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ФАКУЛЬТЕТ: ИНФОРМАТИКА И СИСТЕМЫ УПРАВЛЕНИЯ

КАФЕДРА: КОМПЬЮТЕРНЫЕ СИСТЕМЫ И СЕТИ

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по лабораторной работе № 3

Тема: Исследование среды управления и методов защиты

Дисциплина: Операционные системы

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1. Введение

1.1. Цель работы

Исследование среды управления Linux и методов защиты.

1.2. Общая информация

В данной работе на проработку выносится следующее:

- Окружения рабочего стола (DE) Linux (GNOME, KDE,Xfce,LXDE);
- Настройка Openbox;
- Установка и настройка панелей;
- Настройка autostart;
- Настройка рабочего стола;
- Отображение иконок;
- Установка и настройка conky;
- Управление с помощью консоли;
- Основные команды и утилиты;
- Основные утилиты;
- Объединение команд;
- Более сложные утилиты;
- top, ps, pstree;
- ping, netstat, ip;
- Написание скриптов на bash.

2. Выполнение

2.1. Установка X Window System и Openbox

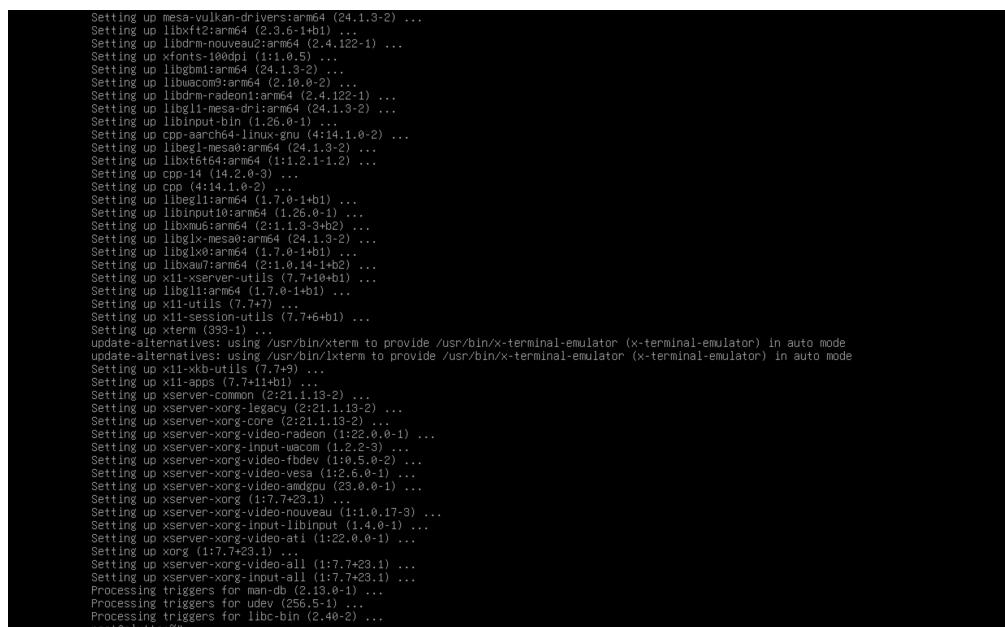
X Window System представляет собой оконную систему, определяющую стандартные интерфейсы и протоколы для работы с графическим интерфейсом пользователя. В данной ЛР будет использована открытая реализация X.Org. Для установки X.Org нужно выполнить следующую команду:

```
apt-get install xorg .
```



```
root@plutto:~# apt-get install xorg
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  cpp-cpp-14 cpp-14-aarch64-linux-gnu fontconfig-config fonts-dejavu-core fonts-dejavu-mono libatomic1
  libdrm-amdgpu1 libdrm-common libdrm-nouveau2 libdrm-radeon1 libegl-mesa0 libegl-libgl libepoxy0 libevdev2 libfontconfig1
  libfontenc1 libgbm1 libgl1-mesa-dri libglapi-mesa libglbl2.0-0+64 libglb2.0-data libglu1-mesa libglvnd libglx-mesa0
  libglx1 libgludev-1.0+0 libicee libinput-bin libinput123 libl123 libl1764 libmoc3 libmpfr libmdev164 libopengl0
  libpca0m libpixman1 libpixman-1-0 liblibsensors5 libsm6 libunwind0 libutempter libvulkan1 libwacom-common
  libxcb-present libxcb-randr libxcb-shape0 libxcb-shm libxcb-sync1 libxcb-xfixes0 libxcb-composite1 libxcursor1 libxcvt0
  libxfixes3 libxfonts1 libxfnt2 libxirr libxinerama1 libxbfile1 libxm6 libxpm libxrandr2 libxrender1 libxshmfence1 libxt6t64
  libxtst6 libxv1 libxvfb libxvfb6 libxvfb6n1 libxvfb7 libxvfb8 libxvfb8n1 libxvfb9 libxvfb9n1 libxvfb9t libxvfb9t64
  xfonts-base xfonts-encodings xfonts-scalable xfonts-utils xinit xinitrc xorg-docs xorg-docs-core xserver-common xserver-xorg-core
  xserver-xorg-input-all xserver-xorg-input-libinput xserver-xorg-input-wacom xserver-xorg-legacy xserver-xorg-video-fbdev xserver-xorg-video-nouveau
  xserver-xorg-video-amdgpu xserver-xorg-video-ati xserver-xorg-video-fbdev xserver-xorg-video-nouveau
  xserver-xorg-video-radeon xserver-xorg-video-vesa xterm
Suggested packages:
  cpp-doc xcc-14-locales cpp-14-doc low-monitor lm-sensors libwacom-bin mesa-utils nicle cairo-5c xorg-docs
  x11-xfs-utils xinput firmware-and-graphics xserver-xorg-video-r128 xserver-xorg-video-mach64 firmware-misc-nonfree
  xfonts-cyrillic
The following NEW packages will be installed:
  cpp-cpp-14 cpp-14-aarch64-linux-gnu fontconfig-config fonts-dejavu-core fonts-dejavu-mono libatomic1
  libdrm-amdgpu1 libdrm-common libdrm-nouveau2 libdrm-radeon1 libegl-mesa0 libegl-libgl libepoxy0 libevdev2 libfontconfig1
  libfontenc1 libgbm1 libgl1-mesa-dri libglapi-mesa libglbl2.0-0+64 libglb2.0-data libglu1-mesa libglvnd libglx-mesa0
  libglx1 libgludev-1.0+0 libicee libinput-bin libinput123 libl123 libl1764 libmoc3 libmpfr libmdev164 libopengl0
  libpca0m libpixman1 libpixman-1-0 liblibsensors5 libsm6 libunwind0 libutempter libvulkan1 libwacom-common
  libxcb-present libxcb-randr libxcb-shape0 libxcb-shm libxcb-sync1 libxcb-xfixes0 libxcb-composite1 libxcursor1 libxcvt0
  libxfixes3 libxfonts1 libxfnt2 libxirr libxinerama1 libxbfile1 libxm6 libxpm libxrandr2 libxrender1 libxshmfence1 libxt6t64
  libxtst6 libxv1 libxvfb libxvfb6 libxvfb6n1 libxvfb7 libxvfb8 libxvfb8n1 libxvfb9 libxvfb9n1 libxvfb9t libxvfb9t64
  xfonts-base xfonts-encodings xfonts-scalable xfonts-utils xinit xinitrc xorg-docs xorg-docs-core xserver-common xserver-xorg
  xserver-xorg-core xserver-xorg-input-all xserver-xorg-input-libinput xserver-xorg-input-wacom xserver-xorg-legacy
  xserver-xorg-video-amdgpu xserver-xorg-video-ati xserver-xorg-video-fbdev xserver-xorg-video-nouveau
  xserver-xorg-video-radeon xserver-xorg-video-vesa xterm
0 upgraded, 119 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.7 MB of archives.
After this operation, 330 MB of additional disk space will be used.
Do you want to continue? [y/n] -
```

Рисунок 1 — `apt-get install xorg`



```
Setting up mesa-vulkan-drivers:arm64 (24.1.3-2) ...
Setting up libfdt2:arm64 (2.3.6-1+b1) ...
Setting up libdrm-nouveau2:arm64 (2.4.122-1) ...
Setting up xfonts-100dpi (111.0.5) ...
Setting up libgbm1:arm64 (24.1.3-2) ...
Setting up libwacom9:arm64 (2.10.0-2) ...
Setting up libdrm-radeon1:arm64 (2.4.122-1) ...
Setting up libegl-mesa0:arm64 (24.1.3-2) ...
Setting up libinput10:arm64 (1.26.0-1) ...
Setting up cpp-aarch64-linux-gnu (4:14.1.0-2) ...
Setting up libegl-mesa0:arm64 (24.1.3-2) ...
Setting up libfdt64:arm64 (111.2.1-1.2) ...
Setting up cpp-14 (14.2.0-3) ...
Setting up cpp (4:14.1.0-2) ...
Setting up libegl1:arm64 (1.7.0-1+b1) ...
Setting up libinput10:arm64 (1.26.0-1) ...
Setting up libmx6:arm64 (211.1.3-3+b2) ...
Setting up libglx-mesa0:arm64 (24.1.3-2) ...
Setting up libglx0:arm64 (1.7.0-1+b1) ...
Setting up libkau7:arm64 (211.0.14-1+b2) ...
Setting up x11-xserver-utils (7.7+10+b1) ...
Setting up x11-utils (7.7+)
Setting up x11-session-utils (7.7+6+b1) ...
Setting up xterm (393-1) ...
update-alternatives: using /usr/bin/xterm to provide /usr/bin/x-terminal-emulator (x-terminal-emulator) in auto mode
update-alternatives: using /usr/bin/xterm to provide /usr/bin/x-terminal-emulator (x-terminal-emulator) in auto mode
Setting up x11-xkb-utils (7.7+9) ...
Setting up x11-apps (7.7+11+b1) ...
Setting up xserver-common (2:21.1.13-2) ...
Setting up xserver-xorg-legacy (2:21.1.13-2) ...
Setting up xserver-xorg-core (2:21.1.13-2) ...
Setting up xserver-xorg-video-radeon (1:22.0.0-1) ...
Setting up xserver-xorg-input-wacom (1:2.2-3) ...
Setting up xserver-xorg-video-fbdev (1:0.0-2) ...
Setting up xserver-xorg-video-vesa (1:2.5.0-1) ...
Setting up xserver-xorg-video-wfpu (23.0.0-1) ...
Setting up xserver-xorg (1:7.7+23.1) ...
Setting up xserver-xorg-video-nouveau (1:1.0.17-3) ...
Setting up xserver-xorg-input-libinput (1.4.0-1) ...
Setting up xserver-xorg-video-ati (1:22.0.0-1) ...
Setting up xorg (1:7.7+23.1) ...
Setting up xserver-xorg-video-all (1:7.7+23.1) ...
Setting up xserver-xorg-input-all (1:7.7+23.1) ...
Processing triggers for man-db (2.19.0-1) ...
Processing triggers for udev (256.5-1) ...
Processing triggers for libc-bin (2.40-2) ...
```

Рисунок 2 — `apt-get install xorg`

После установки оконной системы требуется установить Openbox. Для этого нужно выполнить команду: `apt-get install openbox dbus-x11`

```
libpaperi librsvg2-2 librsvg2-common libsharpyuv0 libspectre1 libstartup-notification0 libthai-data libthai0 libtiff6
libwayland-cursor0 libwayland-egl1 libwebp0 libwebrtc2 libx265-209 libxcb-render0 libxcb-util1 libxdamage1 libxkbcommon0
obconf openbox poppler-data scrot
0 upgraded, 92 newly installed, 0 to remove and 0 not upgraded.
Need to get 39.8 MB of archives.
After this operation, 182 MB of additional disk space will be used.
Do you want to continue? [Y/n] n
 Abort!
root@plutto:~# apt-get install openbox dbus-x11
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
adwaita-icon-theme at-spi2-core dconf-gsettings-backend dconf-service fontconfig fonts-droid-fallback
fonts-noto-mono fonts-urw-base35 gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme libao0
libatk+bridge2.0-0+deb4 libatk1.0-0+deb4 libatspi2.0-0+deb4 libavahi-client3 libavahi-common-data libavahi-common3
libcairo+gobject2 libcalibre2 libcloudproviders libcolor2 libcurl3 libcupsp2t64 libdatrie7 libdcfldn1 libde265-0 libdeflate0
libfdk-audio2 libfdk-aac2 libfdk-flac2 libfdk-mp3lame2 libfdk-vorbis2 libfdk-wavpack2 libfontconfig2 libfribidi0 libgbp0 libgd3 libgdk-pixbuf2.0-0+deb4 libgdk-pixbuf2.0-common libglf7 libgraphite2-3 libgs-common libgs10
libgs10-common libgtk-3-0+deb4 libgtk-3-bin libgtk-3-common libharfbuzz0b libheif+plugin-aomenc libheif+plugin-david
libheif+plugin-libde265 libheif+plugin-x265 libheif1 libhwjt64 libid3tag0 libidn12 libjs-0.35 libimath-3.1-29t64
libimlib2t64 libjbig libjbig2dec0 libjpego2-turbo libjxl0.9 liblcms2-2 liblrc4 liblumai libbrander32v5 libbot2v5
libopenexr-3.1-30 libopenjp2-7 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpangoft2-1.0-0 libpangoft6
libwayland-cursor0 libwayland-egl1 libwebp0 libwebrtc2 libx265-209 libxcb-render0 libxcb-util1 libxdamage1 libxkbcommon0
obconf poppler-data scrot
Suggested packages:
fonts-noto-fonts-freefont-otf | fonts-freefont-ttf fonts-texgyre colord cups-common gvfs libheif+plugin-ffmpegdec
libheif+plugin-jpegdec libheif+plugin-jpgenc libheif+plugin-j2kdec libheif+plugin-j2kenc libheif+plugin-kvazaar
libheif+plugin-ravie libheif+plugin-svtenc liblcm2-utils librsv2-bin fonts-dejavu libxml2-dev tint2 openbox-gnome-session
openbox-kde-session poppler-utils ghostscript fonts-japanese-mincho | fonts-ipafont-mincho fonts-japanese-gothic
| fonts-ipafont-gothic fonts-archic-ukai fonts-archic-uning fonts-nanum
The following NEW packages will be installed:
adwaita-icon-theme at-spi2-common libdbus-1 libdconf-gsettings-backend dconf-service fontconfig
fonts-droid-fallback fonts-noto-mono fonts-urw-base35 gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme
libao0 libatk+bridge2.0-0+deb4 libatk1.0-0+deb4 libatspi2.0-0+deb4 libavahi-client3 libavahi-common-data libavahi-common3
libcairo+gobject2 libcalibre2 libcloudproviders libcolor2 libcurl3 libcupsp2t64 libdatrie7 libdcfldn1 libde265-0 libdeflate0
libfdk-audio2 libfdk-aac2 libfdk-flac2 libfdk-mp3lame2 libfdk-vorbis2 libfdk-wavpack2 libfontconfig2 libfribidi0 libgbp0 libgd3 libgdk-pixbuf2.0-0+deb4 libgdk-pixbuf2.0-common libglf7 libgraphite2-3 libgs-common libgs10
libgs10-common libgtk-3-0+deb4 libgtk-3-bin libgtk-3-common libharfbuzz0b libheif+plugin-aomenc libheif+plugin-david
libheif+plugin-libde265 libheif+plugin-x265 libheif1 libhwjt64 libid3tag0 libidn12 libjs-0.35 libimath-3.1-29t64
libimlib2t64 libjbig libjbig2dec0 libjpego2-turbo libjxl0.9 liblcms2-2 liblrc4 liblumai libbrander32v5 libbot2v5
libopenexr-3.1-30 libopenjp2-7 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpangoft6-1.0-0 libpangoft6
libwayland-cursor0 libwayland-egl1 libwebp0 libwebrtc2 libx265-209 libxcb-render0 libxcb-util1 libxdamage1 libxkbcommon0
obconf openbox poppler-data scrot
0 upgraded, 92 newly installed, 0 to remove and 0 not upgraded.
Need to get 39.8 MB of archives.
After this operation, 182 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

Рисунок 3 — `apt-get install openbox dbus-x11`

```
Setting up libwebrtc2arm64: (1.4.0-0.1) ...
Setting up libavahi-common3:arm64: (0.8-13+b2) ...
Setting up dconf-service: (0.40.0-4+b2) ...
Setting up libthai0:arm64: (0.1.23+b2) ...
Setting up adwaita-icon-theme (47'beta-1) ...
update-alternatives: using /usr/share/icons/adwaita/cursor.theme to provide /usr/share/icons/default/index.theme (x-cursor-theme
) in auto mode
Setting up libopenexr-3.1-30:arm64: (3.1.5-5.1+b2) ...
Setting up libx265-209:arm64: (3.6-3) ...
Setting up libfdk-audio2:arm64: (2.42.12+dfsg-1) ...
Setting up libavahi-client3:arm64: (0.8-13+b2) ...
Setting up libatk+bridge2.0-0+deb4:arm64: (2.53.1-2) ...
Setting up dconf-gsettings-backend:arm64: (0.40.0-4+b2) ...
Setting up libpango-1.0-0:arm64: (1.54.0+ds-2) ...
Setting up libpangoft2-1.0-0:arm64: (1.54.0+ds-2) ...
Setting up libcurl3:arm64: (7.64.0-1+b2) ...
Setting up libpangocairo-1.0-0:arm64: (1.54.0+ds-2) ...
Setting up libgs10:arm64: (10.03.1+dfsg-2) ...
Setting up gsettings-desktop-schemas (47'beta-1) ...
Setting up libpangoft6-1.0-0:arm64: (1.54.0+ds-2) ...
Setting up libspectre1:arm64: (0.2.12+1+b1) ...
Setting up librsv2-2:arm64: (2.58.0+dfsg-1) ...
Setting up librsv2-common:arm64: (2.58.0+dfsg-1) ...
Setting up libheif+plugin-david:arm64: (1.18.1-2) ...
Setting up libheif+plugin-libde265:arm64: (1.18.1-2) ...
Setting up libheif1:arm64: (1.18.1-2) ...
Setting up libimlib2t64:arm64: (1.12.1-1.1+b2) ...
Setting up libheif+plugin-x265:arm64: (1.18.1-2) ...
Setting up libbrander32v5:arm64: (3.6.1-12+b1) ...
Setting up scrot: (1.11.1-1) ...
Setting up openbox: (3.6.1-12+b1) ...
update-alternatives: using /usr/bin/openbox to provide /usr/bin/x-window-manager (x-window-manager) in auto mode
update-alternatives: using /usr/bin/openbox-session to provide /usr/bin/x-session-manager (x-session-manager) in auto mode
Processing triggers for shared-mime-info (2.4-5) ...
Warning: program compiled against libxml2 212 using older 209
Processing triggers for libx-bin (2.40-2) ...
Processing triggers for man-db (2.19.0-1) ...
Processing triggers for libglbl2.0-0t64:arm64 (2.82.0-1) ...
Setting up libgtk-3-0t64:arm64: (3.24.43-3) ...
Setting up at-spi2-core: (2.53.1-2) ...
Setting up obconf: (1.2.0.0-21120150213-3) ...
Processing triggers for libgtk-3-bin (3.24.43-3) ...
Processing triggers for libgd-pixbuf2-2.0-0:arm64 (2.42.12+dfsg-1) ...
Processing triggers for libc-bin (2.40-2) ...
root@plutto:~#
```

Рисунок 4 — `apt-get install openbox dbus-x11`

Чтобы активировать графический интерфейс, необходимо запустить хсервер: `startx`.

