

Отчёт по лабораторной работе №4

Работа с программными пакетами

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Цель работы

Получить навыки работы с репозиториями и менеджерами пакетов в Linux.

Выполнение лабораторной работы



```
root@localhost:/etc/yum.repos.d - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/etc/yum.repos.d - sudo -i x spborisenkova@localhost:/usr/local/bin

GNU nano 8.1 rocky.repo
[baseos]
name=Rocky Linux $releasever - BaseOS
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=BaseOS-$releasever$rltype
#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-10

[baseos-debuginfo]
name=Rocky Linux $releasever - BaseOS - Debug
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=BaseOS-$releasever-debug$rltype
#baseurl=http://dl.rockylinux.org/contentdir/$releasever/BaseOS/$basearch/debug/tree/
gpgcheck=1
enabled=0
metadata_expire=6h
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-10

[baseos-source]
name=Rocky Linux $releasever - BaseOS - Source
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=source&repo=BaseOS-$releasever-source$rltype
#baseurl=http://dl.rockylinux.org/contentdir/$releasever/BaseOS/source/tree/
gpgcheck=1
enabled=0
metadata_expire=6h
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-10

[appstream]
name=Rocky Linux $releasever - AppStream
mirrorlist=https://mirrors.rockylinux.org/mirrorlist?arch=$basearch&repo=AppStream-$releasever$rltype

^G Help      ^O Write Out ^R Where Is  ^M Cut       ^J Execute  ^C Location ^U Undo     ^M Set Mark ^_ To Bracket
^X Exit      ^R Read File ^I Replace   ^L Paste     ^_ Justify  ^G Go To Line ^E Redo     ^C Copy     ^_ Where Was
```

Рис. 1: Содержимое файла rocky.repo

Поиск и установка пакетов

```
root@localhost/etc/yum.repos.d - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost/etc/yum.repos.d - sudo -i x spborisenkova@localhost:/usr/local/bin
root@localhost:~# cd /etc/yum.repos.d/
root@localhost:/etc/yum.repos.d# ls
rocky-addons.repo rocky-devel.repo rocky-extras.repo rocky.repo
root@localhost:/etc/yum.repos.d# nano rocky
root@localhost:/etc/yum.repos.d# nano rocky.repo
root@localhost:/etc/yum.repos.d# dnf repolist
repo id                                repo name
appstream                              Rocky Linux 10 - AppStream
baseos                                 Rocky Linux 10 - BaseOS
extras                                 Rocky Linux 10 - Extras
root@localhost:/etc/yum.repos.d# dnf search user
Last metadata expiration check: 3:31:16 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
===== Name & Summary Matched: user =====
gnome-user-docs.noarch : GNOME User Documentation
libuser.x86_64 : A user and group account administration library
perl-User-pwent.noarch : By-name interface to Perl built-in user name resolver
samba-usershares.x86_64 : Provides support for non-root user shares
usermode.x86_64 : Tools for certain user account management tasks
userspace-rcu.x86_64 : RCU (read-copy-update) implementation in user-space
xdg-user-dirs.x86_64 : Handles user special directories
===== Name Matched: user =====
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
accounts-service.x86_64 : D-Bus interfaces for querying and manipulating user account information
anaconda-gui.x86_64 : Graphical user interface for the Anaconda installer
anaconda-tui.x86_64 : Textual user interface for the Anaconda installer
audit.x86_64 : User space tools for kernel auditing
cachefilesd.x86_64 : CacheFiles user-space management daemon
cockpit-machines.noarch : Cockpit user interface for virtual machines
cockpit-ostree.noarch : Cockpit user interface for rpm-ostree
cockpit-packagekit.noarch : Cockpit user interface for packages
cockpit-storage.noarch : Cockpit user interface for storage, using udisks
console-login-helper-messages.noarch : Combines motd, issue, profile features to show system information to the user before/on login
```

