

Лабораторная работа №4

Работа с программными пакетами

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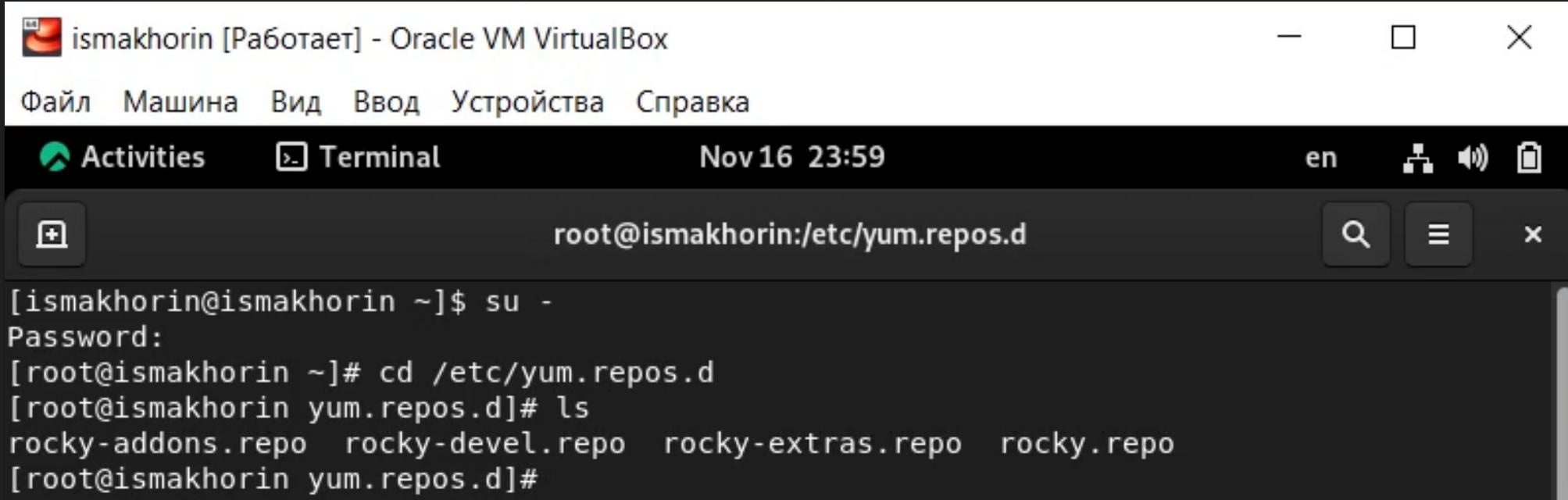
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Цель работы:

- Целью данной работы является получение навыков работы с репозиториями и менеджерами пакетов.

Режим работы суперпользователя, открытие каталога и просмотр содержимого



The screenshot shows a Linux desktop interface with a terminal window open. The window title is "ismakhorin [Работает] - Oracle VM VirtualBox". The menu bar includes "Файл", "Машина", "Вид", "Ввод", "Устройства", and "Справка". Below the menu is a dock with "Activities" and "Terminal" icons. The system tray shows the date and time as "Nov 16 23:59" and language as "en". The terminal window has a dark theme and displays the following command-line session:

```
[ismakhorin@ismakhorin ~]$ su -
Password:
[root@ismakhorin ~]# cd /etc/yum.repos.d
[root@ismakhorin yum.repos.d]# ls
rocky-addons.repo  rocky-devel.repo  rocky-extras.repo  rocky.repo
[root@ismakhorin yum.repos.d]#
```

Рис. 1.1. Открытие режима работы суперпользователя и последующие
открытие каталога.

Изучение файлов репозиториев

```
[root@ismakhorin yum.repos.d]# cat rocky-addons.repo
# rocky-addons.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client. You should use this for Rocky updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[highavailability]
name=Rocky Linux $releasever - High Availability
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=HighAvailability-$releasever$rltype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/HighAvailability/$basearch/os/
gpgcheck=1
enabled=0
countme=1
metadata_expire=6h
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-9

[highavailability-debug]
```

Рис. 1.2. Содержание файла `cat rocky-addons.repo`.

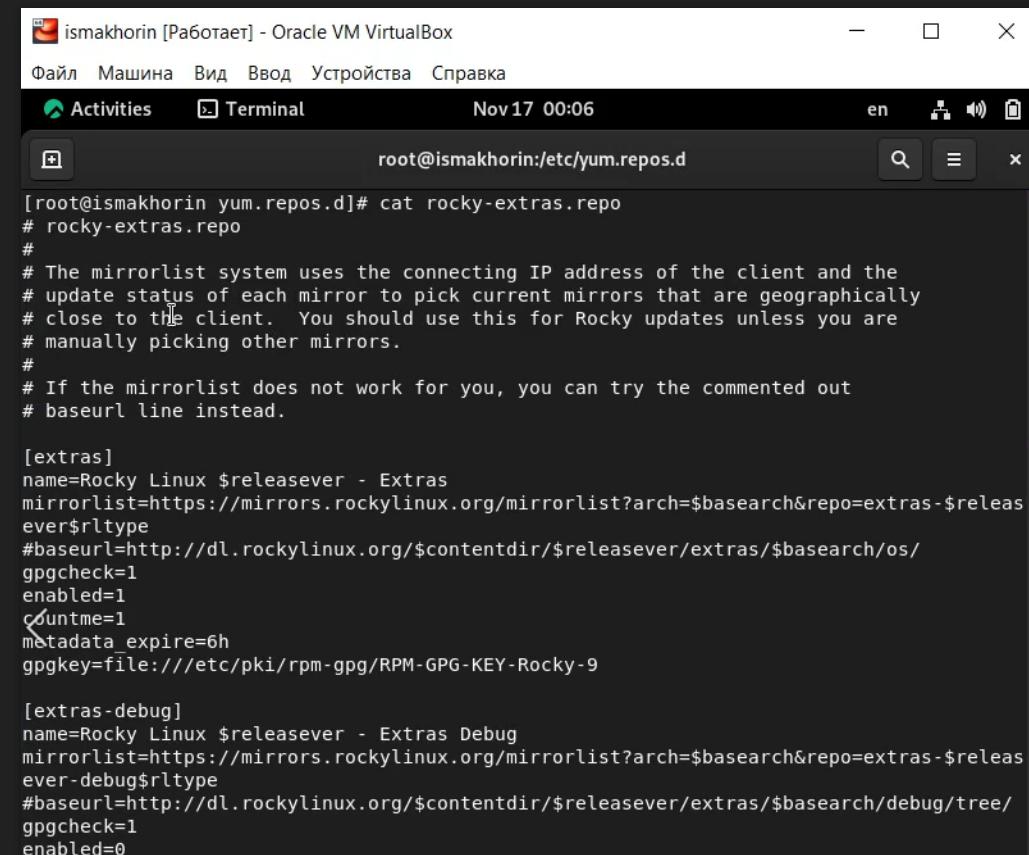
Изучение файлов репозиториев

```
[root@ismakhorin yum.repos.d]# cat rocky-devel.repo
# rocky-devel.repo
#
# devel and no-package-left-behind

[devel]
name=Rocky Linux $releasever - Devel WARNING! FOR BUILDROOT ONLY DO NOT LEAVE ENABLED
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=devel-$release
ver$rltype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/devel/$basearch/os/
gpgcheck=1
enabled=0
countme=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-9
```

Рис. 1.3. Содержание файла cat rocky-devel.repo.

