 [expr $x1+$x2]
5   set x4 [expr $x1-$x2]
6   set x5 [expr $x1*$x2]
7   set x6 pn viewer [expr $x1/$x2]
8
9 []
10 [] []
11 []
12 puts
13 PUT debug
14 PUTS
15 PUTS
16 $!e
17
18 puts
19 SOP
20 $!a!d
21 $!f!e!f!e
22 PUTS
23 [load database design info1.pndb
24 ./r v4
25 ./r v4
26 ./r v4
27 ./script
28 ./script
29 ./script
30
31 }
32 set t2 "-----"
33 PUTS
34 $!c!v!e!w!f
35 #load database ./debug/trace.waveform.pndb
36 #load database ./debug/test.vcd.pndb
37 proc p01 () {
38   set x1 1
39   set x2 2
40   set x3 [expr $x1-$x2]

```

Tagging Menu is under Tool Menu as shown in [Figure 5-46](#).

**Figure 5-46 Tagging Menu**



#### 5.6.4.1 Create Tags

There are two ways to create Tags: manual creating and advanced creating.

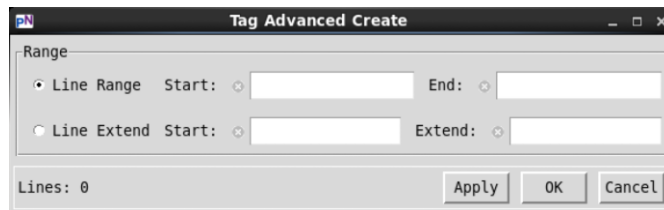
- Manual Create

To manually create a tag, users can select lines in the file first and click Manual Create in the Tagging Menu ([Figure 5-46](#)).

- Advanced Create

It is also supported to create tags using the Tag Advanced Create window ([Figure 5-47](#)). There are two ways to specify lines to create a tag, the one is using Line Range to specify the start/end line number, and the other is using Line Extend to specify the starting line number and the number of lines from the start line that needs to be selected.

**Figure 5-47 Tag Advanced Create window**



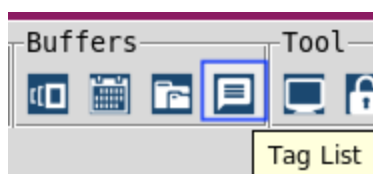
#### 5.6.4.2 Delete Tags

To delete the existing tags, users can click the tagged lines in the file and then delete them one by one, or delete all tags from a file at one time. Please refer to the Tagging Menu ([Figure 5-46](#)).

#### 5.6.4.3 Tag List

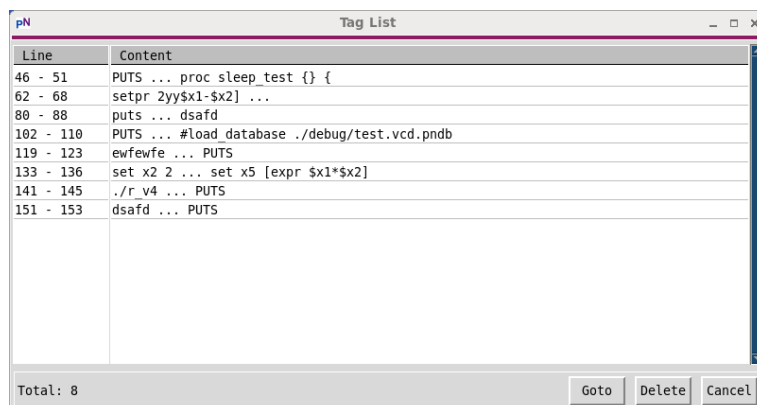
All tags in one file are recorded and can be viewed in the Tag List window ([Figure 5-49](#)). Clicking the Tag List Button ([Figure 5-48](#)) opens the Tag List window.

**Figure 5-48 Tag List Button**



After selecting one or multiple items in the tag list, operations like Goto and Delete can be performed by clicking the corresponding buttons in the Tag List window ([Figure 5-49](#)) or by using the right-click menu.

**Figure 5-49 Tag List Window**



#### 5.6.5 Other tools

The tools of Encrypt/Decrypt, System Information, Split/Join, and Directory Print can also be launched from **PNEdit**.

Encrypt/Decrypt encrypt or decrypt the files in a dedicated way of **PNFile**. System Information prints the system information. Split/Join splits or joins the files selected. Director Print prints the verbose directory information as required.

Please refer to section [3.6](#) to get details.

## 6 *PNDiff*

---

**PNDiff** is a tool in **PNFile** to compare two or multiple text files and show the differences. By comparing the plain text files and highlighting the differences in split windows, **PNDiff** helps locate and navigate the different parts rapidly.

In **PNDiff**, any files being compared can be edited and then saved. Editing is performed in-place via multiple Edit Buttons or by launching **PNEdit**. The comparison can be refreshed in-place if any of the files are updated. Please note that any in-place editing operations can be performed only after clearing the difference mark (refer to section [6.2.3.2](#)).

This section introduces the ways to launch **PNDiff**, the interfaces of **PNDiff**, the usage of **PNDiff**, and how to understand the results of comparing.


### 6.1 Launching *PNDiff*

**PNDiff** can be launched from **PNTree**, including independent **PNTrees** and those embedded in **PNFile** and **PNCompare**, or system terminals directly. Please refer to section [4.2.2](#) to understand independent and embedded **PNTree**.

#### 6.1.1 Launching from *PNTree*

In both independent **PNTree** and the **PNTree** embedded in **PNFile** or **PNCompare**, **PNDiff** can be launched through the right-click menu (section [4.3.3](#)).

Besides, there are two more ways to launch **PNDiff** from the embedded **PNTree** only.

- Firstly, to click one of the buttons,  (“Launch **PNDiff**”), in **PNFile** main window (section [3.1.3.5](#)) or **PNCompare** (section [9.2.3.1](#)).
- Secondly, to use one of the menus, “**PNDiff**”, in **PNFile** main window (section [3.1.2.5](#)) or **PNCompare** (section [9.2.2.1](#))

#### 6.1.2 Launching from terminals as an independent tool

Assuming the **PNFile** Toolkit is installed and configured properly, to launch the **PNDiff** from system terminals, users only need to fire the command **pndiff** followed by candidate files split with blanks. The comparison is then performed on the files followed.

Example: > pndiff x\_old.v x\_new.v x\_test.sv

To get the help information of the command **pndiff**, please use the option “+h” ([Figure 6-1](#)).

**Figure 6-1 PNDiff help information**

```
Valid Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug          -- Display debug message

