

Лабораторная работа № 9

Операционные системы

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Информация

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Вводная часть

Вводная часть

Командная оболочка Midnight Commander

Актуальность

- Midnight Commander является одной из самых распространённых командных оболочек.
- Midnight Commander позволяет выполнять широкий список задач.

Объект и предмет исследования

- Midnight Commander

Цели и задачи

Освоение основных возможностей командной оболочки Midnight Commander. Приобретение навыков практической работы по просмотру каталогов и файлов; манипуляций с ними.

Материалы и методы

- Процессор pandoc для входного формата Markdown
- Результирующие форматы
 - pdf
 - html
- Автоматизация процесса создания: Makefile

Создание презентации

Вызов справки для команды man

```
[avperegudov@fedora ~]$ man mc
```

```
MC(1)                                     GNU Midnight Commander

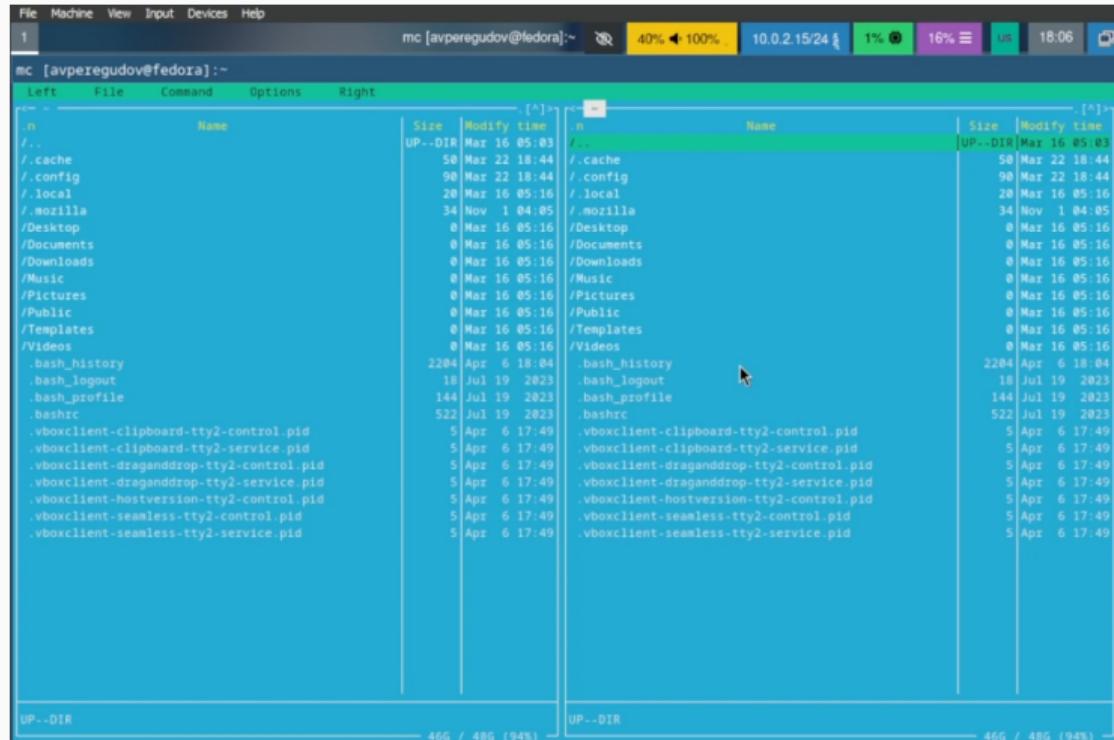
NAME
    mc - Visual shell for Unix-like systems.

SYNOPSIS
    mc [-abcCdfhPstuUVx] [-l log] [dir1 [dir2]] [-e [file] ...] [-v file]

DESCRIPTION
    GNU Midnight Commander is a directory browser/file manager for Unix-like operating systems.
```

Запуск Midnight commander

```
[avperegudov@fedora ~] $ mc
```



Создание файла file.txt

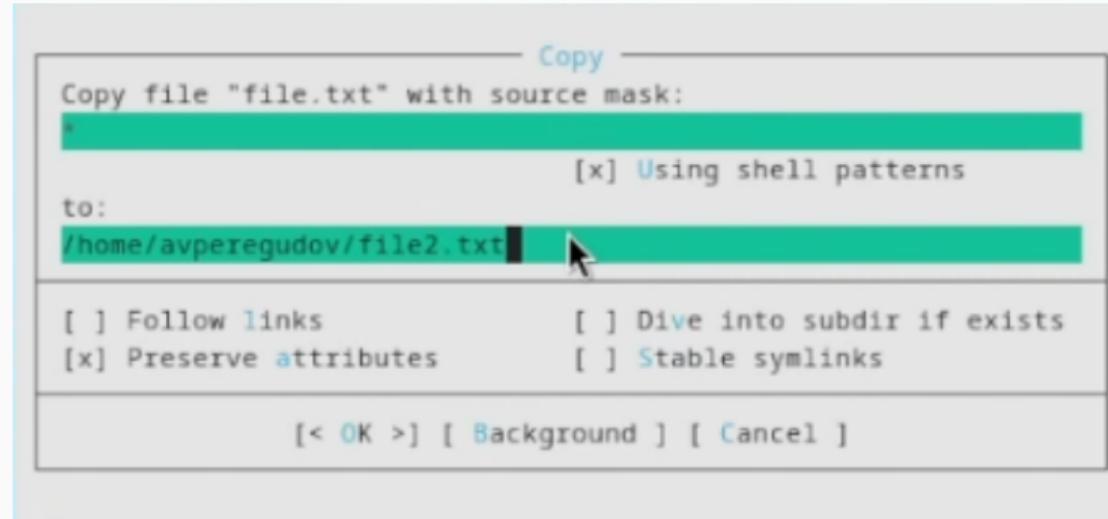
```
[avperegudov@fedora ~]$ touch file.txt
```

Left	File	Command	Options	Right
<--	~			.[^]>
.	n			Size Modify time
/..				UP--DIR Mar 16 05:03
/.cache				50 Mar 22 18:44
/.config				90 Mar 22 18:44
/.local				20 Mar 16 05:16
/.mozilla				34 Nov 1 04:05
/Desktop				0 Mar 16 05:16
/Documents				0 Mar 16 05:16
/Downloads				0 Mar 16 05:16
/Music				0 Mar 16 05:16
/Pictures				0 Mar 16 05:16
/Public				0 Mar 16 05:16
/Templates				0 Mar 16 05:16
/Videos				0 Mar 16 05:16
.bash_history				2204 Apr 6 18:04
.bash_logout				18 Jul 19 2023
.bash_profile				144 Jul 19 2023
.bashrc				522 Jul 19 2023
.vboxclient-clipboard-tty2-control.pid				5 Apr 6 17:49
.vboxclient-clipboard-tty2-service.pid				5 Apr 6 17:49
.vboxclient-draganddrop-tty2-control.pid				5 Apr 6 17:49
.vboxclient-draganddrop-tty2-service.pid				5 Apr 6 17:49
.vboxclient-hostversion-tty2-control.pid				5 Apr 6 17:49
.vboxclient-seamless-tty2-control.pid				5 Apr 6 17:49
.vboxclient-seamless-tty2-service.pid				5 Apr 6 17:49
file.txt				0 Apr 6 18:08

Редактирование файла file.txt

```
mc [avperegudov@fedora]:~  
file.txt [-M--] 42 L:[ 1+ 0 1/ 1] *(42 / 42b) <EOF>  
alexander svwoevmiewmowiemwevwds 1231231
```