Изучение файлов репозиториев



Screenshot of a terminal window titled "ismakhorin [Работает] - Oracle VM VirtualBox". The window shows the command "root@ismakhorin:~\$ cat rocky-extras.repo" and its output. The output displays the configuration for the "rocky-extras" repository, including sections for "[extras]" and "[extras-debug]", and details about mirrorlist, baseurl, gpgcheck, and enabled status.

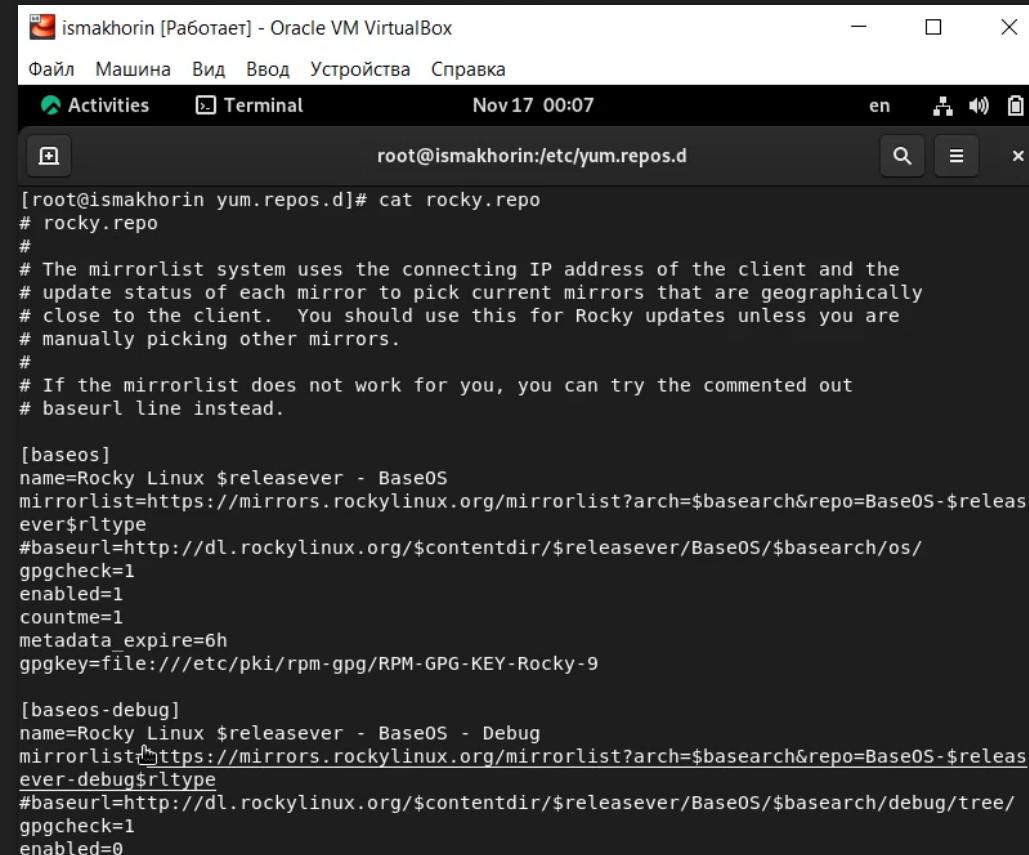
```
[root@ismakhorin yum.repos.d]# cat rocky-extras.repo
# rocky-extras.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client. You should use this for Rocky updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[extras]
name=Rocky Linux $releasever - Extras
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=extras-$releasever$rltype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/extras/$basearch/os/
gpgcheck=1
enabled=1
#unmetme=1
#metadata_expire=6h
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-9

[extras-debug]
name=Rocky Linux $releasever - Extras Debug
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=extras-$releasever-debug$rltype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/extras/$basearch/debug/tree/
gpgcheck=1
enabled=0
```

Рис. 1.4. Содержание файла cat rocky-extras.repo.

Изучение файлов репозиториев



Screenshot of a terminal window titled "ismakhorin [Работает] - Oracle VM VirtualBox". The window shows the command "root@ismakhorin:~\$ cat rocky.repo" and its output. The output displays the configuration for the Rocky Linux repository, including sections for [baseos] and [baseos-debug], with details about mirrorlist, baseurl, gpgcheck, and enabled settings.

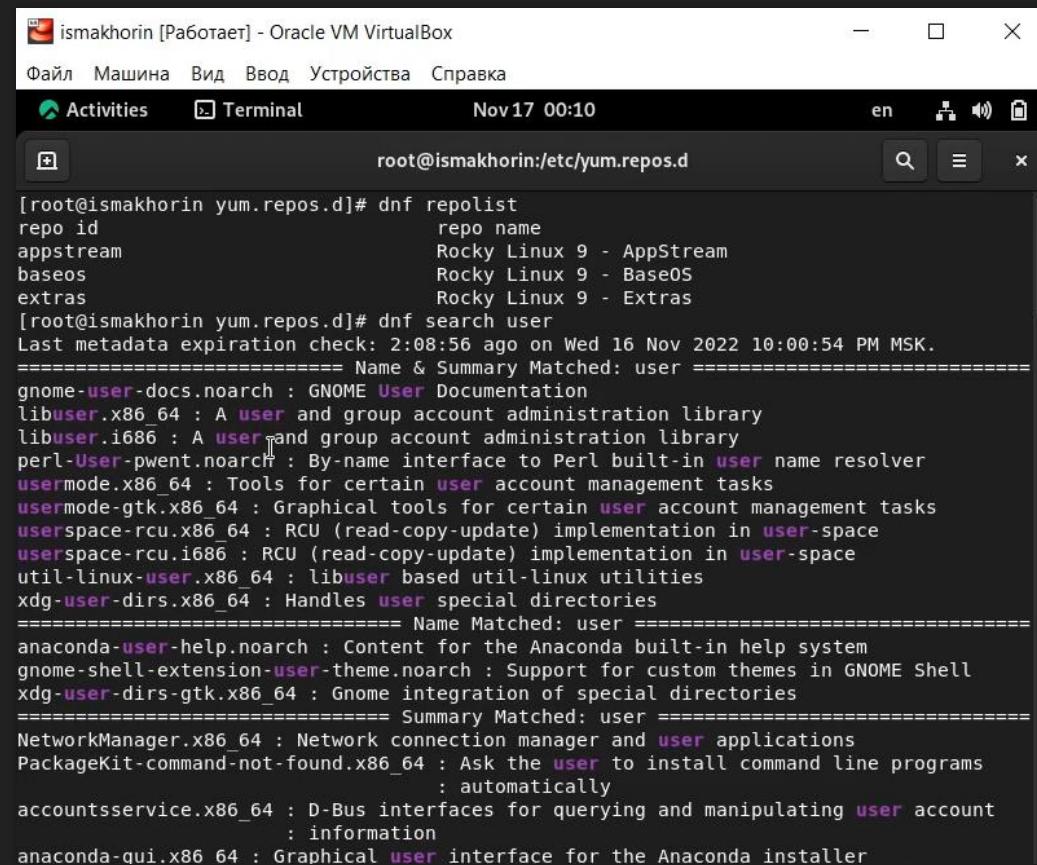
```
[root@ismakhorin yum.repos.d]# cat rocky.repo
# rocky.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client. You should use this for Rocky updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[baseos]
name=Rocky Linux $releasever - BaseOS
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=BaseOS-$releasever$rtype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/BaseOS/$basearch/os/
gpgcheck=1
enabled=1
countme=1
metadata_expire=6h
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-9

[baseos-debug]
name=Rocky Linux $releasever - BaseOS - Debug
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=BaseOS-$releasever-debug$rtype
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/BaseOS/$basearch/debug/tree/
gpgcheck=1
enabled=0
```

Рис. 1.5. Содержание файла cat rocky.repo.