Example commands to invoke pndiff
pndiff
pndiff file1 file2
```

## 6.2 Interfaces of PNDiff

The **PNDiff** window is shown in [Figure 6-2](#). There are four areas in the **PNDiff** window, including Title Area, Button Area, Compare Area, and Status Area.

There can be multiple windows in Compare Area, and the one selected is called an **active window**.

**Figure 6-2 Main areas in PNDiff window**



### 6.2.1 Title Area

The Title Area shows the full path and the name of the file opened in the active window ([Figure 6-3](#)).

**Figure 6-3 Title Area in PNDiff**



## 6.2.2 Menu Area

There are six main menus in the **PNDiff** window, including File Menu, Edit Menu, View Menu, Diff Menu, Tool Menu, and Help Menu ([Figure 6-4](#)).

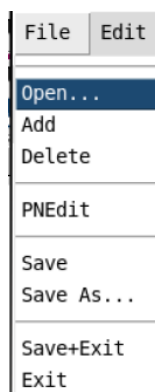
**Figure 6-4 Menus in PNDiff window**



### 6.2.2.1 File Menu

The pull-down menu in File Menu is shown in [Figure 6-5](#).

**Figure 6-5 File Menu in PNDiff window**

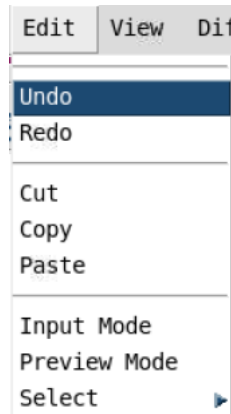


- **Open...** selects a file and opens it in the active window of the Compare Area ([section 6.2.4](#)).
- **Add** creates a new split window in the Compare Area and opens a file in the new window.
- **Delete** closes the active window from the Compare Area.
- **PNEdit** opens the file previewed in the active window of the Compare Area with **PNEdit**.
- **Save** saves the file previewed (and probably modified) in the active window of the Compare Area.
- **Save As...** saves the file previewed (and probably modified) in the active window of the Compare Area under another specified name.
- **Save+Exit** saves the file previewed (and probably modified) in the active window of the Compare Area and quit.
- **Exit** quits the current **PNDiff** window.

### 6.2.2.2 Edit Menu

The pull-down menu in Edit Menu is shown in [Figure 6-6](#). These menus are used to edit the file in the active window in-place. Please note that any in-place editing operations can be performed only after clearing the difference mark (refer to [section 3.1.5.2](#)).

**Figure 6-6 Edit Menu in *PNDiff* window**

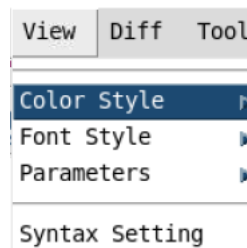


- **Undo** undoes the last change.
- **Redo** reverts the last undoing.
- **Cut** copies and then deletes the selected contents.
- **Copy** copies the selected contents to clipboard buffers.
- **Paste** gets the contents from the latest clipboard buffer and pastes to the position where the cursor locates.
- **Input Mode** enters the input mode.
- **Preview Mode** enters the preview mode.
- **Select** selects contents by word, line, and paragraph, or selects all the contents.

#### 6.2.2.3 View Menu

View Menu ([Figure 6-7](#)) configures the view settings for the Compare Area. It is similar to the View Menu in *PNEdit* Window. Please refer to section [5.2.2.3](#) for details.

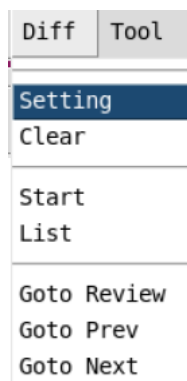
**Figure 6-7 View Menu in *PNDiff* window**



#### 6.2.2.4 Diff Menu

The pull-down menu in Diff Menu is shown in [Figure 6-8](#).

**Figure 6-8 Diff Menu in *PNDiff* window**

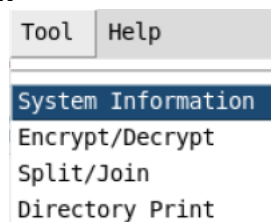


- **Setting** opens the configuring window. (refer to section [6.3](#)).
- **Clear** clears any difference marks from all windows in the Compare Area in *PNDiff*. Only when all the difference marks are removed, the files in Compare Area can be edited in-place with the Edit Buttons or the right-click menu.
- **Start** refreshes the comparison and updates the difference marks in Compare Area.
- **List** opens the window of the difference list. (refer to section [6.4.2](#)).
- **Goto Review** goes to the difference result item specified in the text box of the Review Bar (section [6.2.3.5](#)).
- **Goto Prev** goes to the previous difference result item.
- **Goto Next** goes to the next difference result item.

#### 6.2.2.5 Tool Menu

The pull-down menu in Tool Menu is shown in [Figure 6-9](#).

**Figure 6-9 Tool Menu in *PNDiff* window**

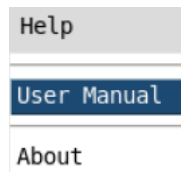


- **System Information** opens the window that prints system information (refer to section [3.8.2](#)).
- **Encrypt/Decrypt** opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
- **Split/Join** splits or joins the files selected in the embedded *PNTree* (refer to section [3.8.3](#)).
- **Directory Print** opens the tool window of the directory information printer (refer to section [3.8.4](#)).

#### 6.2.2.6 Help Menu

The pull-down menu in Help Menu is shown in [Figure 6-10](#).

**Figure 6-10 Help Menu in *PNDiff* window**

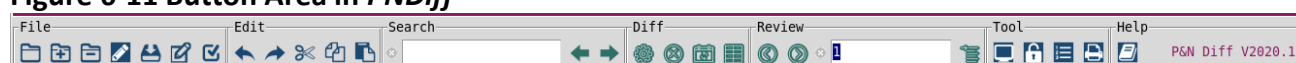


- **User Manual** opens this user manual.
- **About** shows the tool information.

### 6.2.3 Button Area

Button Bar is grouped as shown in [Figure 6-11](#).

**Figure 6-11 Button Area in *PNDiff***



#### 6.2.3.1 File Bar

There are seven buttons in File Bar.

- opens a file in the active window. This option is only valid in Input Mode.
- adds a window to Compare Area and opens a file in it. This option is only valid in Input Mode.
- delete the active window from Compare Area. This option is only valid in Input Mode.
- launches **PNEdit** to edit the file opened in the active window.
- saves the file of the active window. This is used when there are in-place changes to save.
- enters Input Mode to edit the file in the active window. This is only valid when the difference marks are cleared.
- backs to Command Mode for the file in the active window. This is only valid when the difference marks are cleared.




#### 6.2.3.2 Edit Bar

There are five buttons on the Edit Bar. These buttons are used to edit the file in the active window in-place. Please note that any in-place editing operations can be performed only after clearing the difference mark (refer to section [3.1.5.2](#)).

- undoes the last change.
- reverts the latest undo.
- cuts the selected contents and registers.
- copies the selected contents and registers.
- pastes the latest cut or copied contents to the cursor's location.





#### 6.2.3.3 Search Bar

There is one text box and two buttons in Search Bar. The search is performed on the file of the active window.

-   is an input text box for users to search keywords quickly. After entering the keywords in the box, users just need to click Enter to search. The little cross before the box is used to clear all the inputs from the box.
-  goes to the previous match.
-  goes to the next match.




#### 6.2.3.4 Diff Bar

There are four buttons in Diff Bar.

-  opens the configuring window. (refer to section [6.3](#)).
-  clears any difference marks from all windows in the Compare Area in **PNDiff**. Only when all the difference marks are removed, the files in Compare Area can be edited in-place with the Edit Buttons or the right-click menu.
-  refreshes the comparison and updates the difference marks in Compare Area.
-  opens the window of the difference list. (refer to section [6.4.2](#)).





#### 6.2.3.5 Review Bar

There are one text box and two buttons in the Review Bar.

-  goes to the previous difference result item.
-  goes to the next difference result item.
-   is an input text box for users to fill the difference item number to Goto. All the difference results are numbered and listed in the Diff List (section [6.4.2](#)).

#### 6.2.3.6 Tool Bar

There are four buttons in Tool Bar.

-  opens the window that prints system information (refer to section [3.8.2](#)).
-  opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
-  splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
-  opens the tool window of the directory information printer (refer to [3.8.4](#)).

#### 6.2.3.7 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

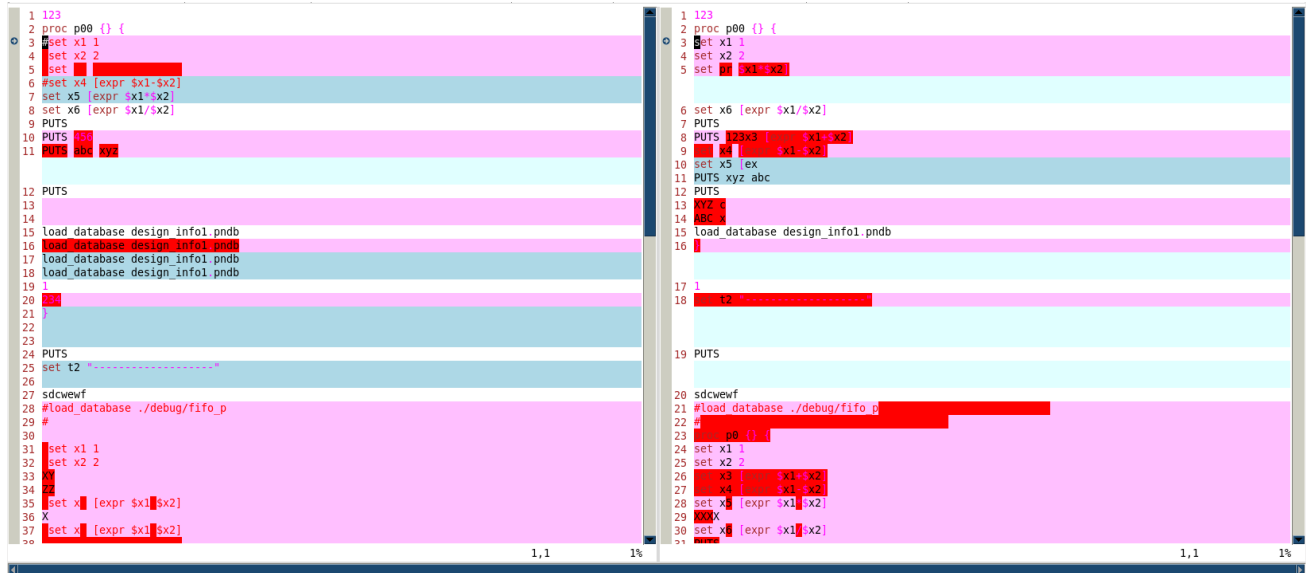
-  opens this user manual.
- **P&N Diff V2020.12** shows the tool information, like tool name, tool version, etc.

## 6.2.4 Compare Area

### 6.2.4.1 Multiple Split Windows

Compare Area in **PNDiff** is split into multiple embedded **PNPreview** windows ([Figure 6-12](#)), and the files being compared are opened in those windows respectively. The only one of these split windows where the cursor is currently in is called the active window.