```

Setting up libwebpdmux2:arm64 (1.4.0-0.1) ...
Setting up libavahi-common3:arm64 (0.8-13+b2) ...
Setting up dconf-service (0.40.0-4+b2) ...
Setting up libthai0:arm64 (0.1.29-2) ...
Setting up adwaita-icon-theme (47~beta-1) ...
update-alternatives: using /usr/share/icons/Adwaita/cursor.theme to provide /usr/share/icons/default/index.theme (x-cursor-theme)
) in auto mode
Setting up libopenexr-3-1-30:arm64 (3.1.5-5.1+b2) ...
Setting up libx265-209:arm64 (3.6-3) ...
Setting up libgdk-pixbuf2.0-bin (2.42.12+dfsg-1) ...
Setting up libavahi-client3:arm64 (0.8-13+b2) ...
Setting up libatk-bridge2.0-0:arm64 (2.53.1-2) ...
Setting up dconf-gsettings-hackend:arm64 (0.40.0-4+b2) ...
Setting up libpango-1.0-0:arm64 (1.54.0+ds-2) ...
Setting up libx11-3:arm64 (0.9.2-19) ...
Setting up libpangoft2-1.0-0:arm64 (1.51.0+ds-2) ...
Setting up libcups2t64:arm64 (2.4.10-1) ...
Setting up libgtk-3-common (3.24.49-3) ...
Setting up libpangocairo-1.0-0:arm64 (1.54.0+ds-2) ...
Setting up libgslib10:arm64 (18.08.1~dfsg-2) ...
Setting up gsettings-desktop-schemas (47~beta-1) ...
Setting up libpangooxft-1.0-0:arm64 (1.54.0+ds-2) ...
Setting up libspectre1:arm64 (0.2.12-1+b1) ...
Setting up librsvg2-2:arm64 (2.58.0+dfsg-1) ...
Setting up librsvg2-common:arm64 (2.58.0+dfsg-1) ...
Setting up libheif-plugin-david:arm64 (1.18.1-2) ...
Setting up libheif-plugin-libde265:arm64 (1.18.1-2) ...
Setting up libheif1:arm64 (1.18.1-2) ...
Setting up libimlib2t64:arm64 (1.12.1-1.1+b2) ...
Setting up libheif-plugin-x265:arm64 (1.18.1-2) ...
Setting up libheif-plugin-aomenc:arm64 (1.18.1-2) ...
Setting up libbrender32v5 (3.6.1-12+b1) ...
Setting up scrot (1.11.1-1) ...
Setting up openbox (3.6.1-12+b1) ...
update-alternatives: using /usr/bin/openbox to provide /usr/bin/x-window-manager (x-window-manager) in auto mode
update-alternatives: using /usr/bin/openbox-session to provide /usr/bin/x-session-manager (x-session-manager) in auto mode
Processing triggers for shared-mime-info (2.4-5) ...
Warning: program compiled against libxml 212 using older 209
Processing triggers for libc-bin (2.40-2) ...
Processing triggers for man-db (2.15.0-1) ...
Processing triggers for libglib2.0-0:arm64 (2.82.0-1) ...
Setting up libgtk-3-0:arm64 (3.24.49-3) ...
Setting up at-spi2-core (2.53.1-2) ...
Setting up dconf (1.2.0.4+git20150213-3) ...
Setting up libgtk-3-bin (3.24.49-3) ...
Processing triggers for libgdk-pixbuf2.0-0:arm64 (2.42.12+dfsg-1) ...
Processing triggers for libc-bin (2.40-2) ...
root@plutto:"# startx

```

Рисунок 5 — `startx`



Рисунок 6 — Рабочий стол и меню

2.2. Эмулятор терминала в графическом режиме

Выберем из меню «Terminal emulator». Открывается окно `uxterm`. В этом окне мы будем вводить команды так же, как в текстовом режиме в мы вводили команды в `bash`.

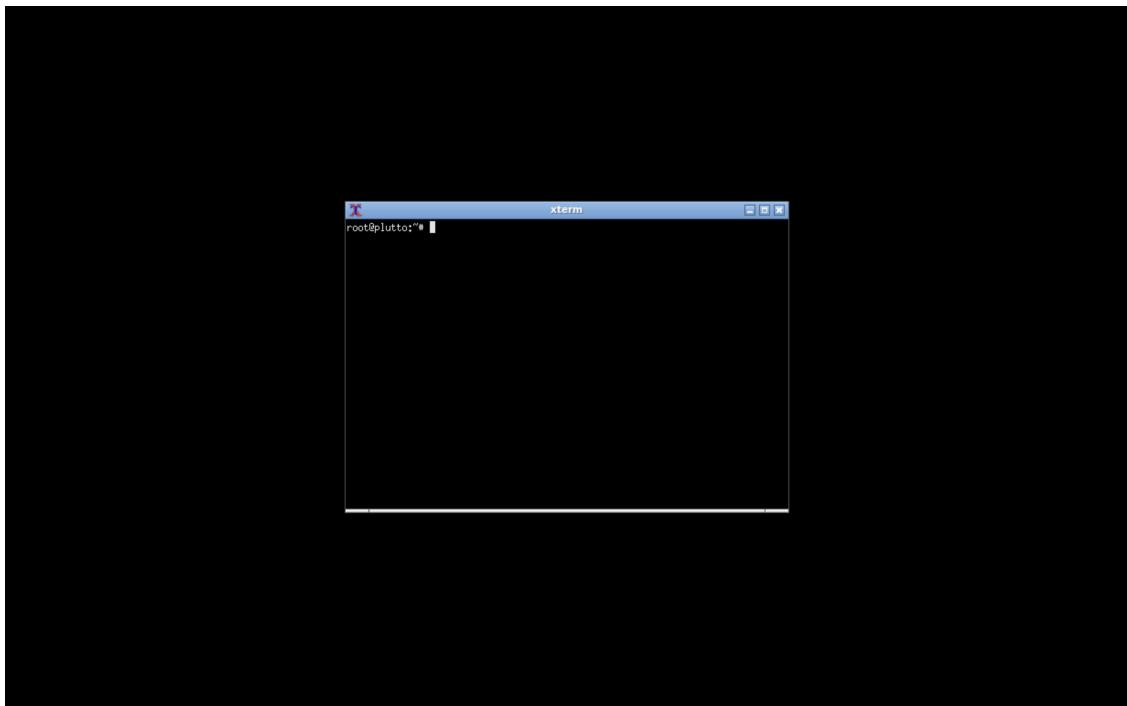


Рисунок 7 — Окно uxterm

Выполним команду: `pstree`

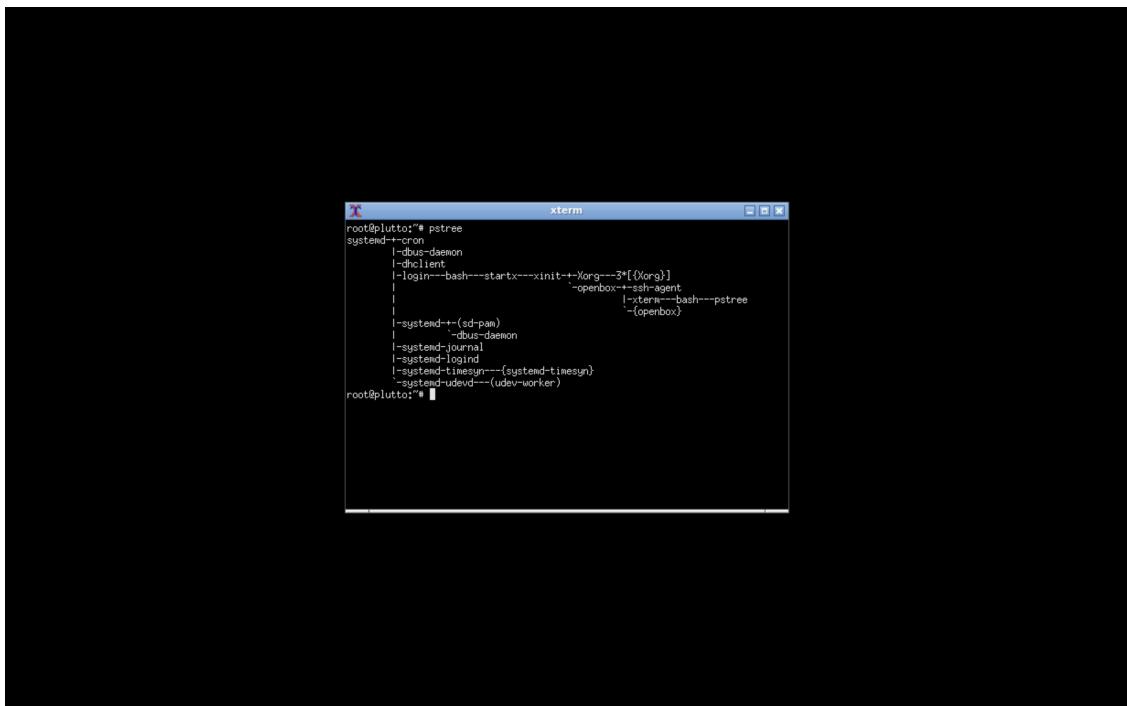


Рисунок 8 — pstree

Тут `bash` работает, просто вывод текста осуществляется посредством `xterm` (`uxterm`). Установим другой эмулятор терминала командой:
`apt-get install kitty`

В этом терминале есть полоса прокрутки, выделение и копирование текста в буфер обмена.

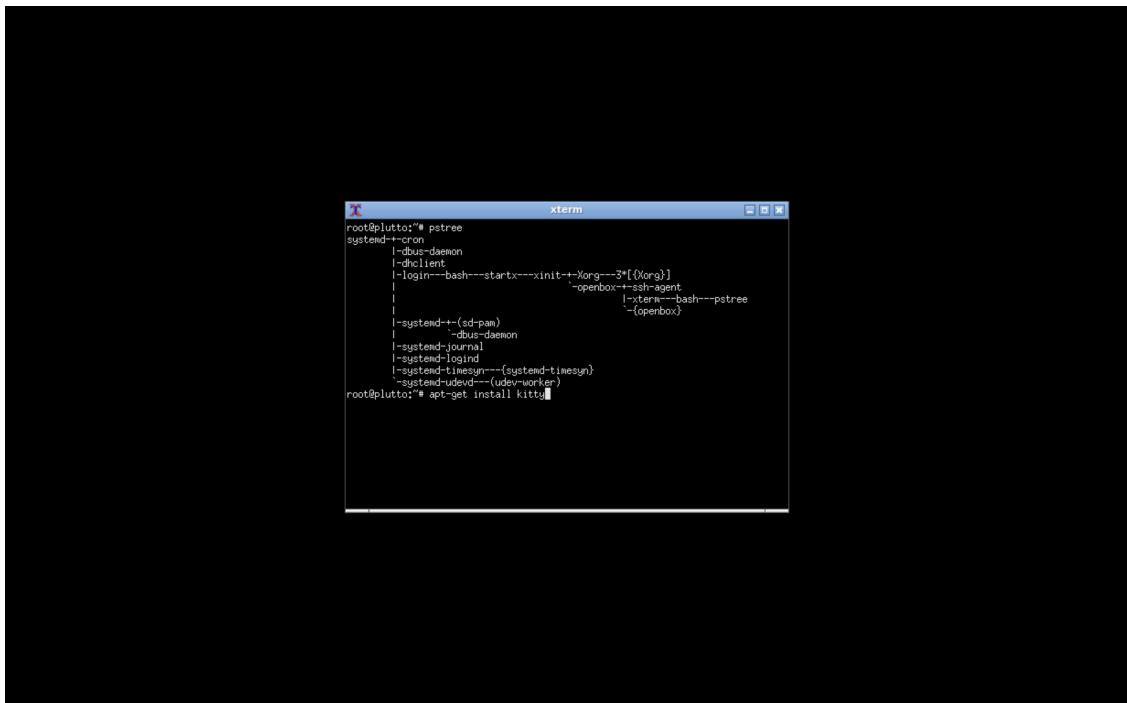


Рисунок 9 — `apt-get install kitty`

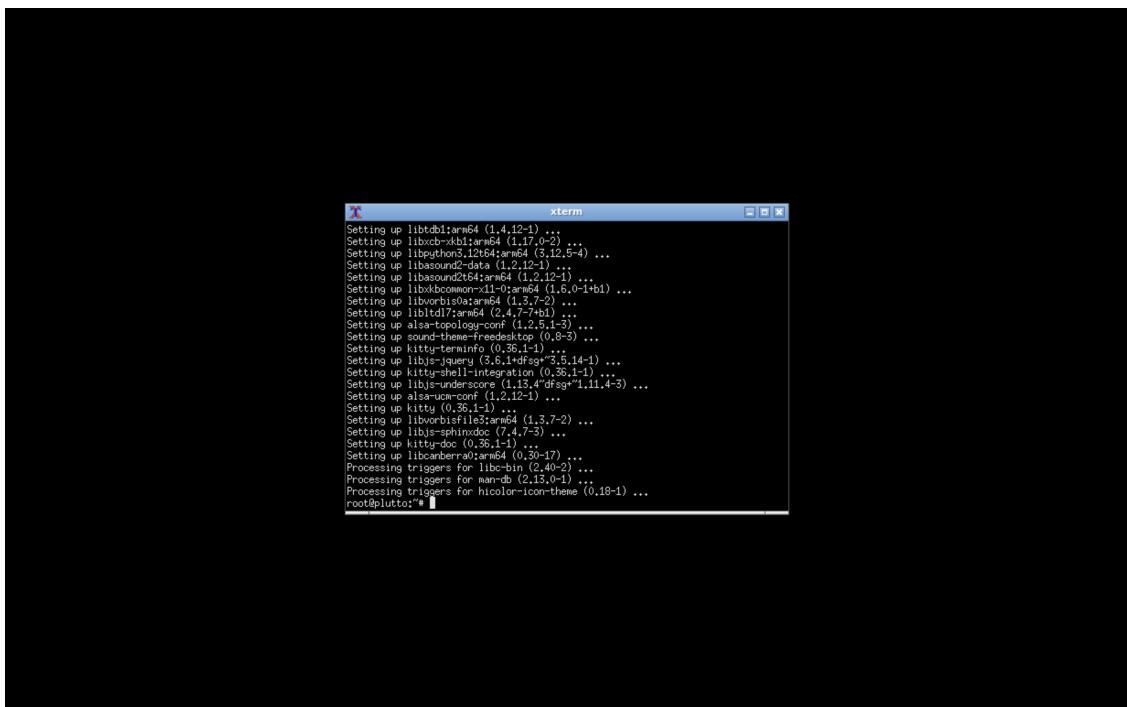


Рисунок 10 — `apt-get install kitty`

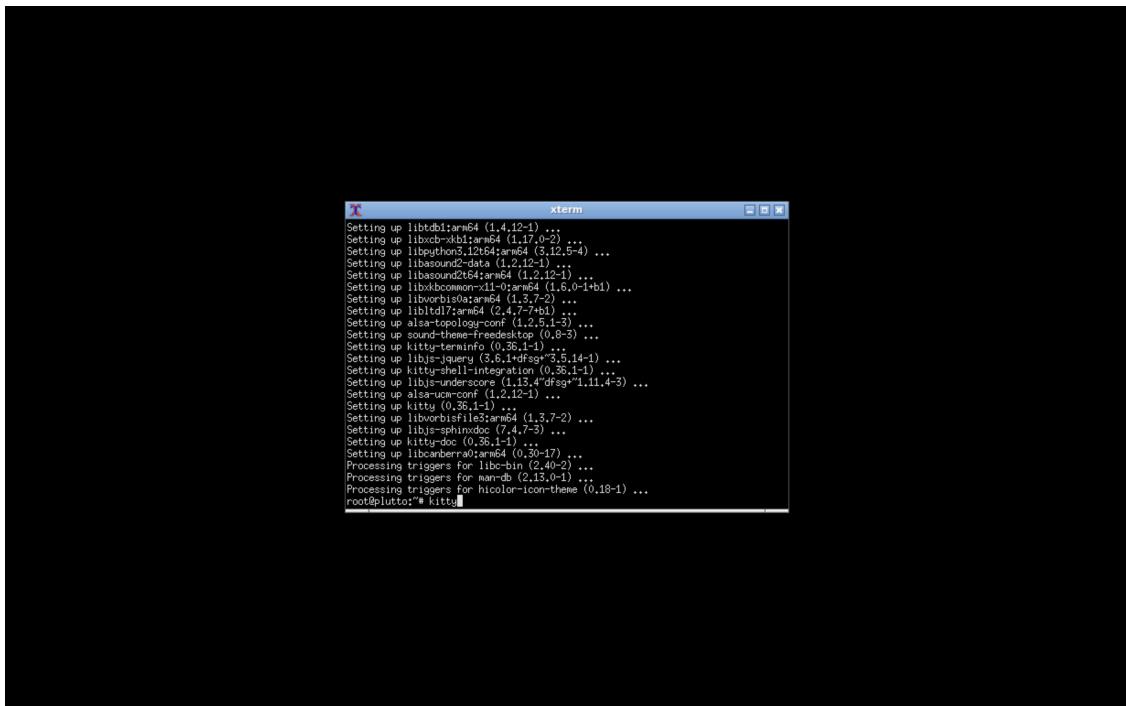


Рисунок 11 — Откроем `kitty`

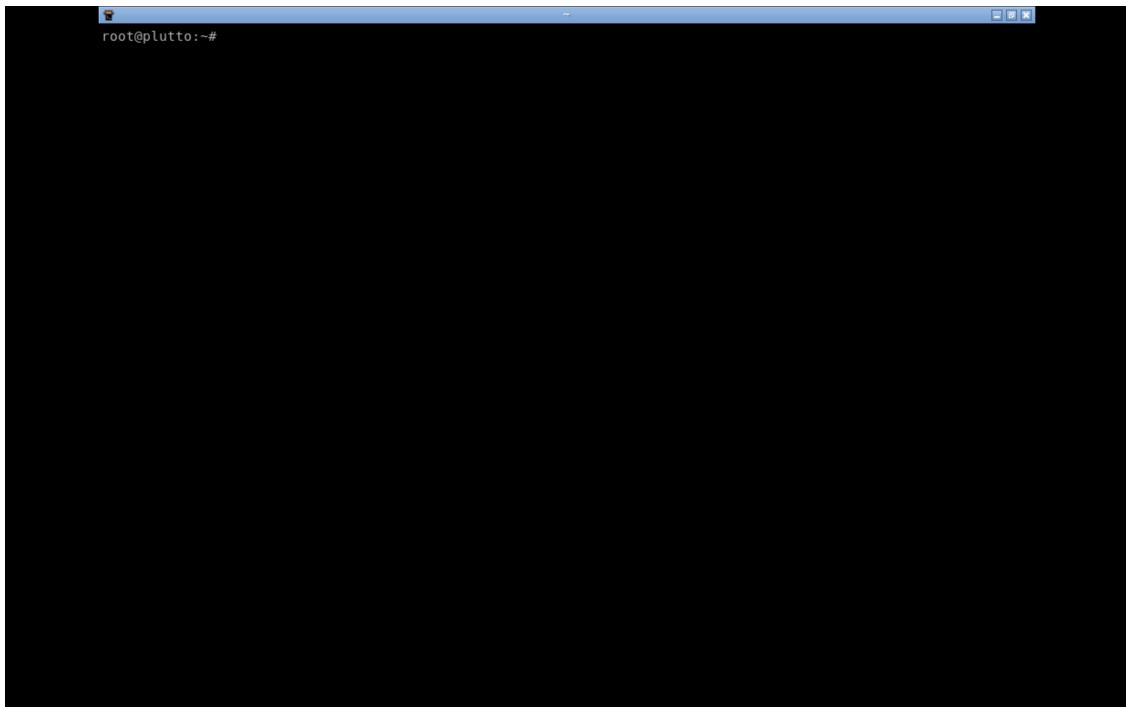


Рисунок 12 — Интерфейс `kitty`

2.3. Подменю «Debian»

В меню нет пункта «Debian», это значит что отсутствуют некоторые необходимые пакеты. Откроем терминал и дадим команды:

```
apt-get install menu apt-get install menu-xdg
```

```

root@plutto:~# apt-get install menu
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  menu-l10n gksu | kde-cli-tools | ktsuss
The following NEW packages will be installed:
  menu
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 326 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian trixie/main arm64 menu arm64 2.1.50 [326 kB]
Fetched 326 kB in 6s (58.6 kB/s)
Selecting previously unselected package menu.
(Reading database ... 39568 files and directories currently installed.)
Preparing to unpack .../archives/menu_2.1.50_arm64.deb ...
Unpacking menu (2.1.50) ...
Setting up menu (2.1.50) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for menu (2.1.50) ...
root@plutto:~# apt-get install menu-xdg
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  menu-xdg
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 5304 B of additional disk space will be used.
Get:1 http://deb.debian.org/debian trixie/main arm64 menu-xdg all 0.7 [5304 B]
Fetched 5304 B in 0s (12.0 kB/s)
Selecting previously unselected package menu-xdg.
(Reading database ... 39751 files and directories currently installed.)
Preparing to unpack .../archives/menu-xdg_0.7_all.deb ...
Unpacking menu-xdg (0.7) ...
Setting up menu-xdg (0.7) ...
Processing triggers for menu (2.1.50) ...
root@plutto:~#

```

Рисунок 13 — `apt-get install menu` `apt-get install menu-xdg`

Далее выполним следующие команды:

```

menu-l10n gksu | kde-cli-tools | ktsuss
The following NEW packages will be installed:
  menu
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 326 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian trixie/main arm64 menu arm64 2.1.50 [326 kB]
Fetched 326 kB in 6s (58.6 kB/s)
Selecting previously unselected package menu.
(Reading database ... 39568 files and directories currently installed.)
Preparing to unpack .../archives/menu_2.1.50_arm64.deb ...
Unpacking menu (2.1.50) ...
Setting up menu (2.1.50) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for menu (2.1.50) ...
root@plutto:~# apt-get install menu-xdg
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  menu-xdg
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 5304 B of additional disk space will be used.
Get:1 http://deb.debian.org/debian trixie/main arm64 menu-xdg all 0.7 [5304 B]
Fetched 5304 B in 0s (12.0 kB/s)
Selecting previously unselected package menu-xdg.
(Reading database ... 39751 files and directories currently installed.)
Preparing to unpack .../archives/menu-xdg_0.7_all.deb ...
Unpacking menu-xdg (0.7) ...
Setting up menu-xdg (0.7) ...
Processing triggers for menu (2.1.50) ...
root@plutto:~# mkdir ~/.config/
mkdir: cannot create directory '/root/.config/': File exists
root@plutto:~# mkdir ~/.config/openbox
root@plutto:~# cp /etc/xdg/openbox/rc.xml ~/.config/openbox
root@plutto:~# cp /etc/xdg/openbox/menu.xml ~/.config/openbox
root@plutto:~# cp /etc/xdg/openbox/autostart.xml ~/.config/openbox
cp: cannot stat '/etc/xdg/openbox/autostart.xml': No such file or directory
root@plutto:~# cp /etc/xdg/openbox/autostart ~/.config/openbox
root@plutto:~#

```

Рисунок 14 — `mkdir ~/.config`

`mkdir ~/.config/openbox`

`cp /etc/xdg/openbox/rc.xml ~/.config/openbox/`

`cp /etc/xdg/openbox/menu.xml ~/.config/openbox/`

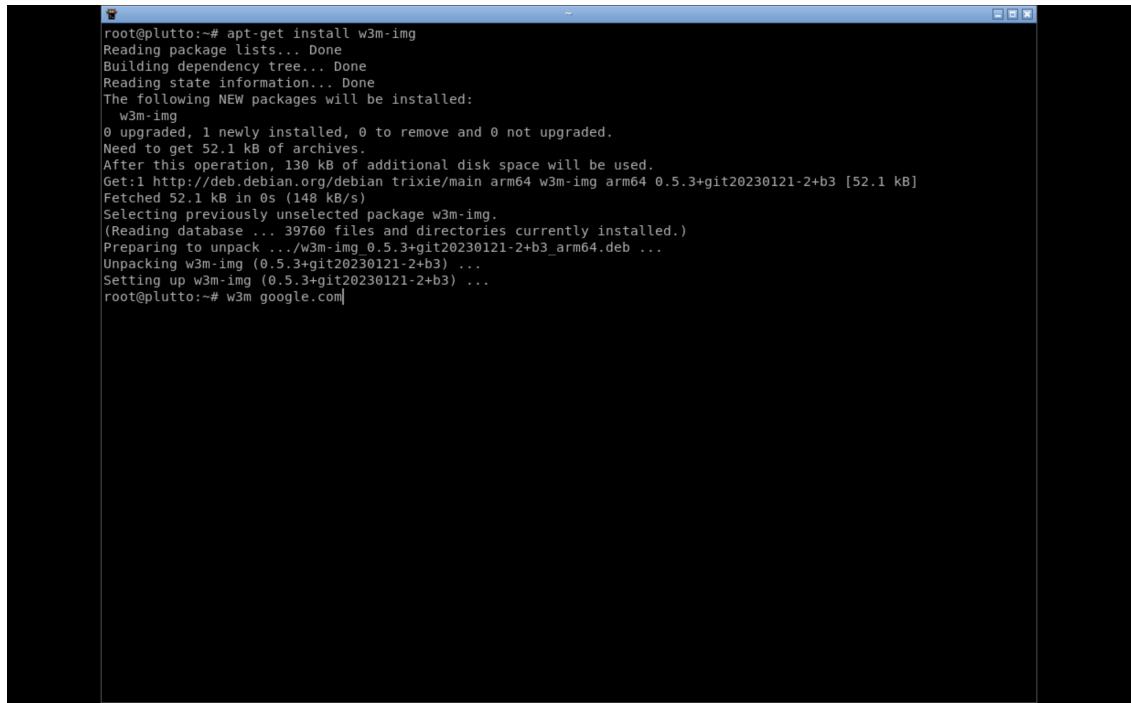
`cp /etc/xdg/openbox/autostart ~/.config/openbox/`

Первые две команды создадут для пользователя `root` папку `./config/openbox`, остальные три скопируют туда настройки из общей папки настроек `Openbox` в папку настроек конкретного пользователя.

2.4. Текстовый браузер w3m в Openbox.

В консоли `kitty` браузер `w3m` способен загружать изображения. Для этого необходимо поставить пакет `w3m-img`:

```
apt-get install w3m-img
```



The screenshot shows a terminal window with a black background and white text. It displays the output of the command `apt-get install w3m-img`. The output includes package lists, dependency resolution, and the download and installation of the `w3m-img` package from the `http://deb.debian.org/debian` repository. The terminal window has a title bar with the name of the terminal and a close button.