Проверка и изменение параметров



The screenshot shows a terminal window titled "root@ismakhorin:etc/yum.repos.d" running on a Rocky Linux 9 system. The window displays the results of two dnf commands: "dnf repolist" and "dnf search user".

```
[root@ismakhorin yum.repos.d]# dnf repolist
repo id          repo name
appstream        Rocky Linux 9 - AppStream
baseos           Rocky Linux 9 - BaseOS
extras            Rocky Linux 9 - Extras
[root@ismakhorin yum.repos.d]# dnf search user
Last metadata expiration check: 2:08:56 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
=====
==== Name & Summary Matched: user ====
gnome-user-docs.noarch : GNOME User Documentation
libuser.x86_64 : A user and group account administration library
libuser.i686 : A user and group account administration library
perl-User-Pwent.noarch : By-name interface to Perl built-in user name resolver
usermode.x86_64 : Tools for certain user account management tasks
usermode-gtk.x86_64 : Graphical tools for certain user account management tasks
userspace-rcu.x86_64 : RCU (read-copy-update) implementation in user-space
userspace-rcu.i686 : RCU (read-copy-update) implementation in user-space
util-linux-user.x86_64 : libuser based util-linux utilities
xdg-user-dirs.x86_64 : Handles user special directories
=====
===== Name Matched: user =====
anaconda-user-help.noarch : Content for the Anaconda built-in help system
gnome-shell-extension-user-theme.noarch : Support for custom themes in GNOME Shell
xdg-user-dirs-gtk.x86_64 : Gnome integration of special directories
=====
===== Summary Matched: user =====
NetworkManager.x86_64 : Network connection manager and user applications
PackageKit-command-not-found.x86_64 : Ask the user to install command line programs
: automatically
accountsservice.x86_64 : D-Bus interfaces for querying and manipulating user account
: information
anaconda-qui.x86_64 : Graphical user interface for the Anaconda installer
```

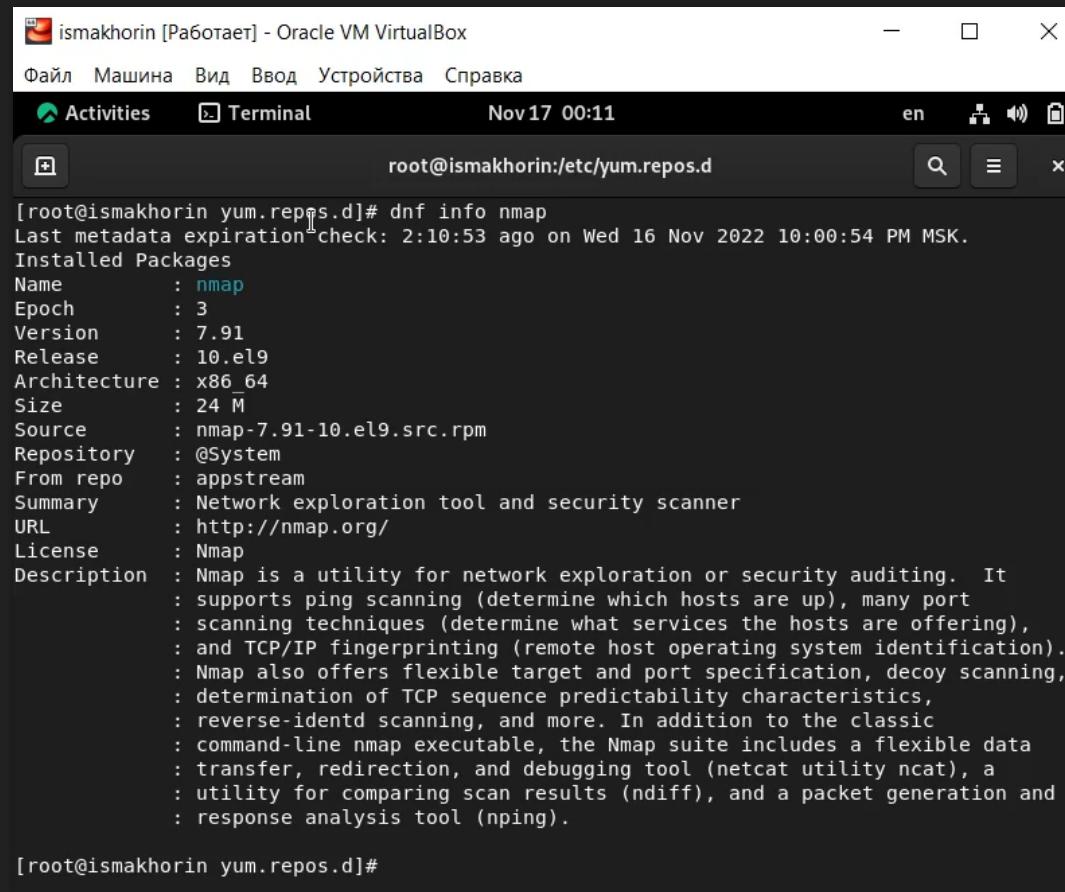
Рис. 2. Список репозиториев и пакетов.

Поиск nmap

```
[root@ismakhorin yum.repos.d]# dnf search nmap
Last metadata expiration check: 2:10:31 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
=====
           Name Exactly Matched: nmap
=====
nmap.x86_64 : Network exploration tool and security scanner
=====
           Name & Summary Matched: nmap
=====
nmap-ncat.x86_64 : Nmap's Netcat replacement
```

Рис. 3.1. Выполнение команды dnf search nmap.

Информация о nmap



ismakhorin [Работает] - Oracle VM VirtualBox

Файл Машина Вид Ввод Устройства Справка

Activities Terminal Nov 17 00:11 en

root@ismakhorin:etc/yum.repos.d

```
[root@ismakhorin yum.repos.d]# dnf info nmap
Last metadata expiration check: 2:10:53 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Installed Packages
Name        : nmap
Epoch       : 3
Version    : 7.91
Release    : 10.el9
Architecture: x86_64
Size        : 24 M
Source      : nmap-7.91-10.el9.src.rpm
Repository  : @System
From repo   : appstream
Summary     : Network exploration tool and security scanner
URL         : http://nmap.org/
License     : Nmap
Description : Nmap is a utility for network exploration or security auditing. It
              : supports ping scanning (determine which hosts are up), many port
              : scanning techniques (determine what services the hosts are offering),
              : and TCP/IP fingerprinting (remote host operating system identification).
              : Nmap also offers flexible target and port specification, decoy scanning,
              : determination of TCP sequence predictability characteristics,
              : reverse-identd scanning, and more. In addition to the classic
              : command-line nmap executable, the Nmap suite includes a flexible data
              : transfer, redirection, and debugging tool (netcat utility nc), a
              : utility for comparing scan results (ndiff), and a packet generation and
              : response analysis tool (nping).
```

[root@ismakhorin yum.repos.d]#

Рис. 3.2. Выполнение команды dnf info nmap.

Установка nmap

```
[root@ismakhorin yum.repos.d]# dnf install nmap
Last metadata expiration check: 2:10:05 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Dependencies resolved.
=====
 Package           Architecture      Version       Repository      Size
 =====
 Installing:
 nmap             x86_64          3:7.91-10.el9   appstream     5.4 M

 Transaction Summary
 =====
 Install 1 Package

 Total download size: 5.4 M
 Installed size: 24 M
 Is this ok [y/N]: y
 Downloading Packages:
 nmap-7.91-10.el9.x86_64.rpm          2.6 MB/s | 5.4 MB  00:02
 -----
 Total                                         2.1 MB/s | 5.4 MB  00:02

 Running transaction check
 Transaction check succeeded.
 Running transaction test
 Transaction test succeeded.
 Running transaction
 Preparing    :
```

1/1

Рис. 3.3. Выполнение команды `dnf install nmap`.