**Figure 6-12 Compare Area in PNDiff**



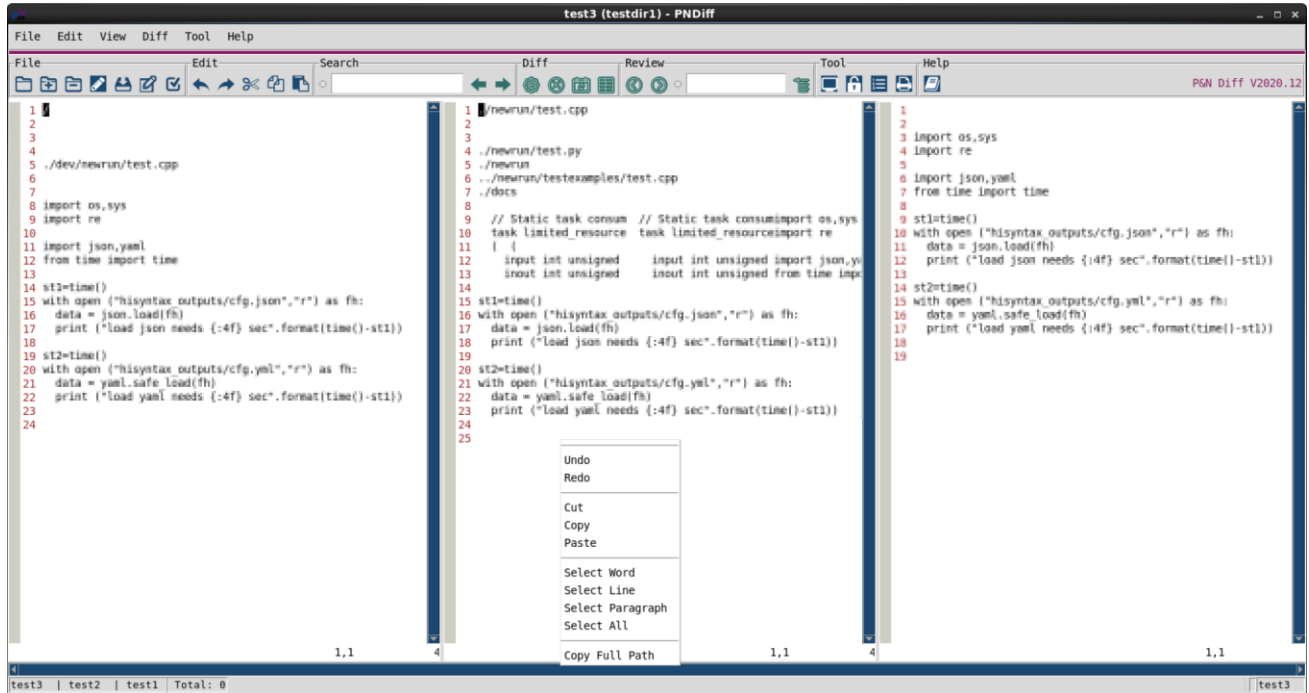
After comparing, the difference marks are highlighted. These marks can be cleared or updated. More details about how to compare and how to understand the results are in sections [6.3](#) and [6.4](#).

### 6.2.4.2 Right-click Menus in Two Modes

- Edit Mode

The right-click menu in Edit Mode ([Figure 6-13](#)) is the same as that described in the section [3.1.5.3](#).

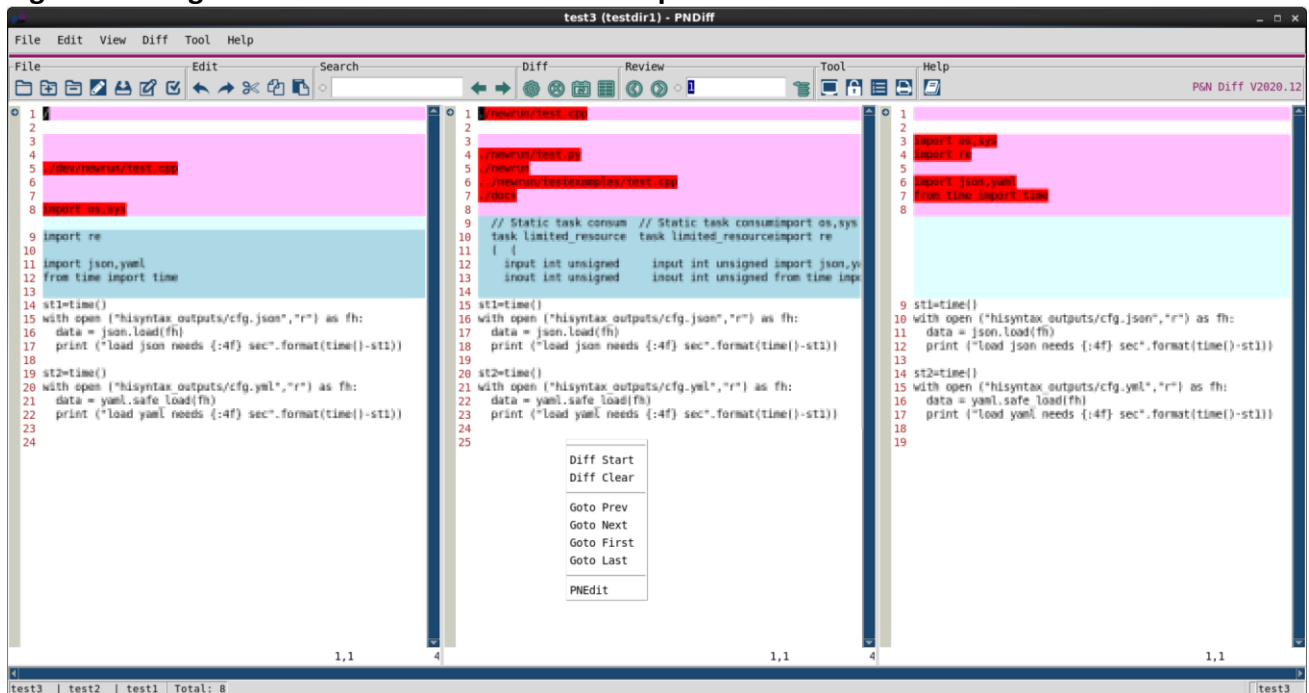
**Figure 6-13 Right-click Menu in Edit Mode in Compare Area**



- Diff Mode

The functions supported in the right-click menu in Diff Mode ([Figure 6-14](#)) is similar to that described in the section [6.2.2.4](#).

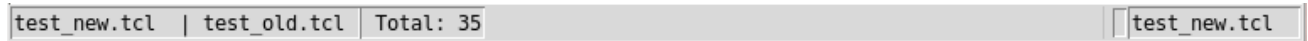
**Figure 6-14 Right-click Menu in Diff Mode in Compare Area**



## 6.2.5 Status Area

Status Area shows the status of the files being compared and the summary of the comparison.

**Figure 6-15 Status Area in PNDiff**

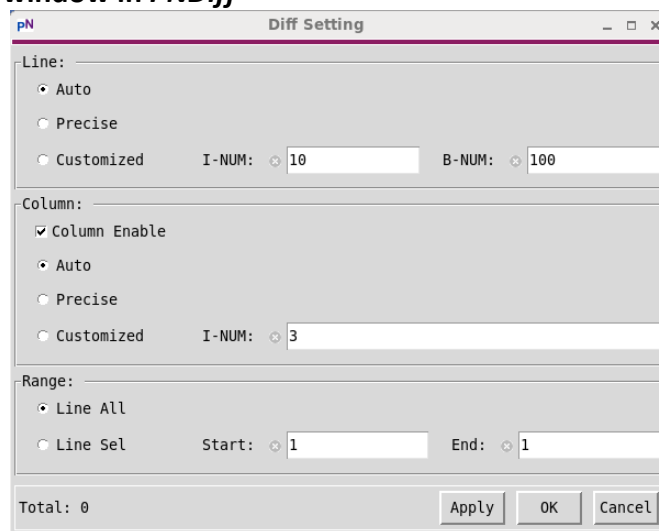


In the example in [Figure 6-15](#), the items “test\_old.tcl” and “test\_new.tcl” are the name of the two files being compared. “Total: 35” indicates that there are thirty-five differences between the two files.

## 6.3 Comparing Two or Multiple Files

**PNDiff** compares files automatically. Generally, users are not required to concern about the configuration. However, for the users who have advanced requirements on the comparison, **PNDiff** provides the Diff Setting window ([Figure 6-16](#)).

**Figure 6-16 Diff Setting window in PNDiff**



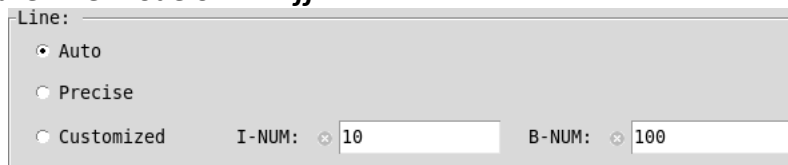
### 6.3.1 Setting Diff Mode

In Diff Mode Card on the Diff Setting panel, there are two modes supported, Line Mode and Column Mode. Line Mode is enabled by default, and it cannot be disabled. Column Mode is enabled by default as well, but it can be disabled via the Diff Setting window.

#### 6.3.1.1 Line Mode

With Line Mode enabled, **PNDiff** compares the lines among the candidate files. There are three exclusive options for Line Mode, Auto, Precise, and Customized ([Figure 6-17](#)).

**Figure 6-17 Configure Line Mode of PNDiff**



- **Auto** is the default one. Choosing Auto means **PNDiff** configures Line Mode automatically.
- **Precise** limits **PNDiff** to compare the files line by line precisely.

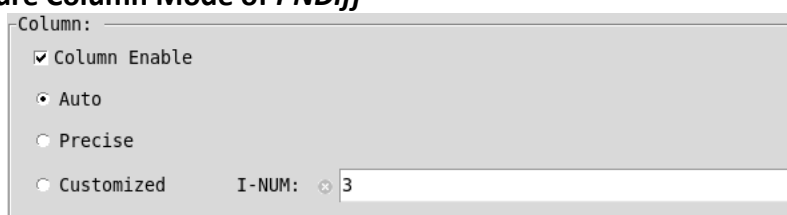
- **Customized** allows for even more flexible comparing. I-NUM sets the maximum line number that **PNDiff** looks for a line from the other side if there is no match. B-NUM sets the maximum line number that **PNDiff** looks for two neighboring lines from the other side if there is no match.

### 6.3.1.2 Column Mode

With Column Mode enabled, **PNDiff** compares the columns for each line as well. Column Mode is enabled by default, but users can disable it by not ticking ☐ **Column Enable**. When Column Mode is disabled, only the identical lines are marked as of no diff.

Similarly, there are three exclusive options for Column Mode, Auto, Precise, and Customized ([Figure 6-18](#)).

**Figure 6-18 Configure Column Mode of PNDiff**

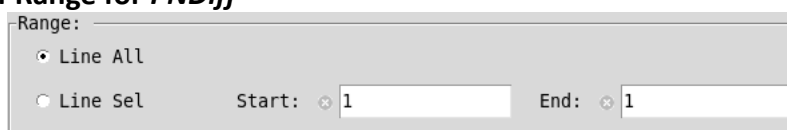


- **Auto** is the default one. Choosing Auto means **PNDiff** configures Column Mode automatically.
- **Precise** limits **PNDiff** to compare the mapped lines word by word precisely.
- **Customized** allows for even more flexible comparing. I-NUM sets the maximum word number that **PNDiff** looks for a word in one line from other files if there is no match.

### 6.3.2 Setting Diff Range

In some cases, there are needs to only compare part of the lines rather than the entire file. Diff Range provides the approach to set the line range that users want to compare ([Figure 6-19](#)).

**Figure 6-19 Set Diff Range for PNDiff**



- **Line All** is the default setting. That means the comparison is performed on all the lines of both files.
- **Line Sel** allows users to set the Start and End line number for **PNDiff** to compare. The Start line number is valid when it is not larger than the minimum EOF line of candidate files. The End line number is valid when it is not smaller than the Start line number and not larger than the minimum EOF line of candidate files. If invalid ranges are set, **PNDiff** adjusts them automatically.

[Figure 6-20](#) shows one example of the different result after setting Line Sel. Those lines that are not compared are masked in a different color.

**Figure 6-20 One example of Line Sel in Diff Range setting**



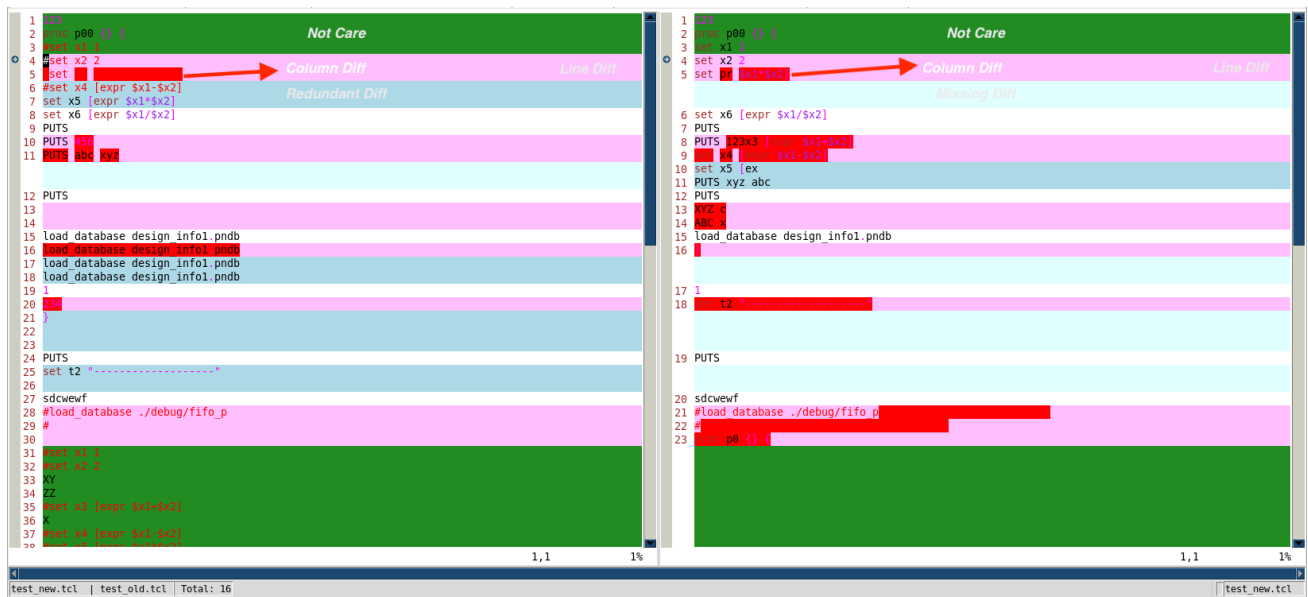
## 6.4 Understanding the Compare results

### 6.4.1 Diff Marks

After comparing, the difference marks are displayed. There are four different types of diff marks, Column Diff, Line Diff, Redundant Diff, and Missing Diff ([Figure 6-21](#)). Each of them has unique highlight color (the color varies with Color Style).

There is the fifth mark called Not Care showing the mask on those lines that are not compared due to the range setting (refer to section [6.3.2](#)).

**Figure 6-21 Diff Marks in PNDiff**



### 6.4.2 Diff List

The Diff results can be viewed in the Diff List window ([Figure 6-22](#), and refer to section [6.2.3.4](#) for the way of opening the Diff List window).

It demonstrates the Diff Type and the Diff location in each file compared. Users can use the button Goto to jump to the Diff item selected.

**Figure 6-22 Diff List Window**

PN Diff List			
Number	Type	test new.tcl	test old.tcl
1	difference	Line 4 Diff	Line 4 Diff
2	difference	Line 5 Diff	Line 5 Diff
3	missmatch	Line 6-7 Redu	2 lines Miss
4	difference	Line 10 Diff	Line 8 Diff
5	difference	Line 11 Diff	Line 9 Diff
6	missmatch	2 lines Miss	Line 10-11 Redu
7	difference	Line 13 Diff	Line 13 Diff
8	difference	Line 14 Diff	Line 14 Diff
9	difference	Line 16 Diff	Line 16 Diff
10	missmatch	Line 17-18 Redu	2 lines Miss
11	difference	Line 20 Diff	Line 18 Diff
12	missmatch	Line 21-23 Redu	3 lines Miss
13	missmatch	Line 25-26 Redu	2 lines Miss
14	difference	Line 28 Diff	Line 21 Diff
15	difference	Line 29 Diff	Line 22 Diff
16	difference	Line 30 Diff	Line 23 Diff
Total: 16			
		Goto	OK Cancel

# 7

## PNConsole

---

**PNConsole** is a graphical Multi-Language Platform Console, which has four languages preset, including Shell, TCL, Python, and Perl. After selecting the compiler from the preset ones, any commands and scripts in this language can be well supported in the graphical **PNConsole**.

Besides, any other language compilers which are available in the system can be well supported in **PNConsole** as well.

This section introduces the ways to launch **PNConsole**, the interfaces of **PNConsole**, and the usage of **PNConsole**.

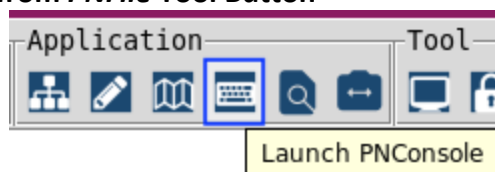
### 7.1 Launching **PNConsole**

**PNConsole** can be launched from **PNFile** or system terminals directly.

#### 7.1.1 Launching from **PNFile**

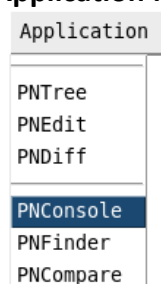
There are two ways to launch **PNConsole** from **PNFile**. The first one is to use the Tool Button “**PNConsole**” in **PNFile** ([Figure 7-1](#)).

Figure 7-1 Launch **PNConsole** from **PNFile** Tool Button



The second one is to click “**PNConsole**” in the Application Menu of **PNFile** ([Figure 7-2](#)).

Figure 7-2 Launch **PNConsole** from **PNFile** Application Menu



## 7.1.2 Launching from terminals as an independent tool

Assuming the *PNFile* Toolkit is installed and configured properly, to launch the *PNConsole* from system terminals, users only need to fire the command *pnconsole*.

Example: > pnconsole

To get the help information of the command *pnconsole*, please use the option “+h” ([Figure 7-3](#)).

**Figure 7-3 *PNConsole* help information**

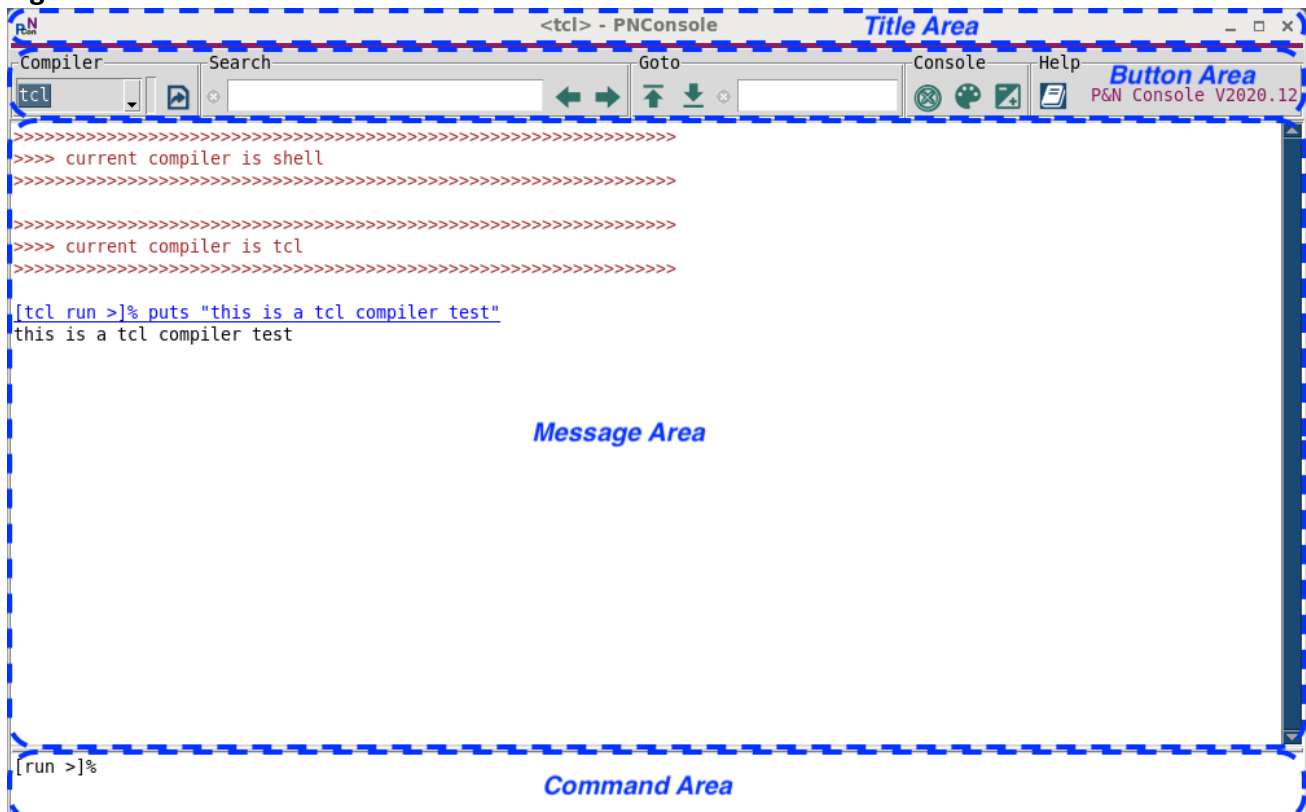
```
Valid Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug          -- Display debug message