Копирование файла file.txt

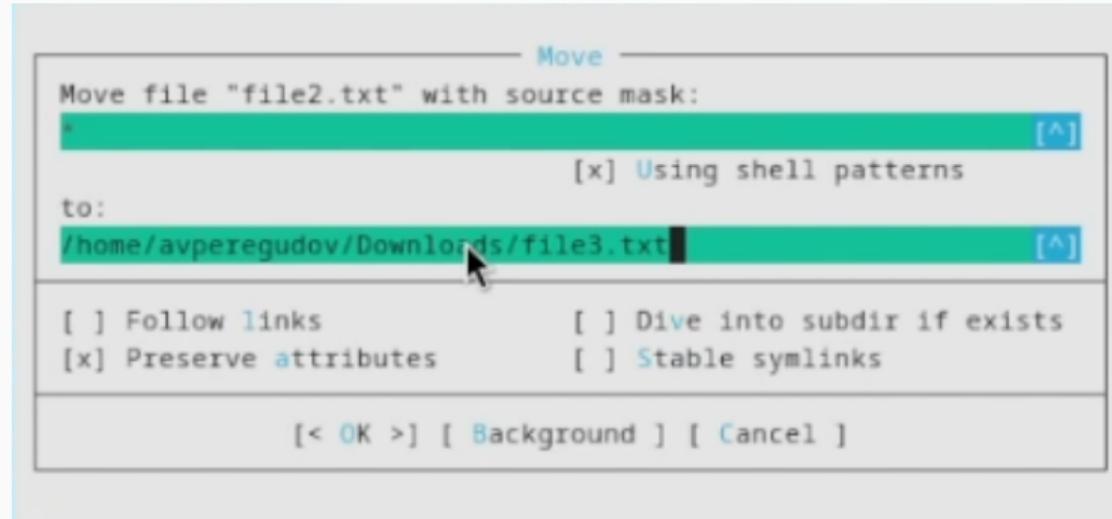


Left	File	Command	Options	Right
<--	~			[^]>
.	Name		Size	Modify time
..			UP--DIR	Mar 16 05:03
./cache			50	Mar 22 18:44
./config			90	Mar 22 18:44
./local			20	Mar 16 05:16
./mozilla			34	Nov 1 04:05
/Desktop			0	Mar 16 05:16
/Documents			0	Mar 16 05:16
/Downloads			0	Mar 16 05:16
/Music			0	Mar 16 05:16
/Pictures			0	Mar 16 05:16
/Public			0	Mar 16 05:16
/Templates			0	Mar 16 05:16

Копирование файла file.txt

```
mc [avperegudov@fedora]:~  
/home/avperegudov/file2.txt  
alexander svwoevmwievmowievwmewvwd5 1231231
```

Перемещение file2.txt

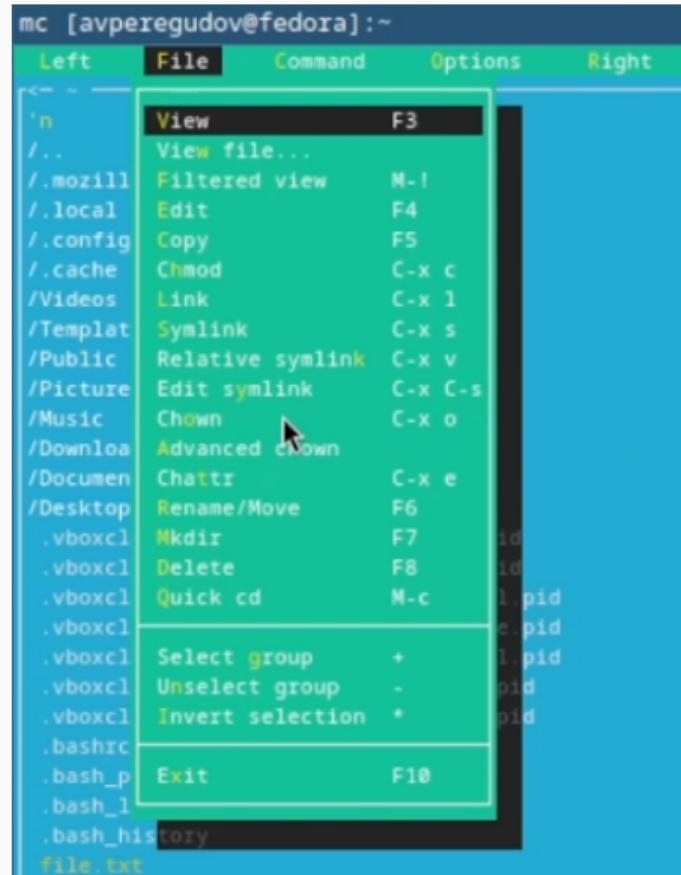


mc [avperegudov@fedora]:~/Downloads				
Left	File	Command	Options	Right
<-	~/Downloads			. [^]>
.		Name		Size Modify time
/..				UP--DIR Apr 6 18:10
	file3.txt			42 Apr 6 18:09

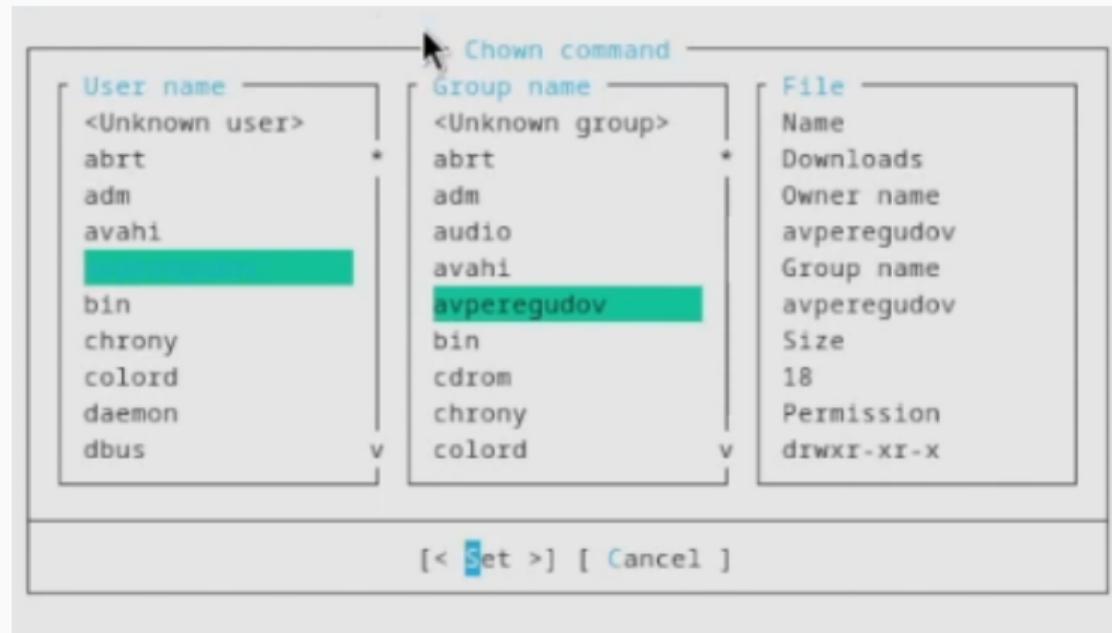
Перемещение file2.txt

```
mc [avperegudov@fedora]:~/Downloads  
/home/avperegudov/Downloads/file3.txt  
alexander svwoesawiewmowiewmwevwds 1231231
```