Установка nmap

```
[root@ismakhorin yum.repos.d]# dnf install nmap\*
Last metadata expiration check: 2:11:33 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Package nmap-3:7.91-10.el9.x86_64 is already installed.
Package nmap-ncat-3:7.91-10.el9.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ismakhorin yum.repos.d]# █
```

Рис. 3.4. Выполнение команды `dnf install nmap*`.

Удаление nmap

```
[root@ismakhorin yum.repos.d]# dnf remove nmap
Dependencies resolved.
=====
 Package           Architecture   Version            Repository      Size
 =====
 Removing:
 nmap             x86_64        3:7.91-10.el9    @appstream    24 M

 Transaction Summary
 =====
 Remove 1 Package

 Freed space: 24 M
 Is this ok [y/N]:
```

Рис. 4.1. Выполнение команды dnf remove nmap.

Удаление nmap

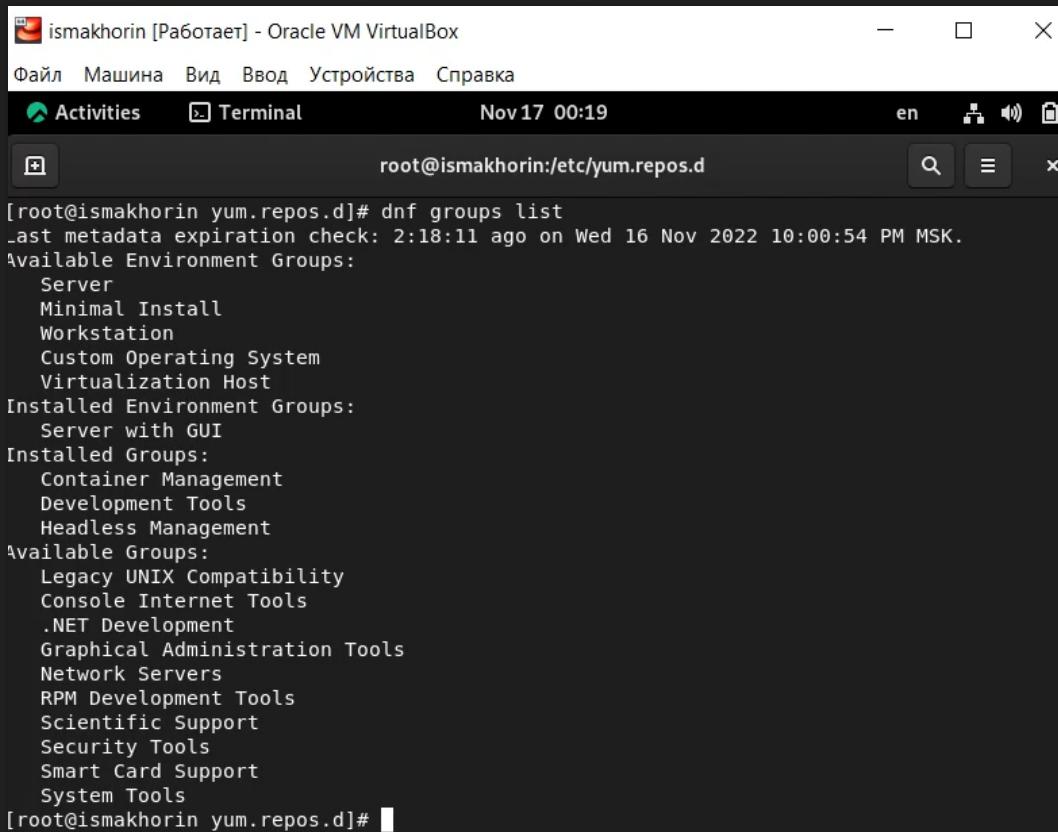
```
[root@ismakhorin yum.repos.d]# dnf remove nmap\*
Dependencies resolved.
=====
 Package           Architecture   Version        Repository      Size
 =====
 Removing:
 nmap-ncat        x86_64        3:7.91-10.el9    @AppStream    470 k

 Transaction Summary
 =====
 Remove 1 Package

 Freed space: 470 k
 Is this ok [y/N]: █
```

Рис. 4.2. Выполнение команды `dnf remove nmap*`.

Получение списка имеющихся групп пакетов



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Activities Terminal Nov 17 00:19 en

root@ismakhorin:/etc/yum.repos.d

```
[root@ismakhorin yum.repos.d]# dnf groups list
Last metadata expiration check: 2:18:11 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Available Environment Groups:
  Server
  Minimal Install
  Workstation
  Custom Operating System
  Virtualization Host
Installed Environment Groups:
  Server with GUI
Installed Groups:
  Container Management
  Development Tools
  Headless Management
Available Groups:
  Legacy UNIX Compatibility
  Console Internet Tools
  .NET Development
  Graphical Administration Tools
  Network Servers
  RPM Development Tools
  Scientific Support
  Security Tools
  Smart Card Support
  System Tools
[root@ismakhorin yum.repos.d]#
```

Рис. 5.1. Получение списков имеющихся групп пакетов (выполнение команды `dnf groups list`).

Получение списка имеющихся групп пакетов

```
[root@ismakhorin yum.repos.d]# LANG=C dnf groups list
Last metadata expiration check: 2:18:35 ago on Wed Nov 16 22:00:54 2022.
Available Environment Groups:
  Server
  Minimal Install
  Workstation
  Custom Operating System
  Virtualization Host
Installed Environment Groups:
  Server with GUI
Installed Groups:
  Container Management
  Development Tools
  Headless Management
Available Groups:
  Legacy UNIX Compatibility
  Console Internet Tools
  .NET Development
  Graphical Administration Tools
  Network Servers
  RPM Development Tools
  Scientific Support
  Security Tools
  Smart Card Support
  System Tools
[root@ismakhorin yum.repos.d]# dnf groups
```

Рис. 5.2. Выполнение команды LANG=C dnf group list.

Получение информации

```
[root@ismakhorin yum.repos.d]# dnf groups info "RPM Development Tools"
Last metadata expiration check: 2:19:01 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Group: RPM Development Tools
Description: Tools used for building RPMs, such as rpmbuild.
Mandatory Packages:
    redhat-rpm-config
    rpm-build
Default Packages:
    rpmdevtools
Optional Packages:
    rpmlint
[root@ismakhorin yum.repos.d]# █
```

Рис. 5.3. Получение информации (выполнение команды `dnf groups info "RPM Development Tools"`).

Установка группы пакетов

```
[root@ismakhorin yum.repos.d]# dnf groupinstall "RPM Development Tools"
Last metadata expiration check: 2:19:38 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
```

Рис. 5.4. Установка группы пакетов RPM Development Tools (выполнение команды `dnf groupinstall "RPM Development Tools"`).

Удаление группы пакетов

```
[root@ismakhorin yum.repos.d]# dnf groupremove "RPM Development Tools"
Dependencies resolved.
=====
 Package           Architecture Version       Repository      Size
 =====
 Removing:
 rpmdevtools        noarch     9.5-1.el9   @appstream    195 k
 Removing unused dependencies:
 python3-argcomplete noarch     1.12.0-5.el9 @appstream    219 k
 Removing Groups:
 RPM Development Tools

 Transaction Summary
 =====
 Remove 2 Packages

 Freed space: 414 k
 [s this ok [y/N]: y]
```

Рис. 5.5. Удаление группы пакетов RPM Development Tools (выполнение команды `dnf groupremove "RPM Development Tools"`).