Example commands to invoke pnconsole
pnconsole
-
```

## 7.2 Interfaces of *PNConsole*

The *PNConsole* window is shown in [Figure 7-4](#). There are four areas in the *PNConsole* window, including Title Area, Button Area, Message Area, and Command Area.

**Figure 7-4 Main areas in *PNConsole* window**



### 7.2.1 Title Area

The Title Area shows the current compiler ([Figure 7-5](#)).

**Figure 7-5 Title Area of *PNConsole***



## 7.2.2 Button Area

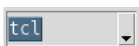

Button Bar is grouped as shown in [Figure 7-6](#).

**Figure 7-6 Button Area of *PNConsole***






### 7.2.2.1 Compiler Bar

There is one pull-down list and one button in the Compiler Bar.

-  allows users to select or set one compiler (refer to section [7.3.1](#)).
-  opens the file-selecting window and loads/executes scripts selected (refer to section [7.3.3](#)).




### 7.2.2.2 Search Bar

There are one text box and two buttons in Search Bar.

-  is an input text box for users to search keywords from the Message Area quickly. After entering the keywords in the box, users just need to click Enter to search. The little cross before the box is used to clear all the inputs from the box.
-  goes to the previous match.
-  goes to the next match.




### 7.2.2.3 Goto Bar

There are two buttons and one text box in the Goto Bar.

-  goes to the top of the Message Area.
-  goes to the bottom of the Message Area.
-  is an input text box for users to fill the line number of the Message Area to Goto.


### 7.2.2.4 Console Bar

There are three buttons in the Console Bar.

-  clears all messages from the Message Area.
-  sets the color scheme for the Message Area.
-  sets the font of the Message Area.

### 7.2.2.5 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

-  opens this user manual.
- **P&N Console V2020.12** shows the tool information, like tool name, tool version, etc.

### 7.2.3 Message Area

The Message Area demonstrates all the messages and running logs ([Figure 7-7](#)). Searching and jumping are supported in Message Area (refer to sections [7.2.2.2](#) and [7.2.2.3](#)). The color scheme and font can be changed (refer to section [7.2.2.4](#)).

**Figure 7-7 Message Area in *PNConsole* window**



### 7.2.4 Command Area

In the Command Area ([Figure 7-8](#)), commands in the language selected can be typed in and executed.

**Figure 7-8 Command Area in *PNConsole* window**



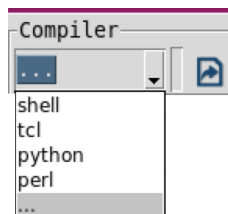
Please note that multiple commands should be typed in as one multi-line command separated by Ctrl+Enter and executed at one time. Any command typed in and followed by the Enter key is executed separately. Please refer to section [7.3](#) for more details.

## 7.3 Running Commands and Scripts in *PNConsole*

### 7.3.1 Selecting Compiler

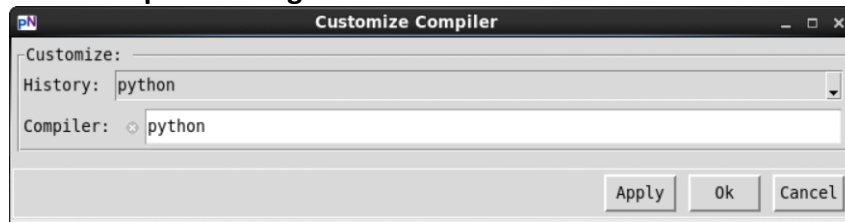
The pull-down list in Compiler Bar allows users to select or set one compiler ([Figure 7-9](#)). There are four preset language compilers, including Shell, TCL, Python, and Perl.

**Figure 7-9 Pull-Down List in Compiler Bar**



Users can also select “...” from the pull-down list to customize the compiler by setting any compiler available in the system ([Figure 7-10](#)).

**Figure 7-10 Customize Compiler setting window**



### 7.3.2 Running Commands


Any command typed in and followed by the Enter key is executed separately.

If there are multiple commands which have dependencies, they should be typed in as one multi-line command separated by Ctrl+Enter and executed at one time. For example, with a Python compiler, if users need to run the two commands below, and the second command depends on the result of the first command, they should be executed at one time.

```
import os
print (os.path.abspath('./'))
```

There are two ways to do so, the one is to type the first command followed by Ctrl+Enter and the second command, and then to press Enter to execute; the other one is to save the commands in a file, and then to source or load the file.

### 7.3.3 Running Scripts

Running scripts in **PNConsole** is very simple and efficient. Users can either use the “load script” button  (section [7.2.2.1](#)) or source the script files in the Command Area (the specific sourcing command depends on the language selected).

## 8 *PNFinder*

---

**PNFinder** is an efficient tool to find file and search (and replace) the content. Multiple searching modes and filtering configs make the tool flexible and powerful. It supports both normal plain text and regex text expression searching. It manages to control the searching depth and filter files by multiple criteria like name, owner, access, time, and size. What's more, reviewing and locating any of the searching results is quite easy in the **PNFinder** results window.

This section introduces the ways to launch **PNFinder**, the interfaces, and the usage of **PNFinder**.

### 8.1 Launching *PNFinder*

**PNFinder** can be launched from **PNFile** or system terminals directly.

#### 8.1.1 Launching from *PNFile*

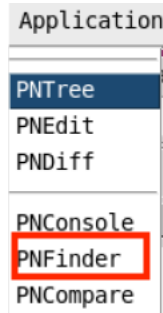
There are two entries to **PNFinder** from **PNFile** main window. The one is in Application Menu ([Figure 8-1](#)), and the other is in Application Bar ([Figure 8-2](#)).

If more than one file or directory is selected in the embedded **PNTree** of the **PNFile** window before launching **PNFinder**, the path of the latest selection is used as the initial home path (i.e., the starting hierarchy of the searching) the new **PNFinder** window.

If one file or directory is selected in the embedded **PNTree** of the **PNFile** window before launching **PNFinder**, the path of the selection is used as the initial home path (i.e., the starting hierarchy of the searching) of the new **PNFinder** window.

If no file or directory is selected in the embedded **PNTree** of the **PNFile** window before launching **PNCompare**, the home path of the embedded **PNTree** is used as the initial home path (i.e., the starting hierarchy of the searching) the new **PNFinder** window.

**Figure 8-1 Launch *PNFinder* from *PNFile* Application Menu**



**Figure 8-2 Launch *PNFinder* from *PNFile* Application Bar**



### 8.1.2 Launching from terminals as an independent tool

Assuming the **PNFile** Toolkit is installed and configured properly, to launch the **PNFinder** from system terminals, users just need to fire the command **pnfinder** followed by one optional directory path. The path followed is the initial home path (i.e., the starting hierarchy of searching) of **PNFinder**. The current path where the tool is launched is used if no option is followed. When there is more than one path followed, the last one is the starting hierarchy of searching. If the specified path is not available, the current path is used.

Example: > pnfinder

To get the help information of the **pnfinder** command, please use the option "+h" ([Figure 8-3](#)).

**Figure 8-3 pnfinder help information**

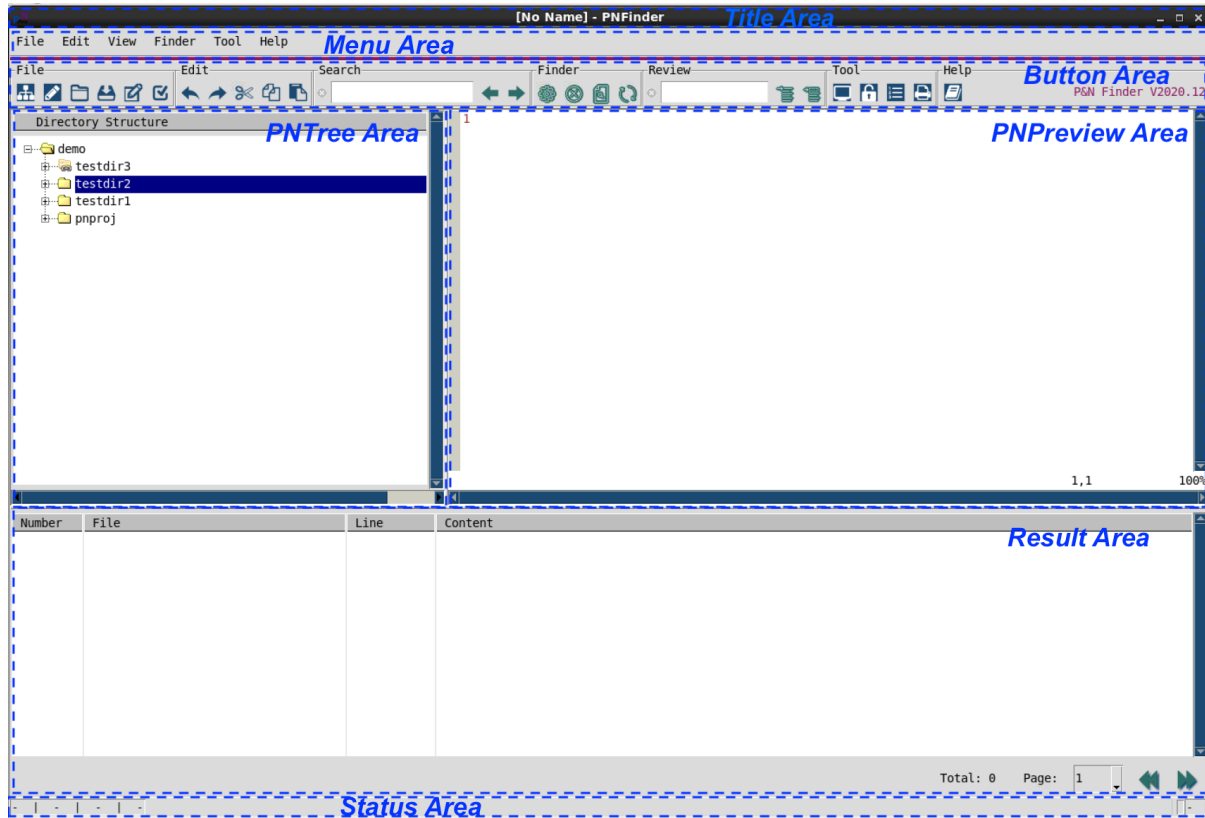
```
/demo> pnfinder +help
Valid Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug           -- Display debug message