```
root@pluton:~# apt-get install w3m-img
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  w3m-img
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 52.1 kB of archives.
After this operation, 130 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian/trixie/main arm64 w3m-img arm64 0.5.3+git20230121-2+b3 [52.1 kB]
Fetched 52.1 kB in 0s (148 kB/s)
Selecting previously unselected package w3m-img.
(Reading database ... 39760 files and directories currently installed.)
Preparing to unpack .../w3m-img_0.5.3+git20230121-2+b3_arm64.deb ...
Unpacking w3m-img (0.5.3+git20230121-2+b3) ...
Setting up w3m-img (0.5.3+git20230121-2+b3) ...
root@pluton:~# w3m google.com
```

Рисунок 15 — `apt-get install w3m-img`

После успешной установки запустим браузер.

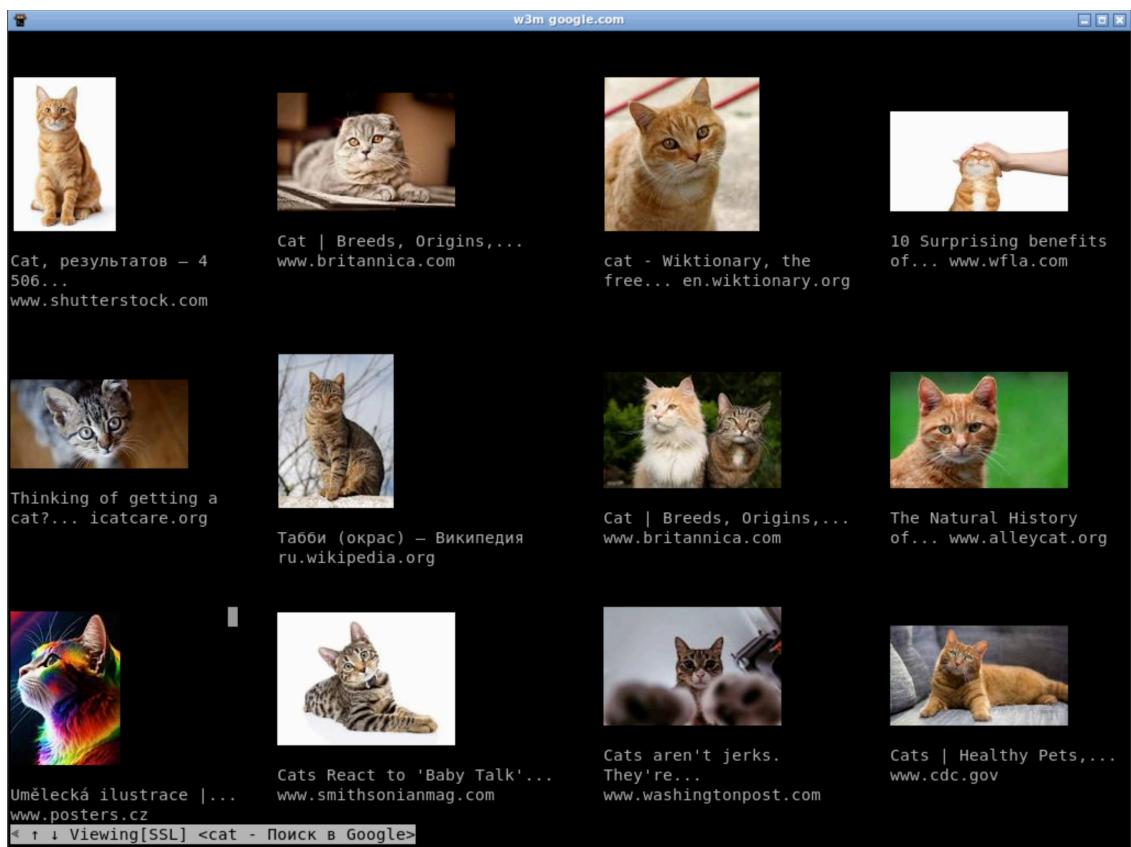


Рисунок 16 — [w3m google.com](#)

2.5. Установка текстового редактора «mousepad»

Соберем `mousepad` из исходников. Для этого перейдем на сайт deb.debian.org/debian.

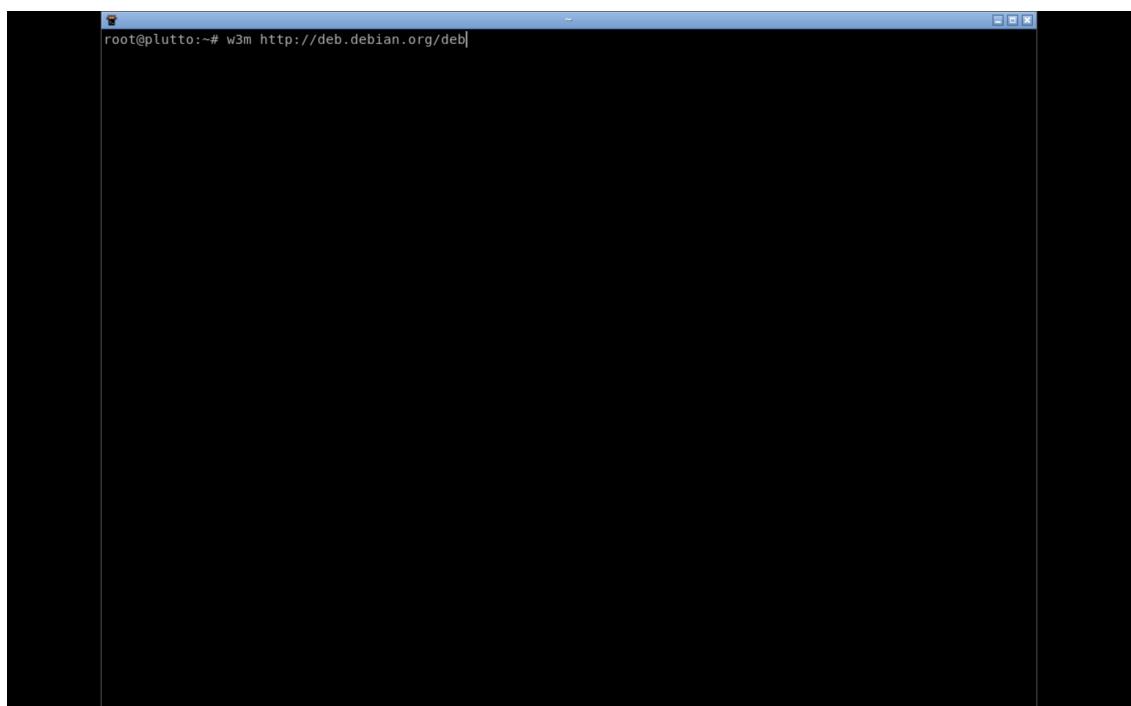


Рисунок 17 — [w3m deb.debian.org/debian](#)

А затем последовательно перейдем по ссылкам пути к директории `pool/main/m/`. Далее с помощью поиска (`/`) найдем `mousepad`.

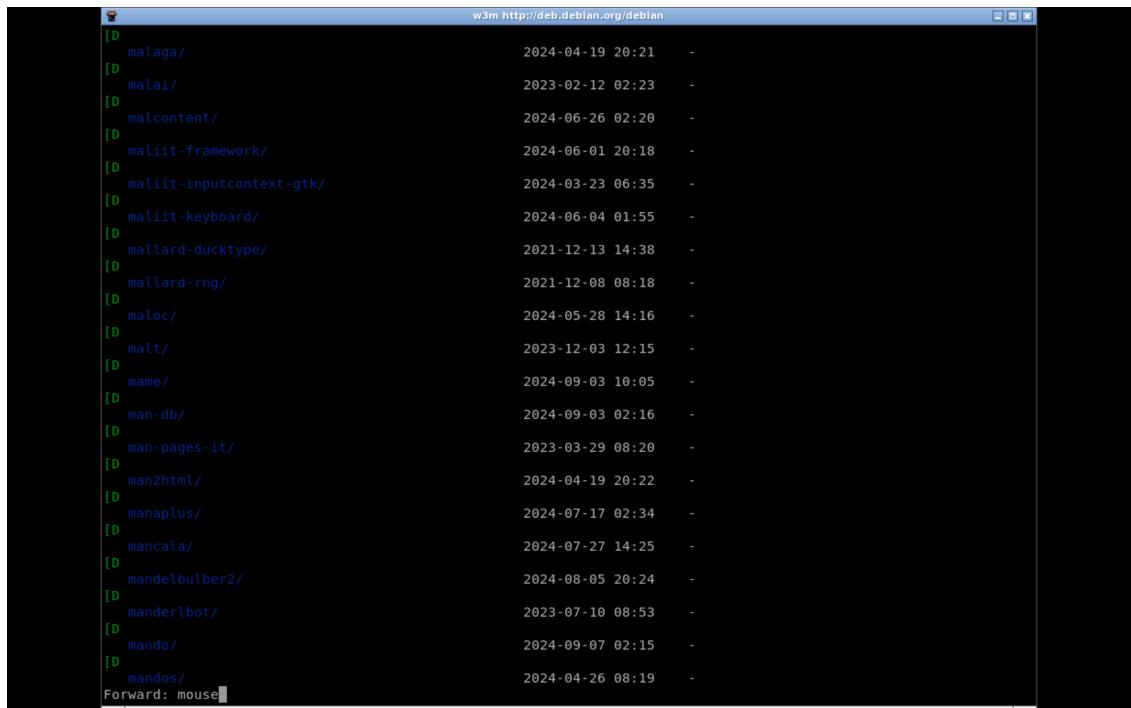


Рисунок 18 — Поиск `/mousepad`

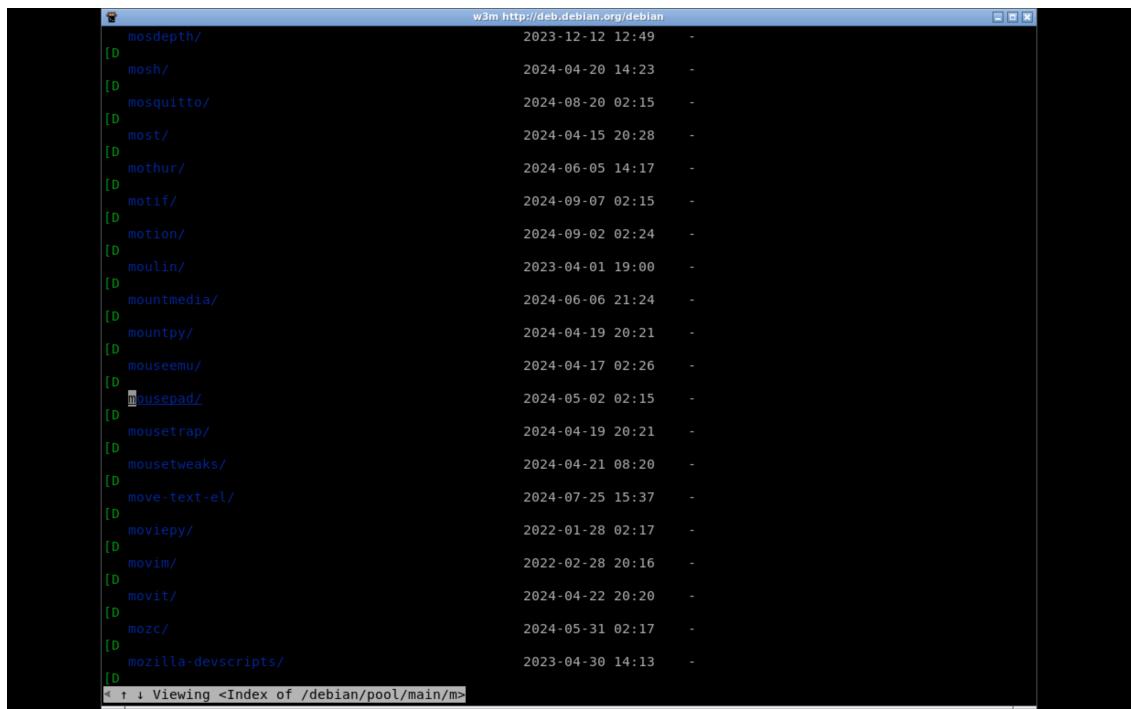


Рисунок 19 — Поиск `/mousepad`

Попадаем в директорию и ищем архив с исходниками.

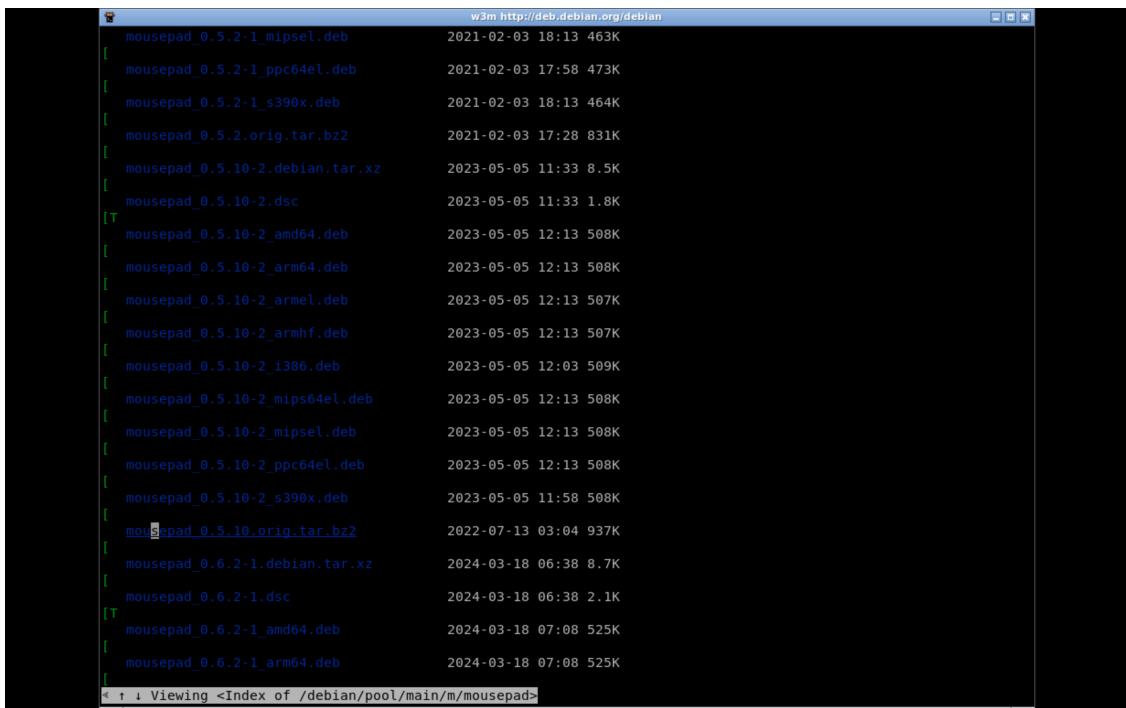


Рисунок 20 — Архив с исходниками

Нажимаем Enter и скачиваем файл.

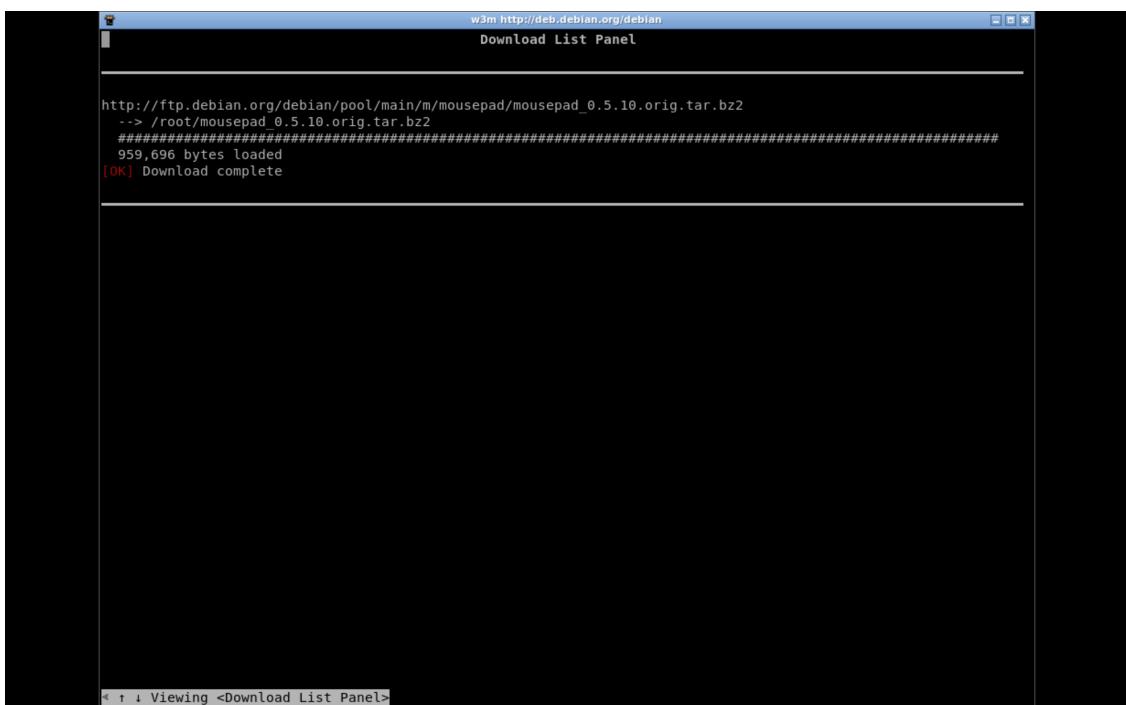
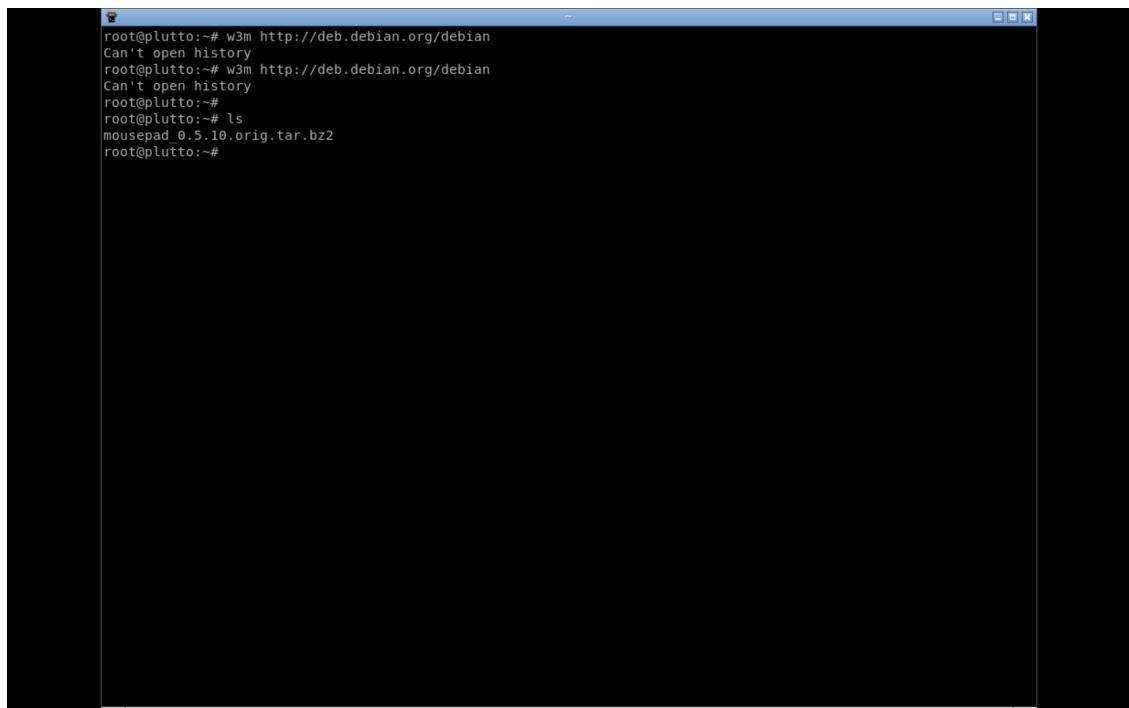


Рисунок 21 — Загрузка завершена

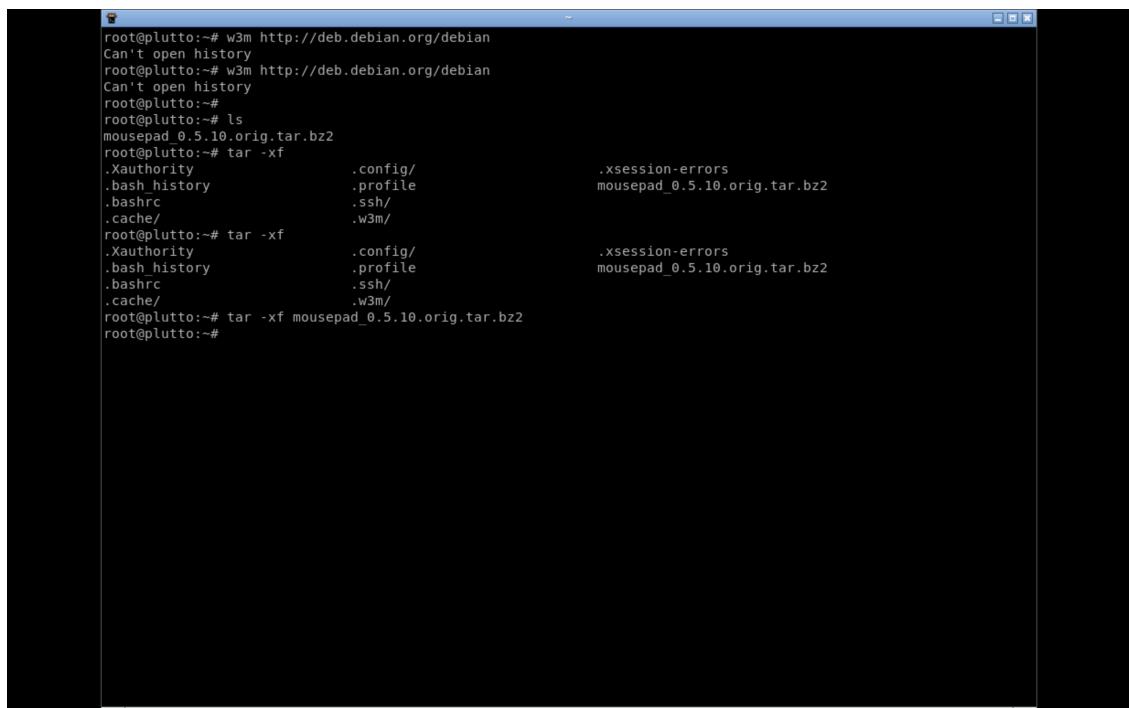
После выходим из браузера. При помощи команды `ls` видим, что файл загружен и находится в домашней директории.



```
root@plutto:~# w3m http://deb.debian.org/debian
Can't open history
root@plutto:~# w3m http://deb.debian.org/debian
Can't open history
root@plutto:~#
root@plutto:~# ls
mousepad_0.5.10.orig.tar.bz2
root@plutto:~#
```

Рисунок 22 — Загруженный файл

Распакуем архив при помощи утилиты `tar`.



```
root@plutto:~# w3m http://deb.debian.org/debian
Can't open history
root@plutto:~# w3m http://deb.debian.org/debian
Can't open history
root@plutto:~#
root@plutto:~# ls
mousepad_0.5.10.orig.tar.bz2
root@plutto:~# tar -xf
.Xauthority          .config/           .xsession-errors
.bash_history        .profile           mousepad_0.5.10.orig.tar.bz2
.bashrc              .ssh/
.cache/              .w3m/
root@plutto:~# tar -xf
.Xauthority          .config/           .xsession-errors
.bash_history        .profile           mousepad_0.5.10.orig.tar.bz2
.bashrc              .ssh/
.cache/              .w3m/
root@plutto:~# tar -xf mousepad_0.5.10.orig.tar.bz2
root@plutto:~#
```

Рисунок 23 — `tar -xf mousepad_0.5.10.orig.tar.bz2`

Теперь установим компилятор и стандартные библиотеки:

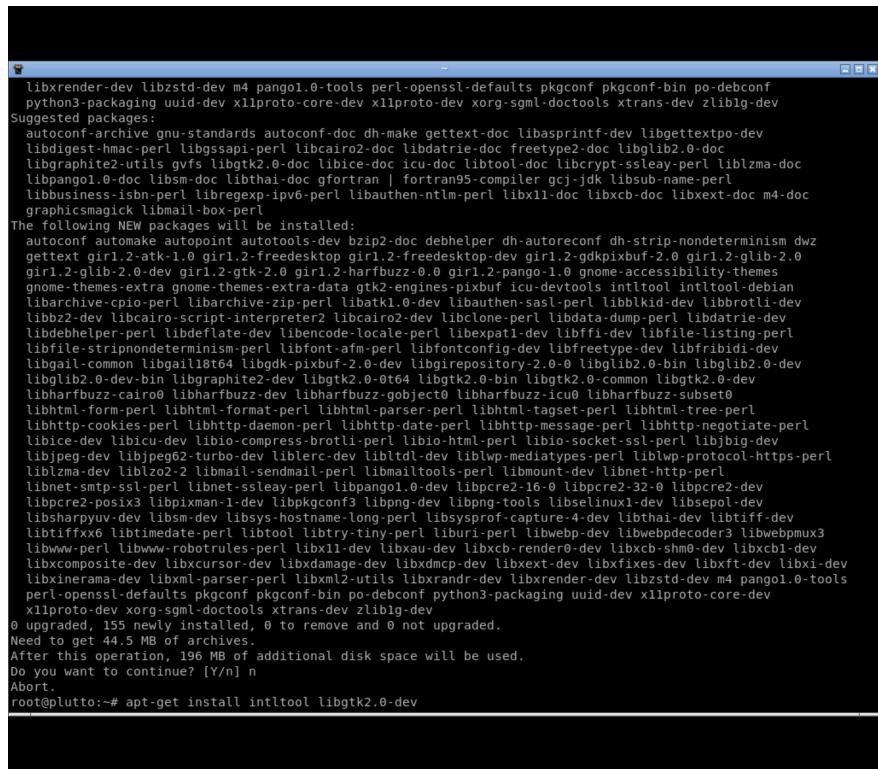
```
apt-get install build-essential
apt-get install intltool libgtk2.0-dev
apt-get install gtk
```