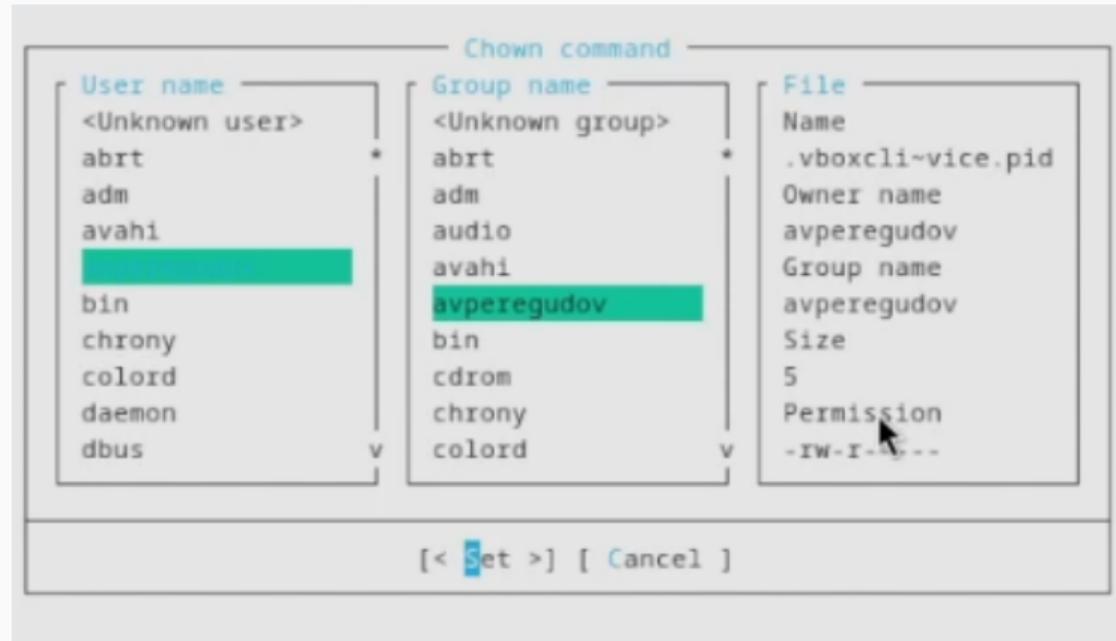
Chown



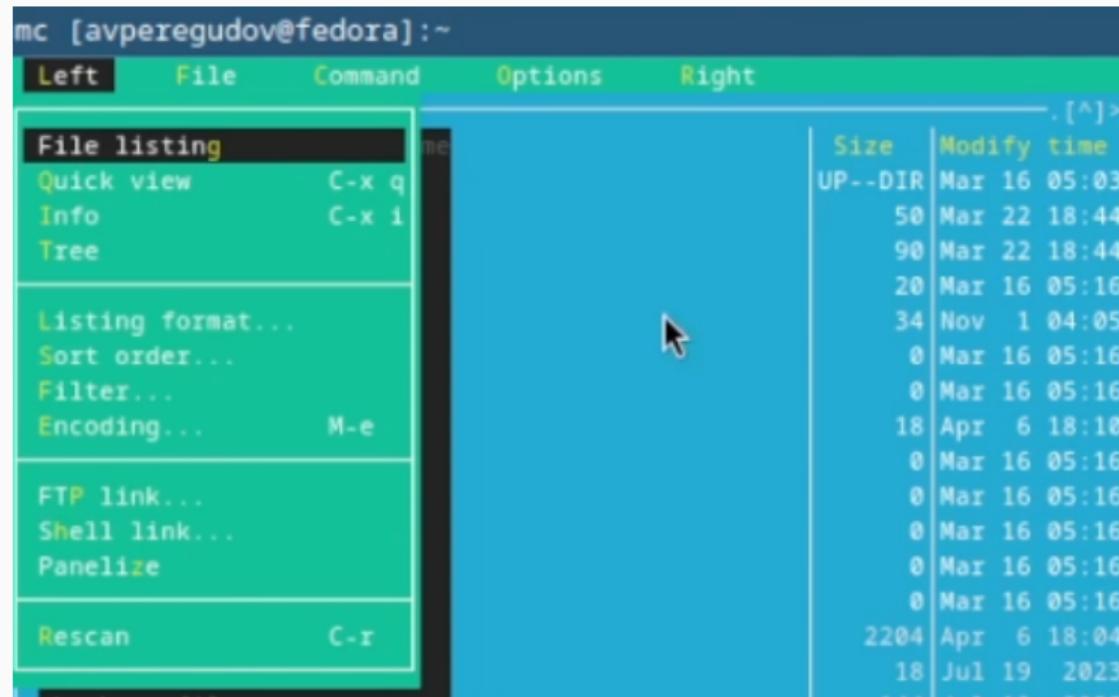
Chown



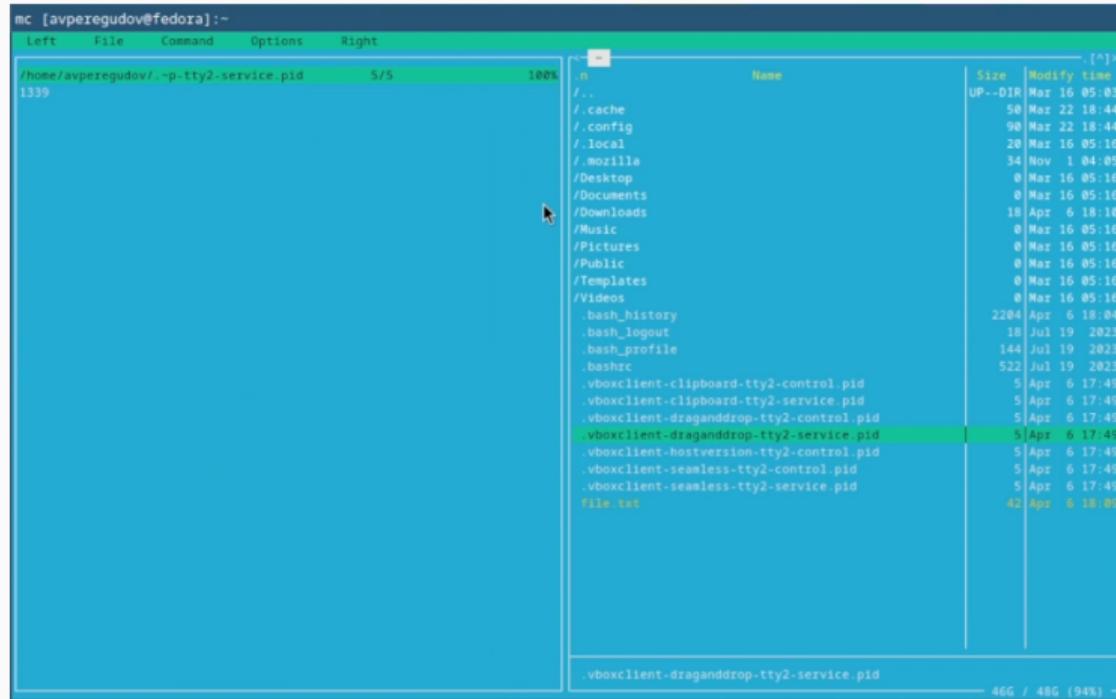
Chown



Основные команды меню левой панели



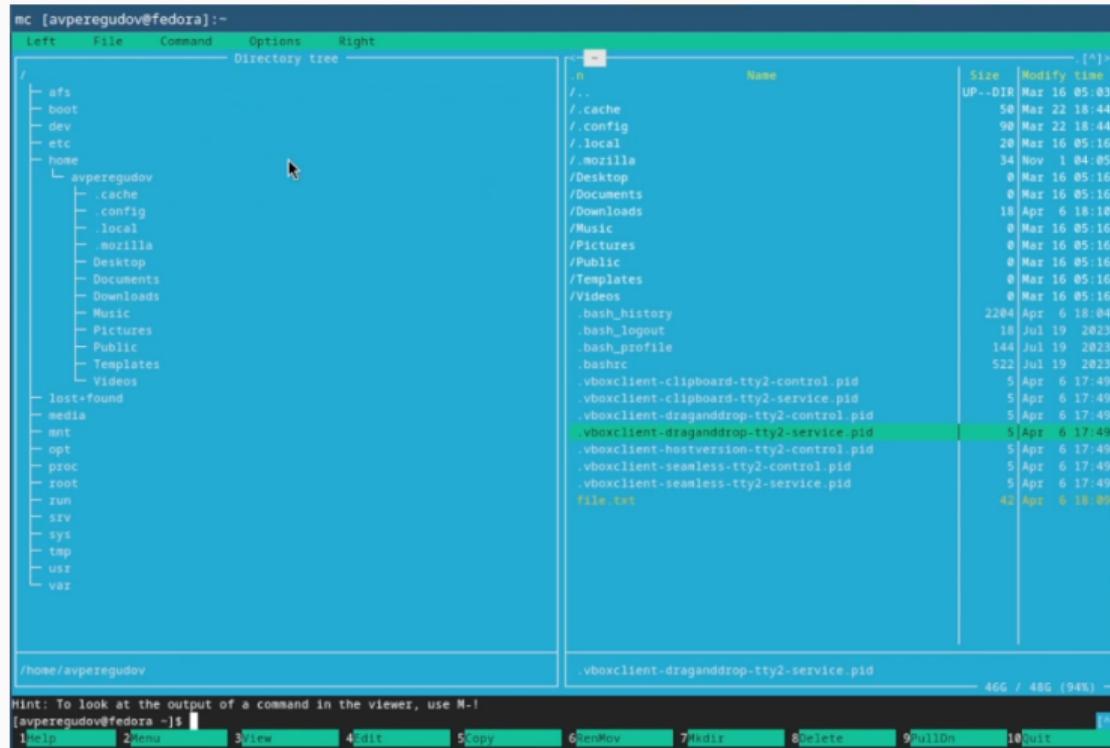
Основные команды меню левой панели



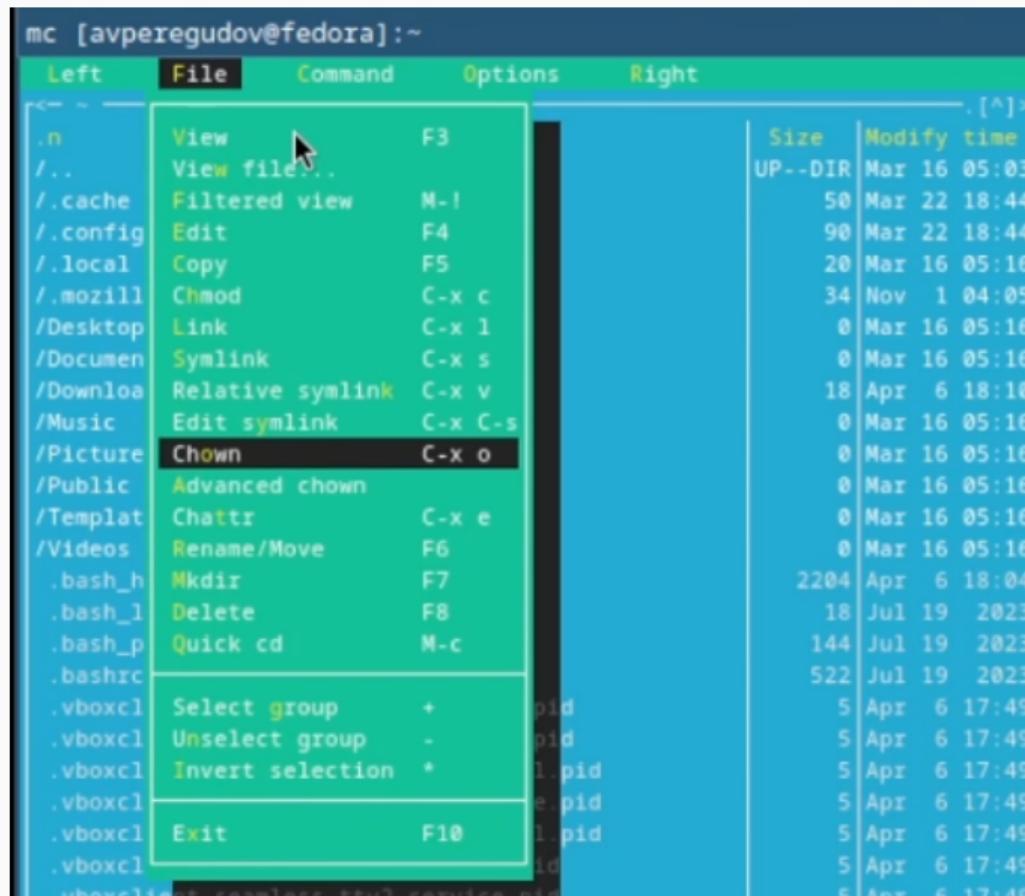
Основные команды меню левой панели

```
mc [avperegufov@fedora]:~  
Left File Command Options Right  
Midnight Commander 4.0.30  
File: .vboxclient-draganddrop-tty2-service.pid  
Location: 26h:13fh  
Mode: -rw-r----- (0640)  
Attributes: -----  
Links: 1  
Owner: avperegufov/avperegufov  
Size: 5 (8 blocks)  
Changed: Apr 6 17:49  
Modified: Apr 6 17:49  
Accessed: Apr 6 18:19  
Filesystem: /home  
Device: /dev/sda3  
Type: btrfs (lfh)  
Free space: 46G / 48G (94%)  
No node information  
  
[...]  
n Name Size Modify time  
/..  
/.cache 50 Mar 22 18:44  
/.config 90 Mar 22 18:44  
/.local 20 Mar 16 05:16  
/.mozilla 34 Nov 1 04:05  
/Desktop 0 Mar 16 05:16  
/Documents 0 Mar 16 05:16  
/Downloads 18 Apr 6 18:18  
/Music 0 Mar 16 05:16  
/Pictures 0 Mar 16 05:16  
/Public 0 Mar 16 05:16  
/Templates 0 Mar 16 05:16  
/Videos 0 Mar 16 05:16  
.bash_history 2204 Apr 6 18:04  
.bash_logout 18 Jul 19 2023  
.bash_profile 144 Jul 19 2023  
.bashrc 522 Jul 19 2023  
.vboxclient-clipboard-tty2-control.pid 5 Apr 6 17:49  
.vboxclient-clipboard-tty2-service.pid 5 Apr 6 17:49  