Example commands to invoke pnfinder
pnfinder
pnfinder directory
```

## 8.2 Interfaces of *PNFinder*

The **PNFinder** main window is shown in [Figure 8-4](#). There are seven areas in the window, including Title, Menu, Button, PNTree, PNPreview, Result, and Status Area.

Figure 8-4 Main Window of *PNFinder*



### 8.2.1 Title Area

The Title Area ([Figure 8-5](#)) shows the full path and the name of the file opened in PNPreview Area.

Figure 8-5 Title Area of *PNFinder* Main Window



### 8.2.2 Menu Area

There are six menus ([Figure 8-6](#)) in Menu Area, including File, Edit, View, Finder, Tool, and Help Menu.

Figure 8-6 Menu Area of *PNFinder* Main Window



#### 8.2.2.1 File Menu

The pull-down menu in File Menu is shown in [Figure 8-7](#).

**Figure 8-7 File Menu in *PNFinder* Main Window**



- **PNTree** launches a new **PNTree** and uses the path of the selected file or directory as its Home Path (refer to section [4.2.2](#) for multiple **PNTrees**).
- **Tree Home ...** opens the directory selecting window for users to change the Home Path of the current **PNTree** (refer to section [4.2.1](#) for the concept of Home Path).
- **PNEdit** opens the file selected in the embedded **PNTree** with a new **PNEdit** window (refer to section [5](#) for **PNEdit**).
- **Send To ...** opens the file selected in the embedded **PNTree** in a new tab of one existed **PNEdit** window.
- **Save** saves the file that is opened and edited in **PNPreview** (refer to section [3.1.5](#) for **PNPreview**) area.
- **Save As ...** saves the file that is opened and edited in **PNPreview** area, but to another path or with another name.
- **Save+Exit** saves the file that is opened and edited in **PNPreview** area and quits **PNFinder**.
- **Exit** quits **PNFinder**.

#### 8.2.2.2 Edit Menu

The pull-down menu in Edit Menu is shown in [Figure 8-8](#). It is associated with the operations in the **PNPreview** area.

**Figure 8-8 Edit Menu in *PNFinder* Main Window**



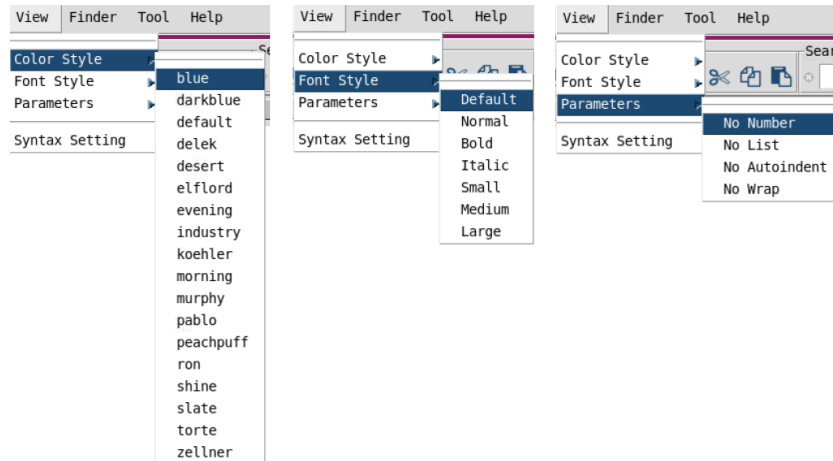
- **Undo** undoes the last change.
- **Redo** reverts the last undoing.
- **Cut** copies and then deletes the selected contents.
- **Copy** copies the selected contents.

- **Paste** pastes the latest cut or copied contents to the cursor's location.
- **Input Mode** enters the input mode.
- **Preview Mode** enters the default preview mode.
- **Select** selects contents by word, line, and paragraph, or selects all the contents.

### 8.2.2.3 View Menu

View Menu ([Figure 8-9](#)) configures the view settings for **PNPreview** Area. It is similar to the View Menu in **PNEdit** Window. Please refer to section [5.2.2.3](#) for details.

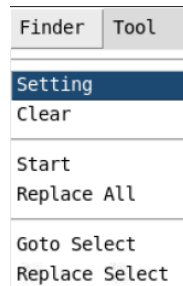
**Figure 8-9 View Menu in PNFinder Main Window**



### 8.2.2.4 Finder Menu

The key menu of PNFinder is the Finder Menu ([Figure 8-10](#)).

**Figure 8-10 Finder Menu in PNFinder Main Window**

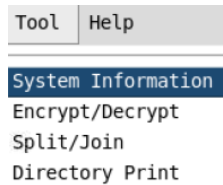


- **Setting** opens the finder setting window (refer to section [8.3](#)).
- **Clear** clears the current finding results.
- **Start** starts to find.
- **Replace All** replaces all with specific contents.
- **Goto Select** jumps to the result item selected (refer to section [8.4](#)).
- **Replace Select** replaces the result item selected with specific contents.

### 8.2.2.5 Tool Menu

There are multiple tools listed in Tool Menu ([Figure 8-11](#)).

**Figure 8-11 Tool Menu in *PNFinder* Main Window**

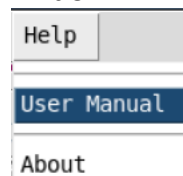


- **System Information** opens the window that prints system information (refer to section [3.8.2](#)).
- **Encrypt/Decrypt** opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
- **Split/Join** splits or joins the files selected in the embedded **PNTree** area (refer to section [3.8.3](#)).
- **Directory Print** opens the tool window of the directory information printer (refer to section [3.8.4](#)).

#### 8.2.2.6 Help Menu

The pull-down menu in Help Menu is shown in [Figure 8-12](#).

**Figure 8-12 Help Menu in *PNFinder* Main Window**



- **User Manual** opens this user manual.
- **About** shows the tool information.

### 8.2.3 Button Area







Button Bar is grouped as shown in [Figure 8-14](#).

**Figure 8-13 Button Area in *PNFinder* Main Window**








#### 8.2.3.1 File Bar

There are six buttons in File Bar.

-  launches a new **PNTree** window and uses the selected path as the home path.
-  launches a new **PNEdit** window and opens the selected files or directories.
-  launches a file-selecting window for users to select and open a file in the **PNPreview** area.
-  saves the file that is opened and edited in the **PNPreview** area (refer to section [3.1.5](#) for **PNPreview**).
-  enters Input Mode to edit the file in the **PNPreview** area (refer to section [3.1.5](#) for **PNPreview**). To back to the default preview mode, enter Escape (Esc).
-  enters Preview Mode.




### 8.2.3.2 Edit Bar

There are five buttons in Edit Bar. These operations are only available for the files opened in the **PNPreview** area (refer to section [3.1.5](#) for **PNPreview**).

-  undoes the last change.
-  reverts the latest undo.
-  cuts the selected contents and registers.
-  copies the selected contents and registers.
-  pastes the latest cut or copied contents to the cursor's location.





### 8.2.3.3 Search Bar

There are one input text box and two buttons in Search Bar.

-  is an input text box for users to search keywords in **PNPreview** quickly. After entering the keywords in the box, users just need to click Enter to search. The little cross before the box is used to clear all the inputs from the box.
-  goes to the previous match.
-  goes to the next match.




### 8.2.3.4 Finder Bar

There are four buttons in Finder Bar (refer to section [8.3](#) for the detailed usage).

-  opens the finder setting window.
-  clears the current finding results.
-  starts to find.
-  replaces all items found with specified contents.

### 8.2.3.5 Review Bar




There are one input text box and two buttons in Review Bar (refer to section [8.4](#) for the detailed usage).

-  is an input text box for users to fill the number of a specific result item to either review or replace.
-  goes to the result item specified.
-  replaces the result item specified with the content set in the Finder Setting window.

### 8.2.3.6 Tool Bar



There are four buttons in Tool Bar.

-  opens the window that prints system information (refer to section [3.8.2](#)).

-  opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
-  splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
-  opens the tool window of the directory information printer (refer to [3.8.4](#)).

#### 8.2.3.7 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

-  opens this user manual.
-  shows the tool information, like tool name, tool version, etc.

#### 8.2.4 PNTree Area

In this area, one **PNTree** is embedded. Please refer to section [4](#) for details about **PNTree**. The difference is the right-click menu is not available in this **PNTree**.

#### 8.2.5 PNPreview Area

**PNPreview** is embedded in this area. Please refer to section [3.1.5](#) for details about **PNPreview**.

#### 8.2.6 Result Area

All finding matches with the information like file, line number, and content preview are numbered and listed in this area. Please refer to section [8.4](#) for details about how to review the **PNFinder** results.

#### 8.2.7 Status Area

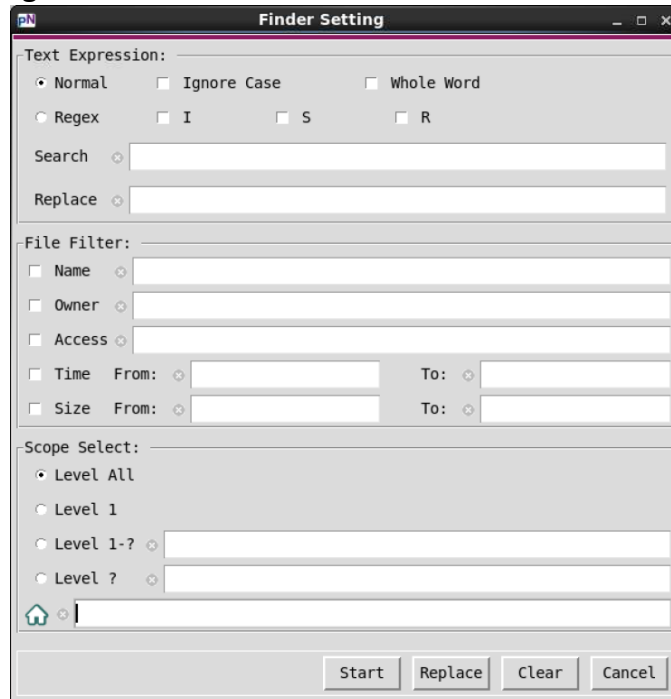
The Status Area is at the bottom of the **PNFinder** Main Window showing the information and the status of the file opened in the **PNPreview** Area. Please refer to section [3.1.5.3](#) for details.

### 8.3 Setting **PNFinder**

To find any files or contents in files with **PNFinder**, the first step is to set it according to users' requirements.

[Figure 8-14](#) is the Finder Setting window which can be opened from either Finder Menu (section [8.2.2.4](#)) or Finder Bar (section [8.2.3.4](#)).

**Figure 8-14 Finder Setting Window of PNFinder**



### 8.3.1 Text Expression Card

Text Expression Card configures the searching on the text content of each candidate file.

Similar to the Expression Card in **PNEdit**, there are two searching & replacing modes supported, Normal and Regex. Please refer to section [5.3.1](#) for details.

### 8.3.2 File Filter Card


File Filter Card sets the conditions, including name, owner, access type, time last updated and size, to filter candidate files. Any condition works only when it is ticked (i.e., selected).

Only the files that meets all conditions selected are to be looked for.

- **Name**, file name. The wildcard is supported in the keyword box to match any characters.
- **Owner**, the username of the file owner.
- **Access**, the access type of the file of current users, such as “r”, “w”, “x”, or “rw”, etc.
- **Time**, the range of time when the file was updated last time. The format is yyyy-mm-dd.
- **Size**, the range of file size, in the unit of Byte.

### 8.3.3 Scope Select Card





Scope Select Card sets the searching depth.

-  sets the home path (i.e., the starting hierarchy of the searching). The default starting path can be overridden here.
- **Level All** means to search all subhierarchies from the starting hierarchy.
- **Level 1** means to only search one level from the starting hierarchy.

- **Level 1-?** means to search one to N level from the starting hierarchy. The number N is set in the following text box.
- **Level ?** means to only search the N level counting from the starting hierarchy. The number N is set in the following text box.

### 8.3.4 Buttons

There are four buttons at bottom of the Finder Setting panel.

-  starts to search with **PNFinder**.
-  replaces the matches in the selected candidate file with the content or expression typed in the Replace box. Please use this button with caution since this action is not reversible.
-  clears all the settings. It also clears the current **PNFinder** results.
-  closes the Finder Setting window.

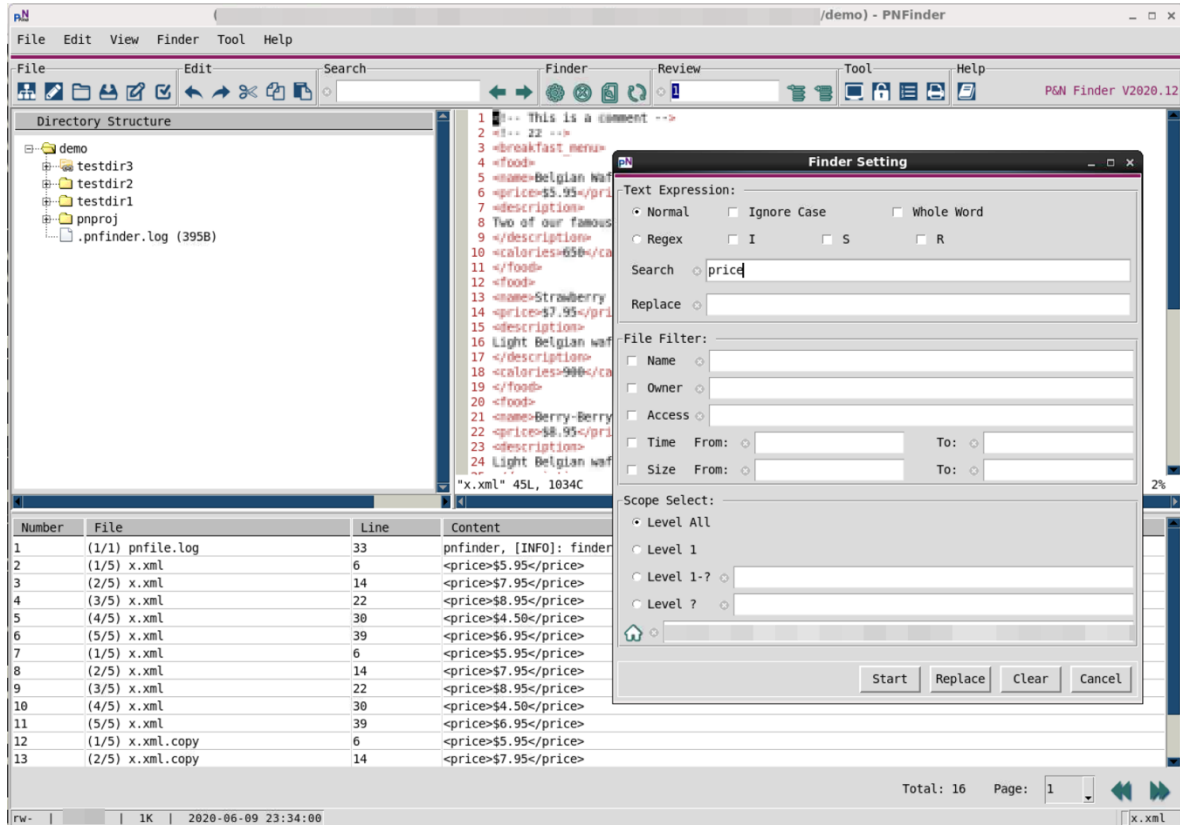
## 8.4 Reviewing **PNFinder** Results

### 8.4.1 Finding Results

The finding results are listed in the Result Area. Each match with certain information, including file, line number, and content preview, is numbered and listed.

[Figure 8-15](#) shows an example of **PNFinder** settings and its result.

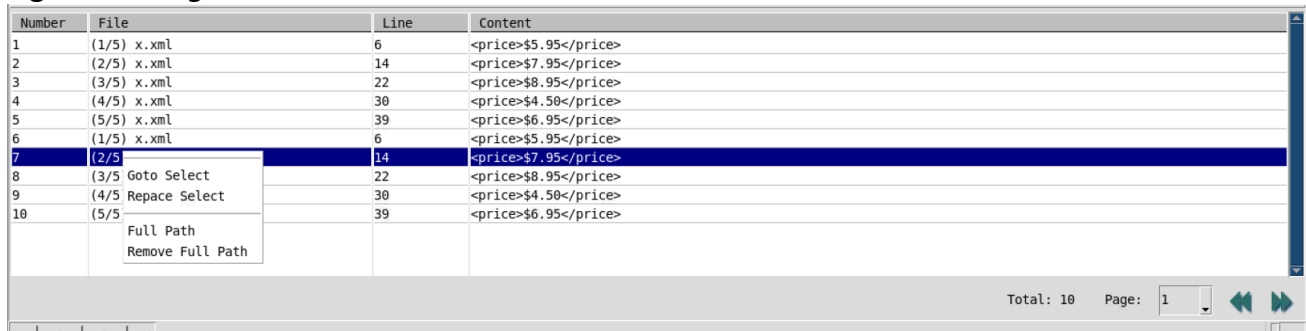
**Figure 8-15 PNFinder Example Result**



The right-click menu is provided in the Result Area to support more operations ([Figure 8-16](#)).

- **Goto Select** goes to the selected match.
- **Replace Select** replaces the selected match with the contents specified in the Finder Setting Window.
- **Full Path** shows the full path of the files listed.
- **Remove Full Path** shows the file name only with no path (default).


**Figure 8-16 Right-Click menu in the result list area**



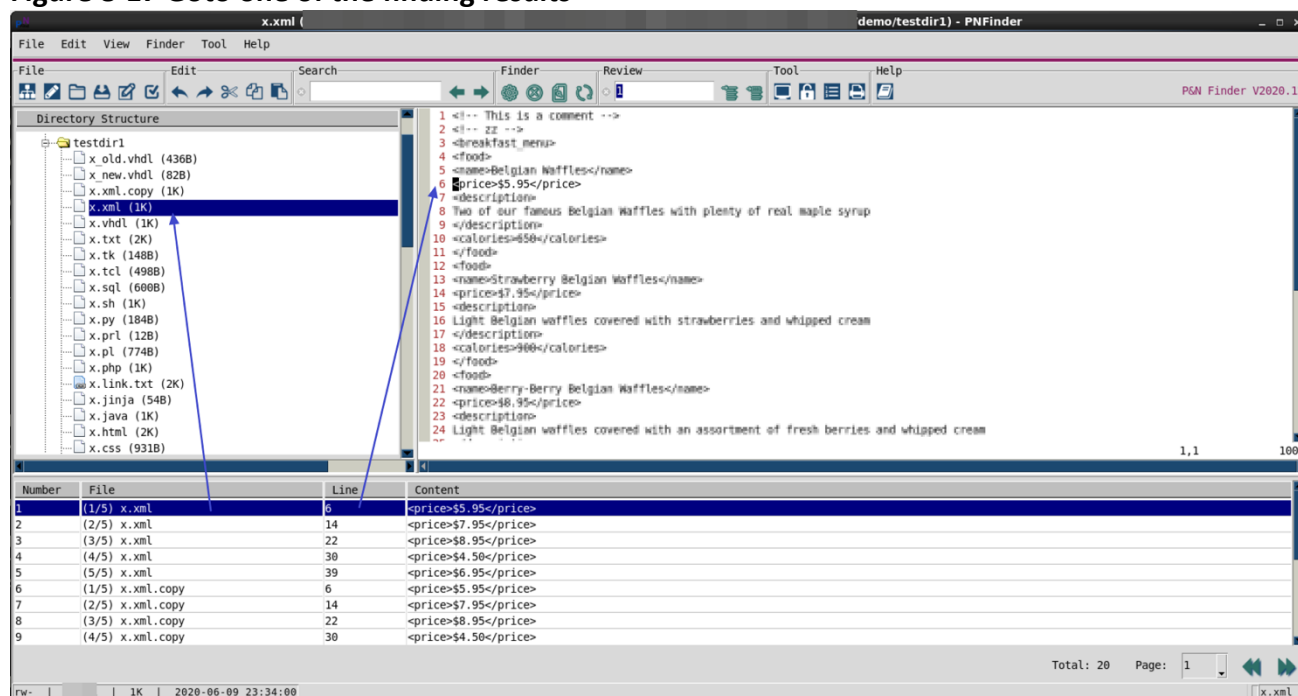
When the finding results are available, users can either Goto any of them or Replace one, multiple, or all the matches with specified texts or expressions.

## 8.4.2 Operation Goto

By double-clicking on any match listed in Results Area, users can “Goto” that match, i.e., the associated file is highlighted in the **PNTree** Area and opened in the **PNPreview** Area, and the cursor goes to the specific line automatically ([Figure 8-17](#)).

There are three other entries to the operation Goto. The first one is in the right-click menu ([Figure 8-16](#)). The second one is the button  in the Review Bar (section [8.2.3.5](#)). The last one is the “Goto Select” in Finder Menu (section [8.2.2.4](#)).


**Figure 8-17 Goto one of the finding results**



## 8.4.3 Operation Replace


As described in section [8.3.1](#), both Normal and Regex modes are supported for Search & Replace in **PNFinder**. With the text or expression specified in the Text Expression Card in the Finder Setting Window, users can replace any or all the matches. Please use this with caution as it is not reversible.

- Replace All

It replaces all the matches at once. There are three entries to this function. The first one is the button “Replace” in the Finder Setting Window (section [8.3.4](#)). The second one is the button  in the Finder Bar (section [8.2.3.4](#)). The last one is “Replace All” in the Finder Menu (section [8.2.2.4](#)).

- Replace Selected

It replaces one or multiple matches which are selected only. There are three ways to Replace Selected. The first one is to select one or multiple matches in the Result Area

and use the right-click menu ([Figure 8-16](#)). The second one is to type the number of the target match in the text box of the Review Bar and use the button  (section [8.2.3.5](#)). The last one is to select one or multiple matches in the Result Area and use the “Replace Select” of the Finder Menu (section [8.2.2.4](#))

## 9 *PNCompare*

---

***PNCompare*** is an efficient and practical file & directory comparing tool that aims to compare two directories and/or files inside. It supports to compare by multiple criteria, such as owner, access, time, size, and content. It also supports comparing depth control and multiple comparing modes like File-Folder, File-Only, and Folder-Only. After comparing, ***PNCompare*** manages to review the results and to resolve the differences easily.

This section introduces the ways to launch ***PNCompare***, the interfaces of ***PNCompare***, and the usage of ***PNCompare***.

### 9.1 Launching *PNCompare*

***PNCompare*** can be launched from ***PNFile*** or system terminals directly.

#### 9.1.1 Launching from *PNFile*

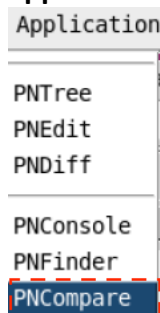
There are two entries to ***PNCompare*** from ***PNFile*** main window. The one is in Application Menu ([Figure 9-1](#)), and the other is in the Application Bar ([Figure 9-2](#)).

If two or more files or directories are selected in the embedded ***PNTree*** of ***PNFile*** window before launching ***PNCompare***, the paths of the latest two selections are used as the initial home paths for the Left and Right side ***PNTrees*** in the Compare Area ([Figure 9-4](#) and section [9.2.4](#)) of the new ***PNCompare*** window.

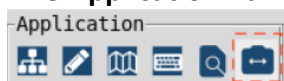
If one file or directory is selected in the embedded ***PNTree*** of ***PNFile*** window before launching ***PNCompare***, the path of the selection is used as the initial home path for both the Left and Right side ***PNTrees*** in the Compare Area ([Figure 9-4](#) and section [9.2.4](#)) of the new ***PNCompare*** window.

If no file or directory is selected in the embedded ***PNTree*** of ***PNFile*** window before launching ***PNCompare***, the home path of the embedded ***PNTree*** is used as the initial home path for both the Left and Right side ***PNTrees*** in the Compare Area ([Figure 9-4](#) and section [9.2.4](#)) of the new ***PNCompare*** window.

**Figure 9-1 Launch *PNCompare* from *PNFile* Application Menu**



**Figure 9-2 Launch *PNCompare* from *PNFile* Application Bar**



### 9.1.2 Launching from terminals as an independent tool

Assuming the **PNFile** Toolkit is installed and configured properly, to launch the **PNCompare** from system terminals, users just need to fire the command **pncompare** followed by optional directory paths.

The only valid path followed is used as the initial home path for both the Left and Right side **PNTrees** in the Compare Area ([Figure 9-4](#) and section [9.2.4](#)) of the new **PNCompare** window. The current path where the tool is launched is used if no option is followed.

When there is more than one path followed, the last two are used as the initial home paths for the Left and Right side **PNTrees** in the Compare Area ([Figure 9-4](#) and section [9.2.4](#)) of the new **PNCompare** window. If the specified path is not available, the current path is used.

Example: > pncompare

To get the help information of the **pncompare** command, please use the option "+h" ([Figure 9-3](#)).

**Figure 9-3 pncompare help information**

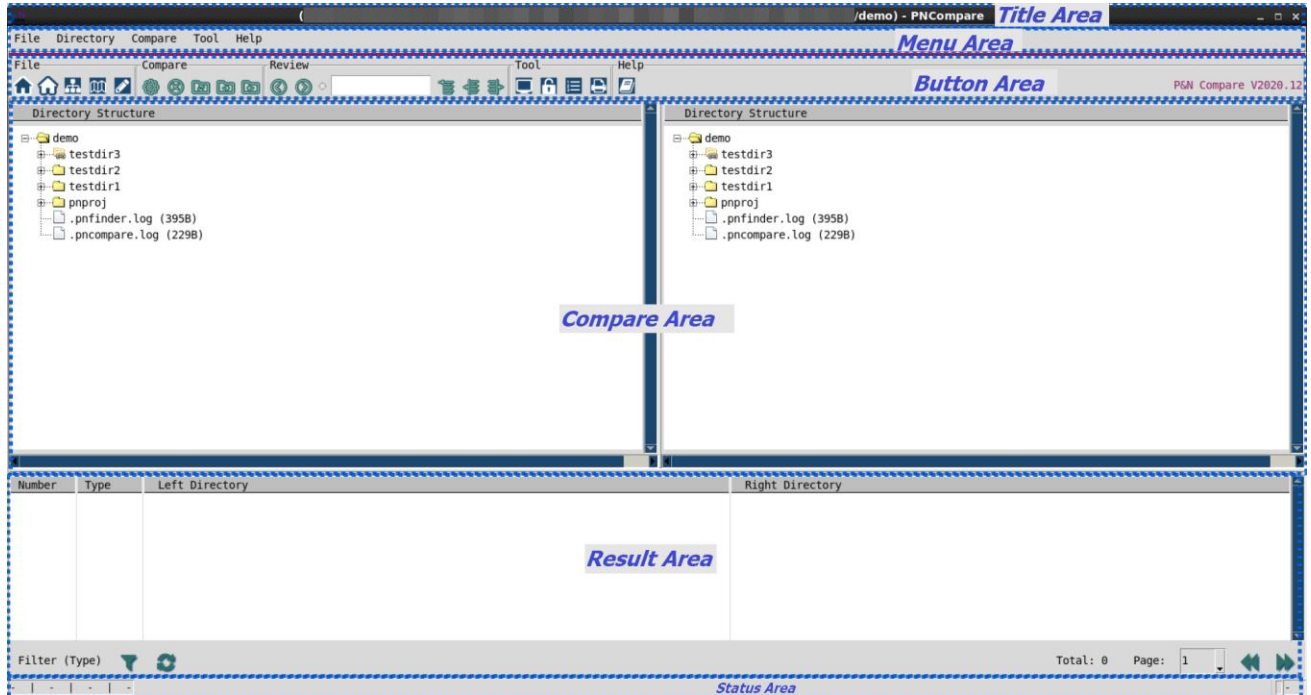
```
/demo> pncompare +h
Valid Options:
+help/h          -- Display all supported options
+version/v       -- Display the version string
+debug          -- Display debug message