```
root@pluto:~# w3m http://deb.debian.org/debian  
Can't open history  
root@pluto:~# w3m http://deb.debian.org/debian  
Can't open history  
root@pluto:~#  
root@pluto:~# ls  
mousepad_0.5.10.orig.tar.bz2  
root@pluto:~# tar -xf  
.Xauthority .config/.xsession-errors  
.bash_history .profile mousepad_0.5.10.orig.tar.bz2  
.bashrc .ssh/  
.cache/ .w3m/  
root@pluto:~# tar -xf  
.Xauthority .config/.xsession-errors  
.bash_history .profile mousepad_0.5.10.orig.tar.bz2  
.bashrc .ssh/  
.cache/ .w3m/  
root@pluto:~# tar -xf mousepad_0.5.10.orig.tar.bz2  
root@pluto:~#  
root@pluto:~# apt-get install build-essential|
```

Рисунок 24 — `apt-get install build-essential`

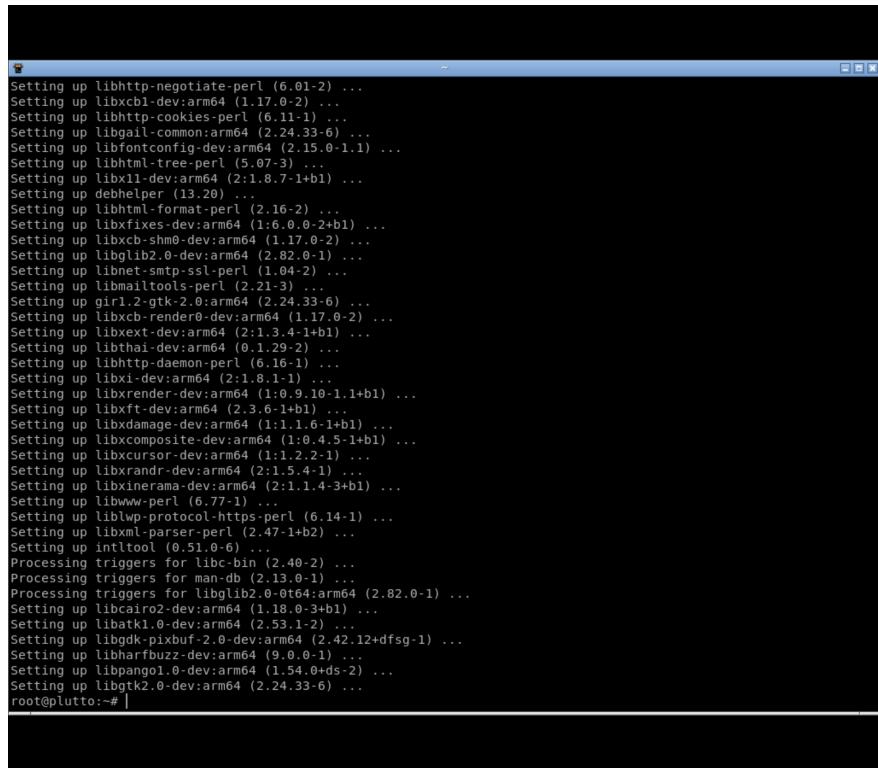
```
Setting up liblsan0:arm64 (14.2.0-3) ...  
Setting up libitm1:arm64 (14.2.0-3) ...  
Setting up libalgorithm-merge-perl (0.08-5) ...  
Setting up gnupg-utils (2.2.43-8+b1) ...  
Setting up libcff0:arm64 (2.43.1-3) ...  
Setting up pinentry-curses (1.2.1-4+b1) ...  
Setting up gpg-agent (2.2.43-8+b1) ...  
Created symlink '/etc/systemd/user/sockets.target.wants/gpg-agent-browser.socket' → '/usr/lib/systemd/user/gpg-agent-browser.socket'.  
Created symlink '/etc/systemd/user/sockets.target.wants/gpg-agent-extra.socket' → '/usr/lib/systemd/user/gpg-agent-extra.socket'.  
Created symlink '/etc/systemd/user/sockets.target.wants/gpg-agent-ssh.socket' → '/usr/lib/systemd/user/gpg-agent-ssh.socket'.  
Created symlink '/etc/systemd/user/sockets.target.wants/gpg-agent.socket' → '/usr/lib/systemd/user/gpg-agent.socket'.  
Setting up gpgsm (2.2.43-8+b1) ...  
Setting up libldap-2.5-0:arm64 (2.5.18+dfsg-3) ...  
Setting up dirmngr (2.2.43-8+b1) ...  
Created symlink '/etc/systemd/user/sockets.target.wants/dirmngr.socket' → '/usr/lib/systemd/user/dirmngr.socket'.  
Setting up libgpgfng0:arm64 (2.43.1-3) ...  
Setting up binutils (2.43.1-3) ...  
Setting up libgcc1 (2.43.1-3) ...  
Setting up libgcc1-14-dev:arm64 (14.2.0-3) ...  
Setting up libstdc++-14-dev:arm64 (14.2.0-3) ...  
Setting up gpg-wks-client (2.2.43-8+b1) ...  
Setting up binutils-aarch64-linux-gnu (2.43.1-3) ...  
Setting up binutils (2.43.1-3) ...  
Setting up dpkg-dev (1.22.11) ...  
Setting up gcc-14-aarch64-linux-gnu (14.2.0-3) ...  
Setting up gcc-aarch64-linux-gnu (4:14.1.0-2) ...  
Setting up gcc-14 (14.2.0-3) ...  
Setting up g++-14 (4:14.1.0-2) ...  
Setting up gcc (4:14.1.0-2) ...  
Setting up g++ (4:14.1.0-2) ...  
update-alternatives: using /usr/bin/g++ to provide /usr/bin/c++ (c++) in auto mode  
Setting up build-essential (12.10) ...  
Processing triggers for man-db (2.13.0-1) ...  
Processing triggers for libc-bin (2.40-2) ...  
root@pluto:~|
```

Рисунок 25 — `apt-get install build-essential`



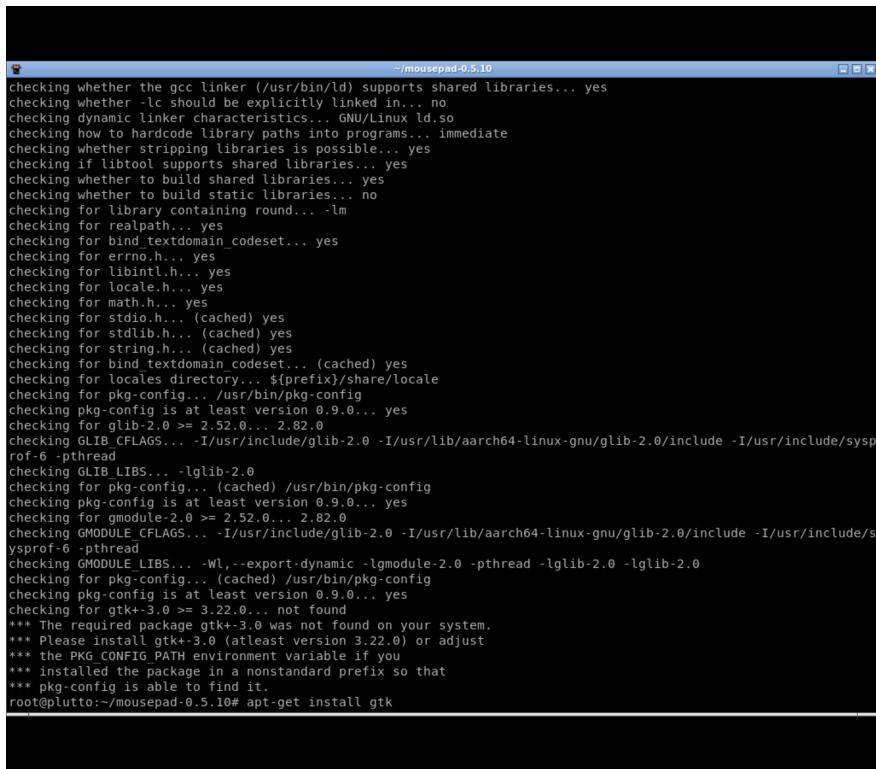
```
libxrender-dev libzstd-dev m4 pangol.0-tools perl-openssl-defaults pkgconf pkgconf-bin po-debconf
python3-packaging uid-dev x11proto-core-dev x11proto-dev xorg-sgml-doctools xtrans-dev zlib1g-dev
Suggested packages:
autoconf-archive gnu-standards autoconf-doc dh-make gettext-doc libasprintf-dev libgettextpo-dev
libdigest-hmac-perl libgssapi-perl libcairo2-doc libdatrie-doc freetype2-doc libgl2.0-doc
libgraphite2-utils gvfs libgtk2.0-doc libice-doc icu-doc libtool-doc libcrypt-ssleay-perl liblzma-doc
libpango1.0-doc libsm-doc libthai-doc gfortran fortran95-compiler gcj-jdk libsub-name-perl
libbusiness-ldap-perl libregexp-ipv6-perl libauthen-ntlm-perl libxii-doc libxcb-doc libxext-doc m4-doc
graphicsmagick libmail-box-perl
The following NEW packages will be installed:
autoconf automake autopoint autotools-dev bzip2-doc debhelper dh-autoreconf dh-strip-nondeterminism dwz
gettext gir1.2-atk-1.0 gir1.2-freedesktop gir1.2-gdkpixbuf-2.0 gir1.2-glib-2.0
gir1.2-glib-2.0-dev gir1.2-gtk-2.0 gir1.2-harfbuzz-0.0 gir1.2-pango-1.0 gnome-accessibility-themes
gnome-themes-extras gnome-themes-extras-data gtk2-engines-pixbuf icu-devtools intltool intltool-debian
libarchive-cpio-perl libarchive-zip-perl libatk1.0-dev libauthen-sasl-perl libblkid-dev libbrotli-dev
libbz2-dev libcairo-script-interpreter2 libcairo2-dev libclone-perl libdata-dump-perl libdatrie-dev
libdechelper-perl libdeflate-dev libencode-local-perl libexpat-dev libffi-dev libfile-listing-perl
libfile-stripnondeterminism-perl libfont-afm-perl libfontconfig-dev libfreetype-dev libfribidi-dev
libgail-common libgail18t64 libgd2.0-dev libgirepository-2.0 libgl2.0-bin libgl2.0-dev
libgl2.0-dev-bin libgraphite2-dev libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libgtk2.0-dev
libharfbuzz-cairo0 libharfbuzz-dev libharfbuzz-gobject libharfbuzz-icu0 libharfbuzz-subset0
libhtml-form-perl libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl libhtml-tree-perl
libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl libhttp-message-perl libhttp-negotiate-perl
libice-dev libicu-dev libio-compress-brotli-perl libio-html-perl libio-socket-ssl-perl libjbig2-dev
libjpeg-dev libjpegturbo2-turbo-dev liblerc-dev libltdl-dev liblwp-mediatypes-perl liblwp-protocol-https-perl
liblzo2-dev liblzo2-2 libmail-sendmail-perl libmailtools-perl libmount-dev libnet-http-perl
libnet-smtp-ssl-perl libnet-ssleay-perl libpango1.0-dev libpcre2-16-0 libpcre2-32-0 libpcre2-dev
libpcre2-posix3 libpixman-1-dev libpkcon3 libpng-dev libpng-tools libselinux1-dev libsep0-dev
libsharpuy-dev libsm-dev libsys-hostname-long-perl libsysprof-capture-4-dev libthai-dev libtiff-dev
libtiffxx libtiffimage-perl libtiff-tiny-perl liburi-perl libwebp-dev libwebpdecoder3 libwebpmux3
libwww-perl libwww-robotrules-perl libxml1-dev libxcb-render0-dev libxcb-shm0-dev libxcb1-dev
libxcomposite-dev libxcursor-dev libxdamage-dev libxdmcp-dev libxext-dev libxfixes-dev libxft-dev libxi-dev
libxinerama-dev libxml-parser-perl libxml2-utils libxrandr-dev libxrender-dev libxstd-dev m4 pangol.0-tools
perl-openssl-defaults pkgconf pkgconf-bin po-debconf python3-packaging uid-dev x11proto-core-dev
x11proto-dev xorg-sgml-doctools xtrans-dev zlib1g-dev
0 upgraded, 155 newly installed, 0 to remove and 0 not upgraded.
Need to get 44.5 MB of archives.
After this operation, 196 MB of additional disk space will be used.
Do you want to continue? [Y/n]
Abort.
root@pluto:~# apt-get install intltool libgtk2.0-dev
```

Рисунок 26 — `apt-get install intltool libgtk2.0-dev`



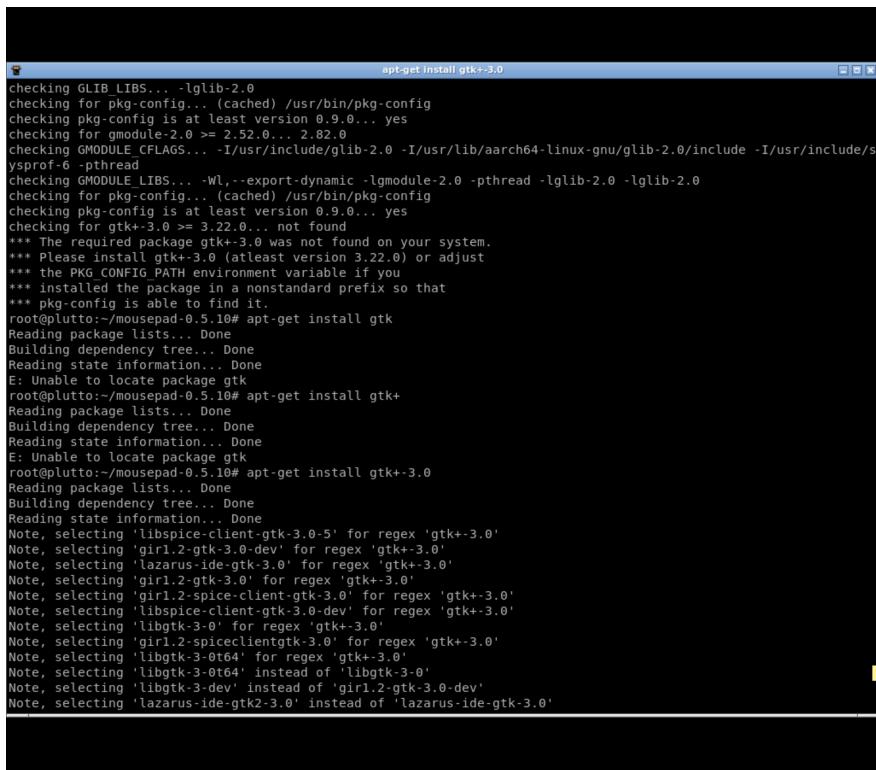
```
Setting up libhttp-negotiate-perl (6.01-2) ...
Setting up libxcb1-dev:arm64 (1.17.0-2) ...
Setting up libhttp-cookies-perl (6.11-1) ...
Setting up libgail-common:arm64 (2.24.33-6) ...
Setting up libfontconfig-dev:arm64 (2.15.0-1.1) ...
Setting up libhtml-tree-perl (5.07-3) ...
Setting up libxml1-dev:arm64 (2:1.8.7-1+b1) ...
Setting up debhelper (13.20) ...
Setting up libhtml-format-perl (2.16-2) ...
Setting up libxfixes-dev:arm64 (1:6.0.0-2+b1) ...
Setting up libxcb-shm0-dev:arm64 (1.17.0-2) ...
Setting up libgl2.0-dev:arm64 (2.82.0-1) ...
Setting up libnet-smtp-ssl-perl (1.04-2) ...
Setting up libmailtools-perl (2.21-3) ...
Setting up gir1.2-gtk-2.0:arm64 (2.24.33-6) ...
Setting up libxcb-render0-dev:arm64 (1.17.0-2) ...
Setting up libxext-dev:arm64 (2:1.3.4-1+b1) ...
Setting up libthai-dev:arm64 (0.1.29-2) ...
Setting up libhttp-daemon-perl (6.16-1) ...
Setting up libxi-dev:arm64 (2:1.8.1-1) ...
Setting up libxrender-dev:arm64 (1:0.9.10-1.1+b1) ...
Setting up libxft-dev:arm64 (2.3.6-1+b1) ...
Setting up libxdamage-dev:arm64 (1:1.1.6-1+b1) ...
Setting up libcomposite-dev:arm64 (1:0.4.5-1+b1) ...
Setting up libxcursor-dev:arm64 (1:1.2.2-1) ...
Setting up libxrandr-dev:arm64 (2:1.5.4-1) ...
Setting up libxinerama-dev:arm64 (2:1.1.4-3+b1) ...
Setting up libwww-perl (6.77-1) ...
Setting up liblwp-protocol-https-perl (6.14-1) ...
Setting up libxml-parser-perl (2.47-1+b2) ...
Setting up intltool (0.51.0-6) ...
Processing triggers for libc-bin (2.40-2) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for libgl2.0-0t64:arm64 (2.82.0-1) ...
Setting up libcairo2-dev:arm64 (1.18.0-3+b1) ...
Setting up libatk1.0-dev:arm64 (2.53.1-2) ...
Setting up lib gdk-pixbuf2.0-dev:arm64 (2.42.12+dfsg-1) ...
Setting up libharfbuzz-dev:arm64 (9.0.0-1) ...
Setting up libpango1.0-dev:arm64 (1.54.0+ds-2) ...
Setting up libgtk2.0-dev:arm64 (2.24.33-6) ...
root@pluto:~|
```

Рисунок 27 — `apt-get install intltool libgtk2.0-dev`



```
-/mousepad:0.5.10
checking whether the gcc linker (/usr/bin/ld) supports shared libraries... yes
checking whether -lc should be explicitly linked in... no
checking dynamic linker characteristics... GNU/Linux ld.so
checking how to hardcode library paths into programs... immediate
checking whether stripping libraries is possible... yes
checking if libtool supports shared libraries... yes
checking whether to build shared libraries... yes
checking whether to build static libraries... no
checking for library containing round... -lm
checking for realpath... yes
checking for bind_textdomain_codeset... yes
checking for errno.h... yes
checking for libintl.h... yes
checking for locale.h... yes
checking for math.h... yes
checking for stdio.h... (cached) yes
checking for stdlib.h... (cached) yes
checking for string.h... (cached) yes
checking for bind_textdomain_codeset... (cached) yes
checking for locales directory... ${prefix}/share/locale
checking for pkg-config... /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for glib-2.0 >= 2.52.0... 2.82.0
checking GLIB_CFLAGS... -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -pthread
checking GLIB_LIBS... -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gmodule-2.0 >= 2.52.0... 2.82.0
checking GMODULE_CFLAGS... -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -pthread
checking GMODULE_LIBS... -Wl,--export-dynamic -lgmodule-2.0 -pthread -lglib-2.0 -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gtk+-3.0 >= 3.22.0... not found
*** The required package gtk+-3.0 was not found on your system.
*** Please install gtk+-3.0 (atleast version 3.22.0) or adjust
*** the PKG_CONFIG_PATH environment variable if you
*** installed the package in a nonstandard prefix so that
*** pkg-config is able to find it.
root@plutto:~/mousepad-0.5.10# apt-get install gtk
```

Рисунок 28 — `apt-get install intltool gtk`



```
apt-get install gtk+-3.0
checking GLIB_LIBS... -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gmodule-2.0 >= 2.52.0... 2.82.0
checking GMODULE_CFLAGS... -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -pthread
checking GMODULE_LIBS... -Wl,--export-dynamic -lgmodule-2.0 -pthread -lglib-2.0 -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gtk+-3.0 >= 3.22.0... not found
*** The required package gtk+-3.0 was not found on your system.
*** Please install gtk+-3.0 (atleast version 3.22.0) or adjust
*** the PKG_CONFIG_PATH environment variable if you
*** installed the package in a nonstandard prefix so that
*** pkg-config is able to find it.
root@plutto:~/mousepad-0.5.10# apt-get install gtk+
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package gtk
root@plutto:~/mousepad-0.5.10# apt-get install gtk+
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'libspice-client-gtk-3.0-5' for regex 'gtk+-3.0'
Note, selecting 'gir1.2-gtk-3.0-dev' for regex 'gtk+-3.0'
Note, selecting 'lazarus-ide-gtk-3.0' for regex 'gtk+-3.0'
Note, selecting 'gir1.2-gtk-3.0' for regex 'gtk+-3.0'
Note, selecting 'gir1.2-spice-client-gtk-3.0' for regex 'gtk+-3.0'
Note, selecting 'libspice-client-gtk-3.0-dev' for regex 'gtk+-3.0'
Note, selecting 'libgtk-3-0' for regex 'gtk+-3.0'
Note, selecting 'libgtk-3-spiceclientgtk-3.0' for regex 'gtk+-3.0'
Note, selecting 'libgtk-3-0-dev' for regex 'gtk+-3.0'
Note, selecting 'libgtk-3-0t64' instead of 'libgtk-3-0'
Note, selecting 'libgtk-3-dev' instead of 'gir1.2-gtk-3.0-dev'
Note, selecting 'lazarus-ide-gtk2-3.0' instead of 'lazarus-ide-gtk-3.0'
```

Рисунок 29 — `apt-get install intltool gtk`

```

checking for stdio.h... (cached) yes
checking for stdlib.h... (cached) yes
checking for string.h... (cached) yes
checking for bind_textdomain_codeset... (cached) yes
checking for locales directory... ${prefix}/share/locale
checking for pkg-config... /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for glib-2.0 >= 2.52.0... 2.82.0
checking GLIB_CFLAGS... -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -pthread
checking GLIB_LIBS... -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gmodule-2.0 >= 2.52.0... 2.82.0
checking GMODULE_CFLAGS... -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -pthread
checking GMODULE_LIBS... -Wl,--export-dynamic -lgmodule-2.0 -pthread -lglib-2.0 -lglib-2.0
checking for pkg-config... (cached) /usr/bin/pkg-config
checking pkg-config is at least version 0.9.0... yes
checking for gtk-3.0 >= 3.22.0... 3.24.43
checking GTK_CFLAGS... -I/usr/include/gtk-3.0 -I/usr/include/pango-1.0 -I/usr/include/glib-2.0 -I/usr/lib/aarch64-linux-gnu/glib-2.0/include -I/usr/include/sysprof-6 -I/usr/include/harfbuzz -I/usr/include/freetype2 -I/usr/include/libpng16 -I/usr/include/libmount -I/usr/include/blkid -I/usr/include/fribidi -I/usr/include/cairo -I/usr/include/pixman-1 -I/usr/include/gdk-pixbuf-2.0 -I/usr/include/aarch64-linux-gnu -I/usr/include/webp -I/usr/include/gio-unix-2.0 -I/usr/include/cloudproviders -I/usr/include/atk-1.0 -I/usr/include/at-spi2-atk/2.0 -I/usr/include/at-spi-2.0 -I/usr/include/dbus-1.0 -I/usr/lib/aarch64-linux-gnu/dbus-1.0/include -pthread
checking GTK_LIBS... -lgtk-3 -lgdk-3 -lz -lpangocairo-1.0 -lpango-1.0 -lharfbuzz -latk-1.0 -lcairo-gobject -lcairo -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0
checking for GTKSOURCEVIEW... no
checking for GTKSOURCEVIEW... no
configure: error: Package requirements (gtksourceview-3.0 >= 3.24.0) were not met:
Package 'gtksourceview-3.0', required by 'virtual:world', not found
Consider adjusting the PKG_CONFIG_PATH environment variable if you
installed software in a non-standard prefix.

Alternatively, you may set the environment variables GTKSOURCEVIEW_CFLAGS
and GTKSOURCEVIEW_LIBS to avoid the need to call pkg-config.
See the pkg-config man page for more details.
root@plutto:~/mousepad_0.5.10# apt-get install gtksourceview-3.0

```

Рисунок 30 — `apt-get install intltool gtksourceview`

```

ude/libpng16 -I/usr/include/libmount -I/usr/include/blkid -I/usr/include/fribidi -I/usr/include/cairo -I/usr/include/pixman-1 -I/usr/include/gdk-pixbuf-2.0 -I/usr/include/aarch64-linux-gnu -I/usr/include/webp -I/usr/include/gio-unix-2.0 -I/usr/include/cloudproviders -I/usr/include/atk-1.0 -I/usr/include/at-spi2-atk/2.0 -I/usr/include/at-spi-2.0 -I/usr/include/dbus-1.0 -I/usr/lib/aarch64-linux-gnu/dbus-1.0/include -pthread
checking GTK_LIBS... -lgtk-3 -lgdk-3 -lz -lpangocairo-1.0 -lpango-1.0 -lharfbuzz -latk-1.0 -lcairo-gobject -lcairo -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0
checking for GTKSOURCEVIEW... no
checking for GTKSOURCEVIEW... no
configure: error: Package requirements (gtksourceview-3.0 >= 3.24.0) were not met:
Package 'gtksourceview-3.0', required by 'virtual:world', not found
Consider adjusting the PKG_CONFIG_PATH environment variable if you
installed software in a non-standard prefix.

Alternatively, you may set the environment variables GTKSOURCEVIEW_CFLAGS
and GTKSOURCEVIEW_LIBS to avoid the need to call pkg-config.
See the pkg-config man page for more details.
root@plutto:~/mousepad_0.5.10# apt-get install gtksourceview-3.0
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'libgedit-gtksourceview-300-0' for regex 'gtksourceview-3.0'
Note, selecting 'libggtksourceview-3.0-dev' for regex 'gtksourceview-3.0'
Note, selecting 'libggtksourceview-3.0-doc' for regex 'gtksourceview-3.0'
Note, selecting 'libgedit-gtksourceview-300-doc' for regex 'gtksourceview-3.0'
Note, selecting 'libggtksourceview-3.0-1' for regex 'gtksourceview-3.0'
Note, selecting 'libggtksourceview-3.0-common' for regex 'gtksourceview-3.0'
Note, selecting 'libgedit-gtksourceview-300-common' for regex 'gtksourceview-3.0'
The following additional packages will be installed:
  gir1.2-gtksourceview-3.0 libxml2-dev
Suggested packages:
  devhelp libglib2.0-doc libgtk-3-doc libgdk-pixbuf2.0-doc libpango1.0-doc
The following NEW packages will be installed:
  gir1.2-gtksourceview-3.0 libgedit-gtksourceview-300-common
  libgedit-gtksourceview-300-doc libggtksourceview-3.0-1 libggtksourceview-3.0-common libggtksourceview-3.0-dev
  libggtksourceview-3.0-doc libxml2-dev
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 2286 kB of archives.
After this operation, 16.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] 

```

Рисунок 31 — `apt-get install intltool gtksourceview`

Переходим в распакованный каталог, собираем и устанавливаем:

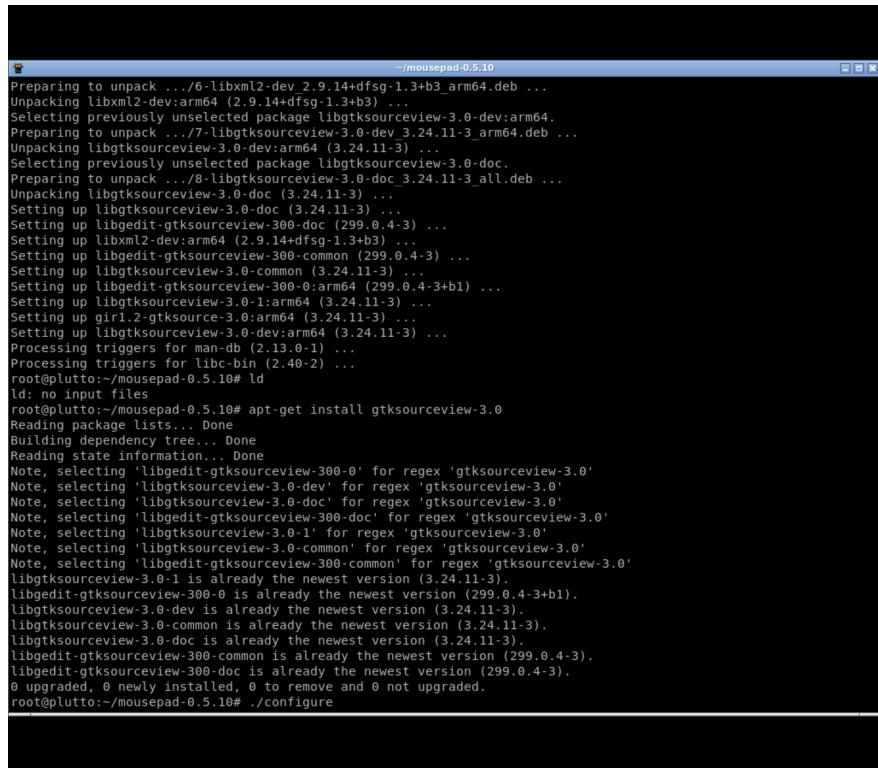
```

cd mousepad_0.5.10
./configure

```

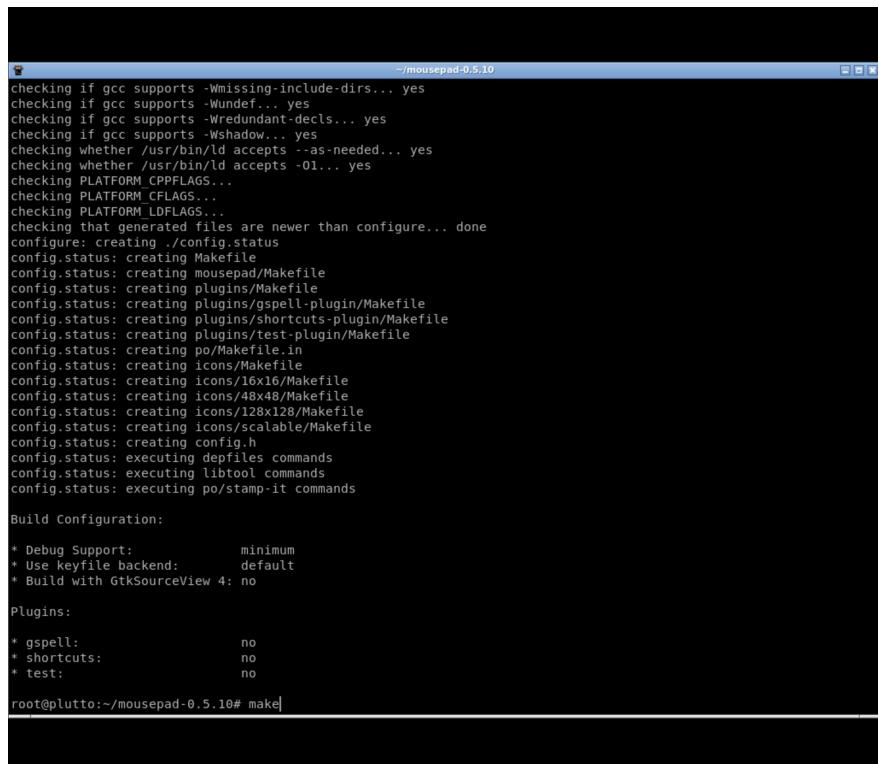
`make`

`make install-strip`



