

NAME

diff – compare two files

SYNOPSIS

diff [-bitw] [-c | -e | -f | -h | -n | -u] *file1 file2*

diff [-bitw] [-C *number* | -U *number*] *file1 file2*

diff [-bitw] [-D *string*] *file1 file2*

diff [-bitw] [-c | -e | -f | -h | -n | -u] [-l] [-r] [-s] [-S *name*] *directory1 directory2*

DESCRIPTION

The **diff** utility will compare the contents of *file1* and *file2* and write to standard output a list of changes necessary to convert *file1* into *file2*. This list should be minimal. Except in rare circumstances, **diff** finds a smallest sufficient set of file differences. No output will be produced if the files are identical.

The normal output contains lines of these forms:

n1 **a** *n3,n4*

n1,n2 **d** *n3*

n1,n2 **c** *n3,n4*

where *n1* and *n2* represent lines *file1* and *n3* and *n4* represent lines in *file2*. These lines resemble **ed**(1) commands to convert *file1* to *file2*. By exchanging **a** for **d** and reading backward, *file2* can be converted to *file1*. As in **ed**, identical pairs, where *n1*=*n2* or *n3*=*n4*, are abbreviated as a single number.

Following each of these lines come all the lines that are affected in the first file flagged by '<', then all the lines that are affected in the second file flagged by '>'.

OPTIONS

The following options are supported:

- b** Ignores trailing blanks (spaces and tabs) and treats other strings of blanks as equivalent.
- i** Ignores the case of letters. For example, 'A' will compare equal to 'a'.
- t** Expands <TAB> characters in output lines. Normal or **-c** output adds character(s) to the front of each line that may adversely affect the indentation of the original source lines and make the output lines difficult to interpret. This option will preserve the original source's indentation.
- w** Ignores all blanks (<SPACE> and <TAB> characters) and treats all other strings of blanks as equivalent. For example, 'if (a == b)' will compare equal to 'if(a==b)'.

The following options are mutually exclusive:

- c** Produces a listing of differences with three lines of context. With this option, output format is modified slightly. That is, output begins with identification of the files involved and their creation dates, then each change is separated by a line with a dozen *'s. The lines removed from *file1* are marked with '-'. The lines added to

file2 are marked '+''. Lines that are changed from one file to the other are marked in both files with '!'.
 @@ -n1,n2 +n3,n4 @@

- C** *number* Produces a listing of differences identical to that produced by **-c** with *number* lines of context.

- D** *string* Creates a merged version of *file1* and *file2* with C preprocessor controls included so that a compilation of the result without defining *string* is equivalent to compiling *file1*, while defining *string* will yield *file2*.

- e** Produces a script of only **a**, **c**, and **d** commands for the editor **ed**, which will recreate *file2* from *file1*. In connection with the **-e** option, the following shell program may help maintain multiple versions of a file. Only an ancestral file (\$1) and a chain of version-to-version **ed** scripts (\$2,\$3,...) made by **diff** need be on hand. A "latest version" appears on the standard output.


```
(shift; cat $*; echo '1,$p') | ed - $1
```

- f** Produces a similar script, not useful with **ed**, in the opposite order.

- h** Does a fast, half-hearted job. It works only when changed stretches are short and well separated, but does work on files of unlimited length. Options **-c**, **-C**, **-D**, **-e**, **-f**, and **-n** are unavailable with **-h**. **diff** does not descend into directories with this option.

- n** Produces a script similar to **-e**, but in the opposite order and with a count of changed lines on each insert or delete command.

- u** Produces a listing of differences with three lines of context. The output is similar to that of the **-c** option, except that the context is "unified". Removed and changed lines in *file1* are marked by a '-' while lines added or changed in *file2* are marked by a '+'. Both versions of changed lines appear in the output, while added, removed, and context lines appear only once. The identification of *file1* and *file2* is different, with "——" and "+++" being printed where "***" and "——" would appear with the **-c** option. Each change is separated by a line of the form

```
@@ -n1,n2 +n3,n4 @@
```

-U *number* Produces a listing of differences identical to that produced by **-u** with *number* lines of context.

The following options are used for comparing directories:

-l Produces output in long format. Before the **diff**, each text file is piped through **pr(1)** to paginate it. Other differences are remembered and summarized after all text file differences are reported.

-r Applies **diff** recursively to common subdirectories encountered.

-s Reports files that are identical. These identical files would not otherwise be mentioned.

-S *name* Starts a directory **diff** in the middle, beginning with the file *name*.

OPERANDS

The following operands are supported:

file1
file2 A path name of a file or directory to be compared. If either *file1* or *file2* is **-**, the standard input will be used in its place.

directory1
directory2 A path name of a directory to be compared.

If only one of *file1* and *file2* is a directory, **diff** will be applied to the non-directory file and the file contained in the directory file with a filename that is the same as the last component of the non-directory file.

USAGE

See **largefile(5)** for the description of the behavior of **diff** when encountering files greater than or equal to 2 Gbyte (2^{31} bytes).

EXAMPLES

Example 1: Typical output of the diff command

In the following command, **dir1** is a directory containing a directory named **x**, **dir2** is a directory containing a directory named **x**, **dir1/x** and **dir2/x** both contain files named **date.out**, and **dir2/x** contains a file named **y**:

```
example% diff -r dir1 dir2
Common subdirectories: dir1/x and dir2/x
```

```

Only in dir2/x: y

diff -r dir1/x/date.out dir2/x/date.out

1c1

< Mon Jul  2 13:12:16 PDT 1990

---

> Tue Jun 19 21:41:39 PDT 1990

```

ENVIRONMENT VARIABLES

See **environ(5)** for descriptions of the following environment variables that affect the execution of **diff**: **LANG**, **LC_ALL**, **LC_CTYPE**, **LC_MESSAGES**, **LC_TIME**, and **NLSPATH**.

TZ Determines the locale for affecting the timezone used for calculating file timestamps written with the **-C** and **-c** options.

EXIT STATUS

The following exit values are returned:

0 No differences were found.

1 Differences were found.

>1 An error occurred.

FILES

/tmp/d????? temporary file used for comparison

/usr/lib/diffh executable file for **-h** option

ATTRIBUTES

See **attributes(5)** for descriptions of the following attributes:

tab() allbox; cw(2.750000i)| cw(2.750000i) lw(2.750000i)| lw(2.750000i). ATTRIBUTE
 TYPEATTRIBUTE VALUE AvailabilitySUNWesu CSIEnabled Interface StabilityStandard

SEE ALSO

bdiff(1), **cmp(1)**, **comm(1)**, **dircmp(1)**, **ed(1)**, **pr(1)**, **sdiff(1)**, **attributes(5)**, **environ(5)**, **largefile(5)**, **standards(5)**

NOTES

Editing scripts produced under the **-e** or **-f** options are naive about creating lines consisting of a single period (.).

Missing NEWLINE at end of file indicates that the last line of the file in question did not have a NEWLINE. If the lines are different, they will be flagged and output, although the output will seem to indicate they are the same.