Просмотр истории и отмена действий

ismakhorin [Работает] - Oracle VM VirtualBox

Файл Машина Вид Ввод Устройства Справка

Activities Terminal Nov 17 00:22 en

[root@ismakhorin yum.repos.d]# dnf history

ID	Command line	Date and time	Action(s)	Altered
7	groupremove RPM Development Tool	2022-11-17 00:21	Removed	3
6	groupinstall RPM Development Tool	2022-11-17 00:20	I, U	13
5	remove nmap*	2022-11-17 00:18	Removed	1
4	remove nmap	2022-11-17 00:16	Removed	1
3	install nmap	2022-11-17 00:11	Install	1
2	install mc	2022-11-12 10:40	Install	1 <
1		2022-11-12 01:38	Install	1282 >E

[root@ismakhorin yum.repos.d]# dnf history undo 6

_last metadata expiration check: 2:21:05 ago on Wed 16 Nov 2022 10:00:54 PM MSK.

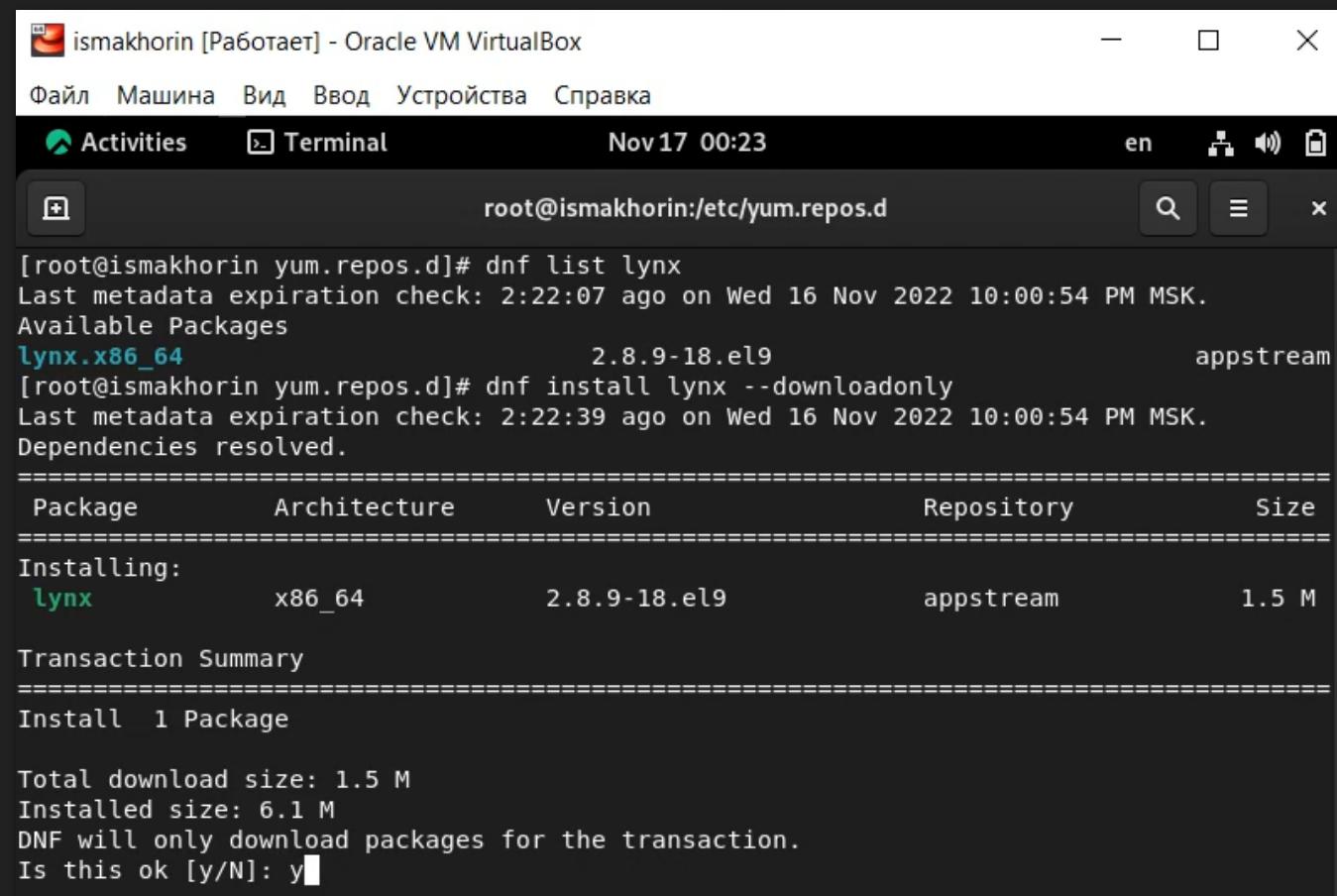
Error: The following problems occurred while running a transaction:

Cannot find rpm nevra "rpm-sign-libs-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-sign-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-plugin-selinux-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-plugin-audit-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-libs-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-build-libs-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "python3-rpm-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-plugin-systemd-inhibit-4.16.1.3-12.el9_0.x86_64".
Cannot find rpm nevra "rpm-build-4.16.1.3-12.el9_0.x86_64".

[root@ismakhorin yum.repos.d]#

Рис. 6. Просмотр использования команды dnf и отмена шестого по счёту действия.

Скачивание пакета



Screenshot of a Linux terminal window titled "ismakhorin [Работает] - Oracle VM VirtualBox". The window shows a terminal session as root. The user runs "dnf list lynx", finds it available in the appstream repository, installs it with "--downloadonly", and then installs it with "dnf install lynx". The transaction summary shows one package being installed from the appstream repository.

```
[root@ismakhorin yum.repos.d]# dnf list lynx
Last metadata expiration check: 2:22:07 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Available Packages
lynx.x86_64                  2.8.9-18.el9          appstream
[root@ismakhorin yum.repos.d]# dnf install lynx --downloadonly
Last metadata expiration check: 2:22:39 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Dependencies resolved.
=====
 Package      Architecture      Version       Repository      Size
 =====
 Installing:
 lynx          x86_64          2.8.9-18.el9    appstream     1.5 M

Transaction Summary
=====
Install 1 Package

Total download size: 1.5 M
Installed size: 6.1 M
DNF will only download packages for the transaction.
Is this ok [y/N]: y
```

Рис. 7. Скачивание rpm-пакета lynx.

Действия с пакетом

```
[root@ismakhorin yum.repos.d]# find /var/cache/dnf/ -name lynx*
/var/cache/dnf/appstream-25485261a76941d3/packages/lynx-2.8.9-18.el9.x86_64.rpm
[root@ismakhorin yum.repos.d]# cd /var/cache/dnf/appstream-25485261a76941d3/packages
[root@ismakhorin packages]# ls
lynx-2.8.9-18.el9.x86_64.rpm
[root@ismakhorin packages]# rpm -Uhv lynx-2.8.9-18.el9.x86_64.rpm
Verifying...                                              #####[ 100%
Preparing...                                              #####[ 100%
Updating / installing...
 1:lynx-2.8.9-18.el9                                     #####[ 100%
[root@ismakhorin packages]# which lynx
/usr/bin/lynx
[root@ismakhorin packages]# rpm -qf $(which lynx)
lynx-2.8.9-18.el9.x86_64
[root@ismakhorin packages]# █
```

Рис. 8. Нахождение каталога с пакетом, установка rpm-пакета, определение расположения исполняемого файла, определение к какому пакету принадлежит lynx.