```
Preparing to unpack .../libxml2-dev_2.9.14+dfsg-1.3+b3_arm64.deb ...
Unpacking libxml2-dev:arm64 (2.9.14+dfsg-1.3+b3) ...
Selecting previously unselected package libgtksourceview-3.0-dev:arm64.
Preparing to unpack .../libgtksourceview-3.0-dev_3.24.11-3_arm64.deb ...
Unpacking libgtksourceview-3.0-dev:arm64 (3.24.11-3) ...
Selecting previously unselected package libgtksourceview-3.0-doc.
Preparing to unpack .../libgtksourceview-3.0-doc_3.24.11-3_all.deb ...
Unpacking libgtksourceview-3.0-doc (3.24.11-3) ...
Setting up libgtksourceview-3.0-doc (3.24.11-3) ...
Setting up libgedit-gtksourceview-300-doc (299.0.4-3) ...
Setting up libxml2-dev:arm64 (2.9.14+dfsg-1.3+b3) ...
Setting up libgedit-gtksourceview-300-common (299.0.4-3) ...
Setting up libgtksourceview-3.0-common (3.24.11-3) ...
Setting up libgedit-gtksourceview-300-0:arm64 (299.0.4-3+b1) ...
Setting up libgtksourceview-3.0-1:arm64 (3.24.11-3) ...
Setting up gir1.2-gtksource-3.0:arm64 (3.24.11-3) ...
Setting up libgtksourceview-3.0-dev:arm64 (3.24.11-3) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for libc-bin (2.40-2) ...
root@pluto:~/mousepad-0.5.10# ld
ld: no input files
root@pluto:~/mousepad-0.5.10# apt-get install gtksourceview-3.0
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'libgtksourceview-300-0' for regex 'gtksourceview-3.0'
Note, selecting 'libgtksourceview-3.0-dev' for regex 'gtksourceview-3.0'
Note, selecting 'libgtksourceview-3.0-doc' for regex 'gtksourceview-3.0'
Note, selecting 'libgedit-gtksourceview-300-doc' for regex 'gtksourceview-3.0'
Note, selecting 'libgtksourceview-3.0-1' for regex 'gtksourceview-3.0'
Note, selecting 'libgtksourceview-3.0-common' for regex 'gtksourceview-3.0'
Note, selecting 'libgedit-gtksourceview-300-common' for regex 'gtksourceview-3.0'
libgtksourceview-3.0-1 is already the newest version (3.24.11-3).
libgedit-gtksourceview-300-0 is already the newest version (299.0.4-3+b1).
libgtksourceview-3.0-dev is already the newest version (3.24.11-3).
libgtksourceview-3.0-common is already the newest version (3.24.11-3).
libgtksourceview-3.0-doc is already the newest version (3.24.11-3).
libgedit-gtksourceview-300-common is already the newest version (299.0.4-3).
libgedit-gtksourceview-300-doc is already the newest version (299.0.4-3).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@pluto:~/mousepad-0.5.10# ./configure
```

Рисунок 32 — `./configure`



```
checking if gcc supports -Wmissing/include-dirs... yes
checking if gcc supports -Wundef... yes
checking if gcc supports -Wredundant-decls... yes
checking if gcc supports -Wshadow... yes
checking whether /usr/bin/ld accepts --as-needed... yes
checking whether /usr/bin/ld accepts -O1... yes
checking PLATFORM_CFLAGS...
checking PLATFORM_CFLAGS...
checking PLATFORM_LDFLAGS...
checking that generated files are newer than configure... done
configure: creating ./config.status
config.status: creating Makefile
config.status: creating mousepad/Makefile
config.status: creating plugins/Makefile
config.status: creating plugins/gspell-plugin/Makefile
config.status: creating plugins/shortcuts-plugin/Makefile
config.status: creating plugins/test-plugin/Makefile
config.status: creating po/Makefile.in
config.status: creating icons/Makefile
config.status: creating icons/16x16/Makefile
config.status: creating icons/48x48/Makefile
config.status: creating icons/128x128/Makefile
config.status: creating icons/scalable/Makefile
config.status: creating config.h
config.status: executing depfiles commands
config.status: executing libtool commands
config.status: executing po/stamp-it commands

Build Configuration:

* Debug Support:           minimum
* Use keyfile backend:     default
* Build with GtkSourceView 4: no

Plugins:

* gspell:                  no
* shortcuts:               no
* test:                    no

root@pluto:~/mousepad-0.5.10# make|
```

Рисунок 33 — `make`

```
installing ja.gmo as /usr/local/share/locale/ja/LC_MESSAGES/mousepad.mo
installing kk.gmo as /usr/local/share/locale/kk/LC_MESSAGES/mousepad.mo
installing ko.gmo as /usr/local/share/locale/ko/LC_MESSAGES/mousepad.mo
installing lt.gmo as /usr/local/share/locale/lt/LC_MESSAGES/mousepad.mo
installing ms.gmo as /usr/local/share/locale/ms/LC_MESSAGES/mousepad.mo
installing nb.gmo as /usr/local/share/locale/nb/LC_MESSAGES/mousepad.mo
installing nl.gmo as /usr/local/share/locale/nl/LC_MESSAGES/mousepad.mo
installing nn.gmo as /usr/local/share/locale/nn/LC_MESSAGES/mousepad.mo
installing oc.gmo as /usr/local/share/locale/oc/LC_MESSAGES/mousepad.mo
installing pl.gmo as /usr/local/share/locale/pl/LC_MESSAGES/mousepad.mo
installing pt.gmo as /usr/local/share/locale/pt/LC_MESSAGES/mousepad.mo
installing pt_BR.gmo as /usr/local/share/locale/pt_BR/LC_MESSAGES/mousepad.mo
installing ro.gmo as /usr/local/share/locale/ro/LC_MESSAGES/mousepad.mo
installing ru.gmo as /usr/local/share/locale/ru/LC_MESSAGES/mousepad.mo
installing sk.gmo as /usr/local/share/locale/sk/LC_MESSAGES/mousepad.mo
installing sl.gmo as /usr/local/share/locale/sl/LC_MESSAGES/mousepad.mo
installing sq.gmo as /usr/local/share/locale/sq/LC_MESSAGES/mousepad.mo
installing sr.gmo as /usr/local/share/locale/sr/LC_MESSAGES/mousepad.mo
installing sv.gmo as /usr/local/share/locale/sv/LC_MESSAGES/mousepad.mo
installing te.gmo as /usr/local/share/locale/te/LC_MESSAGES/mousepad.mo
installing th.gmo as /usr/local/share/locale/th/LC_MESSAGES/mousepad.mo
installing tr.gmo as /usr/local/share/locale/tr/LC_MESSAGES/mousepad.mo
installing ug.gmo as /usr/local/share/locale/ug/LC_MESSAGES/mousepad.mo
installing uk.gmo as /usr/local/share/locale/uk/LC_MESSAGES/mousepad.mo
installing zh_CN.gmo as /usr/local/share/locale/zh_CN/LC_MESSAGES/mousepad.mo
installing zh_TW.gmo as /usr/local/share/locale/zh_TW/LC_MESSAGES/mousepad.mo
make[2]: Leaving directory '/root/mousepad-0.5.10/po'
make[2]: Entering directory '/root/mousepad-0.5.10'
make[3]: Entering directory '/root/mousepad-0.5.10'
make[3]: Nothing to be done for 'install-exec-am'.
/usr/bin/mkdir -p '/usr/local/share/metainfo'
/usr/bin/install -c -m 644 org.xfce.mousepad.appdata.xml '/usr/local/share/metainfo'
/usr/bin/mkdir -p '/usr/local/share/applications'
/usr/bin/install -c -m 644 org.xfce.mousepad.desktop org.xfce.mousepad-settings.desktop '/usr/local/share/applications'
/usr/bin mkdir -p '/usr/local/share/polkit-1/actions'
/usr/bin/install -c -m 644 org.xfce.mousepad.policy '/usr/local/share/polkit-1/actions'
make[3]: Leaving directory '/root/mousepad-0.5.10'
make[2]: Leaving directory '/root/mousepad-0.5.10'
make[1]: Leaving directory '/root/mousepad-0.5.10'
root@pluto:~/mousepad-0.5.10# make install-strip
```

Рисунок 34 — `make install-strip`

```
installing ja.gmo as /usr/local/share/locale/ja/LC_MESSAGES/mousepad.mo
installing kk.gmo as /usr/local/share/locale/kk/LC_MESSAGES/mousepad.mo
installing ko.gmo as /usr/local/share/locale/ko/LC_MESSAGES/mousepad.mo
installing lt.gmo as /usr/local/share/locale/lt/LC_MESSAGES/mousepad.mo
installing ms.gmo as /usr/local/share/locale/ms/LC_MESSAGES/mousepad.mo
installing nb.gmo as /usr/local/share/locale/nb/LC_MESSAGES/mousepad.mo
installing nl.gmo as /usr/local/share/locale/nl/LC_MESSAGES/mousepad.mo
installing nn.gmo as /usr/local/share/locale/nn/LC_MESSAGES/mousepad.mo
installing oc.gmo as /usr/local/share/locale/oc/LC_MESSAGES/mousepad.mo
installing pl.gmo as /usr/local/share/locale/pl/LC_MESSAGES/mousepad.mo
installing pt.gmo as /usr/local/share/locale/pt/LC_MESSAGES/mousepad.mo
installing pt_BR.gmo as /usr/local/share/locale/pt_BR/LC_MESSAGES/mousepad.mo
installing ro.gmo as /usr/local/share/locale/ro/LC_MESSAGES/mousepad.mo
installing ru.gmo as /usr/local/share/locale/ru/LC_MESSAGES/mousepad.mo
installing sk.gmo as /usr/local/share/locale/sk/LC_MESSAGES/mousepad.mo
installing sl.gmo as /usr/local/share/locale/sl/LC_MESSAGES/mousepad.mo
installing sq.gmo as /usr/local/share/locale/sq/LC_MESSAGES/mousepad.mo
installing sr.gmo as /usr/local/share/locale/sr/LC_MESSAGES/mousepad.mo
installing sv.gmo as /usr/local/share/locale/sv/LC_MESSAGES/mousepad.mo
installing te.gmo as /usr/local/share/locale/te/LC_MESSAGES/mousepad.mo
installing th.gmo as /usr/local/share/locale/th/LC_MESSAGES/mousepad.mo
installing tr.gmo as /usr/local/share/locale/tr/LC_MESSAGES/mousepad.mo
installing ug.gmo as /usr/local/share/locale/ug/LC_MESSAGES/mousepad.mo
installing uk.gmo as /usr/local/share/locale/uk/LC_MESSAGES/mousepad.mo
installing zh_CN.gmo as /usr/local/share/locale/zh_CN/LC_MESSAGES/mousepad.mo
installing zh_TW.gmo as /usr/local/share/locale/zh_TW/LC_MESSAGES/mousepad.mo
make[2]: Leaving directory '/root/mousepad-0.5.10/po'
make[2]: Entering directory '/root/mousepad-0.5.10'
make[3]: Entering directory '/root/mousepad-0.5.10'
make[3]: Nothing to be done for 'install-exec-am'.
/usr/bin/mkdir -p '/usr/local/share/metainfo'
/usr/bin/install -c -m 644 org.xfce.mousepad.appdata.xml '/usr/local/share/metainfo'
/usr/bin/mkdir -p '/usr/local/share/applications'
/usr/bin/install -c -m 644 org.xfce.mousepad.desktop org.xfce.mousepad-settings.desktop '/usr/local/share/applications'
/usr/bin mkdir -p '/usr/local/share/polkit-1/actions'
/usr/bin/install -c -m 644 org.xfce.mousepad.policy '/usr/local/share/polkit-1/actions'
make[3]: Leaving directory '/root/mousepad-0.5.10'
make[2]: Leaving directory '/root/mousepad-0.5.10'
make[1]: Leaving directory '/root/mousepad-0.5.10'
root@pluto:~/mousepad-0.5.10# make install-strip
```

Рисунок 35 — `make install-strip`

Итак, мы установили `mousepad`. Теперь перезагрузим терминал и зайдем в лог `xorg`.

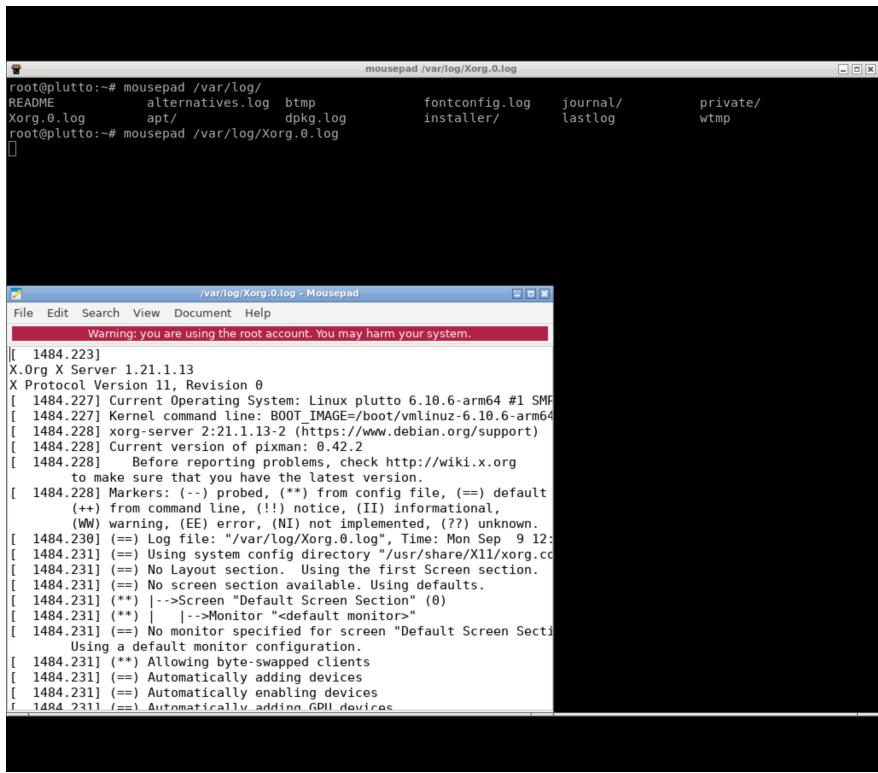


Рисунок 36 — Лог `xorg`

Далее в лабораторных работах я буду использовать `neovim` так как для меня этот редактор удобнее. Установил я его командой `apt-get install neovim`. Конфигурацию тоже написал я, ее исходники лежат по адресу `github.com/pluttan/dotfiles/nvim`.

2.6. Установка и настройка панелей

По умолчанию Openbox предоставляет пользователю лишь рабочий стол с контекстным меню. Для получения более привычного способа управления нужно установить панели. Среди самых популярных панелей для Openbox можно выделить `xfce4-panel`, `lxpanel` и `tint2`. Первые две входят в состав `Xfce` и `LXDE` соответственно. Для установки `xfce4-panel` необходимо выполнить команду: `apt-get install dbus-x11 xfce4-panel`

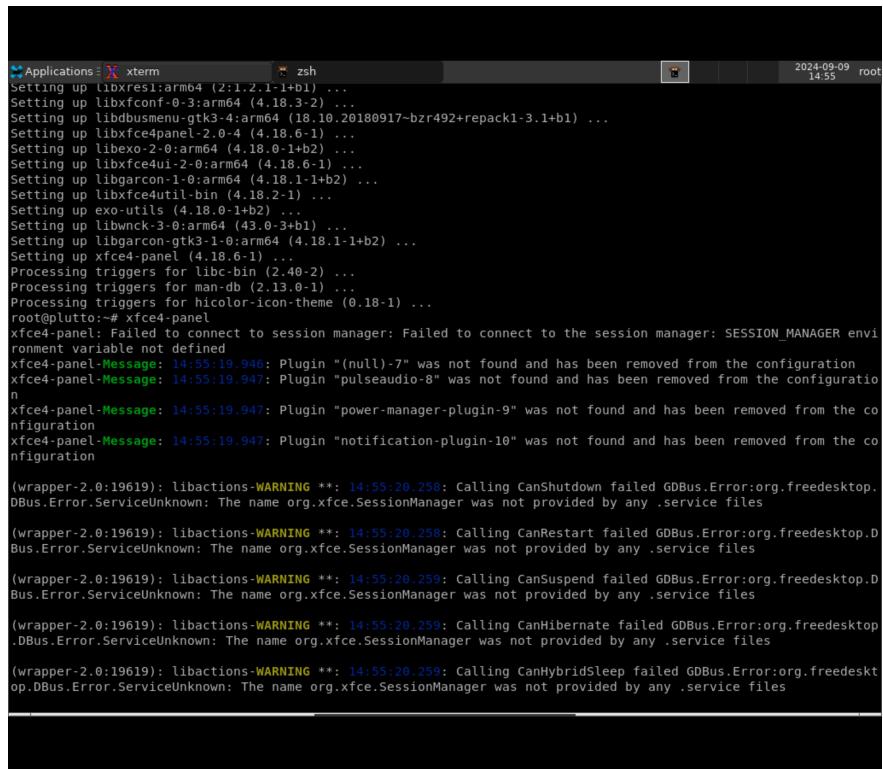
```
root@plutto:~# apt-get install dbus-x11 xfce4-panel
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
dbus-x11 is already the newest version (1.14.10-4+b1).
The following additional packages will be installed:
  exo-utils libdbusmenu-glib4 libdbusmenu-gtk3-4 libexo-2.0 libexo-common libgarcon-1.0 libgarcon-common
    libgarcon-gtk3-1.0 libwnck-3.0 libwnck-3-common libxfce4panel-2.0.4 libxfce4ui-2.0 libxfce4ui-common
    libxfc4util-bin libxfc4util-common libxfc4util7 libxfconf-0.3 libxres1 xfconf
Suggested packages:
  devhelp
The following NEW packages will be installed:
  exo-utils libdbusmenu-glib4 libdbusmenu-gtk3-4 libexo-2.0 libexo-common libgarcon-1.0 libgarcon-common
    libgarcon-gtk3-1.0 libwnck-3.0 libwnck-3-common libxfce4panel-2.0.4 libxfce4ui-2.0 libxfce4ui-common
    libxfc4util-bin libxfc4util-common libxfc4util7 libxfconf-0.3 libxres1 xfce4-panel xfconf
0 upgraded, 20 newly installed, 0 to remove and 0 not upgraded.
Need to get 2265 kB of archives.
After this operation, 14.0 MB of additional disk space will be used.
Do you want to continue? [Y/n] ■
```

Рисунок 37 — `apt-get install dbus-x11 xfce4-panel`

Для запуска панели необходимо набрать в терминале: `xfce4-panel`. После этого будет показан диалог первого запуска, необходимо выбрать «Использовать настройки по умолчанию».

```
Preparing to unpack .../14.libxresl_2%3a1.2.1-1+b1_arm64.deb ...
Unpacking libxresl:arm64 (2:1.2.1-1+b1) ...
Selecting previously unselected package libwnck-3-common.
Preparing to unpack .../15-libwnck-3-common_43.0-3_all.deb ...
Unpacking libwnck-3-common (43.0-3) ...
Selecting previously unselected package libwnck-3-0:arm64.
Preparing to unpack .../16-libwnck-3-0_43.0-3+b1_arm64.deb ...
Unpacking libwnck-3-0:arm64 (43.0-3+b1) ...
Selecting previously unselected package libxfce4panel-2.0-4.
Preparing to unpack .../17-libxfce4panel-2.0-4_4.18.6-1_arm64.deb ...
Unpacking libxfce4panel-2.0-4 (4.18.6-1) ...
Selecting previously unselected package libxfce4util-bin.
Preparing to unpack .../18-libxfce4util-bin_4.18.2-1_arm64.deb ...
Unpacking libxfce4util-bin (4.18.2-1) ...
Selecting previously unselected package xfce4-panel.
Preparing to unpack .../19-xfce4-panel_4.18.6-1_arm64.deb ...
Unpacking xfce4-panel (4.18.6-1) ...
Setting up libexo-common (4.18.0-1) ...
Setting up libwnck-3-common (43.0-3) ...
Setting up libdbusmenu-glib4:arm64 (18.10.20180917~bzr492+repack1-3.1+b1) ...
Setting up libxfce4util-common (4.18.2-1) ...
Setting up libgarcon-common (4.18.1-1) ...
Setting up libxfce4util7:arm64 (4.18.2-1) ...
Setting up libxfce4ui-common (4.18.6-1) ...
Setting up xconf (4.18.3-2) ...
Setting up libxresl:arm64 (2:1.2.1-1+b1) ...
Setting up libxfconf-0-3:arm64 (4.18.3-2) ...
Setting up libdbusmenu-gtk3-4:arm64 (18.10.20180917~bzr492+repack1-3.1+b1) ...
Setting up libxfce4panel-2.0-4 (4.18.6-1) ...
Setting up libexo-2-0:arm64 (4.18.0-1+b2) ...
Setting up libxfce4ui-2-0:arm64 (4.18.6-1) ...
Setting up libgarcon-1-0:arm64 (4.18.1-1+b2) ...
Setting up libxfce4util-bin (4.18.2-1) ...
Setting up exo-utils (4.18.0-1+b2) ...
Setting up libwnck-3-0:arm64 (43.0-3+b1) ...
Setting up libgarcon-gtk3-1-0:arm64 (4.18.1-1+b2) ...
Setting up xfce4-panel (4.18.6-1) ...
Processing triggers for libc-bin (2.40-2) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for hicolor-icon-theme (0.18-1) ...
root@pluto:~# xfce4-panel
```

Рисунок 38 — xfce4-panel



```
Applications xterm zsh 2024-09-09 14:55 root
Setting up libxres1:arm64 (2:1.2.1-1+b1) ...
Setting up libxfconf-0-3:arm64 (4.18.3-2) ...
Setting up libdbusmenu-gtk3-4:arm64 (18.10.20180917-bzr492+repack1-3.1+b1) ...
Setting up libxfc4panel-2.0-4 (4.18.6-1) ...
Setting up libexo-2-0:arm64 (4.18.0-1+b2) ...
Setting up libxfc4ui-2-0:arm64 (4.18.6-1) ...
Setting up libgarcon-1-0:arm64 (4.18.1-1+b2) ...
Setting up libxfc4util-bin (4.18.2-1) ...
Setting up exo-utils (4.18.0-1+b2) ...
Setting up libwnck-3-0:arm64 (43.0-3+b1) ...
Setting up libgarcon-gtk3-1-0:arm64 (4.18.1-1+b2) ...
Setting up xfce4-panel (4.18.6-1) ...
Processing triggers for libc-bin (2.40-2) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for hicolor-icon-theme (0.18-1) ...
root@pluto:~# xfce4-panel
xfce4-panel: Failed to connect to session manager: Failed to connect to the session manager: SESSION_MANAGER environment variable not defined
xfce4-panel:Message: 14:55:19.946: Plugin "(null)-7" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "pulseaudio-8" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "power-manager-plugin-9" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "notification-plugin-10" was not found and has been removed from the configuration

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.258: Calling CanShutdown failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