.vboxclient-draganddrop-tty2-control.pid 5 Apr 6 17:49  
.vboxclient-draganddrop-tty2-service.pid 5 Apr 6 17:49  
.vboxclient-hostversion-tty2-control.pid 5 Apr 6 17:49  
.vboxclient-seamless-tty2-control.pid 5 Apr 6 17:49  
.vboxclient-seamless-tty2-service.pid 5 Apr 6 17:49  
file.txt 42 Apr 6 18:09  
  
.vboxclient-draganddrop-tty2-service.pid  
46G / 48G (94%) →
```

Основные команды меню левой панели



View



View

```
mc [avperegudov@fedora]:~  
/home/avperegudov/file.txt  
alexander svwoevmwievwmowiewvwds 1231231
```

Edit

```
mc [avperegov@fedora]:~  
Left File Command Options Right  
<-- ~ .n View file... F3  
/.. Filtered view M-!  
.cache Edit F4  
.config Copy F5  
.local Chmod C-x c  
.mozilla Link C-x l  
.Desktop Symlink C-x s  
.Documents Relative symlink C-x v  
.Downloads Edit symlink C-x C-s  
.Music Chown C-x o  
.Pictures Advanced chown  
.Public Chattr C-x e  
.Templates Rename/Move F6  
.Videos Mkdir F7  
.bash_history Delete F8  
.bash_logout Quick cd M-c  
  
Select group + pid  
Unselect group - pid  
Invert selection * l.pid  
Exit F10 l.pid  
.vboxclient-seamless-tty2-service.pid  
pid
```

Edit

```
mc [avperegudov@fedora]:~  
file.txt [-M--] 4 L:[ 1+ 7 8/ 8] *(82 / 82b  
alexander svwoevmwievwmowiewvwewds 1231231sdsvdsvs  
sdvwe  
vw  
ev  
wev  
we  
b  
wewe
```

Close file

File /home/avperegudov/file.txt was modified.

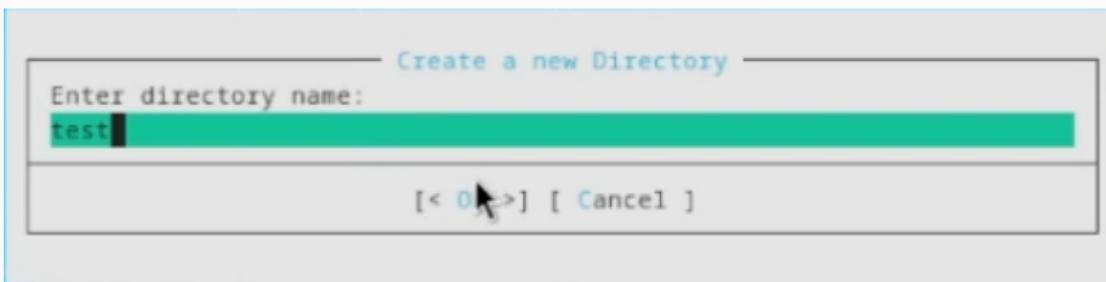
Save before close?