Дополнительная информация

```
[root@ismakhorin packages]# rpm -qi lynx
Name        : lynx
Version     : 2.8.9
Release     : 18.el9
Architecture: x86_64
Install Date: Thu 17 Nov 2022 12:26:40 AM MSK
Group       : Unspecified
Size        : 6357335
License      : GPLv2
Signature    : RSA/SHA256, Thu 26 May 2022 05:49:04 AM MSK, Key ID 702d426d350d275d
Source RPM   : lynx-2.8.9-18.el9.src.rpm
Build Date   : Wed 25 May 2022 11:26:16 PM MSK
Build Host   : pb-3b6cf428-3a50-41d4-a8c1-07b0601a9918-b-x86-64
Packager    : Rocky Linux Build System (Peridot) <releng@rockylinux.org>
Vendor      : Rocky Enterprise Software Foundation
URL         : http://lynx.browser.org/
Summary     : A text-based Web browser
Description  :
Lynx is a text-based Web browser. Lynx does not display any images,
but it does support frames, tables, and most other HTML tags. One
advantage Lynx has over graphical browsers is speed; Lynx starts and
exits quickly and swiftly displays web pages.
[root@ismakhorin packages]# █
```

Рис. 9.1. Получение дополнительной информации о содержимом пакета.

Получение списка

```
[root@ismakhorin packages]# rpm -ql lynx
/etc/lynx-site.cfg
/etc/lynx.cfg
/etc/lynx.lss
/usr/bin/lynx
/usr/lib/.build-id
/usr/lib/.build-id/08
/usr/lib/.build-id/08/90611137f0e786da7bbca2bd850dfff653a058
/usr/share/doc/lynx
/usr/share/doc/lynx/INSTALLATION
/usr/share/doc/lynx/README
/usr/share/doc/lynx/docs
/usr/share/doc/lynx/docs/CHANGES2.3
/usr/share/doc/lynx/docs/CHANGES2.4
/usr/share/doc/lynx/docs/CHANGES2.5
/usr/share/doc/lynx/docs/CHANGES2.6
/usr/share/doc/lynx/docs/CHANGES2.7
/usr/share/doc/lynx/docs/CHANGES2.8
/usr/share/doc/lynx/docs/CRAWL.announce
/usr/share/doc/lynx/docs/FM.announce
/usr/share/doc/lynx/docs/IBMPC-Charsets.announce
/usr/share/doc/lynx/docs/README.TRST
/usr/share/doc/lynx/docs/README_chartrans
```

Рис. 9.2. Получение списка всех файлов в пакете.

Перечень файлов

```
[root@ismakhorin packages]# rpm -qd lynx
/usr/share/doc/lynx/INSTALLATION
/usr/share/doc/lynx/README
/usr/share/doc/lynx/docs/CHANGES2.3
/usr/share/doc/lynx/docs/CHANGES2.4
/usr/share/doc/lynx/docs/CHANGES2.5
/usr/share/doc/lynx/docs/CHANGES2.6
/usr/share/doc/lynx/docs/CHANGES2.7
/usr/share/doc/lynx/docs/CHANGES2.8
/usr/share/doc/lynx/docs/CRAWL.announce
/usr/share/doc/lynx/docs/FM.announce
/usr/share/doc/lynx/docs/IBMPCC-charset.announce
/usr/share/doc/lynx/docs/README.TRST
/usr/share/doc/lynx/docs/README.chartrans
/usr/share/doc/lynx/docs/README.cookies
/usr/share/doc/lynx/docs/README.defines
/usr/share/doc/lynx/docs/README.metrics
/usr/share/doc/lynx/docs/README.options
/usr/share/doc/lynx/docs/README.release
/usr/share/doc/lynx/docs/README.rootcerts
/usr/share/doc/lynx/docs/README.ssl
/usr/share/doc/lynx/docs/README.sslcerts
/usr/share/doc/lynx/docs/SOCKETSHR.announce
/usr/share/doc/lynx/docs/TCPWARE.announce
```

Рис. 9.3. Вывод перечня файлов с документацией пакета.

Просмотр файлов документации

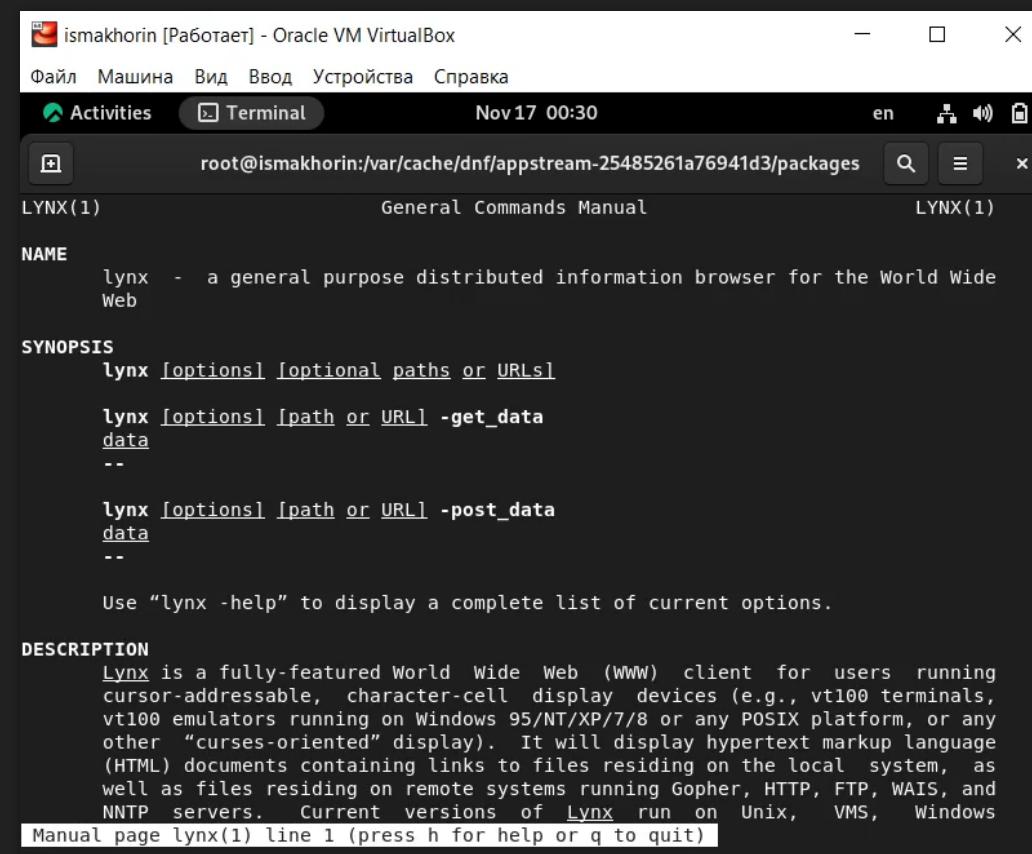


Рис. 9.4. Просмотр файлов документов документации.