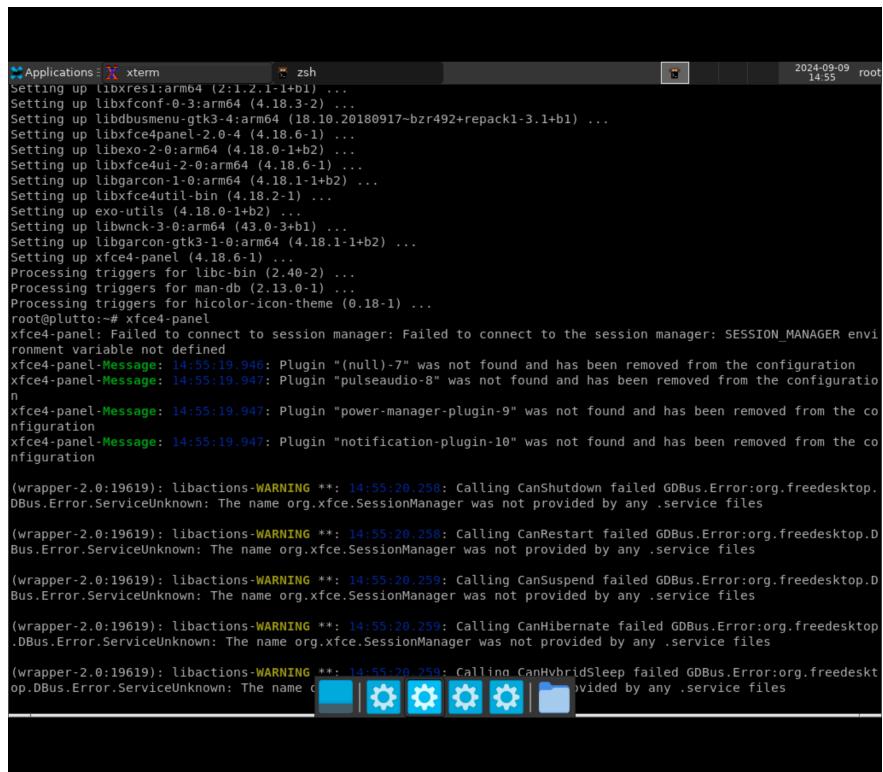
(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.258: Calling CanRestart failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanSuspend failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanHibernate failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanHybridSleep failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files
```

Рисунок 39 — xfce4-panel



```
Applications xterm zsh 2024-09-09 14:55 root
Setting up libxres1:arm64 (2:1.2.1-1+b1) ...
Setting up libxfconf-0-3:arm64 (4.18.3-2) ...
Setting up libdbusmenu-gtk3-4:arm64 (18.10.20180917-bzr492+repack1-3.1+b1) ...
Setting up libxfc4panel-2.0-4 (4.18.6-1) ...
Setting up libexo-2-0:arm64 (4.18.0-1+b2) ...
Setting up libxfc4ui-2-0:arm64 (4.18.6-1) ...
Setting up libgarcon-1-0:arm64 (4.18.1-1+b2) ...
Setting up libxfc4util-bin (4.18.2-1) ...
Setting up exo-utils (4.18.0-1+b2) ...
Setting up libwnck-3-0:arm64 (43.0-3+b1) ...
Setting up libgarcon-gtk3-1-0:arm64 (4.18.1-1+b2) ...
Setting up xfce4-panel (4.18.6-1) ...
Processing triggers for libc-bin (2.40-2) ...
Processing triggers for man-db (2.13.0-1) ...
Processing triggers for hicolor-icon-theme (0.18-1) ...
root@pluto:~# xfce4-panel
xfce4-panel: Failed to connect to session manager: Failed to connect to the session manager: SESSION_MANAGER environment variable not defined
xfce4-panel:Message: 14:55:19.946: Plugin "(null)-7" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "pulseaudio-8" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "power-manager-plugin-9" was not found and has been removed from the configuration
xfce4-panel:Message: 14:55:19.947: Plugin "notification-plugin-10" was not found and has been removed from the configuration

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.258: Calling CanShutdown failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.258: Calling CanRestart failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanSuspend failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanHibernate failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19619): libactions:WARNING **: 14:55:20.259: Calling CanHybridSleep failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files
```

Рисунок 40 — xfce4-panel

Однако при закрытии окна консоли панель пропадёт. Она пропала из-за того, что родителем процесса панели являлся процесс окна консоли. Этот недостаток может быть исправлен запуском параллельных процессов.

```
root@plutto:~# kitty|xfce4-panel
[0.223] [glib error 65544]: process_desktop_settings: failed with error: [org.freedesktop.DBus.Error.ServiceUnknown] The name org.freedesktop.portal.Desktop was not provided by any .service files
[0.223] [glib error 65544]: Notify: Failed to get server capabilities error: [org.freedesktop.DBus.Error.ServiceUnknown] The name org.freedesktop.Notifications was not provided by any .service files
root@plutto:~# xfce4-panel
xfce4-panel: Failed to connect to session manager: Failed to connect to the session manager: SESSION_MANAGER environment variable not defined

(wrapper-2.0:19653): libactions-WARNING **: 14:56:25.766: Calling CanShutdown failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19653): libactions-WARNING **: 14:56:25.767: Calling CanRestart failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19653): libactions-WARNING **: 14:56:25.767: Calling CanSuspend failed GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.xfce.SessionManager was not provided by any .service files

(wrapper-2.0:19653): libactions-WARNING **: 14:56:25.767: Calling CanHibernate f
```

Рисунок 41 — kitty|xfce4-panel

Настроим верхнюю панель. Для этого нужно щёлкнуть правой клавишей мыши по панели, после чего появится меню. В этом меню нужно выбрать пункт «Параметры панели», после чего вокруг панели появится выделение и откроется окно настроек.

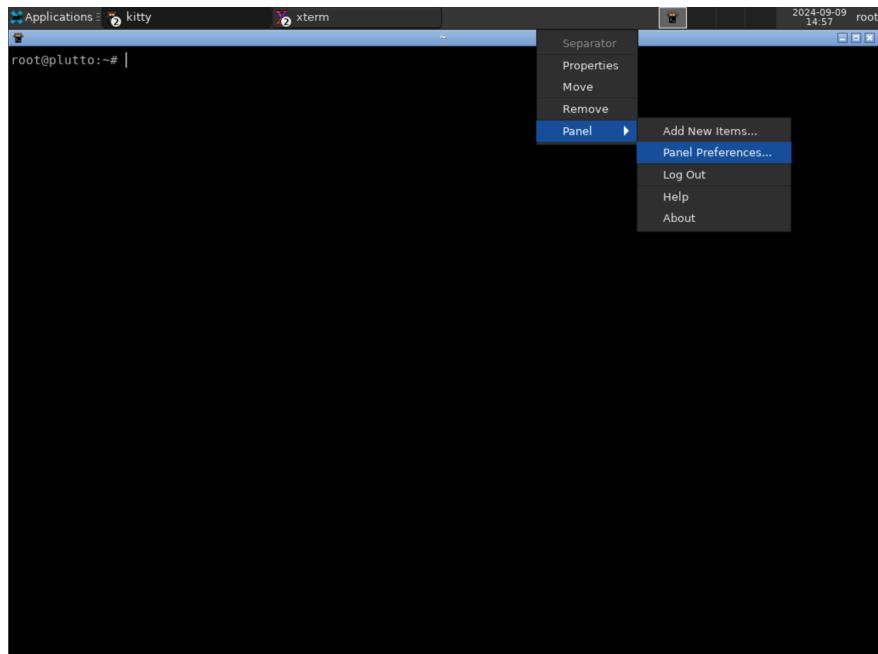


Рисунок 42 — Меню

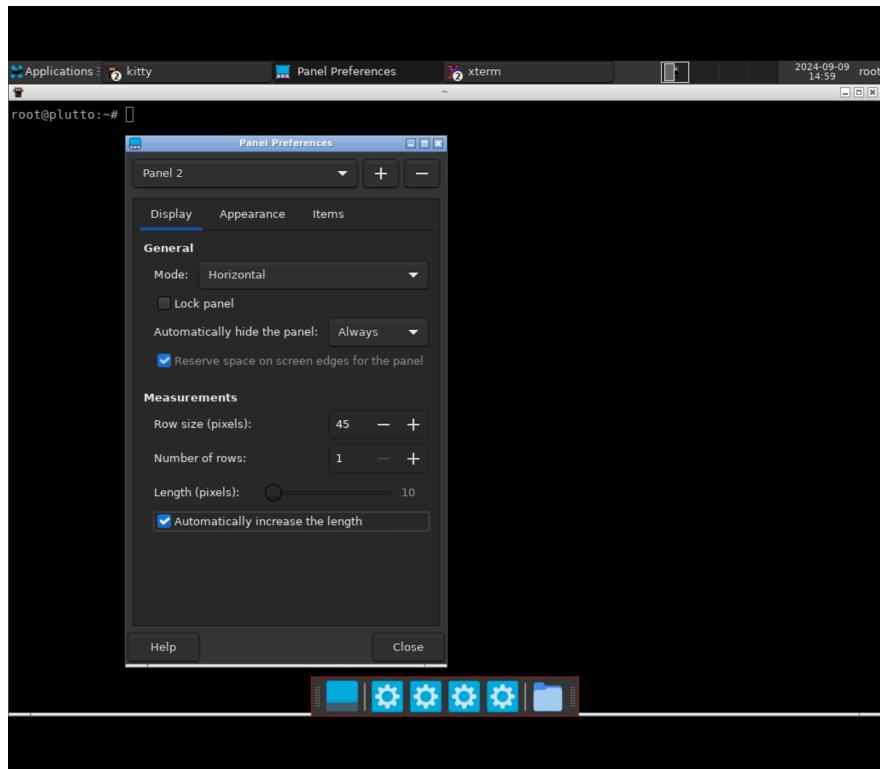


Рисунок 43 — Настройки

Над вкладками находится переключатель панелей (раскрывающийся список) и кнопки добавления/удаления панелей.

Вкладка «Экран» позволяет настроить такие опции, как ширину панели, возможность перетаскивать панель, ширину панели, автоматическое скрытие и т.д.

Вкладка «Внешний вид» содержит всего одну опцию, позволяющую выбрать стиль панели: системный, цвет или изображение. Вкладка «Элементы» содержит список элементов, размещенных на панели. Их можно перемещать (клавиши с зелёными стрелками), настраивать, удалять и добавлять.

Настроим нижнюю панель следующим образом: постоянная ширина, возможность перетаскивания по экрану, автоскрытие.

Для настройки нижней панели нужно выбрать «Панель 2» в переключателе панелей. На вкладке «Экран» уберем отметку с пункта «Закрепить панель» и поставить в «Автоматически показывать и скрывать панель», ширину установить 45пикселов и длину 25%.

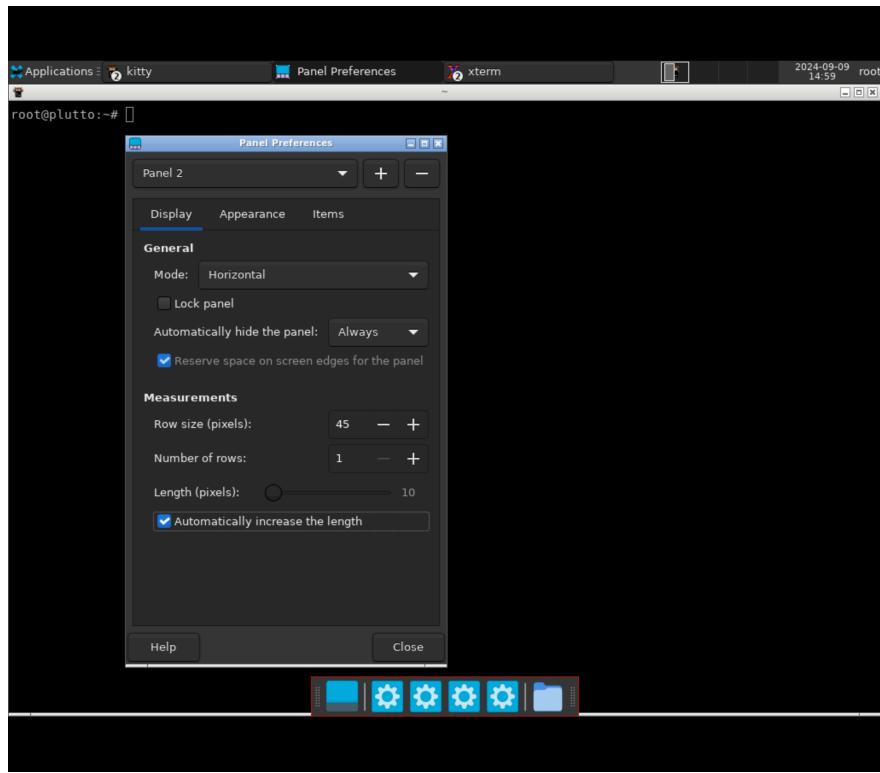


Рисунок 44 — «Экран»

На вкладке «Элементы» убрать все элементы, кроме «Показать рабочий стол», разделитель и «Каталог». Разделитель настроить следующим образом: стиль – прозрачный, установить отметку в пункте «Расширять». После закрытия окна настройки панель скроется, при наведении на неё курсора она развернётся. Теперь панель можно перетаскивать по всему экрану (захватив курсором одно из мест по краю панели, отмеченных точками)

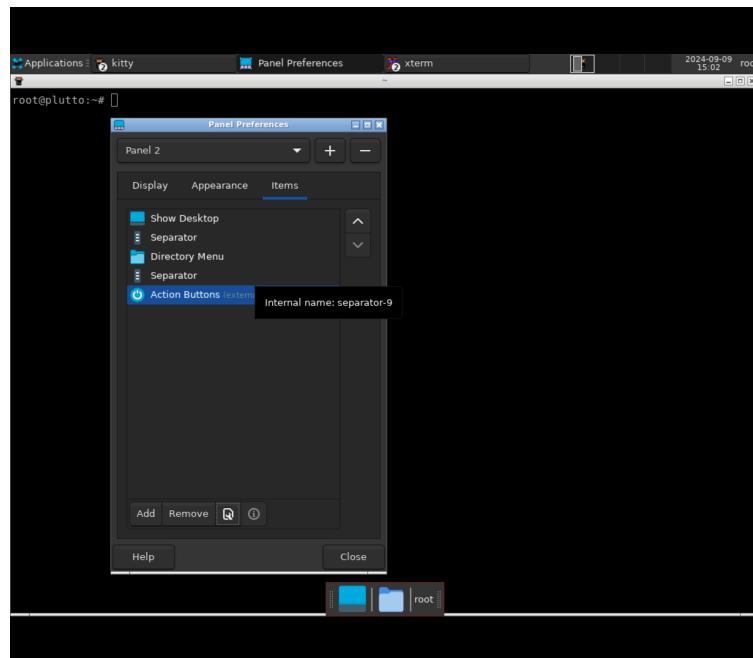


Рисунок 45 — «Элементы»

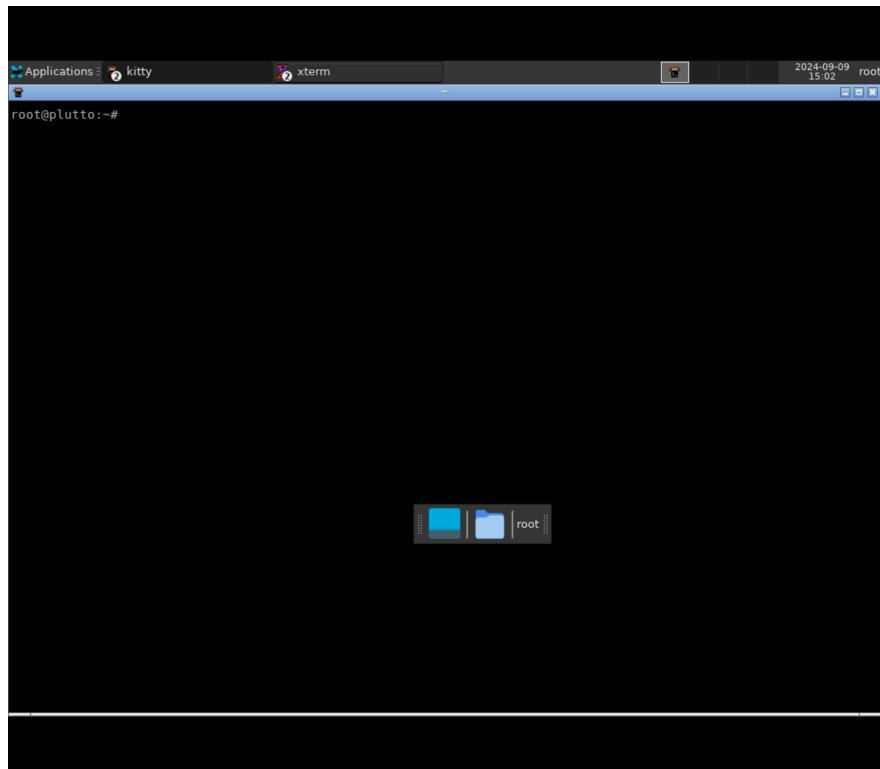


Рисунок 46 — Результат

2.7. Настройка autostart

Как было отмечено, панель закрывается при закрытии окна терминала, из которого она была вызвана. Это можно исправить с помощью настроек автозапуска.

В этом пункте работы будет использоваться системный скрипт autostart. Openbox может быть настроен для каждого пользователя отдельно, тогда файлы autostart, environment, rc.xml и menu.xml должны содержаться в домашнем каталоге каждого пользователя (`~/.config/openbox/`). При отсутствии этих файлов Openbox обращается к системным, хранящимся в папке `/etc/xdg/openbox/`. Эти файлы лучше оставлять неизменными или исправлять очень аккуратно, так как ошибка в них может вызвать негативные последствия. Особенно этот факт должны иметь в виду системные администраторы, многие программы работают по такому принципу. Добавим автозапуск панели и терминала для всех пользователей. Откроем в `neovim` файл `autostart` :
`nvim /etc/xdg/openbox/autostart`

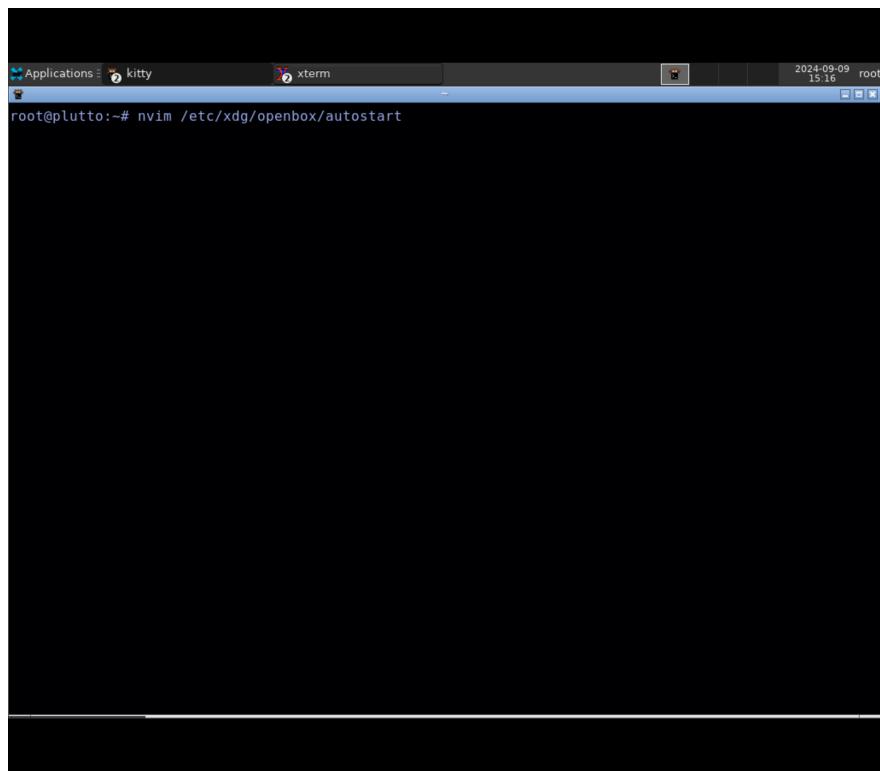


Рисунок 47 — `nvim /etc/xdg/openbox/autostart`

A screenshot of a terminal window titled "xterm" showing the contents of the "/etc/xdg/openbox/autostart" file. The file contains the following code:

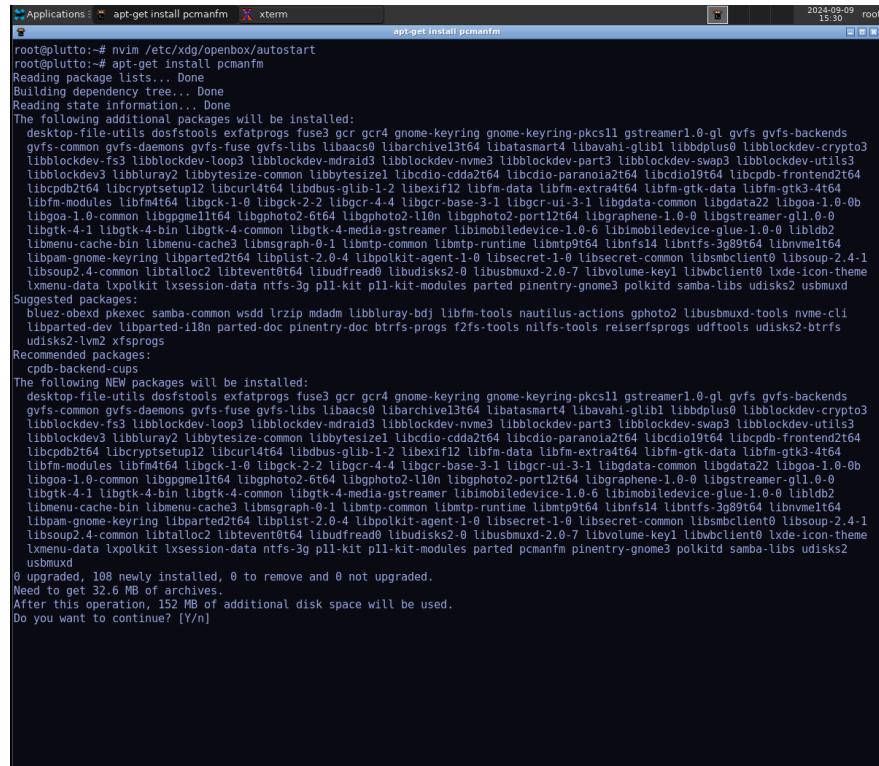
```
1 #
2 # These things are run when an Openbox X Session is started.
3 # You may place a similar script in $HOME/.config/openbox/autostart
4 # to run user-specific things.
5 #
6
7 # If you want to use GNOME config tools...
8 #
9 #if test -x /usr/lib/aarch64-linux-gnu/gnome-settings-daemon >/dev/null; then
10 # /usr/lib/aarch64-linux-gnu/gnome-settings-daemon &
11 #elif which gnome-settings-daemon >/dev/null 2>&1; then
12 # gnome-settings-daemon &
13 #fi
14
15 # If you want to use XFCE config tools...
16 #
17 xfce4-panel & kitty
```

The status bar at the bottom right shows the file name "autostart" and the line number "17:20".

Рисунок 48 — Исправленный файл `autostart`

2.8. Файловый менеджер

Установим PCManFM: `apt-get install pcmanfm`



```
root@pluto:~# nvim /etc/xdg/openbox/autostart
root@pluto:~# apt-get install pcmanfm
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  desktop-file-utils dosfstools exfatprogs fuse3 gcr4 gnome-keyring gnome-keyring-pkcs11 gstreamer1.0-glib gvfs gvfs-backends
  gvfs-common gvfs-daemons gvfs-fuse gvfs-labs libaac3 libarchive13t64 libata-smart4 libavahi-glib libbdplus0 libblockdev-crypto3
  libblockdev-fs3 libblockdev-loop3 libblockdev-mdraid3 libblockdev-nvme3 libblockdev-swap3 libblockdev-utils3
  libblockdev-libblkdev2 libcryptsetup2 libcurl4t64 libibus-glib-1-2 libexif2 libfm-data libfm-extrat464 libfm-gtk-data libfm-gtk3-4t64
  libfm-modules libfm4t64 libgck-1-0 libgck-2-2 libgcr-4-4 libgcr-base-3-1 libgcr-ui-3-1 libgdata-common libgdal22 libgoa-1.0-0b
  libgoa-1.0-common libgpmmel64 libgphoto2-164 libgphoto2-port12t64 libgraphene-1.0-0 libgstreamer-gl1.0-0
  libgtk-4-1 libgtk-4-bin libgtk-4-common libgtk-4-media-gstreamer libimobiledevice-1.0-6 libimobiledevice-glue-1.0-6 libld2
  libmenu-cache-bin libmenu-cache3 libmenu-common libmtp-runtime libmtp9t64 libnfs14 libnfts-3g89t64 libnvmel64
  libpam-gnome-keyring libparted2t64 libplist-2.0-4 libpolkit-agent-1-0 libsecret-1-0 libsecret-common libsmclient0 libsoup-2.4-1
  libsoup2-4-common libtalloc2 libtevent9t64 libudfread0 libudisks2-0 libusbmuxd-2.0-7 libvolume-key1 libwbcclient0 lxde-icon-theme
  lxmenu-data lxp0lkit lxsession-data nfts-3g pl1-kit pl1-kit-modules parted pinentry-gnome3 polkitd samba-libs udisks2 usbmuxd
Suggested packages:
  bluez-obexd pxekey samba-common wsdd lrzip mdadm libblu-ray-bdj libfm-tools nautilus-actions gphoto2 libusbmuxd-tools nvme-cl
  libparted-dev libparted-i8n parted-doc pinentry-doc btrfs-progs f2fs-tools nilfs-tools reiserfsprogs udf-tools udisks2-btrfs
  udisks2-lvm2 xfprogs
Recommended packages:
  cpdb-backend-cups
The following NEW packages will be installed:
  desktop-file-utils dosfstools exfatprogs fuse3 gcr4 gnome-keyring gnome-keyring-pkcs11 gstreamer1.0-glib gvfs gvfs-backends
  gvfs-common gvfs-daemons gvfs-fuse gvfs-labs libaac3 libarchive13t64 libata-smart4 libavahi-glib libbdplus0 libblockdev-crypto3
  libblockdev-fs3 libblockdev-loop3 libblockdev-mdraid3 libblockdev-nvme3 libblockdev-swap3 libblockdev-utils3
  libblockdev-libblkdev2 libcryptsetup2 libcurl4t64 libibus-glib-1-2 libexif2 libfm-data libfm-extrat464 libfm-gtk-data libfm-gtk3-4t64
  libfm-modules libfm4t64 libgck-1-0 libgck-2-2 libgcr-4-4 libgcr-base-3-1 libgcr-ui-3-1 libgdata-common libgdal22 libgoa-1.0-0b
  libgoa-1.0-common libgpmmel64 libgphoto2-164 libgphoto2-port12t64 libgraphene-1.0-0 libgstreamer-gl1.0-0
  libgtk-4-1 libgtk-4-bin libgtk-4-common libgtk-4-media-gstreamer libimobiledevice-1.0-6 libimobiledevice-glue-1.0-6 libld2
  libmenu-cache-bin libmenu-cache3 libmenu-common libmtp-runtime libmtp9t64 libnfs14 libnfts-3g89t64 libnvmel64
  libpam-gnome-keyring libparted2t64 libplist-2.0-4 libpolkit-agent-1-0 libsecret-1-0 libsecret-common libsmclient0 libsoup-2.4-1
  libsoup2-4-common libtalloc2 libtevent9t64 libudfread0 libudisks2-0 libusbmuxd-2.0-7 libvolume-key1 libwbcclient0 lxde-icon-theme
  lxmenu-data lxp0lkit lxsession-data nfts-3g pl1-kit pl1-kit-modules parted pcmanfm pinentry-gnome3 polkitd samba-libs udisks2
  usbmuxd
0 upgraded, 108 newly installed, 0 to remove and 0 not upgraded.
Need to get 32.6 MB of archives.
After this operation, 152 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Рисунок 49 — `apt-get install pcmanfm`

Файловый менеджер вызывается командой `pcmanfm`.