[Yes] [No] [Cancel]

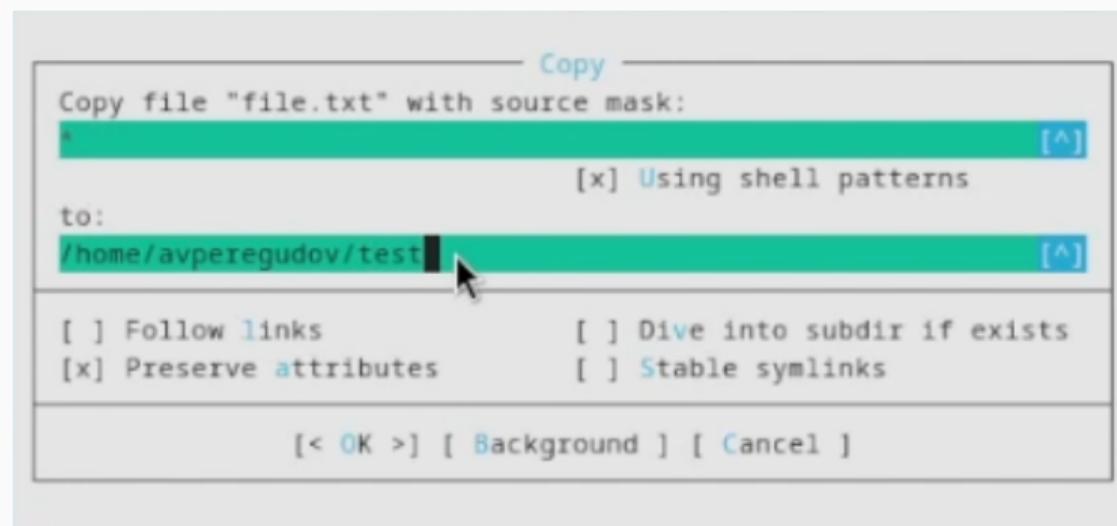
Mkdir

Left	File	Command	Options	Right
..	View	F3		
./..	View file...			
/.cache	Filtered view	M-!		
/.config	Edit	F4		
/.local	Copy	F5		
/.mozilla	Chmod	C-x c		
/Desktop	Link	C-x l		
/Documents	Symlink	C-x s		
/Downloads	Relative symlink	C-x v		
/Music	Edit symlink	C-x C-s		
/Pictures	Chown	C-x o		
/Public	Advanced chown			
/Templates	Chattr	C-x e		
/Videos	Rename/Move	F6		
.bash_history	Mkdir	F7		
.bash_logout	Deleted	F8		
.bash_profile	Quick cd	M-c		
	Select group	+	pid	
	Unselect group	-	pid	
	Invert selection	*	l.pid	
	Exit	F10	l.pid	
			id	
				[^] >

Mkdir



Copy

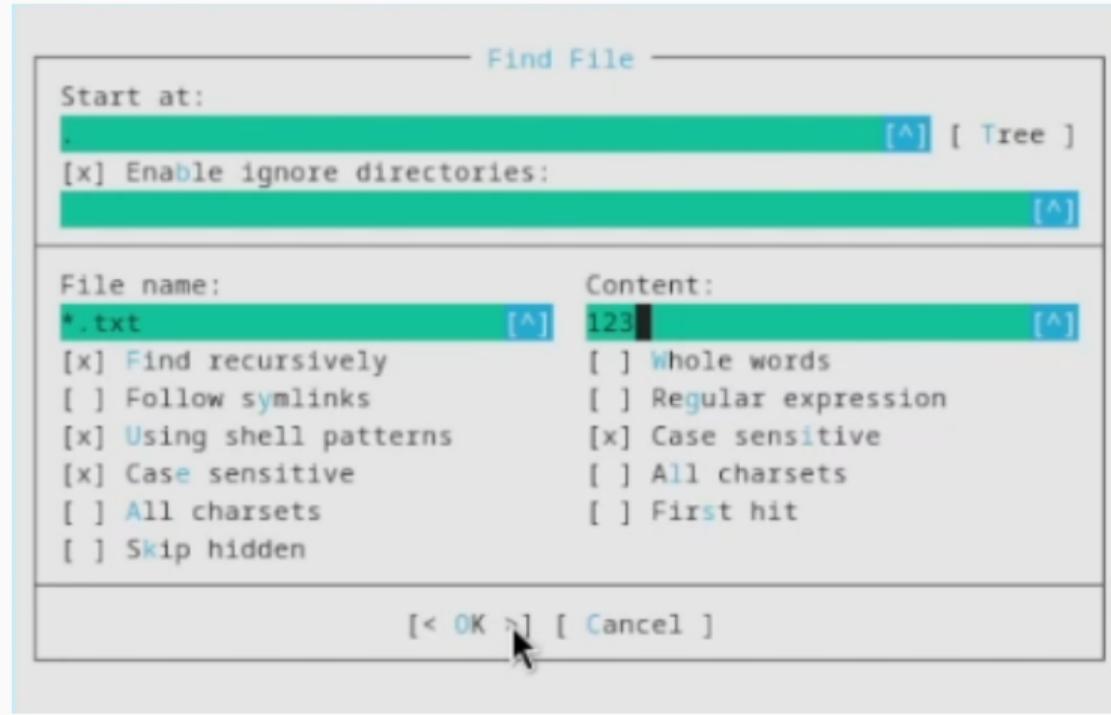


Find file

```
mc [avperegov@fedora]:~
```

Left	File	Command	Options	Right
<-- ~		User menu	F2	[^]>
.n		Directory tree		
/..		Find file	M-?	IR Mar 16 05:03
/.cache		Swap panels	C-u	50 Mar 22 18:44
/.config		Switch panels on/off	C-o	90 Mar 22 18:44
/.local		Compare directories	C-x d	20 Mar 16 05:16
/.mozilla		Compare files	C-x C-d	34 Nov 1 04:05
/Desktop		External panelize	C-x !	0 Mar 16 05:16
/Documents		Show directory sizes	C-Space	0 Mar 16 05:16
/Downloads				18 Apr 6 18:10
/Music				0 Mar 16 05:16
/test		Command history	M-h	16 Apr 6 18:28
.bashrc		Viewed/edited files history	M-E	22 Jul 19 2023
.vboxclient-clip		Directory hotlist	C-\	5 Apr 6 17:49
.vboxclient-clip		Active VFS list	C-x a	5 Apr 6 17:49
.vboxclient-drag		Background jobs	C-x j	5 Apr 6 17:49
.vboxclient-drag		Screen list	M-`	5 Apr 6 17:49
.vboxclient-host				5 Apr 6 17:49
.vboxclient-seam		Edit extension file		5 Apr 6 17:49
.vboxclient-seam		Edit menu file		5 Apr 6 17:49
file.txt		Edit highlighting group file		41 Apr 6 18:35

Find file

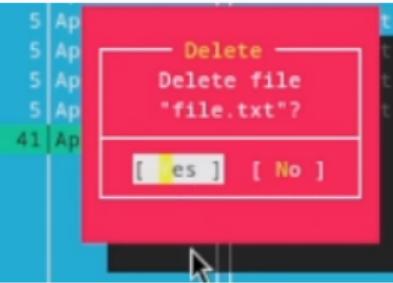


Find file

```
Find File: "*.txt", Content: "123"   
/home/avperegudov  
1:file.txt  
/home/avperegudov/test  
  
/home/avperegudov/Downloads  
1:file3.txt  
  
Found: 3  
Finished  
[< Shdir >] [ Again ] [ Suspend ] [ Quit ]  
[ Panelize ] [ View - F3 ] [ Edit - F4 ]
```