Конфигурационные файлы пакета Скрипты

```
[root@ismakhorin packages]# rpm -qc lynx
/etc/lynx-site.cfg
/etc/lynx.cfg
/etc/lynx.lss
[root@ismakhorin packages]# rpm -q --scripts lynx
[root@ismakhorin packages]# █
```

Рис. 10. Вывод на экран перечень и месторасположение конфигурационных файлов пакета, вывод расположения и содержание скриптов.

lynx

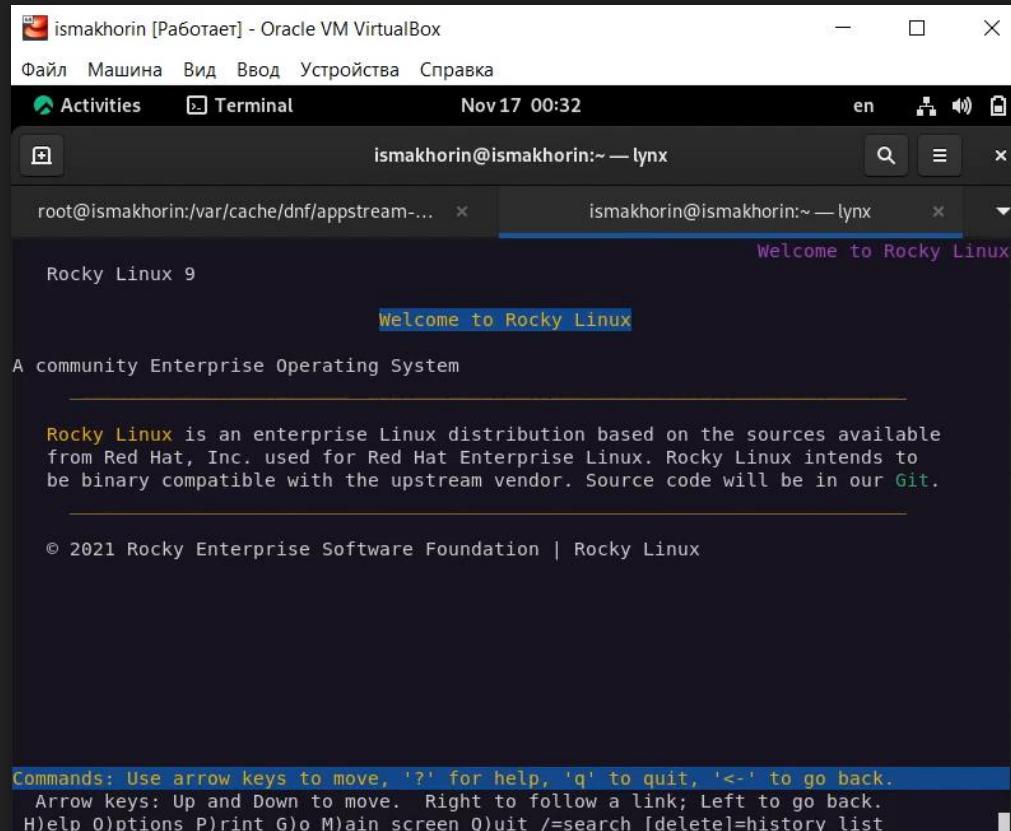


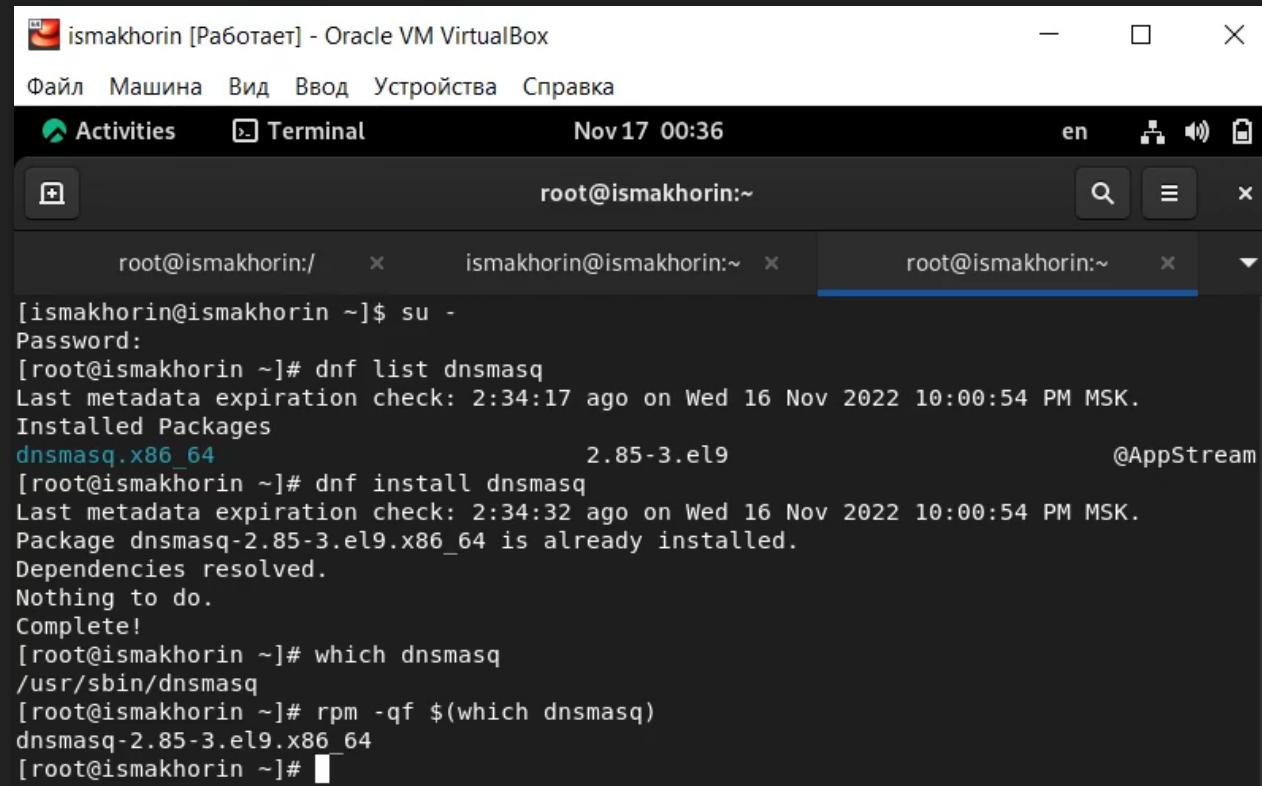
Рис. 11.1. Запуск текстового браузера lynx.

Удаление пакета

```
[root@ismakhorin packages]# rpm -e lynx
[root@ismakhorin packages]# ls
lynx-2.8.9-18.el9.x86_64.rpm
```

Рис. 11.2. Удаление пакета и проверка.

Пакет dnsmasq



The screenshot shows a terminal window titled "ismakhorin [Работает] - Oracle VM VirtualBox". The window has a dark theme with white text. It displays a command-line session as root:

```
[ismakhorin@ismakhorin ~]$ su -
Password:
[root@ismakhorin ~]# dnf list dnsmasq
Last metadata expiration check: 2:34:17 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Installed Packages
dnsmasq.x86_64                  2.85-3.el9                  @AppStream
[root@ismakhorin ~]# dnf install dnsmasq
Last metadata expiration check: 2:34:32 ago on Wed 16 Nov 2022 10:00:54 PM MSK.
Package dnsmasq-2.85-3.el9.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ismakhorin ~]# which dnsmasq
/usr/sbin/dnsmasq
[root@ismakhorin ~]# rpm -qf $(which dnsmasq)
dnsmasq-2.85-3.el9.x86_64
[root@ismakhorin ~]#
```

Рис. 11.3. Установка пакета dnsmasq, определение расположение исполняемого файла, определение к какому пакету принадлежит dnsmasq.