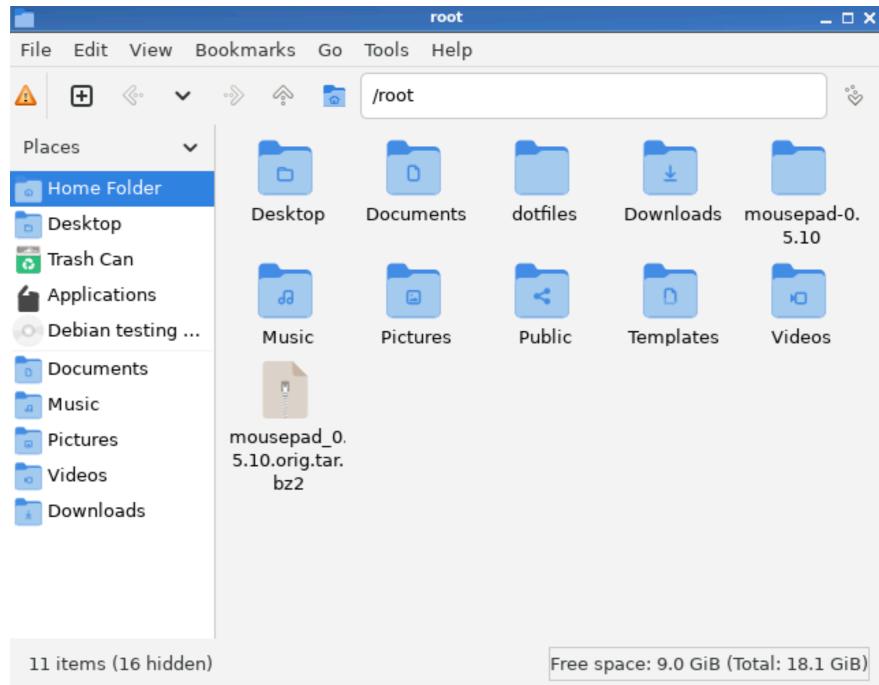


Рисунок 50 — `pcmanfm`

Я буду пользоваться файловым менеджером `yazi`.

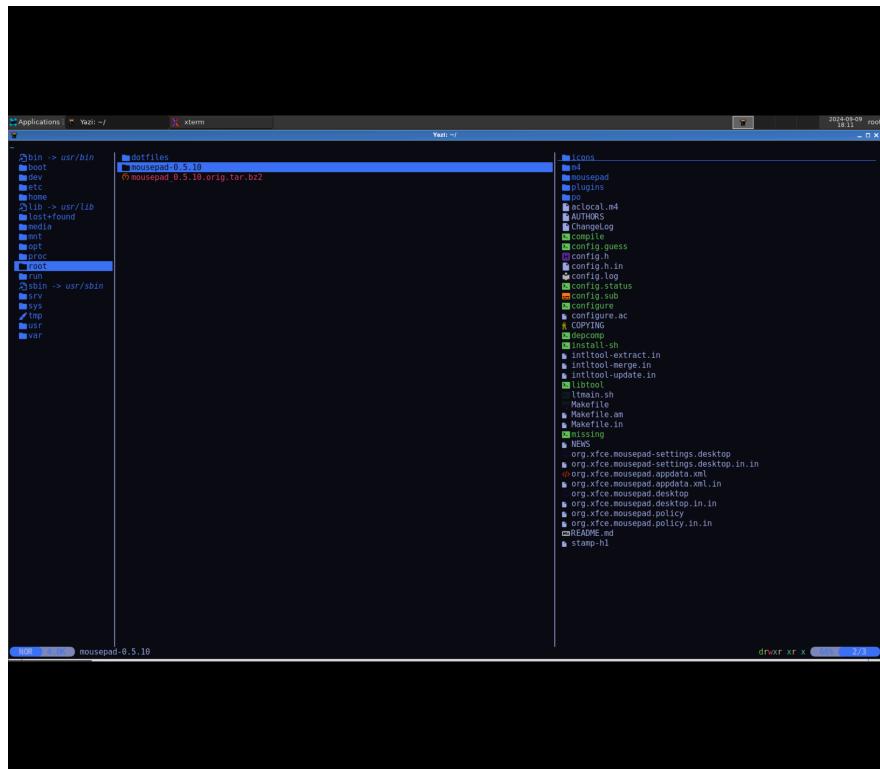


Рисунок 51 — `yazi`

2.9. Настройка рабочего стола

Для организации привычного пользователю Windows окружения не хватает, как минимум, одного важного элемента: иконок на рабочем столе. Для отображения иконок могут использоваться отдельные программы. В данной ЛР предлагается использовать `idesk`. Вторым элементом, который будет добавлен на рабочий стол, будет менеджер системных ресурсов `conky`. Для отображения иконок рабочего стола нужно установить `idesk`:
`apt-get install idesk`

```
root@pluto:~# apt-get install idesk
Reading package lists... Done
Building dependency tree... Done
Reading status information... Done
The following NEW packages will be installed:
  idesk
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.3 kB of archives.
After this operation, 314 kB of additional disk space will be used.
get:1: /var/cache/apt/archives/trilix/main arm64 idesk arm64 0.7.5-9 [87.3 kB]
Fetched 87.3 kB in 0s (304 kB/s)
Selecting previously unselected package idesk.
(Reading database ... 129477 files and directories currently installed.)
Unpacking idesk (0.7.5-9) ...
Setting up idesk (0.7.5-9) ...
Processing triggers for man-db (2.13.0-1) ...
root@pluto:~#
```

Рисунок 52 — `apt-get install idesk`

При попытке вызова будет выдана ошибка. Она объясняется отсутствием необходимой папки, её можно создать следующей командой:

```
mkdir ~/.idesktop
```

```
root@pluto:~# apt-get install idesk
Reading package lists... Done
Building dependency tree... Done
Reading status information... Done
The following NEW packages will be installed:
  idesk
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.3 kB of archives.
After this operation, 314 kB of additional disk space will be used.
get:1: /var/cache/apt/archives/trilix/main arm64 idesk arm64 0.7.5-9 [87.3 kB]
Fetched 87.3 kB in 0s (304 kB/s)
Selecting previously unselected package idesk.
(Reading database ... 129477 files and directories currently installed.)
Unpacking idesk (0.7.5-9) ...
Setting up idesk (0.7.5-9) ...
Processing triggers for man-db (2.13.0-1) ...
root@pluto:~# mkdir ~/.idesktop
root@pluto:~#
```

Рисунок 53 — `mkdir ~/.idesktop`

Результат повторного запуска `idesk` :

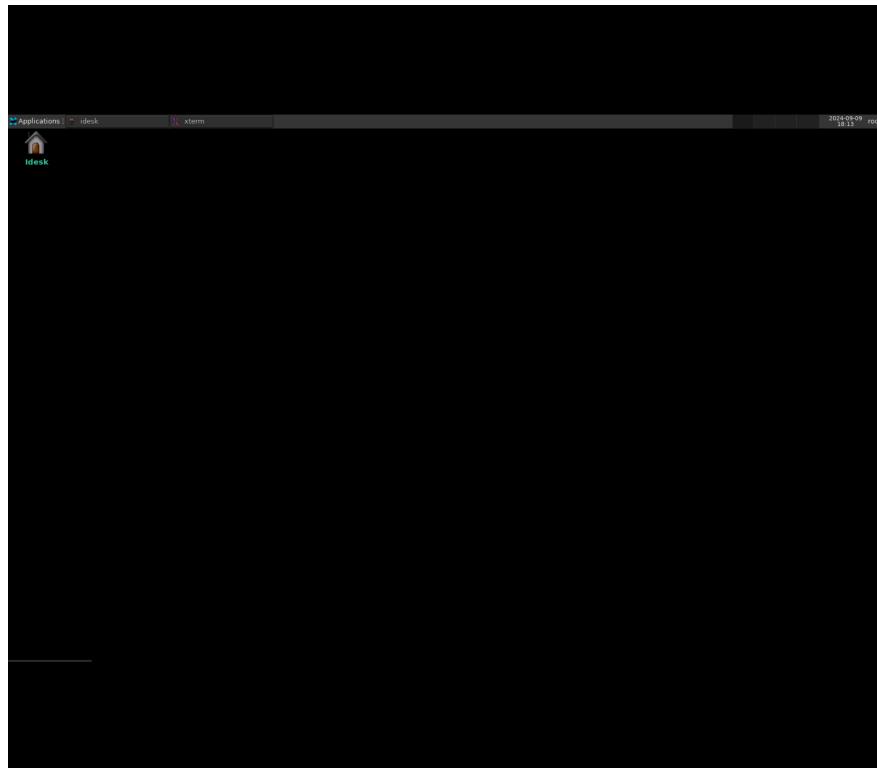


Рисунок 54 — `idesk`

Необходимо исправить скрипт `autostart`. Теперь он будет выглядеть так:

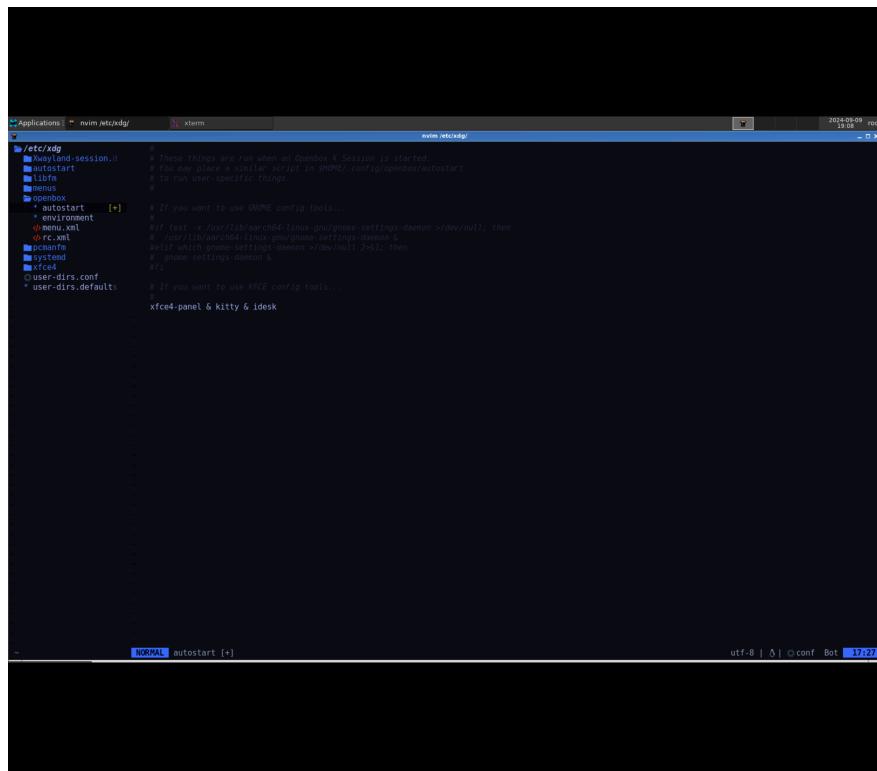


Рисунок 55 — `autostart`

Теперь необходимо попробовать создать ярлык на рабочем столе. Ярлыки в idesk хранятся в виде файлов lnk. Для создания ярлыка (и открытия его для редактирования) для mousepad нужно выполнить следующую команду:

```
nvim ~/idesktop/leafpad.lnk
```

В данной команде используется особенность большинства редакторов в UNIX-системах: если файл существует, он открывается, если нет – он создаётся.

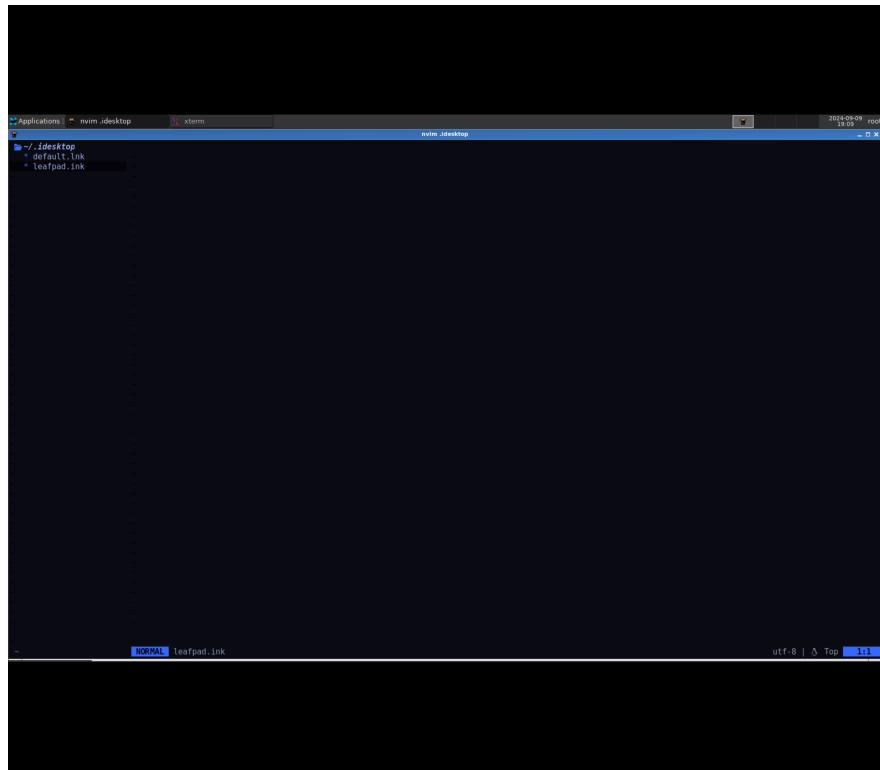


Рисунок 56 — Файл создан

В файле необходимо набрать следующее:

```
table Icon
  Caption: Mousepad
  Command: /usr/bin/mousepad
  Icon: /usr/share/icons/gnome/32x32/apps/accessories-texteditor.png
  Width: 32
  Height: 32
  X: 100
  Y: 100
end
```

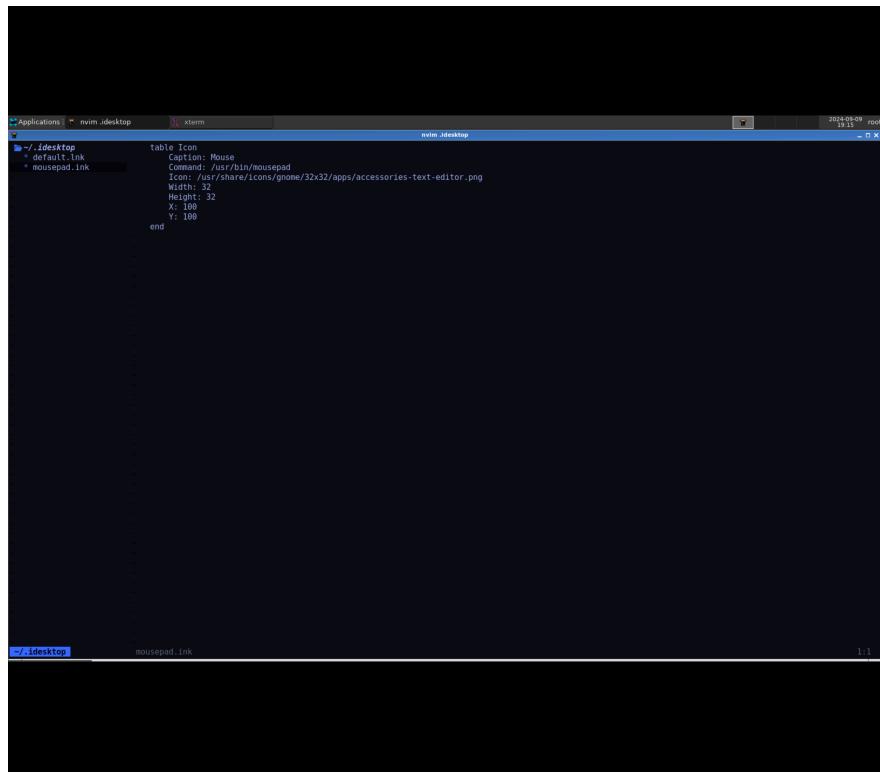


Рисунок 57 — Добавлена конфигурация ярлыка

Это вызовет ошибку связанную с неустановленным **GNOME** поэтому я установил весь **GNOME**, а после отключил его функционал.

```
root@pluton:~# idesk
[idesk] Starting in :0
[idesk] Background's file not found.
[idesk] Background's source not found.
Can't load: /usr/share/icons/gnome/32x32/apps/accessories-text-editor.png bailing -- Mouse
Check to see if the image and path to image is valid
```

Рисунок 58 — Ошибка

Перезагрузить **idesk** можно введя следующие команды:
`killall idesk` `idesk`

```
root@pluto:~# apt-get install idesk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  idesk
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.3 kB of archives.
After this operation, 314 kB of additional disk space will be used.
get:1 http://ports.ubuntu.com/ubuntu-ports/trusty/main armhf idesk armhf 0.7.5-9 [87.3 kB]
Selected previously unselected package idesk.
(Reading database ... 12847 files and directories currently installed.)
Unpacking idesk (0.7.5-9) ...
Setting up idesk (0.7.5-9) ...
Processing triggers for man-db (2.13.0-1) ...
root@pluto:~# mkdir -v .idesktop
root@pluto:~# idesk
Idesk starting in :0
Command: /usr/bin/ideskrc!
Loaded default file: /usr/share/idesk/dot.ideskrcc
[idesk] Background's file not found.
[idesk] Background's source not found.
Loaded default file: /usr/share/idesk/default.lnk
root@pluto:~# mvn .config
root@pluto:~# mvn .config /etc/X11/
root@pluto:~# mvn .config
ideskrcc .idesktop/
root@pluto:~# rm -f .killall idesk
root@pluto:~# idesk
Idesk starting in :0
[idesk] Background's file not found.
[idesk] Background's source not found.
```

Рисунок 59 — `killall idesk` `idesk`

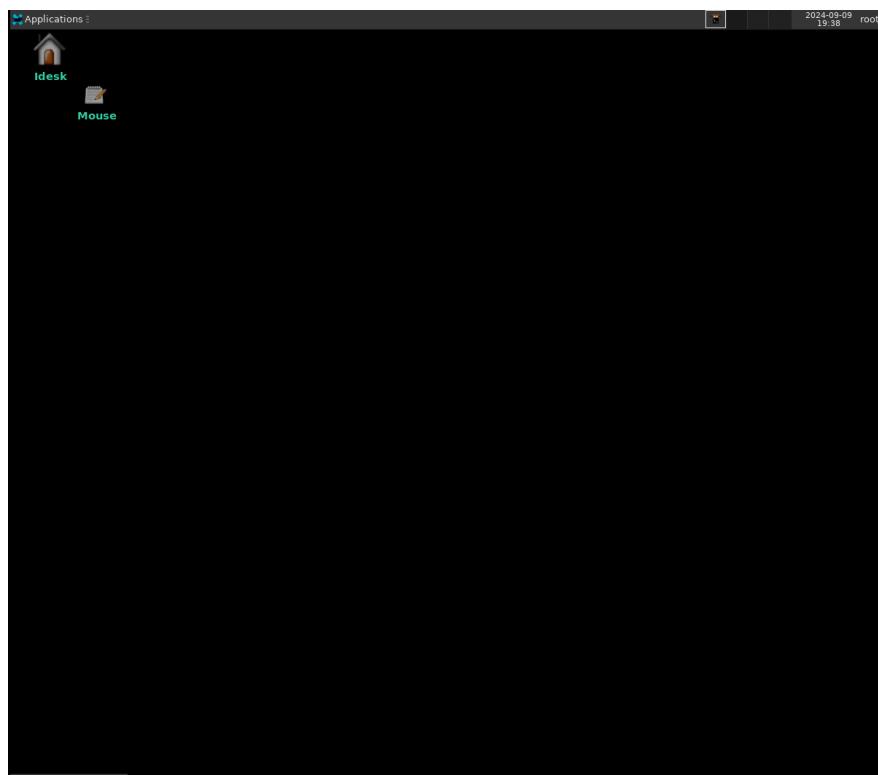


Рисунок 60 — Иконка создана

Преимуществом хранения ярлыков в таком формате является гибкая настройка. Возможно настроить не только размер и положение, но и реакцию на отдельные кнопки мыши. Так, `Command[0]` отвечает за реакцию на двойное нажатие левой кнопки мыши, `Command[1]` – за двойное нажатие правой. По-

меняем название ярлыка на `TextEdit` и сделаем так, чтобы при двойном щелчке левой клавишей мыши открывался `Mousepad`, при двойном щелчке правой – `neovim` в новом окне `kitty`.

```
table Icon
Caption: TextEditor
Command[0]: kitty --hold nvim
Command[1]: mousepad
Icon: /usr/share/icons/gnome/32x32/apps/accessories-text-editor.png
Width: 32
Height: 32
X: 100
Y: 100
end
```

Рисунок 61 — Исправленная конфигурация

Теперь необходимо настроить отображение иконок в `PCManFM`. Он использует библиотеку `GTK`, следующая команда скачает и установит иконки, которые будут использоваться всеми `GTK`-приложениями: `apt-get install tango-icon-theme` Для того, чтобы именно эти иконки использовались в `GTK` приложениях, необходимо создать для них конфигурационный файл: `nvim ~/.gtkrc-2.0` В этом файле необходимо прописать следующую строчку: `gtk-icon-theme-name="Tango"`