Command history

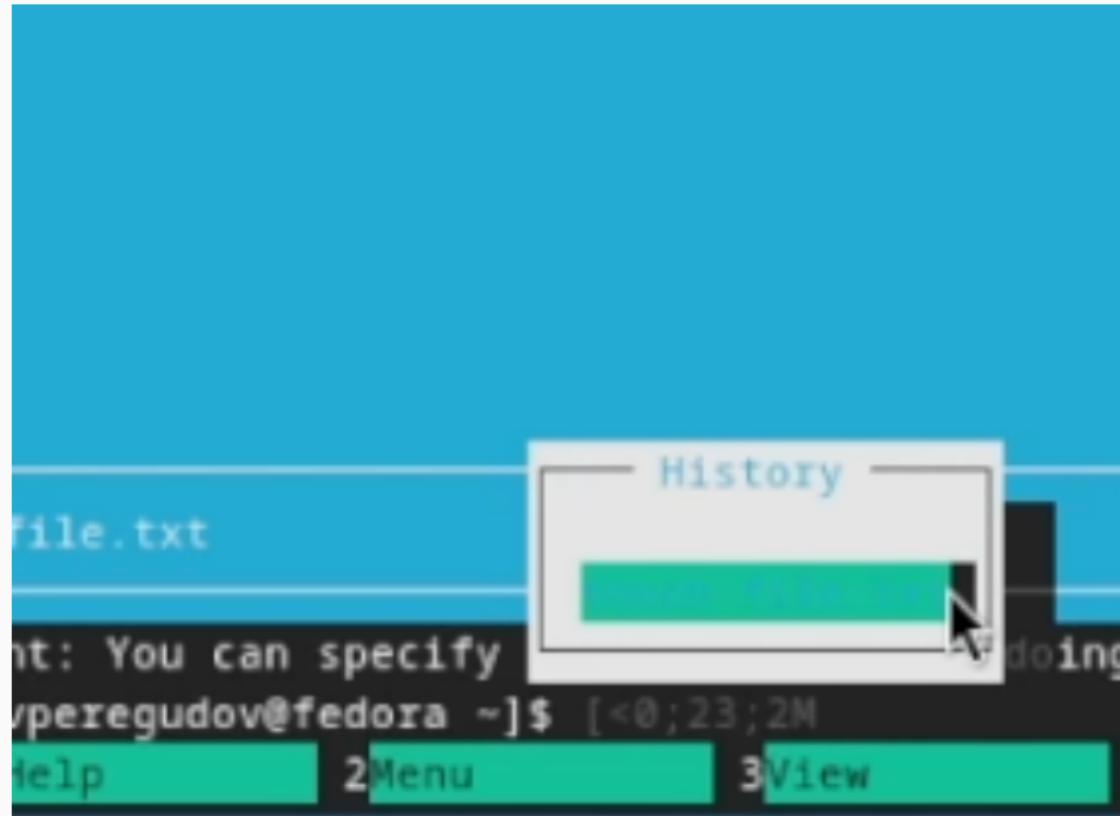
```
.vboxclient-draganddrop-tty2-service.pid  
.vboxclient-hostversion-tty2-control.pid  
.vboxclient-seamless-tty2-control.pid  
.vboxclient-seamless-tty2-service.pid  
file.txt
```



Command history

Left	File	Command	Options	Right
.n		User menu	F2	
/..		Directory tree		
/.cache		Find file	M-?	Modify time
/.config		Swap panels	C-u	Mar 16 05:03
/.local		Switch panels on/off	C-o	Mar 22 18:44
/.mozilla		Compare directories	C-x d	Mar 16 05:16
/Desktop		Compare files	C-x C-d	Nov 1 04:05
/Documents		External panelize	C-x !	Mar 16 05:16
/Downloads		Show directory sizes	C-Space	Apr 6 18:10
/Music				Mar 16 05:16
/test		Command history	M-h	Apr 6 18:28
.bashrc		Viewed/edited files	M-E	Jul 19 2023
.vboxclient-clip		Directory hotlist	C-\	Apr 6 17:49
.vboxclient-clip		Active VFS list	C-x a	Apr 6 17:49
.vboxclient-drag		Background jobs	C-x j	Apr 6 17:49
.vboxclient-drag		Screen list	M-`	Apr 6 17:49
.vboxclient-host				Apr 6 17:49
.vboxclient-seam		Edit extension file		Apr 6 17:49
.vboxclient-seam		Edit menu file		Apr 6 17:49
file.txt		Edit highlighting group file		Apr 6 18:35

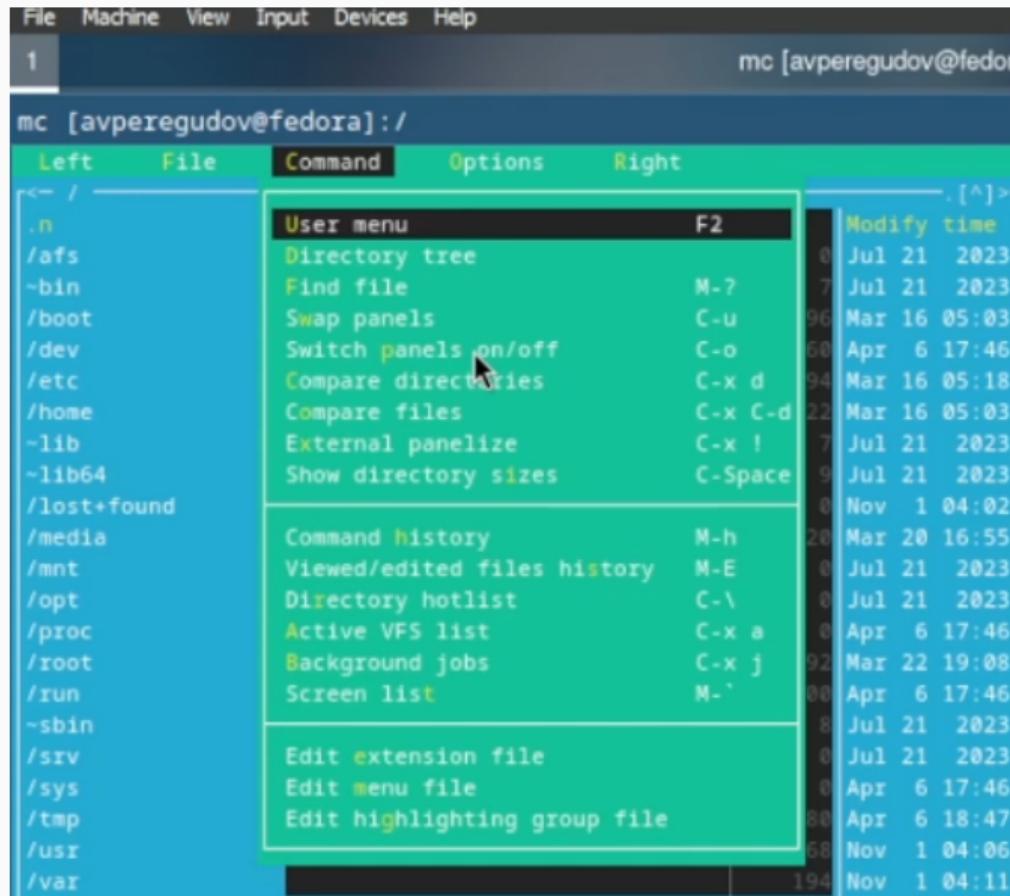
Command history



Command history

```
file.txt                                46G
Hint: You can specify the username when doing ftps: cd ftp:
[avperegov@fedora ~]$ touch file.txt
1Help    2Menu    3View    4Edit
```

Switch panels



Switch panels

```
[avperegudov@fedora ~]$ cd ~  
[avperegudov@fedora ~]$ █
```

Файл меню

Command	Options	Right
User menu		F2
Directory tree		
Find file		M-?
Swap panels		C-u
Switch panels on/off		C-o
Compare directories		C-x d
Compare files		C-x C-d
External panelize		C-x !
Show directory sizes		C-Space
Command history		M-h
Viewed/edited files history		M-E
Directory hotlist		C-\
Active VFS list		C-x a
Background jobs		C-x j
Screen list		M-`
Edit extension file		
Edit menu file		
Edit highlighting group file		