Дополнительная информация

```
[root@ismakhorin ~]# rpm -qi dnsmasq
Name        : dnsmasq
Version     : 2.85
Release     : 3.el9
Architecture: x86_64
Install Date: Sat 12 Nov 2022 01:43:05 AM MSK
Group       : Unspecified
Size        : 715155
License     : GPLv2 or GPLv3
Signature   : RSA/SHA256, Mon 13 Jun 2022 04:32:44 AM MSK, Key ID 702d426d350d275d
Source RPM  : dnsmasq-2.85-3.el9.src.rpm
Build Date  : Tue 10 May 2022 06:00:13 PM MSK
Build Host  : pb-8228638d-b6df-4f0e-bbd4-e27c5d13cc7e-b-x86-64
Packager    : Rocky Linux Build System (Peridot) <releng@rockylinux.org>
Vendor      : Rocky Enterprise Software Foundation
URL         : http://www.thekelleys.org.uk/dnsmasq/
Summary     : A lightweight DHCP/caching DNS server
Description :
Dnsmasq is lightweight, easy to configure DNS forwarder and DHCP server.
It is designed to provide DNS and, optionally, DHCP, to a small network.
It can serve the names of local machines which are not in the global
DNS. The DHCP server integrates with the DNS server and allows machines
with DHCP-allocated addresses to appear in the DNS with names configured
either in each host or in a central configuration file. Dnsmasq supports
```

Рис. 12.1. Получение дополнительной информации о содержимом пакета.

Список файлов

```
[root@ismakhorin ~]# rpm -ql dnsmasq
/etc/dbus-1/system.d/dnsmasq.conf
/etc/dnsmasq.conf
/etc/dnsmasq.d
/usr/lib/.build-id
/usr/lib/.build-id/41
/usr/lib/.build-id/41/8f032eb7f0212e8f4a28b7844eac0599830057
/usr/lib/systemd/system/dnsmasq.service
/usr/lib/sysusers.d/dnsmasq.conf
/usr/sbin/dnsmasq
/usr/share/dnsmasq
/usr/share/dnsmasq/trust-anchors.conf
/usr/share/doc/dnsmasq
/usr/share/doc/dnsmasq/CHANGELOG
/usr/share/doc/dnsmasq/DBus-interface
/usr/share/doc/dnsmasq/FAQ
/usr/share/doc/dnsmasq/doc.html
/usr/share/doc/dnsmasq/setup.html
/usr/share/licenses/dnsmasq
/usr/share/licenses/dnsmasq/COPYING
/usr/share/licenses/dnsmasq/COPYING-v3
/usr/share/man/man8/dnsmasq.8.gz
/var/lib/dnsmasq
[root@ismakhorin ~]#
```

Рис. 12.2. Получение списка всех файлов в пакете.

ВЫВОД ПЕРЕЧНЯ ФАЙЛОВ

```
[root@ismakhorin ~]# rpm -qd dnsmasq
/usr/share/doc/dnsmasq/CHANGELOG
/usr/share/doc/dnsmasq/DBus-interface
/usr/share/doc/dnsmasq/FAQ
/usr/share/doc/dnsmasq/doc.html
/usr/share/doc/dnsmasq/setup.html
/usr/share/man/man8/dnsmasq.8.gz
[root@ismakhorin ~]# █
```

Рис. 12.3. Вывод перечня файлов с документацией пакета.

Просмотр файлов документации

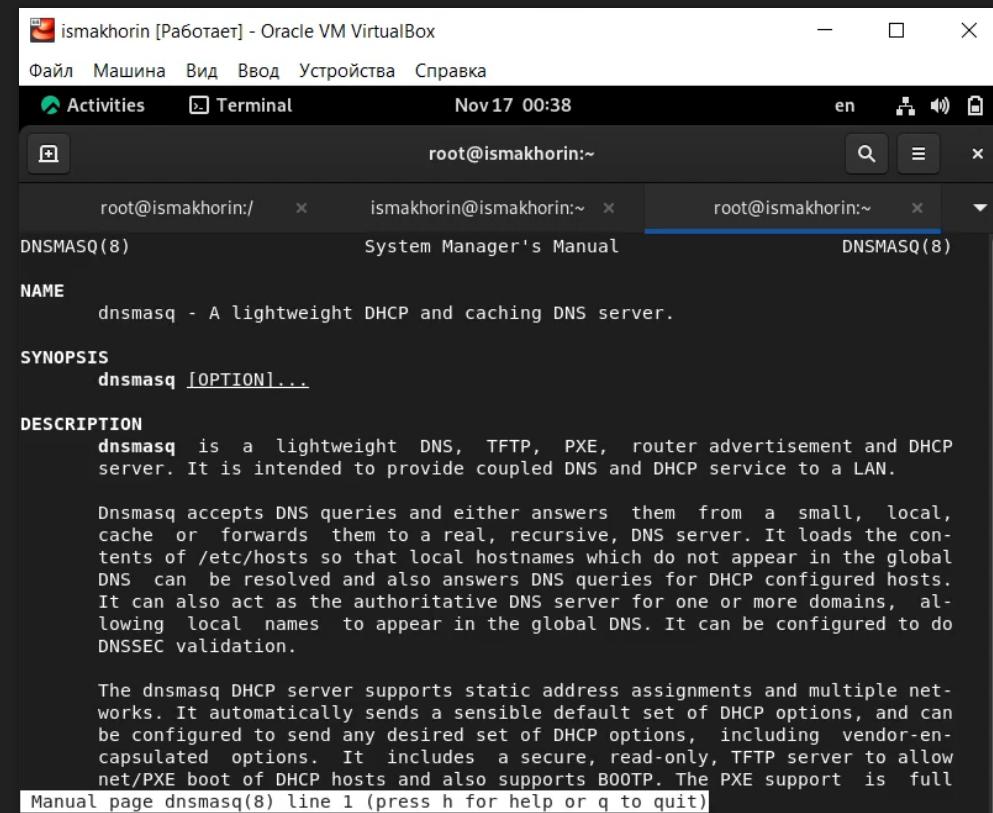


Рис. 12.4. Просмотр файлов документов.

Конфигурационные файлы пакета

```
[root@ismakhorin ~]# rpm -qc dnsmasq  
/etc/dbus-1/system.d/dnsmasq.conf  
/etc/dnsmasq.conf
```

Рис. 12.5. Вывод на экран перечень и месторасположение конфигурационных файлов пакета.

Скрипты, выполняемые при установке пакета

```
[root@ismakhorin ~]# rpm -q --scripts dnsmasq
preinstall scriptlet (using /bin/sh):
#precreate users so that rpm can install files owned by that user

# generated from dnsmasq-systemd-sysusers.conf
getent group 'dnsmasq' >/dev/null || groupadd -r 'dnsmasq'
getent passwd 'dnsmasq' >/dev/null || \
    useradd -r -g 'dnsmasq' -d '/var/lib/dnsmasq' -s '/sbin/nologin' -c 'Dnsmasq DHCP a
nd DNS server' 'dnsmasq'
postinstall scriptlet (using /bin/sh):
    [
if [ $1 -eq 1 ] && [ -x "/usr/lib/systemd/systemd-update-helper" ]; then
    # Initial installation
    /usr/lib/systemd/systemd-update-helper install-system-units dnsmasq.service || :
fi
preuninstall scriptlet (using /bin/sh):
```

Рис. 13.1. Вывод на экран расположение и содержание скриптов, выполняемых при установке пакета.

Удаление пакета

```
[root@ismakhorin ~]# rpm -e dnsmask  
error: package dnsmask is not installed  
[root@ismakhorin ~]# █
```

Рис. 13.2. Удаление пакета.

ВЫВОД

- В ходе выполнения лабораторной работы были получены представление о работе с учётными записями пользователей и группами пользователей в операционной системе типа Linux.



Спасибо за внимание!