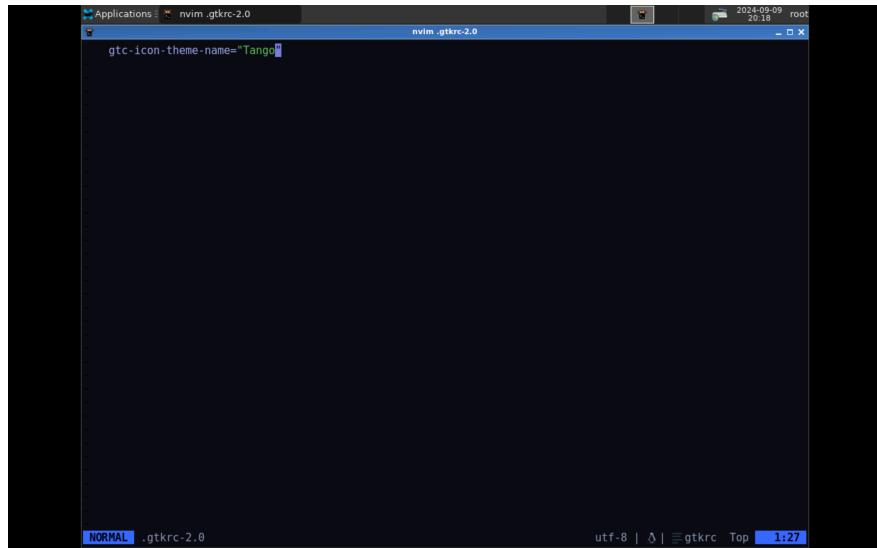


Рисунок 62 — Исправленная конфигурация

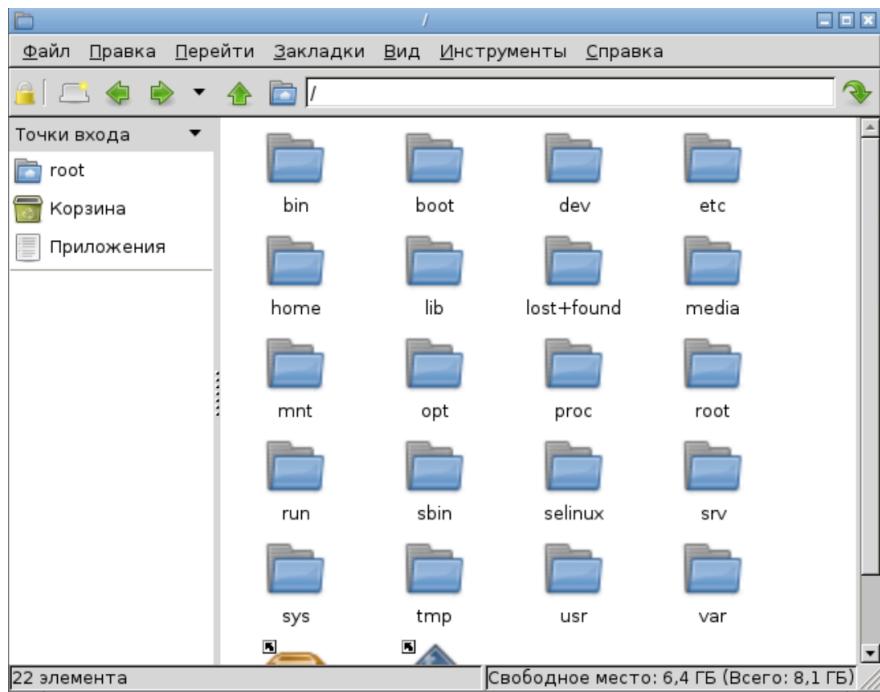


Рисунок 63 — Новые иконки

2.10. Установка и настройка `conky`

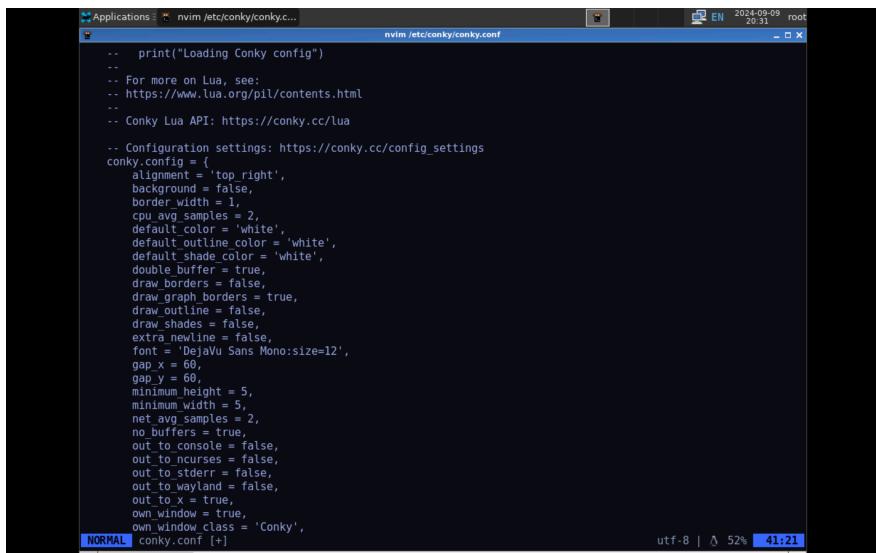
`conky` представляет собой монитор системных ресурсов. Это гибкая утилита, позволяющая отслеживать такие параметры, как использование ОЗУ и диска, нагрузку на ЦП. Однако `conky` может отображать даже новости и погоду. Для установки `conky` надо выполнить: `apt-get install conky` (`apt-get install conky-all`)

```
root@plutto:~# apt-get install conky
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Package conky is a virtual package provided by:
  conky-std 1.21.6-1
  conky-cli 1.21.6-1
  conky-all 1.21.6-1
You should explicitly select one to install.

E: Package 'conky' has no installation candidate
root@plutto:~# apt-get install conky-all
```

Рисунок 64 — `apt-get install conky-all`

Для настройки `conky` необходимо отредактировать его конфигурационный файл: `nvim /etc/conky/conky.conf`



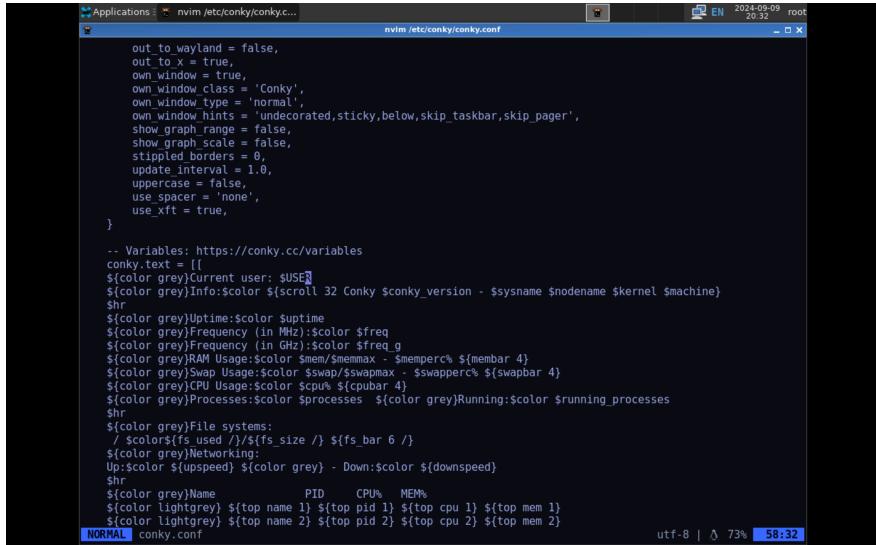
```
-- print("Loading Conky config")
-- For more on Lua, see:
-- https://www.lua.org/pil/contents.html
-- Conky Lua API: https://conky.cc/lua

conky.config = {
    alignment = 'top right',
    background = false,
    border_width = 1,
    cpu_avg_samples = 2,
    default_color = 'white',
    default_outline_color = 'white',
    double_buffer = true,
    draw_borders = false,
    draw_graph_borders = true,
    draw_outline = false,
    draw_shades = false,
    extra_newline = false,
    font = 'DejaVu Sans Mono:size=12',
    gap_x = 60,
    gap_y = 60,
    minimum_height = 5,
    minimum_width = 5,
    net_avg_samples = 2,
    no_buffers = true,
    out_to_console = false,
    out_to_ncurses = false,
    out_to_stderr = false,
    out_to_wayland = false,
    out_to_x = true,
    own_window = true,
    own_window_class = 'Conky',
}

NORMAL conky.conf [+]
```

Рисунок 65 — `nvim /etc/conky/conky.conf`

Как и в случае с настройкой `Openbox`, это общий файл. Пользовательские файлы настроек `conky` должны лежать по адресу `~/.conkyrc`. Необходимо изменить положение `conky`. Для этого замените строку `alignment top_left` на `alignment top_right`. В секции `conky.text` задается текст, выводимый на панель `conky`. Следующая строка добавит в `conky` отображение имени пользователя в системе: `${color grey} Current user: $USER`



```
out_to_wayland = false,
out_to_x = true,
own_window = true,
own_window_class = 'Conky',
own_window_type = 'normal',
own_window_hints = 'undecorated,sticky,below,skip_taskbar,skip_pager',
show_graph_range = false,
show_graph_scale = false,
stippled_borders = 0,
update_interval = 1.0,
uppercase = false,
use_spacer = 'none',
use_xft = true,
}

-- Variables: https://conky.cc/variables
conky.text = [
${color grey}Current user: $USER
${color grey}Info:$color ${scroll 32 Conky $conky_version - $sysname $nodename $kernel $machine}
$hr
${color grey}Uptime:${color $uptime
${color grey}Frequency (in GHz):$color $freq
${color grey}RAM Usage:$color $mem/$memmax - $memperc% ${membar 4}
${color grey}Swap Usage:$color $swap/$swapmax - $swapperc% ${swapbar 4}
${color grey}CPU Usage:$color $cpu% ${cpubar 4}
${color grey}Processes:$color $processes ${color grey}Running:$color $running_processes
$hr
${color grey}File systems:
/ ${color $fs_used /}$fs_size /) ${fs_bar 6 /)
${color grey}Networking:
Up:$color ${upspeed} ${color grey} - Down:$color ${downspeed}
$hr
${color grey}Name PID CPU% MEM%
${color lightgrey} ${top name 1} ${top pid 1} ${top cpu 1} ${top mem 1}
${color lightgrey} ${top name 2} ${top pid 2} ${top cpu 2} ${top mem 2}
```

Рисунок 66 — `nvim /etc/conky/conky.conf`

Перезапустим `conky` и увидим результат:

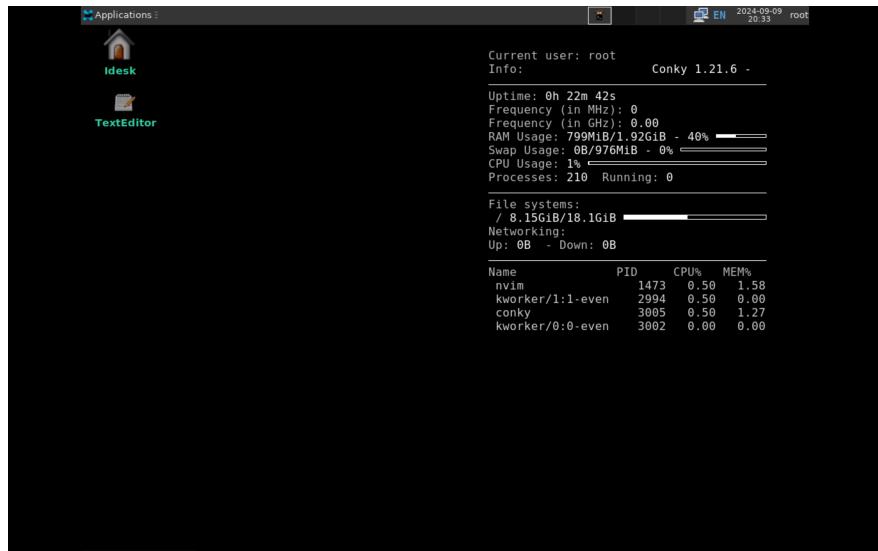


Рисунок 67 — conky

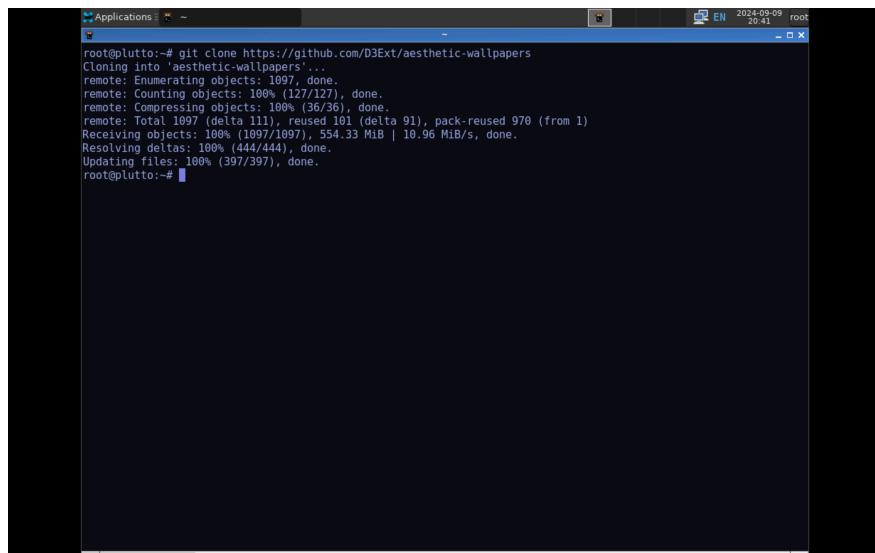
Наконец, необходимо отредактировать скрипт автозапуска, добавив в него `conky`, теперь скрипт должен выглядеть следующим образом:

```
# These things are run when an Openbox X Session is started.
# You may place a similar script in $HOME/.config/openbox/autostart
# to run user-specific things.
#
# If you want to use GNOME config tools...
# if test -x /usr/lib/aarch64-linux-gnu/gnome-settings-daemon >/dev/null; then
#   /usr/lib/aarch64-linux-gnu/gnome-settings-daemon &
# elif which gnome-settings-daemon >/dev/null 2>&1; then
#   gnome-settings-daemon &
# fi
#
# If you want to use XFCE config tools...
# xfce4-panel & kitty & idesk & conky
```

Рисунок 68 — autostart

2.11. Настройка фона рабочего стола

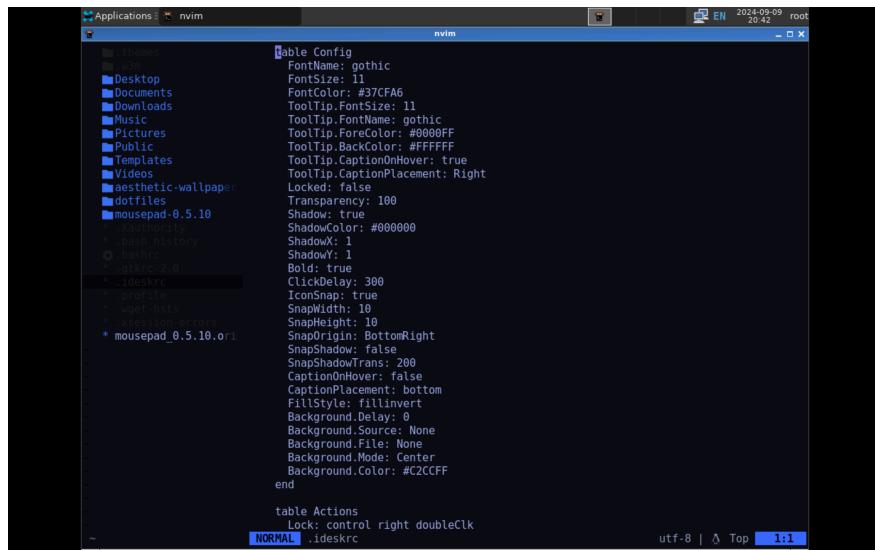
Скачаем большую коллекцию фонов для рабочего стола: <https://github.com/D3Ext/aesthetic-wallpapers>.



```
root@plutto:~# git clone https://github.com/D3Ext/aesthetic-wallpapers
Cloning into 'aesthetic-wallpapers'...
remote: Enumerating objects: 1097, done.
remote: Counting objects: 100% (127/127), done.
remote: Compressing objects: 100% (36/36), done.
remote: Total 1097 (delta 111), reused 101 (delta 91), pack-reused 970 (from 1)
Receiving objects: 100% (1097/1097), 554.33 MiB | 10.96 MiB/s, done.
Resolving deltas: 100% (444/444), done.
Updating files: 100% (397/397), done.
root@plutto:~#
```

Рисунок 69 — `aesthetic-wallpapers`

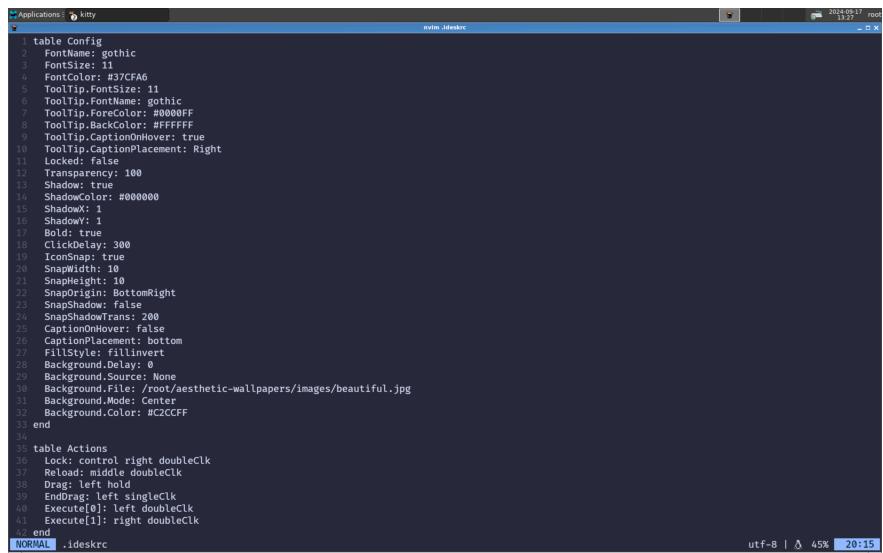
Откроем текстовым редактором файл `/root/.ideskr`, и зададим полный путь к файлу фоновой картинки в параметре `Background.file`. Убедитесь, что после имени файла нет пробела. Перезапустим `idesk`.



```
Table Config
  FontName: gothic
  FontSize: 11
  FontColor: #37CFA6
  Tooltip.FontSize: 11
  Tooltip.FontName: gothic
  Tooltip.ForeColor: #0000FF
  Tooltip.BackColor: #FFFFFF
  Tooltip.CaptionOnHover: true
  Tooltip.CaptionPlacement: Right
  Locked: false
  Transparency: 100
  Shadow: true
  ShadowColor: #000000
  ShadowX: 1
  ShadowY: 1
  Bold: true
  ClickDelay: 300
  IconSnap: true
  SnapWidth: 10
  SnapHeight: 10
  SnapOrigin: BottomRight
  SnapShadow: false
  SnapShadowTrans: 200
  CaptionOnHover: false
  CaptionPlacement: bottom
  FillStyle: fillInvert
  Background.Delay: 0
  Background.Source: None
  Background.File: None
  Background.Mode: Center
  Background.Color: #C2CCFF
end

table Actions
  Lock: control right doubleClk
```

Рисунок 70 — `/root/.ideskr`



```

1 table Config
2   FontName: gothic
3  FontSize: 11
4   FontColor: #37CF6
5   ToolTip.FontSize: 11
6   ToolTip.FontName: gothic
7   ToolTip.ForeColor: #0000FF
8   ToolTip.BackColor: #FFFFFF
9   ToolTip.CaptionOnHover: true
10  ToolTip.CaptionPlacement: Right
11  Locked: false
12  Transparency: 100
13  Shadow: true
14  ShadowColor: #000000
15  ShadowX: 1
16  ShadowY: 1
17  Bold: true
18  ClickDelay: 300
19  IconSnap: true
20  SnapWidth: 10
21  SnapHeight: 10
22  SnapAlign: BottomRight
23  SnapShadow: false
24  SnapShadowTrans: 200
25  CaptionOnHover: false
26  CaptionPlacement: bottom
27  FillStyle: fillInvert
28  BackgroundMode: None
29  Background.Source: None
30  Background.File: /root/aesthetic-wallpapers/images/beautiful.jpg
31  Background.Mode: Center
32  Background.Color: #C2CCFF
33 end
34 table Actions
35 Lock: control right doubleClk
36 Reload: middle doubleClk
37 Drag: left hold
38 EndDrag: left singleClk
39 Execute[0]: left doubleClk
40 Execute[1]: right doubleClk
41 end

```

NORMAL .ideskrc

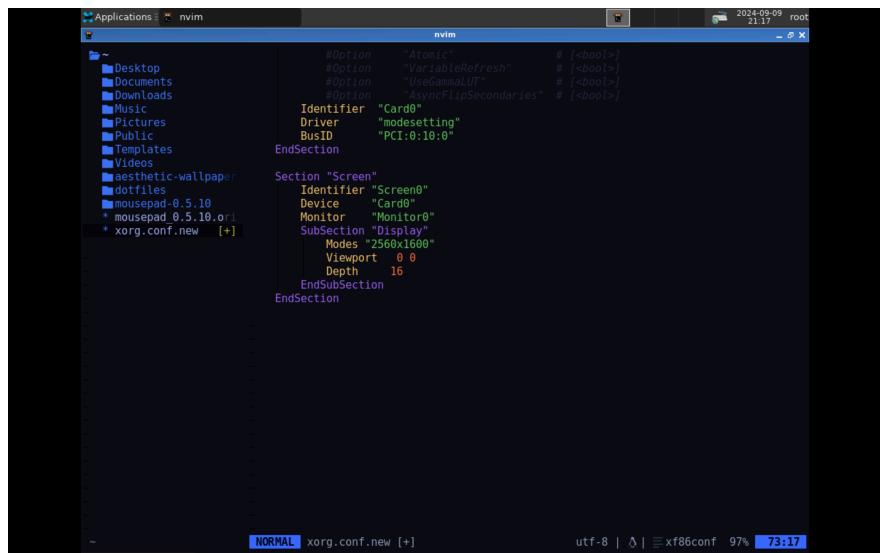
Рисунок 71 — /root/.ideskrc



Рисунок 72 — Результат

2.12. Настройка расширения экрана

Отредактируем `xorg.conf` так:



```
#Option "Atomic" # {<bool>}
#Option "VariableRefresh" # {<bool>}
#Option "SyncToVBlank" # {<bool>}
#Option "AsyncFlipSecondaries" # {<bool>}
Identifier "Card0"
Driver "modesetting"
BusID "PCI:0:10:0"
EndSection
Section "Screen"
Identifier "Screen0"
Device "Card0"
Monitor "Monitor0"
SubSection "Display"
Modes "2560x1600"
Viewport 0 0
Depth 16
EndSubSection
EndSection
EndSection
```

Рисунок 73 — `xorg.conf`

Перезапустим `xorg` и получим финальный результат:

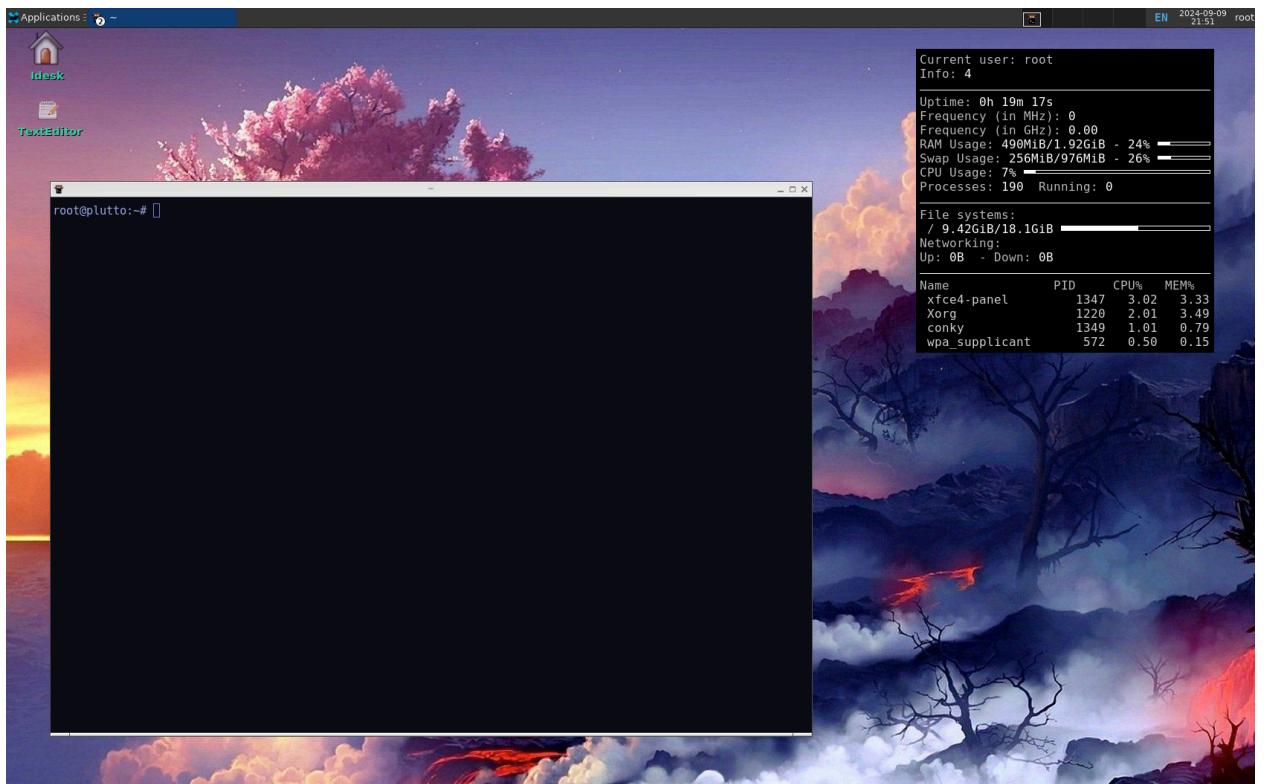


Рисунок 74 — финальный результат