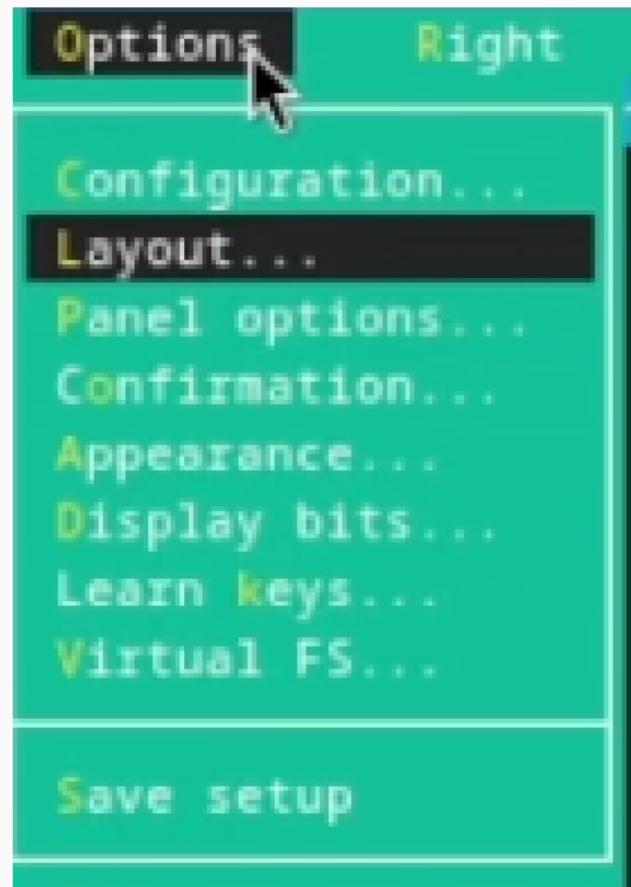
Файл меню

```
mc [avperegudov@fedora]:~  
_mc.menu      [----]  @ L:[ 1+ 0   1/370] *(0    /11821b) @115 0x073  
shell_patterns=0  
  
=====  
# %% The % character  
# %f The current file (if non-local vfs, file will be copied locally and  
#       %f will be full path to it)  
# %p The current file  
# %d The current working directory  
# %s "Selected files"; the tagged files if any, otherwise the current file  
# %t Tagged files  
# %u Tagged files (and they are untagged on return from expand_format)  
# %view Runs the commands and pipes standard output to the view command  
# If %view is immediately followed by '(', recognize keywords  
#   ascii, hex, nroff and unform  
#  
# If the format letter is in uppercase, it refers to the other panel  
#  
# With a number followed the % character you can turn quoting on (default)  
# and off. For example:  
#   %f   quote expanded macro  
#   %!f  ditto  
#   %&f  don't quote expanded macro  
=====  
  
+ ! t t  
#     Do something on the current file  
#     CMD=%{Enter command}  
#     SCMD $f  
  
+ t t  
#     Do something on the tagged files  
#     CMD=%{Enter command}  
#     for i in %t ; do  
#       SCMD "$i"  
#     done  
  
#     Edit a bug report and send it to root  
#     !='mktemp "${MC_TMPDIR:-/tmp}/mail.XXXXXX"' || exit 1  
#     ${EDITOR:-vi} "$1"  
#     echo -e "Subject: $1" | mail root < "$1"
```

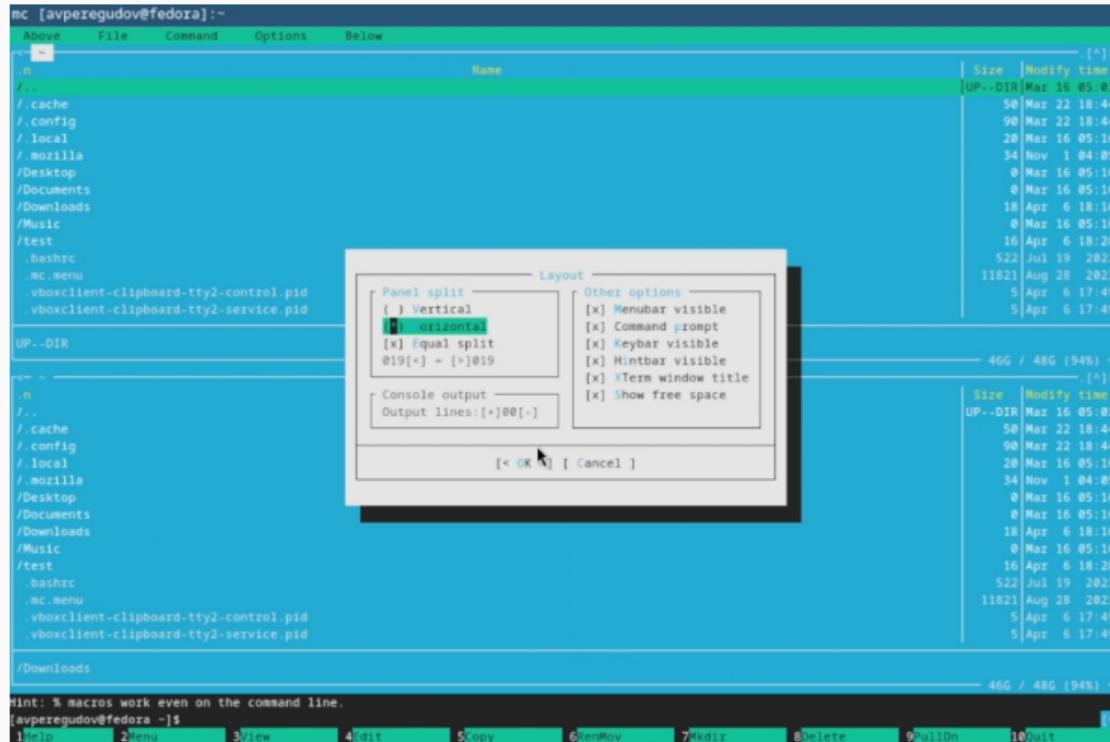
Файл расширений

```
mc [avperegov@fedora]:~  
mc.ext.ini      [----] 0 L:[ 62+19  81/1136] *(3094/26909b) 0035 0x023  
#     matches *.tar.lzma or *.tlz.  
  
# RegexIgnoreCase [true|false]  
#   Defines whether the Regex value is case sensitive or not.  
#   If absent, Regex is case sensitive.  
  
# Shell  
#   Describes an extension when starting with a dot (no wildcards).  
#  
# Example:  
#   Shell=.tar  
#   matches *.tar.  
  
# If it doesn't start with a dot, it matches only a file of that name.  
  
# If both keys Regex and Shell are in the same section, Regex is used  
# and Shell is ignored.  
  
# ShellIgnoreCase [true|false]  
#   Defines whether the Shell value is case sensitive or not.  
#   If absent, Shell is case sensitive.  
  
# Include  
#   Reference to another section.  
#  
# Example:  
#   Include=video  
#   points to the [Include/video] section.  
  
Commands:  
  
# Open  
#   Execute the command if the user presses Enter or doubleclicks it.  
  
# View  
#   Execute the command if the user presses F3.  
  
# Edit  
#   Execute the command if the user presses F4.
```