Рис. 2: Поиск пакетов по слову user

```
root@localhost:/etc/yum.repos.d -- sudo -i
spborisenkova@localhost:~/net-admin/lab: root@localhost:/etc/yum.repos.d -- sudo -i x spborisenkova@localhost:/usr/local/bin

nunad.x86_64 : NUMA user daemon
open-vm-tools-desktop.x86_64 : User experience components for Open Virtual Machine Tools
passt.x86_64 : User-mode networking daemons for virtual machines and namespaces
perl-LWP-Protocol-https.noarch : Provide HTTPS support for LWP::UserAgent
perl-Tk.x86_64 : Perl Graphical User Interface ToolKit
php-pecl-apcu.x86_64 : APC User Cache
prefixdevname.x86_64 : Udev helper utility that provides network interface naming using user defined prefix
python3-meh-gui.noarch : Graphical user interface for the python3-meh library
python3-urwid.x86_64 : Console user interface library
qatlib.x86_64 : Intel QuickAssist user space library
quota.x86_64 : System administration tools for monitoring users' disk usage
quota-warnquota.x86_64 : Send e-mail to users over quota
rdma-core.x86_64 : RDMA core userspace libraries and daemons
rootfiles.noarch : The basic required files for the root user's directory
rshim.x86_64 : User-space driver for Mellanox BlueField SoC
rsync-rsync.noarch : A script to setup restricted rsync users via ssh logins
sssd-tools.x86_64 : Userspace tools for use with the SSSD
sudo.x86_64 : Allows restricted root access for specified users
systemd-oomd.x86_64 : A userspace out-of-memory (OOM) killer
texlive-listofitems.noarch : Grab items in lists using user-specified sep char
texlive-xtlextra.noarch : "Extras" for LaTeX users of XeTeX
trace-cmd.x86_64 : A user interface to Ftrace
uresourced.x86_64 : Dynamically allocate resources to the active user
virtiofsd.x86_64 : Virtio-fs vhost-user device daemon (Rust version)
xhost.x86_64 : Manage hosts or users allowed to connect to the X server
root@localhost:/etc/yum.repos.d# dnf search nmap
No such command: search. Please use /bin/dnf --help
It could be a DNF plugin command, try: "dnf install 'dnf-command(search)'"
root@localhost:/etc/yum.repos.d# dnf search nmap
Last metadata expiration check: 3:31:52 ago on Sat 27 Sep 2025 05:57:58 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
root@localhost:/etc/yum.repos.d#
```

Рис. 3: Информация о пакете nmap

Установка и удаление пакетов

```
root@localhost:/etc/yum.repos.d -- sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab/ root@localhost:/etc/yum.repos.d -- sudo -i x spborisenkova@localhost:/usr/local/bin

nmap-ncat.x86_64 : Nmap's Netcat replacement
root@localhost:/etc/yum.repos.d# dnf install nmap
Last metadata expiration check: 3:32:11 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Dependencies resolved.
=====
Package                Architecture      Version           Size              Repository
=====
Installing:
nmap                    x86_64            4:7.92-3.el10    5.6 M             appstream

Transaction Summary
=====
Install 1 Package

Total download size: 5.6 M
Installed size: 24 M
Is this ok [y/N]: y
Downloading Packages:
nmap-7.92-3.el10.x86_64.rpm                                16 MB/s | 5.6 MB  00:00
-----
Total                                                    6.0 MB/s | 5.6 MB  00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :                                1/1
  Installing     : nmap-4:7.92-3.el10.x86_64      1/1
  Running scriptlet: nmap-4:7.92-3.el10.x86_64      1/1

Installed:
nmap-4:7.92-3.el10.x86_64

Complete!
root@localhost:/etc/yum.repos.d#
```

Рис. 4: Установка nmap

Установка и удаление пакетов

```
root@localhost:/etc/yum.repos.d - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/etc/yum.repos.d - sudo -i x spborisenkova@localhost:/usr/local/bin

Installing      : nmap-4:7.92-3.el10.x86_64                                1/1
Running scriptlet: nmap-4:7.92-3.el10.x86_64                                1/1

Installed:
nmap-4:7.92-3.el10.x86_64

Complete!
root@localhost:/etc/yum.repos.d# dnf remove nmap
Dependencies resolved.
=====
Package           Architecture      Version           Repository        Size
=====
Removing:
nmap               x86_64            4:7.92-3.el10     @appstream        24 M
=====

Transaction Summary
=====
Remove 1 Package

Freed space: 24 M
Is this ok [y/N]: y
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :                                1/1
  Erasing       : nmap-4:7.92-3.el10.x86_64        1/1
  Running scriptlet: nmap-4:7.92-3.el10.x86_64        1/1

Removed:
nmap-4:7.92-3.el10.x86_64

Complete!
root@localhost:/etc/yum.repos.d#
```

Рис. 5: Удаление nmap

```
root@localhost:/etc/yum.repos.d - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab/ root@localhost:/etc/yum.repos.d - sudo -i x spborisenkova@localhost:/usr/local/bin

Running transaction
Preparing      :                               1/1
Erasing       : nmap-4:7.92-3.el10.x86_64      1/1
Running scriptlet: nmap-4:7.92-3.el10.x86_64    1/1

Removed:
nmap-4:7.92-3.el10.x86_64

Complete!
root@localhost:/etc/yum.repos.d# dnf groups list
Last metadata expiration check: 3:34:01 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Available Environment Groups:
  Server
  Minimal Install
  Workstation
  Custom Operating System
  Virtualization Host
Installed Environment Groups:
  Server with GUI
Installed Groups:
  Container Management
  Headless Management
Available Groups:
  Legacy UNIX Compatibility
  Smart Card Support
  Console Internet Tools
  Development Tools
  .NET Development
  Graphical Administration Tools
  Network Servers
  RPM Development Tools
  Scientific Support
  Security Tools
  System Tools
root@localhost:/etc/yum.repos.d#
```