Example commands to invoke pncompare
pncompare
pncompare directory
```

## 9.2 Interfaces of *PNCompare*

The **PNCompare** main window is shown in [Figure 9-4](#). There are six areas in the window, including Title, Menu, Button, Compare, Result, and Status Area.

Figure 9-4 Main Window of *PNCompare*



### 9.2.1 Title Area

The Title Area ([Figure 9-5](#)) shows the work path of *PNCompare*.

Figure 9-5 Title Area of *PNCompare* Main Window



### 9.2.2 Menu Area

There are five menus ([Figure 9-6](#)) in Menu Area, including File, Directory, Compare, Tool, and Help Menu.

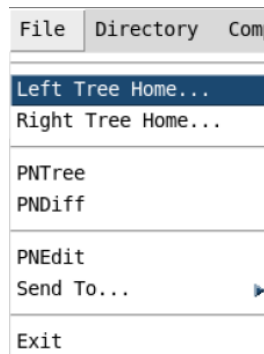
Figure 9-6 Menu Area of *PNCompare* Main Window



#### 9.2.2.1 File Menu

The pull-down menu in File Menu is shown in [Figure 9-7](#).

Figure 9-7 File Menu in *PNCompare* Main Window

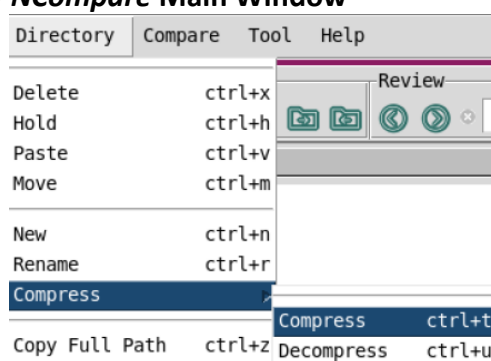


- **Left Tree Home...** sets the home path for the left **PNTree**.
- **Right Tree Home...** sets the home path for the right **PNTree**.
- **PNTree** launches a new independent **PNTree** window using the selected path as the home path.
- **PNDiff** launches **PNDiff** to compare the files selected (refer to section [6.1.1](#)).
- **PNEdit** launches a new **PNEdit** window and opens the selected files or directories.
- **Send To...** opens the file selected in a new tab of one existed **PNEdit** window.
- **Exit** quits **PNCompare**.

### 9.2.2.2 Directory Menu

The pull-down menu in Directory Menu is shown in [Figure 9-8](#). This is the same as that in section [3.1.2.2](#) but only valid when the comparing results are cleared.

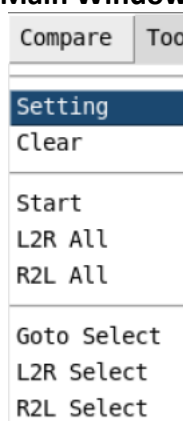
**Figure 9-8 Directory Menu in PNCompare Main Window**



### 9.2.2.3 Compare Menu

The pull-down menu in Compare Menu is shown in [Figure 9-9](#).

**Figure 9-9 Compare Menu in PNCompare Main Window**



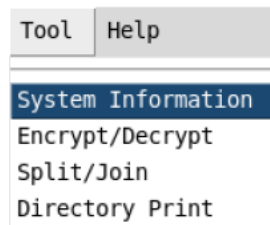
- **Setting** opens the Compare Setting Window (refer to section [9.3](#)).
- **Clear** clears all the comparing results.
- **Start** starts to compare based on the settings.
- **L2R All** resolves all the comparing differences by trying to make the left side the same as the right side (refer to section [9.5.1](#) for operation L2R). This menu is effective only when the comparing result is available.

- **R2L All** resolves all the comparing differences by trying to make the right side the same as the left side (refer to section [9.5.2](#) for operation R2L). This menu is effective only when the comparing result is available.
- **Goto Select** highlights the result selected in Results Area on both sides of the tree in Compare Area (refer to section [9.4.2](#) for operation Goto).
- **L2R Select** resolves the difference selected in Results Area by trying to make the left one the same as the right one (refer to section [9.5.1](#) for operation L2R).
- **R2L Select** resolves the difference selected in Results Area by trying to make the right one the same as the left one (refer to section [9.5.2](#) for operation R2L).

#### 9.2.2.4 Tool Menu

The pull-down menu in Tool Menu is shown in [Figure 9-10](#). This is the same as that in section [3.1.2.6](#).

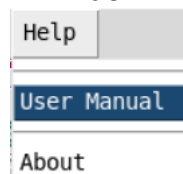
**Figure 9-10 Tool Menu in PNCompare Main Window**



#### 9.2.2.5 Help Menu

The pull-down menu in Help Menu is shown in [Figure 9-11](#).

**Figure 9-11 Help Menu in PNCompare Main Window**

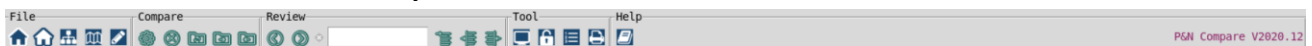


- **User Manual** opens this user manual.
- **About** shows the tool information.

### 9.2.3 Button Area



Button Bar is grouped as shown in [Figure 9-12](#).




**Figure 9-12 Button Area in PNCompare Main Window**



#### 9.2.3.1 File Bar






There are five buttons in File Bar.

-  sets the home path for the left **PNTree**.
-  sets the home path for the right **PNTree**.

-  launches a new independent **PNTree** window using the selected path as the home path.
-  launches **PNDiff** to compare the files selected (refer to section [6.1.1](#)).
-  launches a new **PNEdit** window and opens the selected files or directories.







#### 9.2.3.2 Compare Bar

There are five buttons in Compare Bar.

-  opens the Compare Setting Window (refer to section [9.3](#)).
-  clears all the comparing results.
-  starts to compare based on the settings.
-  L2R All. It resolves all the comparing differences by trying to make the left side the same as the right side (refer to section [9.5](#) for details). This menu is effective only when the comparing result is available.
-  R2L All. It resolves all the comparing differences by trying to make the right side the same as the left side (refer to section [9.5](#) for details). This menu is effective only when the comparing result is available.





#### 9.2.3.3 Review Bar

There are one input text box and five buttons in Review Bar.

-  highlights the previous result on both sides of the tree in Compare Area.
-  highlights the next result on both sides of the tree in Compare Area.
-  is a text box for user to fill the number of specific result in to highlight.
-  highlights the result specified in the text box on both sides of the tree in Compare Area (refer to section [9.4.2](#) for operation Goto).
-  resolves the difference specified in the text box by trying to make the left one the same as the right one (refer to section [9.5.1](#) for operation L2R).
-  resolves the difference specified in the text box by trying to make the right one the same as the left one (refer to section [9.5.2](#) for operation R2L).


#### 9.2.3.4 Tool Bar

There are four buttons in Tool Bar.

-  opens the window that prints system information (refer to section [3.8.2](#)).
-  opens the tool window of Encrypt and Decrypt (refer to section [3.8.1](#)).
-  splits or joins the files selected in the embedded **PNTree** (refer to section [3.8.3](#)).
-  opens the tool window of the directory information printer (refer to [3.8.4](#)).



#### 9.2.3.5 Help Bar

There is one button in the Help Bar. The tool information is also displayed on the right side of the bar.

-  opens this user manual.
- **P&N Compare V2020.12** shows the tool information, like tool name, tool version, etc.

#### 9.2.4 Compare Area

Compare Area consists of two **PNTrees** which are placed side by side. The left and right **PNTree** show the two candidates of the comparison whose home path can be changed.

There are three ways to change the home path of either side of the **PNTrees**. The first way is to use the “Left Tree Home” and “Right Tree Home” in File Menu (section [9.2.2.1](#)), the second way is to use the button  and  in File Bar (section [9.2.3.1](#)), and the last one is to set them in the “Compare Setting Window” (section [9.3](#)).

Compare Area also highlights the results after comparing (section [9.4](#)) and shows the real-time updates after resolving the difference (section [9.5](#)). Please note that both sides in this area support full features of **PNTree** (section [4](#)) only when the result highlights are cleared.

#### 9.2.5 Result Area

The comparing results with information like difference types and associated files in both sides of directories are numbered and listed in the Result Area. Please refer to section [9.4](#) for details.

#### 9.2.6 Status Area

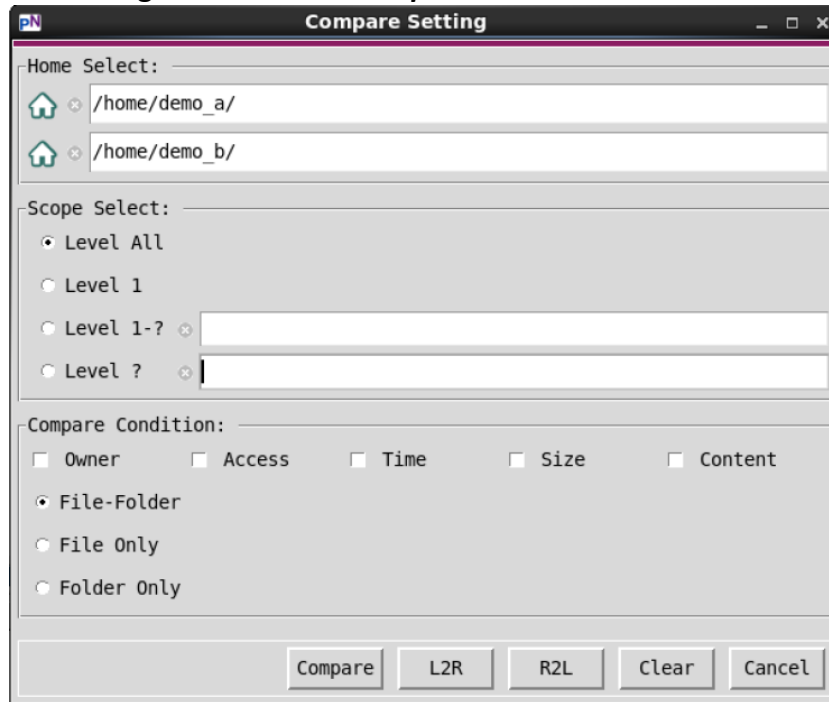
Status Area shows the information and status of the file selected from either side of the **PNTree**.

### 9.3 Setting **PNCompare**

To compare two sides of the candidates with **PNCompare**, the first step is to set it according to users' requirements.

[Figure 9-13](#) is the Compare Setting window which can be opened from either Compare Menu (section [9.2.2.3](#)) or Compare Bar (section [9.2.3.2](#)).

**Figure 9-13 Compare Setting Window of PNCompare**



### 9.3.1 Home Select Card

Two  set the home paths of the left and right **PNTree** respectively. The home paths are also the starting hierarchies of comparing.

### 9.3.2 Scope Select Card

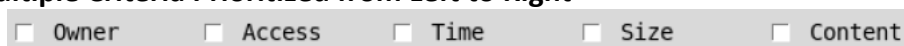
Scope Select Card sets the comparing depth.

- **Level All** means to compare all subhierarchies from the starting hierarchy (home path).
- **Level 1** means to only compare one level from the starting hierarchy.
- **Level 1-?** means to compare one to N level from the starting hierarchy. The number N is set in the following text box.
- **Level ?** means to only compare the N level counting from the starting hierarchy. The number N is set in the following text box.

### 9.3.3 Compare Condition Card

Compare Condition Card sets the criteria ([Figure 9-14](#)) and types ([Figure 9-15](#)) of comparing.

**Figure 9-14 Multiple Criteria Prioritized from Left to Right**



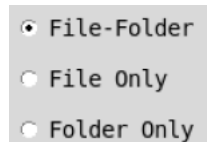
- **Owner**, if ticked, **PNCompare** compares the username of the owner of the files or/and folders.
- **Access**, if ticked, **PNCompare** compares the access type of the files or/and folders. The access type includes “r”, “w”, “x”, and “rw”, etc.
- **Time**, if ticked, **PNCompare** compares the time when the files or/and folders was updated last time.

- **Size**, if ticked, **PNCompare** compares the size of the files or/and folders.
- **Content**, if ticked, **PNCompare** compares the content of the files.

One or multiple criteria listed above can be selected for comparison. Multiple criteria are prioritized from left to right, and the comparison on one file or folder will stop once one criterion is matched.

Besides, users can control the comparing type as below.

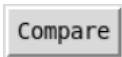

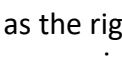
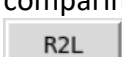
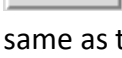
**Figure 9-15 Comparing Types**



- **File-Folder**, if selected, **PNCompare** compares both file and folder (default).
- **File Only**, if selected, **PNCompare** compares file only.
- **Folder Only**, if selected, **PNCompare** compares folder only.

#### 9.3.4 Buttons

After setting, the buttons at the bottom of the Compare Setting Window are used to start comparing and resolve the differences. The entries to these functions are also available in Compare Menu (section [9.2.2.3](#)) and Compare Bar (section [9.2.3.2](#))

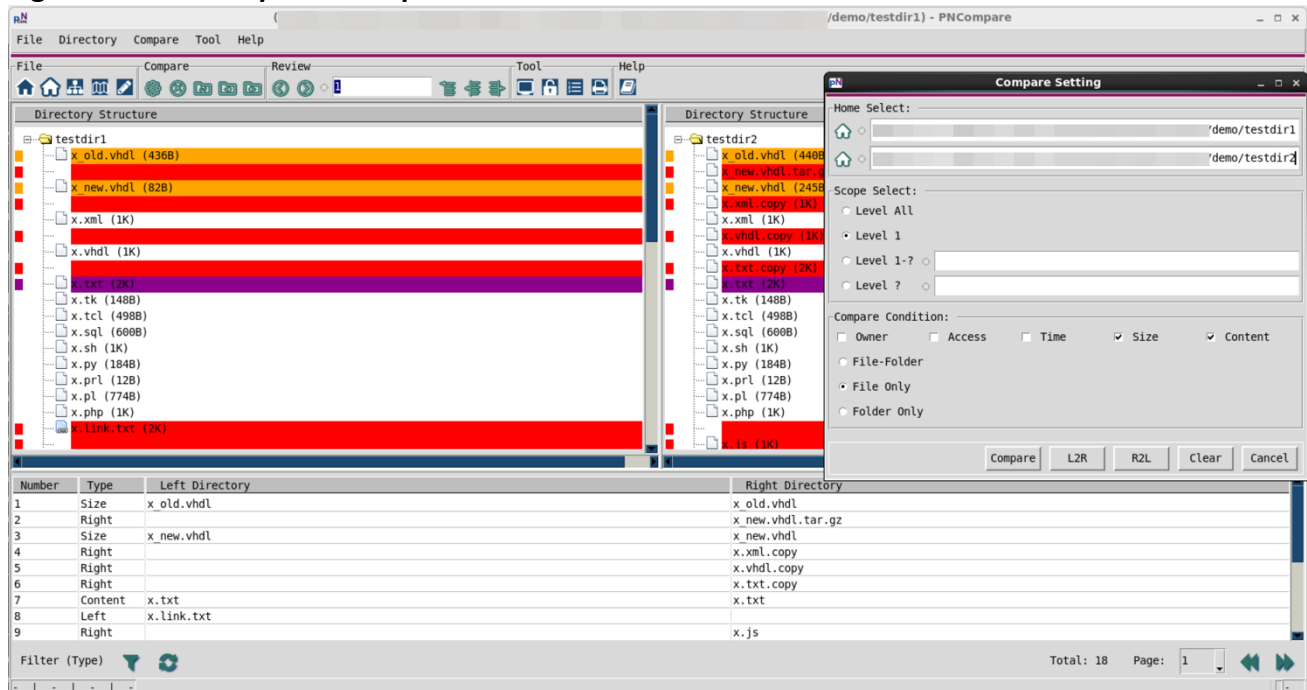
-  starts to compare based on the configurations.
-  resolves all the comparing differences by trying to make the left side the same as the right side (refer to section [9.5](#) for details). This button is effective only when the comparing result is available.
-  resolves all the comparing differences by trying to make the right side the same as the left side (refer to section [9.5](#) for details). This button is effective only when the comparing result is available.
-  clears all the comparing results.
-  dismisses the window.

## 9.4 Reviewing **PNCompare** Results

### 9.4.1 Comparing Results

After comparing, the results are listed in the Result Area and highlighted in the Compare Area ([Figure 9-16](#)).

**Figure 9-16 PNCompare Example Result**

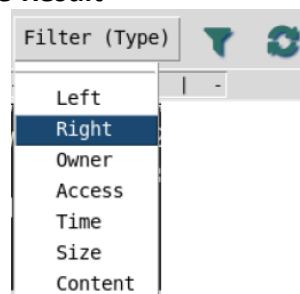


There are seven types of comparing differences.

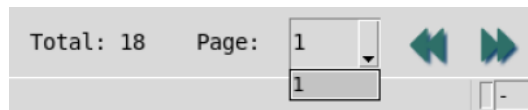
- **Left**, the file or folder only exists on the left-side tree.
- **Right**, the file or folder only exists on the right-side tree.
- **Owner**, the owner of the file or folder on the two sides are different from each other.
- **Access**, the access type of the file or folder on the two sides are different from each other.
- **Time**, the latest update time of the file or folder on the two sides are different from each other.
- **Size**, the size of the file or folder on the two sides are different from each other.
- **Content**, the content of the file on the two sides are different from each other.

The results listed in the Result Area can be filtered with the drop-down button ([Figure 9-17](#)) on the bottom left of the Result Area. The results are also paged as shown in [Figure 9-18](#), and one hundred items can be listed on one single page.

**Figure 9-17 Type Filter on PNCompare Result**

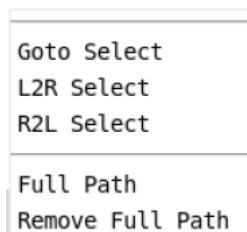


**Figure 9-18 Page of *PNCompare* Result**



The right-click menu is also supported in the Result Area ([Figure 9-19](#)).


**Figure 9-19 Right-click Menu in Result list**



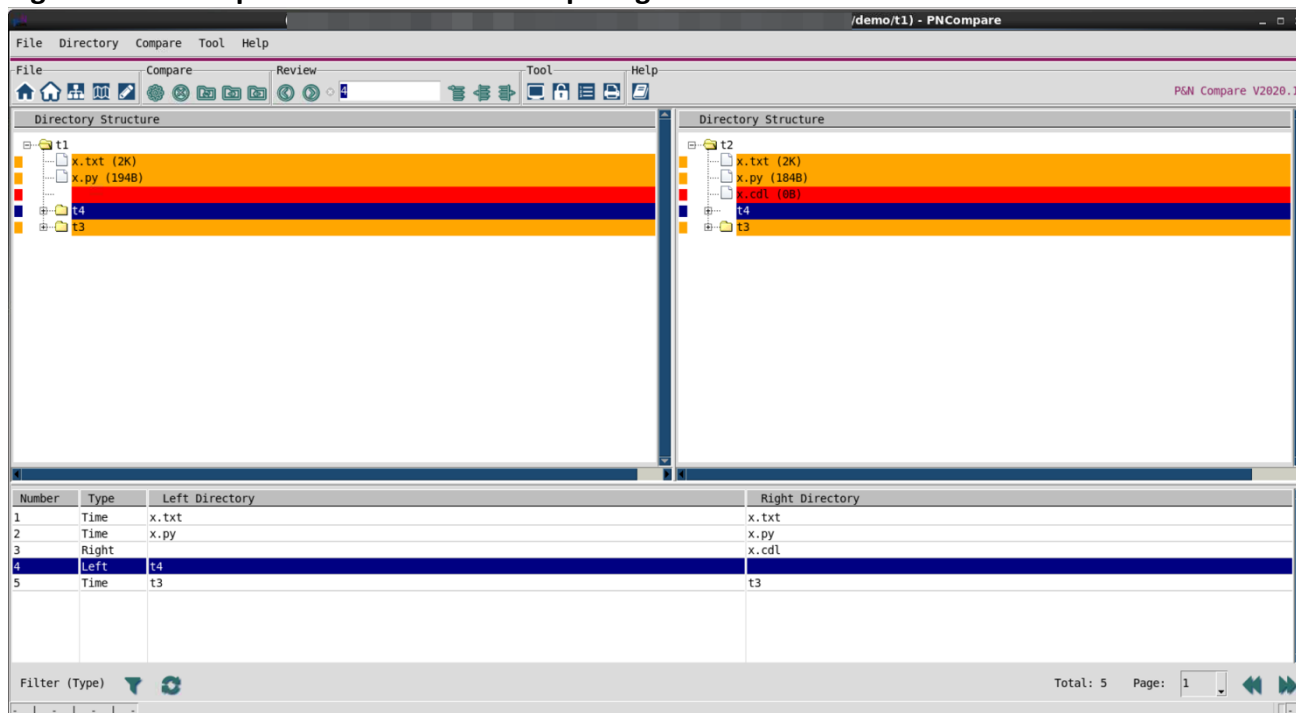
- **Goto Select** highlights the selected item on both sides of the tree in Compare Area.
- **L2R Select** resolves the difference selected by trying to make the left one the same as the right one (refer to section [9.5](#) for details).
- **R2L Select** resolves the difference selected by trying to make the right one the same as the left one (refer to section [9.5](#) for details).
- **Full Path** displays the file and folder with full path in the Result Area (default).
- **Remove Full Path** displays the name of the file and folder only.

### 9.4.2 Operation Goto

By double-clicking on any item in the Result Area, users can “Goto” it, i.e., the associated files or folders of both sides are highlighted in dark blue on the two **PNTrees** simultaneously ([Figure 9-20](#)).

There are three other entries to the operation Goto. The first one is in the right-click menu ([Figure 9-19](#)). The second one is the button  in Review Bar (section [9.2.3.3](#)). The last one is the “Goto Select” in Compare Menu (section [9.2.2.3](#)).

**Figure 9-20 Example: Goto the fourth comparing result**



## 9.5 Resolving Comparing Differences

When the comparing results are available, users can review them in Results Area (section [9.4](#)) and resolve the differences by either merging the left to the right or otherwise. Please always use the resolving function with caution since this is not reversible.


There are two opposite ways of resolving, L2R and R2L.


### 9.5.1 Operation L2R

L2R is to consider the right side the baseline and try to eliminate the difference from the left side. The approaches to resolving the differences in the L2R way depend on the result type.

- a. Left: A file or folder exists on the left side but not on the right side.  
To resolve the difference, **PNCompare** tries to copy the file or folder from the right side.
- b. Right: A file or folder exists on the right side but not on the left side.  
To resolve the difference, **PNCompare** tries to remove the file or folder from the left side.
- c. Other types: There are differences in Owner, Access, Time, Size, or Content between files or folders on the left and right side.  
To resolve the difference, **PNCompare** tries to copy the file or folder from the right side and override the one on the left side.

It is supported to resolve all the differences at once. There are three entries to this function. The first one is the button “L2R” in Compare Setting Window (section [9.3.4](#)). The second one is the

button  in Compare Bar (section [9.2.3.2](#)). The last one is the “L2R All” in Compare Menu (section [9.2.2.3](#)).

It is also supported to resolve one or multiple selected differences only. There are three ways to do so. The first one is to select one or multiple difference in the Results Area and use the right-click menu ([Figure 9-19](#)). The second one is to type the number of the target difference in the text box of Review Bar and use the button  (section [9.2.3.3](#)). The last one is to select one or multiple difference in the Results Area and use the “L2R select” of Compare Menu (section [9.2.2.3](#)).

After resolving, both sides of **PNTrees** will be fully updated only when all the highlights in Compare Area are cleared.

## 9.5.2 Operation R2L

On the contrary, R2L is to consider the left side the baseline and try to eliminate the difference from the right side. The approaches to resolving differences in the R2L way are similar to that in the L2R way (section [9.5.1](#)).

# Appendix A: Commands in *PNEdit*