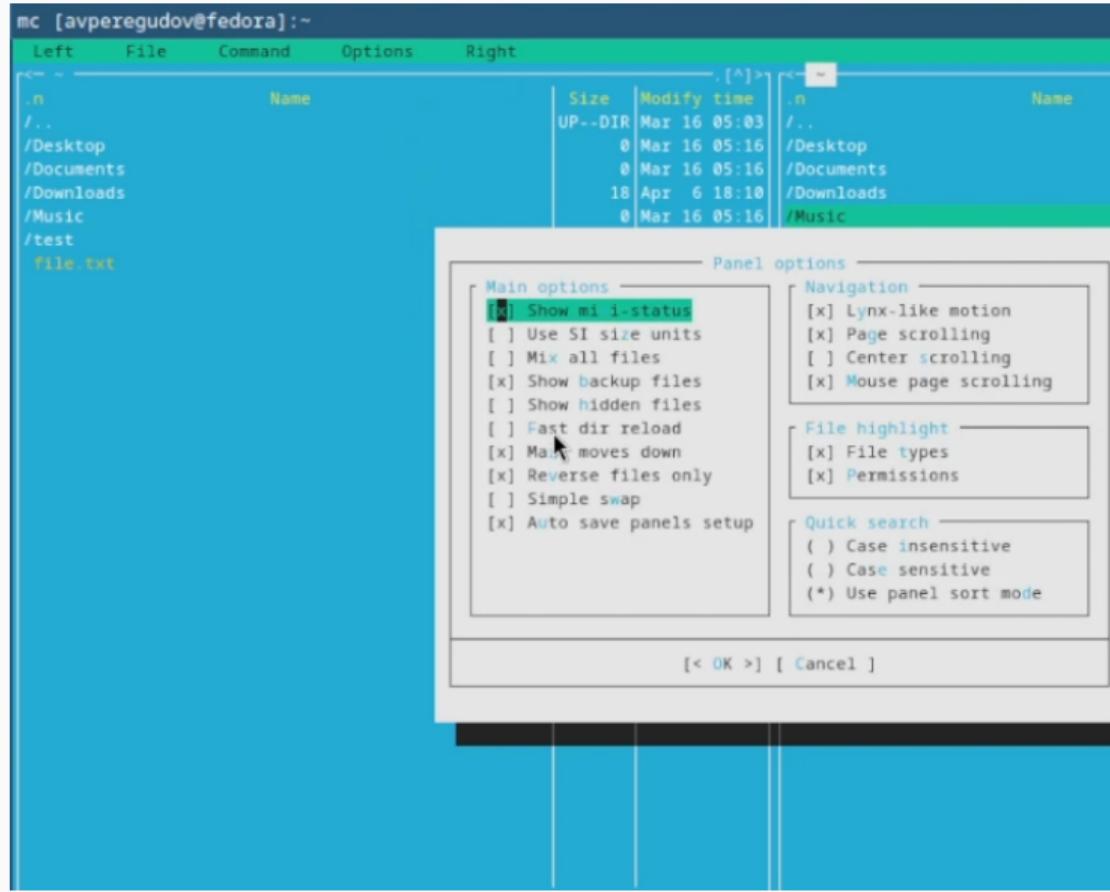
Options



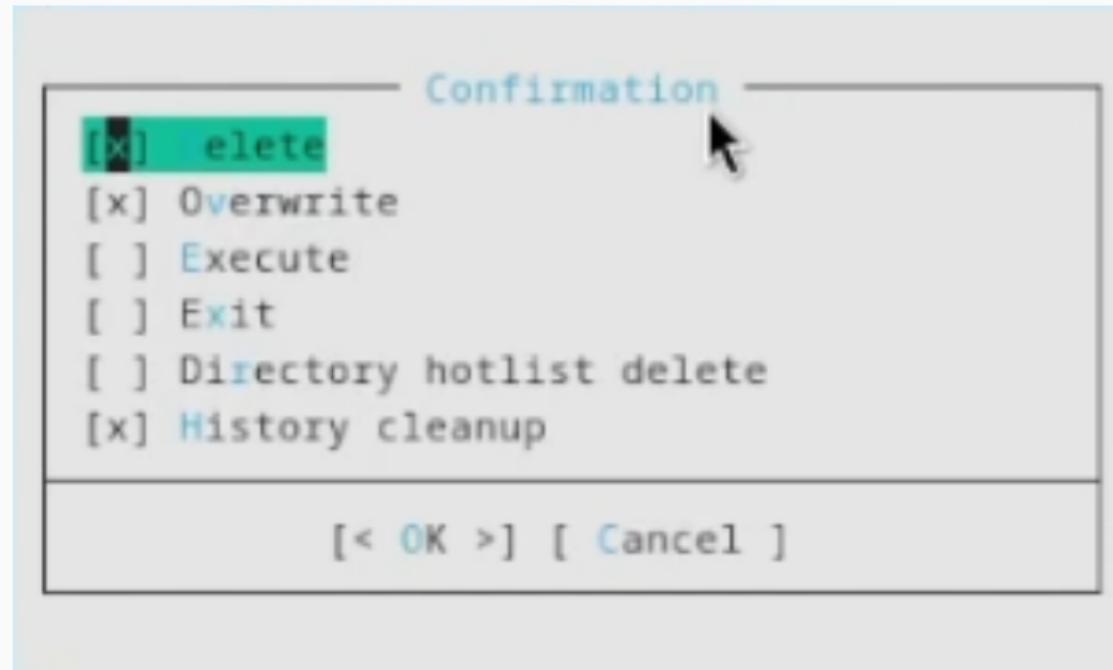
Options



Options



Options



Копирование

```
Hint: Key frequently visited ftp sites :  
[avperegudov@fedora ~]$ touch text.txt
```

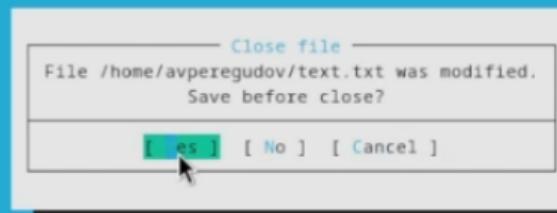
```
[avperegudov@fedora .config]$ cat user-dirs.dirs >> ~/text.txt
```

Манипуляции с текстом

```
mc [avperegudov@fedora]:~  
text.txt      [----] 29 L:[ 1+14 15/ 16] *(632 / 633b) 0010 0x00A  
# This file is written by xdg-user-dirs-update  
# If you want to change or add directories, just edit the line you're  
# interested in. All local changes will be retained on the next run.  
# Format is XDG_xxx_DIR="$HOME/yyy", where yyy is a shell-escaped  
# homedir-relative path, or XDG_xxx_DIR="/yyy", where /yyy is an  
# absolute path. No other format is supported.  
#  
XDG_DESKTOP_DIR="$HOME/Desktop"  
XDG_DOWNLOAD_DIR="$HOME/Downloads"  
XDG_TEMPLATES_DIR="$HOME/Templates"  
XDG_PUBLICSHARE_DIR="$HOME/Public"  
XDG_DOCUMENTS_DIR="$HOME/Documents"  
XDG_MUSIC_DIR="$HOME/Music"  
XDG_PICTURES_DIR="$HOME/Pictures"  
XDG_VIDEOS_DIR="$HOME/Videos"█
```

Манипуляции с текстом

```
mc [avperegudov@fedora]:~  
text.txt [-H--] 40 L:[ 1+ 0 1/ 16] *(40 / 699b) 0035 0x023  
sdvwqefwqdfqascqwdqwmvqapwol;lsacs# This file is written by xdg-user-dirs-update  
# If you want to change or add directories, just edit the line you're  
# interested in. All local changes will be retained on the next run.  
# Format is XDG_xxx_DIR="$HOME/yyy", where yyy is a shell-escaped  
# homedir-relative path, or XDG_xxx_DIR="/yyy", where /yyy is an  
# absolute path. No other format is supported.  
#  
XDG_DESKTOP_DIR="$HOME/Desktop"  
XDG_DOWNLOAD_DIR="$HOME/Downloads"  
XDG_TEMPLATES_DIR="$HOME/Templates"  
XDG_PUBLICSHARE_DIR="$HOME/Public"  
XDG_DOCUMENTS_DIR="$HOME/Documents"  
XDG_MUSIC_DIR="$HOME/Music"  
XDG_PICTURES_DIR="$HOME/Pictures"  
XDG_PICTURES_DIR="$HOME/Pictures"  
sdsvwewqeqdqwdqwsacw
```



Подсветка синтаксиса

```
mc [root@fedora]:/media/sf_sf_work
StructStudy.cpp  [---]  0 L:[ 11+ 0  11/121] *(215 /3332b) 0115 0x073
struct Order ^M
    string name^M
    int cost;^M
    double chance;^M
    ^M
    Order* next = nullptr;^M
};^M
^M
void push_back(Order* head, Order* element) ^M
{
    while (head->next) ^M
        head = head->next;^M
    ^M
    head->next = element;^M
}
^M
void push_front(Order* &head, Order* element) ^M
{
    element->next = head;^M
    head = element;^M
}
^M
void push_after(Order* head, unsigned short index, Order* element) ^M
{
    for (unsigned short i = 0; i != index; i++) ^M
        head = head->next;^M
    ^M
    element->next = head->next;^M
    head->next = element;^M
}
^M
void push_before(Order* head, unsigned short index, Order* element) ^M
```

Подсветка синтаксиса



Подstütка синтаксиса

```
mc [root@fedora]:/media/sf_sf_work
StructStudy.cpp [----] 0 L:[ 19+ 41/121] *(864 /3332b) 0032 0x020
void push_back(Order* head, Order* element) {^M
    while (head->next) {^M
        head = head->next;^M
    }^M
    head->next = element;^M
}^M
^M
void push_front(Order* &head, Order* element) {^M
    element->next = head;^M
    head = element;^M
}^M
^M
void push_after(Order* head, unsigned short index, Order* element) {^M
    for (unsigned short i = 0; i != index; i++) {^M
        head = head->next;^M
    }^M
    ^M
    element->next = head->next;^M
    head->next = element;^M
}^M
^M
void push_before(Order* head, unsigned short index, Order* element) {^M
    Order* previous = nullptr;^M
    for (unsigned short i = 0; i != index; i++) {^M
        previous = head;^M
        head = head->next;^M
    }^M
    ^M
    element->next = head;^M
    if (previous) previous->next = element;^M
}^M
^M
void remove(Order* &head, int index) {^M
    Order* previous = nullptr;^M
    Order* current = head;^M
    for (unsigned short i = 0; i != index; i++) {^M
        previous = head;^M
        current = current->next;^M
    }^M
}
```