

# Line termination conventions

## platform-to-platform differences

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## Line termination

- coded bytes inserted in text files
- signaling end-of-one-line, beginning-of-next
- problematic using file from one platform with utilities on another

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## Line termination

- unix     0a   “linefeed”
- Mac     0d   “carriage return”
- Win     0d0a (pair)

unix:           

preceding text	0a	succeeding text
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Mac:           

preceding text	0d	succeeding text
----------------	----	-----------------

Win:           

preceding text	0d	0a	succeeding text
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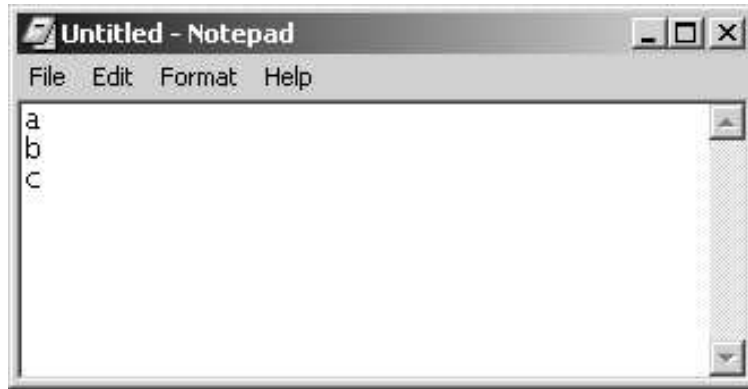
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## Test file

- type it in an editor
- hit these 6 keys
  - a
  - Enter
  - b
  - Enter
  - c
  - Enter

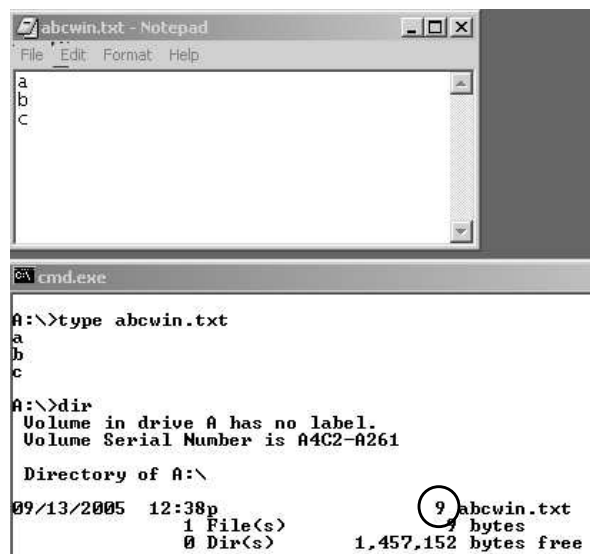
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# Testfile in Notepad (Windows)



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# Contains 9 characters



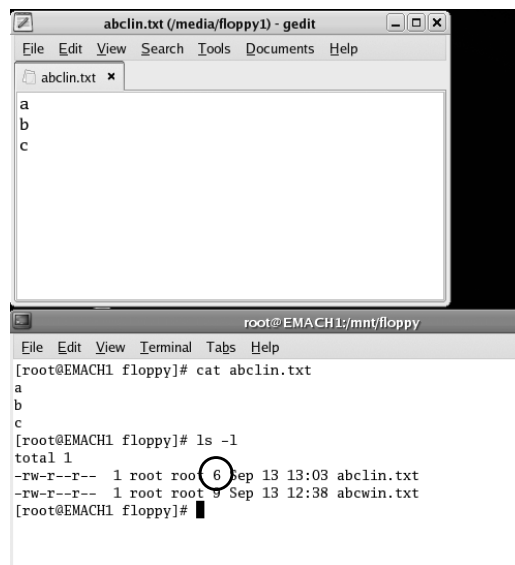
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# Testfile in gedit (linux)



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# Contains 6 characters



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## Here they are in hex

```
root@EMACH1:/mnt/floppy
File Edit View Terminal Tabs Help
[root@EMACH1 floppy]# xxd -g1 abcwin.txt
0000000: 61 0d 0a 62 0d 0a 63 0d 0a          a..b..c..
[0d 0a] ← Windows line terminator
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# xxd -g1 abclin.txt
0000000: 61 0a 62 0a 63 0a          a.b.c.
[0a] ← linux line terminator
[root@EMACH1 floppy]# █
```

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## Here they are again (bin, dec)

```
root@EMACH1:/mnt/floppy
File Edit View Terminal Tabs Help
[root@EMACH1 floppy]# xxd -g1 -b abcwin.txt
0000000: 01100001 00001101 00001010 01100010 00001101 00001010  a..b..
0000006: 01100011 00001101 00001010          c..
[00001101] ← Windows line terminator
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# od -Ad -td1z abcwin.txt
0000000 97 13 10 98 13 10 99 13 10
>a..b..c.<
0000009
[root@EMACH1 floppy]#
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# xxd -g1 -b abclin.txt
0000000: 01100001 00001010 01100010 00001010 01100011 00001010  a.b.c.
[00001010] ← linux line terminator
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# od -Ad -td1z abclin.txt
0000000 97 10 98 10 99 10
>a.b.c.<
0000006
[root@EMACH1 floppy]#
```

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## hex dump/edit tools

- linux
  - xxd
  - od
  - hexedit
- Windows
  - xvi32 (<http://www.chmaas.handshake.de/> )

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## Convert between win and lin

- search and replace in a hex editor
  - 0d0a with 0a            win to lin
  - 0a with od0a            lin to win
- utilities for the purpose (in linux)
  - dos2unix                win to lin
  - unix2dos                lin to win
- roll your own (in linux)
  - sed s/.\$// <infile> > <outfile>        win to lin
  - sed s/\$/\x0d/ <infile> > <outfile>    lin to win

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# Doing some conversions

```
root@EMACH1:/mnt/floppy
File Edit View Terminal Tabs Help
[root@EMACH1 floppy]# cat abcwin.txt | dos2unix | xxd -g1
0000000: 61 0a 62 0a 63 0a          a.b.c.
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# cat abcwin.txt | sed s/.$// | xxd -g1
0000000: 61 0a 62 0a 63 0a          a.b.c.
[root@EMACH1 floppy]#
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# cat abclin.txt | unix2dos | xxd -g1
0000000: 61 0d 0a 62 0d 0a 63 0d 0a  a..b..c..
[root@EMACH1 floppy]#
[root@EMACH1 floppy]# cat abclin.txt | sed s/$/>\x0d/ | xxd -g1
0000000: 61 0d 0a 62 0d 0a 63 0d 0a  a..b..c..
[root@EMACH1 floppy]#
```

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