```
=====
=====      1. Select Commands      =====
=====
```

Select contents.

ggVG      Select all.

<double-mouse-left-click>

Select word. when click on `[]()<>{}|`, select contents  
inside matched pairs. Alphabetic and numeric characters  
joined by underlines are considered as one word and can  
be selected by double-clicking mouse left button.

Continuously duplicated non-alphabetic and  
non-whitespace characters will be selected too.

Continuously duplicated whitespace characters will be  
selected as well.

<triple-mouse-left-click>

Select one line.

```
=====
=====                2. Input Commands                =====
=====
```

By entering input commands, you can switch into input mode. Once in input mode, any character you type is taken to be text and is added to the file.

To exit input mode, press the Escape (Esc) key. Insert/replace via these commands can be undone. When 'autoindent' is on, the indent of current line will be copied and applied to the new line automatically.

- a            Append text after the cursor.
  
- A            Append text at the end of the line.
  
- i            Insert text before the cursor.
  
- I            Insert text before the first non-blank in the line.
  
- o            Begin a new line below the cursor and insert text.

O            Begin a new line above the cursor and insert text.

```
=====
=====
=====  3. Change Commands  =====
=====
```

Make changes. Insert/replace via these commands can be undone. When 'autoindent' is on, the indent of current line will be copied and applied to the new line automatically.

s            Delete char and insert.

S            Same as command 'cc'. If 'autoindent' is on, preserve the indent.

r            Replace one character. Keep in command mode after replacing.

R            Enter replace mode. [Esc] to get back to command mode.

cw           Change (replace) to the end of the word.

ciw          Change (replace) entire word.

cc	Change (replace) entire line. If 'autoindent' is on, preserve the indent.
c\$	Change (replace) to the end of the line
C	Change (replace) to the end of the line. (same as c\$)
<ctrl>h	Used in input mode, back one character.
<ctrl>w	Used in input mode, back one word.
<ctrl>u	Used in input mode, back to the beginning of non-blank character.
[count] J	Join [count] lines below to the current one with one space in between. with no [count] set, a minimum of two lines will be joined. Remove the indent and insert one space when joining
[count] gJ	Similar to [count] J, but don't insert any spaces or remove any indent.
u	Undo the last edit.

<ctrl>r        Redo changes which were undone.

:changeb[uffer]    Open the change buffer window (GUI).

:change <change number in change buffer>

Go to a change listed in the change buffer.

<mouse-middle-click>

Paste from buffer \*(clipboard). This does not change  
the command/input mode.

=====  
=====        4. Cut, copy and paste        =====  
=====

Delete/Cut and paste. Can be undone.

x            Delete (Cut) a character to general buffer.

nx           Delete (Cut) n characters to general buffer.

X            Back (Cut) a character to general buffer.

nX	Back (Cut) n characters to general buffer.
dd	Delete (Cut) a whole line to general buffer.
ndd	Delete (Cut) n lines to general buffer.
dw	Delete (Cut) word (counting from cursor) to general buffer.
dnw	Delete (Cut) n words (counting from cursor) to general buffer.
d)	Delete (Cut) to the end of sentence.
db	Delete (Cut) previous word to general buffer.
dnb	Delete (Cut) previous n words to general buffer.
D	Delete (Cut) to the end of the line to general buffer.
d\$	Delete (Cut) to the end of the line to general buffer.
"*ndd	Delete (cut) n lines to buffer *. Buffer * is the

special buffer for storing the selection.

"[a-z]n~~dd~~ Delete (cut) n lines to buffer [a-z].

"[A-Z]n~~dd~~ Delete (cut) n lines and append to buffer [a-z].

y Yank (copy) the selected chars to general buffer.

yy Yank (copy) a line to general buffer.

Y Yank (copy) a line to general buffer.

nyy Yank (copy) n lines to general buffer.

nY Yank (copy) n lines to general buffer.

yw Yank (copy) a word to general buffer.

ynw Yank (copy) n words to general buffer.

"\*nyy Yank (copy) n lines to buffer \*. Buffer \* is the  
special buffer for storing the selection.

"[a-z]nyy Yank (copy) n lines to buffer [a-z].

"[A-Z]nyy      Yank (copy) n lines and append to buffer [a-z].

"[a-z]nY      Yank (copy) n lines to buffer [a-z].

"[A-Z]nY      Yank (copy) n lines and append to buffer [a-z].

"\*nY      Yank (copy) n lines to buffer \*. Buffer \* is the  
special buffer for storing the selection.

p      Put (paste) general buffer after cursor.

"\*p      Put (paste) text from buffer \* after cursor. Buffer \*  
is the special buffer for storing the selection.

"[a-z]p      Put (paste) text from buffer [a-z] after cursor.

P      Put (paste) general buffer before cursor.

"\*P      Put (paste) text from buffer \* before cursor. Buffer \*  
is the special buffer for storing the selection.

"[a-z]P      Put (paste) text from buffer [a-z] before cursor.

np            Put (paste) general buffer after cursor by n times.

"\*np            Put (paste) text from buffer \* after cursor by n times.

Buffer \* is the special buffer for storing the  
selection.

"[a-z]np            Put (paste) text from buffer [a-z] after cursor by n  
times.

nP            Put (paste) general buffer before cursor by n times.

"\*nP            Put (paste) text from buffer \* before cursor by n  
times. Buffer \* is the special buffer for storing the  
selection.

"[a-z]nP            Put (paste) text from buffer [a-z] before cursor by n  
times.

:stringb[uffer]    Open the string buffer window (GUI) to display the  
contents of all string buffers, clipboard included.

=====

=====            5. Set parameters            =====

=====

Set parameter like to enable/disable displaying line number, invisible characters, etc.

:se[t] number     Display a line number in front of every line.

:se[t] nonumber    Switch off ':set number', not display line number any more.

:se[t] list        Show invisible characters.

:se[t] nolist      Not show invisible characters.

:se[t] autoindent   Automatically copy indent from current line when starting a new line.

:se[t] noautoindent  
Turn off auto indent

:se[t] wrap        Lines longer than the width of the window will wrap and displaying continues on the next line.

:se[t] nowrap      Lines will not wrap and only part of long lines will be

displayed.

```
=====
=====      6. File operations      =====
=====
```

The commands that operate current file or multiple files. The relative path to the search paths is supported.

```
:se[t] path=<path1>[,<path2>,...]
```

Set search path list. Search path is a list of directories which will be searched when using relative paths in the file related commands. Multiple paths should be separated by comma, the order of the paths in the list determines the search priority. Default search path is the home path of the pnfile tree. The reference to the current path is \$path.

```
:se[t] path+=<path1>[,<path2>,...]
```

Append paths to the search path list.

```
:se[t] path-=<path1>[,<path2>,...]
```

Remove paths from the search path list.

:path[list]      List the search paths.

:homepath      Print the home path of the pfile tree.

:r[ead] [file]    Insert the [file] (default: current file) below the  
cursor. can be undone.

gf              Find the file name the cursor is on and edit it, or  
find the directory the cursor is on and browse it. This  
command fails if the Editor refuses to abandon the  
current file.

<ctrl>wgf      Similar to gf, but open in a new tab.

<ctrl>6      Quickly jump back and forth between the latest opened  
two files.

:E[xplore] [directory]

Find the directory and browse it, :E with no argument  
opens the directory where the current file locates.  
this fails if the current file is edited but not saved.

:E[xplore]! [directory]

Same as :E[xplore] [directory], but discard any changes.

:e[dit] [file/directory]

Find the file and edit it, or find the directory and browse it. this fails if the current file is edited but not saved.

:e[dit]! [file/directory]

Same as :e[dit] [file/directory], but discard any changes.

:ene[w]        Edit a new, unnamed buffer. This fails when changes have been made to the current buffer but not saved.

:ene[w]!       Edit a new, unnamed buffer. Discard any changes to the current buffer.

:tabnew [file]    Open [file] in new tab. When with no argument, open a new blank tab.

:sp[lit] [file]   Split current window in two. open (default current file) file in the split window.

<ctrl>ws      Split current window in two.

:vs[plit] [file]    Like ':split', but split vertically.

<ctrl>wv      Vertically split current window in two.

:sav[eas] <file>    Save the file under a new name.

:q[uit]          Quit the current window. This fails when changes have  
been made but not saved.

:q[uit]!          Discard any changes and quit.

:w[rite] [file]    Save the file in-place, or under a new name. Writing  
fails when the file is read-only or when the specified  
[file] exists.

:w[rite]! [file]    Save the file in-place, or under a new name.

:wq [file]        Save the file in-place, or under a new name, and then  
exit. Writing fails when the file is read-only. Exiting  
fails when changes have been made but not saved.

:wq! [file]        Save the file in-place, or under a new name, and then

quit.

:qa[ll]      Quit all tabs. This fails when changes have been made  
but not saved.

:qa[ll]!      Discard any changes and quit all tabs.

:wqa[ll]      Write (save) and quit on all tabs. Writing fails when  
the file is read-only. Exiting fails when changes have  
been made but not saved.

:wqa[ll]!      Write (save) and quit on all tabs.

:wa[ll]      Write (save) on all tabs. Writing fails when the file  
is read-only.

:wa[ll]!      Write (save) on all tabs.

ZZ      Same as ':wq'

ZQ      Same as ':q!'

:f[ile]      Display current file information.

<ctrl>g      Display current file information.

g<ctrl>g      Display current cursor information.

:fileb[uffer]    Open the file buffer window (GUI)

:h[elp]          Finding the help documents.

```
=====
=====          7. motion and scrolling          =====
=====
```

The commands that move the cursor or scroll the window.

H              Move to upper left corner of current screen.

M              Move to middle left of current screen.

L              Move to last left of current screen.

w              Move forward one word

b              Move backward to the start of the previous one word

e	Move to the next end of one word.
ge	Move to the previous end of one word.
k	Move one line up.
j	Move one line down.
h	Move one char left.
l	Move one char right.
gg	Go to the start of a file.
G	Positions you at the end of the file.
nG	Go to the start of the line n.
:[lineno]	Go to the start of line [lineno].
\$	Move to the end of a line.
<End>	Does the same thing as '\$' command.

**^** Move to the first non-blank character of the line.

**0** Move to the very first character of the line.

**<Home>** Move to the very first character of the line.

**%** Go to the nesxt matched [], {}, <>, ()

**f[char]** Move to the next [char] of current line. If the cursor is on the [char], will not move.

**;** Repeat the last 'f[char]', but move forward if the cursor is on the current [char].

**<ctrl>u** Scroll down half a screen of text.

**<ctrl>d** Move the viewing window down half a screen in the file, thus scrolls the text up half a screen.

**<ctrl>f** Scroll forward by a whole screen.

**<ctrl>b** Scroll backward by a whole screen.

<ctrl>l      Redraw current screen.

z<CR>      Make the current line the top of the window and move  
the cursor to the first non-blank character.

z.      Make the current line the middle of the window and move  
the cursor to the first non-blank character.

z-      Make the current line the bottom of the window and move  
the cursor to the first non-blank character.

/[pattern]/[flags]

Search forward and move to next occurrence of  
{pattern}, flags can be combination of 'i', 'm', 's',  
'r'. 'i':(ignore case), 'm':(multi-line), 's':(dot  
matches all), 'r':(raw data matching)

?[pattern][?flags]

Search backward and move to next occurrence of  
{pattern}, flags can be combination of 'i', 'm', 's',  
'r'. 'i':(ignore case), 'm':(multi-line), 's':(dot  
matches all), 'r':(raw data matching)

<shft><mouse-left-click>

Search forward and move to next occurrence of the word  
where the cursor is on

# Search backward and move to next occurrence of the word  
where the cursor is on

\* Search forward and move to next occurrence of the word  
where the cursor is on

n Repeat the last search

N Repeat the last search reversely

```
=====
=====      8. Replace using regex      =====
=====
```

Search and replace the whole file or part of the file. [range] here can be

1) . : current line; 2) n : line n; 3) .+n : current line plus n lines; 4)

\$ : last line; 5) m,n : from line m to line n; 5)'<,>' : selected text, In

column mode, the search&replace will be applied on the selected columns

only. No [range] works the sam as '!'.

`:%s/[regex_old]/[regex_new]/[flags]`

Replace old with new throughout file. flags can be combination of 'i', 'm', 's', 'r'. 'i':(ignore case), 'm':(multi-line), 's':(dot matches all), 'r':(raw data matching).

`:[range]s/[regex_old]/[regex_new]/[flags]`

Replace old with new in line [range]. flags can be combination of 'i', 'm', 's', 'r'. 'i':(ignore case), 'm':(multi-line), 's':(dot matches all), 'r':(raw data matching).

```
=====
=====          9. column mode          =====
=====
```

In column mode, the operations are performed vertically. The change commands can be undone.

`<ctrl>v`      Start column mode.

`k`            In column mode, move one line up to select block.

j	In column mode, move one line down to select block.
h	In column mode, move one char left to select block.
l	In column mode, move one char right to select block.
I	In column mode, insert characters.
s	In column mode, cut to general buffer and insert.
d	In column mode, delete (cut) to the general buffer.
x	In column mode, delete (cut) to the general buffer.
y	In column mode, yank (copy) to the general buffer.
p	In column mode, put general buffer after cursor.
P	In column mode, put general buffer before cursor.
np	In column mode, put general buffer after cursor by n times.
nP	In column mode, put general buffer before cursor by n

times.

J            In column mode, join all involved lines together.  
Remove the indent and insert one space when joining.

gJ           In column mode, similar to J, but don't insert any  
spaces or remove any indent.

## Appendix B: Config File .pnrc

```
=====
===== config file .pnrc =====
=====
```

The tool reads config file .pnrc when starts. The priority of .pnrc in multiple places is: './.pnrc' > '\$HOME/.pnrc' > '\$TOOLPATH/.pnrc'. The following command lines are supported in .pnrc. All of them can be re-configure in GUI. The pond sign, #, is used as line comment and it is case-ignored in .pnrc.

set syntax <on|off>

Default is on to enable tool to highlight/colorize text in auto-detected language. The language detecting is based on file's extension. The tool supports limited but most popular languages.

set window <default|<width>x<height>>

Set the size for the tool windows. The default is auto calculated on screen size.

set number <on|off>

Same as command ':set number' (on), ':set nonumber' (off). default is on.

set list <on|off> Same as command ':set list' (on), ':set nolist' (off). default is off.

set wrap <on|off> Same as command ':set wrap' (on), ':set nowrap' (off). default is on.

set autoindent <on|off>

Same as command ':set autoindent' (on), ':set noautoindent' (off). default is on.

set colorstyle <color mode name>

Set color mode. there are multiple preset modes to choose from, such as default, desert, evening, ect..

set fontstyle <mode name>

Set font modes, like Normal, Bold, Italic, Small, Medium or Large. default is Medium.

set font\_family <font name>

Set the font of characters. default is Monospace.

set font\_size <int>

Set the size of characters. default is 10.

set font\_weight <normal|bold>

Set normal or bold for characters.

set font\_slant <roman|italic>

Set Roman or Italic for characters.

set cursorline <on|off>

Highlight the text line of the cursor with CursorLine,  
useful to easily spot the cursor. default is off.

set cursorline\_bgcolor <default|color name|color code>

Set background color of cursor line when cursor line is  
set to on. The color can be name or code in HEX. If the  
color name or code is not set correctly, default one in  
the set colormode will be applied.

set cursorline\_fgcolor <default|color name|color code>

Set foreground color of cursor line when cursor line is set to on. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set cursorcolumn <on|off>`

Highlight the screen column of the cursor with CursorColumn, useful to align text. default is off.

`set cursorcolumn_bgcolor <default|color name|color code>`

Set background color of cursor column when cursor column is set to on. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set cursorcolumn_fgcolor <default|color name|color code>`

Set foreground color of cursor column when cursor column is set to on. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set cursorflicker <on|off>`

Make the flicker visible. default is on.

`set cursorflicker_bgcolor <default|color name|color code>`

Set background color of flicker when flicker is set to on. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set cursorflicker_fgcolor <default|color name|color code>`

Set foreground color of flicker when flicker is set to on. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set select_bgcolor <default|color name|color code>`

Set background color of selection. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set select_fgcolor <default|color name|color code>`

Set foreground color of selection. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

set insert\_color <default|color name|color code>

Set color of insertion. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

set insert\_width <default|width number>

Set the insert cursor width, default is 3.

set edit\_bgcolor <default|color name|color code>

Set background color of edit. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

set edit\_fgcolor <default|color name|color code>

Set foreground color of edit. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

set search\_bgcolor <default|color name|color code>

Set background color of match when searching. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode

will be applied.

`set search_fgcolor <default|color name|color code>`

Set foreground color of match when searching. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set list_bgcolor <default|color name|color code>`

Set background color of list. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set list_fgcolor <default|color name|color code>`

Set foreground color of list. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode will be applied.

`set tag_bgcolor <default|color name|color code>`

Set background color of tag. The color can be name or code in HEX. If the color name or code is not set correctly, default one in the set colormode

will be applied.

set tag\_fgcolor <default|color name|color code>

Set foreground color of tag. The color

can be name or code in HEX. If the color name or code

is not set correctly, default one in the set colormode

will be applied.

set title <strings>

Add the preset title for all created new files.

set path <path1>[,<path2>,...]

Set search path list, reference to the current path is

\$path

## Appendix C: Error/Warning Message

---

=====

===== 1. *PNFile* =====

=====

FILEEX

Short Message : File exists (add ! to override)

Severity : Error

Description : You are protected from accidentally overwriting a file. When

you want to write anyway, use the same command, but add a "!"

right after the command.

Example:

:w /home/test.txt

changes to:

:w! /home/test.txt

NOWRIT

Short Message : No write since last change (add ! to override)

Severity : Error

**Description** : You are trying to |abandon| a file that has changes. **PNEdit** protects you from losing your work. You can either write the changed file with ":w", or, if you are sure, |abandon| it anyway, and lose all the changes. This can be done by adding a '!' character right after the command you use.

**Example:**

:e /home/test.txt

changes to:

:e! /home/test.txt

**READOY**

**Short Message** : File access is 'read-only' (add ! to override)

**Severity** : Error

**Description** : You are trying to write a file whose access is read-only. To write the file anyway, add a '!' character right after the command you use.

**Example:**

:w

changes to:

:w!

**CNTWTF**

Short Message : Can not open the file for writing <write\_file>

Severity : Error

Description : For some reason, the file you are writing to cannot be created  
or overwritten. The reason could be that you do not have permission  
to write in the directory or the file name is not valid.

CNTACP

Short Message : Can not access start path <start\_path>

Severity : Warning

Description : You may have set the wrong path or do not have the appropriate  
permission to access the path.

=====

===== 2. **PNEdit** =====

=====

NOWRIT

Short Message : No write since last change (add ! to override)

Severity : Error

Description : You are trying to |abandon| a file that has changes. **PNEdit**  
protects you from losing your work. You can either write the  
changed file with ":w", or, if you are sure, |abandon| it anyway,  
and lose all the changes. This can be done by adding a '!' character

right after the command you use.

Example:

```
:e /home/test.txt
```

changes to:

```
:e! /home/test.txt
```

#### CNTOF

Short Message : Can not open file <open\_file>

Severity : Error

Description : If you're getting this error, the problem is most likely that  
the file name or the path to the file is incorrect.

#### ARGREQ

Short Message : Argument required

Severity : Error

Description : This happens when an Ex command with mandatory argument(s)  
was executed, but no argument has been specified.

#### READOY

Short Message : File access is 'read-only' (add ! to override)

Severity : Error

Description : You are trying to write a file that access was read-only. To write the file anyway, add a '!' character right after the command you use.

Example:

:w

changes to:

:w!

#### FILEEX

Short Message : File exists (add ! to override)

Severity : Error

Description : You are protected from accidentally overwriting a file. When you want to write anyway, use the same command, but add a "!" right after the command.

Example:

:w /home/test.txt

changes to:

:w! /home/test.txt

#### CNTWTF

Short Message : Can not open the file for writing <write\_file>

Severity : Error

Description : For some reason, the file you are writing to cannot be created or overwritten. The reason could be that you do not have permission to write in the directory or the file name is not valid.

CNTRDF

Short Message : Can not read the file <read\_file>

Severity : Error

Description : **PNEdit** can not read a temporary file.

CNTFDF

Short Message : Can not find file <find\_file> in path

Severity : Error

Description : The file item you selected can not be found. If you do want to edit a new file, use:  
:e <cfile>

CNTACD

Short Message : Can not access directory <directory\_name>

Severity : Error

Description : You may have set the wrong directory or do not have the appropriate permission to access the directory.

**BADRGX**

Short Message : Bad regular expression: <pattern>

Severity : Error

Description : Invalid Regular Expression. The pattern you entered is not supported in the current regular expression rules.

**BADPSP**

Short Message : Bad Paste position: <position>

Severity : Error

Description : The line-column position you selected is not valid. You can not paste anything into an invalid position.

**BADFMP**

Short Message : Bad From position: <position>

Severity : Error

Description : The From line-column position you selected is not valid.

**BADTOP**

Short Message : Bad To position: <position>

Severity : Error

Description : The To line-column position you selected is not valid.

IVDTAG

Short Message : Tag position <position> invalid

Severity : Error

Description : The line-column position you selected is not valid. The tag will  
not be created.

```
=====
===== 3. PNTree =====
=====
```

CNTACP

Short Message : Can not access start path <start\_path>

Severity : Warning

Description : You may have set the wrong path or do not have the appropriate  
permission to access the path.

BADRGX

Short Message : Bad regular expression: <pattern>

Severity : Error

Description : Invalid Regular Expression. The pattern you entered is not supported in the current regular expression rules.

**BADDIR**

Short Message : Bad directory: <directory\_name>

Severity : Error

Description : You have selected a directory that either does not exist or you may not have permission to access.

**CNTEXD**

Short Message : Can not expand <directory\_name>

Severity : Warning

Description : Can not expand the directory. This warning could be triggered by one of the following reasons:

- The directory has been changed
- You have no permissions to access the directory

**CNTSHF**

Short Message : Can not search file <search\_file>

Severity : Warning

Description : **PNTree** can not perform search operation in this selected file.

CNTRPF

Short Message : Can not replace file <replace\_file>

Severity : Warning

Description : **PNTree** can not perform replace operation in this selected file.

CNTDED

Short Message : Can not delete directory <delete\_directory>

Severity : Warning

Description : The CNTDED warning occurs when users try to delete a directory from their disk. This warning could be triggered by one of the following reasons:

- The directory not exist, or its directory name is misspelled
- There are files or subdirectories which need higher permissions
- There are files in use

CNTCPD

Short Message : Can not copy directory from <from\_directory> to <to\_directory>

Severity : Warning

Description : The CNTCPD warning message appears when you attempt to copy a file or folder to another directory path. It might come up followed by one of the

following messages in different cases:

- There is not enough free disk space. Delete one or more files to free disk space, and then try again.
- An error occurred while copying the file or folder. The operation timed out.
- Can not find the specified directory. Make sure you specify the correct copy to directory name.
- The copy to path is write-protected.

#### CNTMVD

Short Message : Can not move directory from <from\_directory> to <to\_directory>

Severity : Warning

Description : The CNTMVD warning message appears when you attempt to move a file or

folder to another directory path. It might come up followed by one of the

following messages in different cases:

- There is not enough free disk space. Delete one or more files to free disk space, and then try again.
- An error occurred while moving the file or folder. The operation timed out.
- Can not find the specified directory. Make sure you specify the correct move to directory name.
- The move to path is write-protected.

**CNTNWD**

Short Message : Can not new directory <new\_directory>

Severity : Warning

Description : The CNTNWD warning occurs when users try to create a new file or folder

in a directory path. This warning could be triggered by one of the following

reasons:

- The file or folder already exists
- You have no permissions to access the directory

**CNTRND**

Short Message : Can not rename directory <rename\_directory> to <new\_directory>

Severity : Warning

Description : The rename warning message occurs most likely when the directory already

exists.

**CNTCMD**

Short Message : Can not compress directory <compress\_directory> to <compress\_file>

Severity : Warning

Description : An warning occurs while compressing a directory

CNTDCF

Short Message : Can not decompress file <decompress\_file> to <decompress\_directory>

Severity : Warning

Description : An warning occurs while decompressing a directory

=====

===== 4. **PNDiff** =====

=====

NOWRIT

Short Message : No write since last change (add ! to override)

Severity : Error

Description : You are trying to |abandon| a file that has changes. **PNEdit**

protects you from losing your work. You can either write the  
changed file with ":w", or, if you are sure, |abandon| it anyway,  
and lose all the changes. This can be done by adding a '!' character  
right after the command you use.

Example:

:e /home/test.txt

changes to:

:e! /home/test.txt

READOY

Short Message : File access is 'read-only' (add ! to override)

Severity : Error

Description : You are trying to write a file that access was read-only. To write the file anyway, add a '!' character right after the command you use.

Example:

:w

changes to:

:w!

#### CNTWTF

Short Message : Can not open file for writing <write\_file>

Severity : Error

Description : For some reason the file you are writing to cannot be created or overwritten. The reason could be that you do not have permission to write in the directory or the file name is not valid.

#### DIFRNG

Short Message : Input diff range from <from\_line> and to <to\_line> is invalid

Severity : Error

Description : The number of diff from/to line is out of range, you need to set a valid diff from/to line number.

=====

===== 5. **PNConsole** =====

=====

=====

===== 6. Tools =====

=====

SPTLRG

Short Message : Split add Line-Range <line\_range> is invalid

Severity : Error

Description : The number of split add line is out of range, you need to  
set a valid split add line number.

SPTPRG

Short Message : Split add Part-Range <part\_range> is invalid

Severity : Error

Description : The number of split add part is out of range, you need to  
set a valid split add part number.

JONRNG

Short Message : Join insert Line-Range <line\_range> is invalid

Severity : Error

Description : The number of join insert line is out of range, you need to set a valid join insert line number.

BADDIR

Short Message : Bad directory: <directory\_name>

Severity : Error

Description : You have selected a directory that either does not exist or you may not have permission to access.

CNTPTD

Short Message : Can not print directory <print\_directory> to <output\_file>

Severity : Error

Description : The CNTPTD error message appears when you attempt to print directory information into an output file. This error could be caused by one of the following reasons:

- There is not enough free disk space. Delete one or more files to free disk space, and then try again.
- An error occurred while printing a directory information.

- You have no permissions to access the printing file or folder

#### IVDECT

Short Message : Can not encrypt file <encrypt\_file>

Severity : Error

Description : You may not have permission to access the file or it has been encrypted before.

#### IVDDCT

Short Message : Invalid password <password> to decrypt file <decrypt\_file>

Severity : Error

Description : You have entered an incorrect password. The encrypted file can not be decrypted correctly, please input the right password and try again.



# VeriForma

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