Рис. 6: Список и информация о группах пакетов



```
root@localhost:/etc/yum.repos.d -- sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/etc/yum.repos.d -- sudo -i x spborisenkova@localhost:/usr/local/bin

Complete!
root@localhost:/etc/yum.repos.d# dnf groups list
Last metadata expiration check: 3:35:10 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Available Environment Groups:
  Server
  Minimal Install
  Workstation
  Custom Operating System
  Virtualization Host
Installed Environment Groups:
  Server with GUI
Installed Groups:
  Container Management
  Headless Management
Available Groups:
  Legacy UNIX Compatibility
  Smart Card Support
  Console Internet Tools
  Development Tools
  .NET Development
  Graphical Administration Tools
  Network Servers
  RPM Development Tools
  Scientific Support
  Security Tools
  System Tools
root@localhost:/etc/yum.repos.d# dnf groupremove "RPM Development Tools"
Warning: Module or Group 'RPM Development Tools' is not installed.
Dependencies resolved.
Nothing to do.
Complete!
root@localhost:/etc/yum.repos.d# dnf history undo
No transaction ID or package name given.
Error: No transaction ID or package name given.
root@localhost:/etc/yum.repos.d#
```

Рис. 7: Удаление группы и восстановление из истории

Использование rpm (lynx)

```
root@localhost:/etc/yum.repos.d -- sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/etc/yum.repos.d -- sudo -i x spborisenkova@localhost:/usr/local/bin

Dependencies resolved.
Nothing to do.
Complete!
root@localhost:/etc/yum.repos.d# dnf history undo
No transaction ID or package name given.
Error: No transaction ID or package name given.
root@localhost:/etc/yum.repos.d# dnf list lynx
Last metadata expiration check: 3:35:58 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Available Packages
lynx.x86_64                                2.9.0-6.el10                                appstream

root@localhost:/etc/yum.repos.d# dnf install lynx --downloadonly
Last metadata expiration check: 3:36:10 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Dependencies resolved.
=====
Package                                Architecture      Version           Repository        Size
=====
Installing:
lynx                                   x86_64            2.9.0-6.el10     appstream         1.6 M
=====

Transaction Summary
=====
Install 1 Package

Total download size: 1.6 M
Installed size: 6.0 M
DNF will only download packages for the transaction.
Is this ok [y/N]: y
Downloading Packages:
lynx-2.9.0-6.el10.x86_64.rpm                                                    3.6 MB/s | 1.6 MB   00:00
-----
Total                                                                           2.2 MB/s | 1.6 MB   00:00
Complete!
The downloaded packages were saved in cache until the next successful transaction.
You can remove cached packages by executing 'dnf clean packages'.
root@localhost:/etc/yum.repos.d#
```

Рис. 8: Загрузка пакета lynx

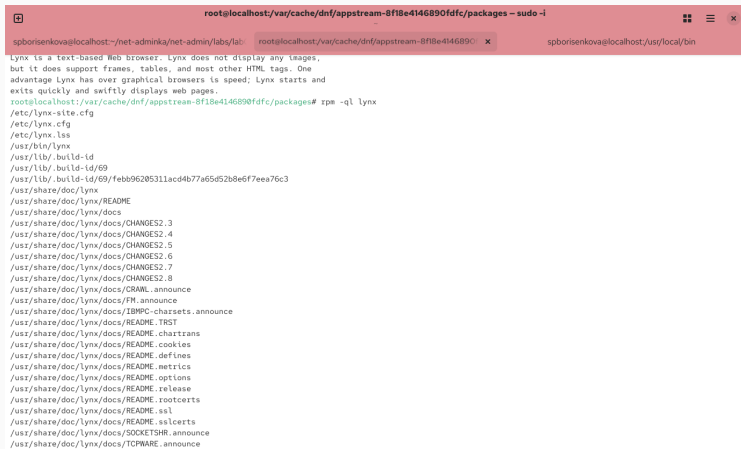
Использование rpm (lynx)

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages x spborisenkova@localhost:/usr/local/bin

root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# cd packages/
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# ls
lynx-2.9.0-6.el10.x86_64.rpm
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -Uhv lynx-2.9.0-6.el10.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:lynx-2.9.0-6.el10 ##### [100%]
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which lynx
/bin/lynx
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qf $(which lynx)
lynx-2.9.0-6.el10.x86_64
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi lynx
Name       : lynx
Version    : 2.9.0
Release    : 6.el10
Architecture: x86_64
Install Date: Sat 27 Sep 2025 09:36:08 PM MSK
Group      : Unspecified
Size       : 6283241
License    : GPL-2.0-only
Signature  : RSA/SHA256, Thu 22 May 2025 11:34:29 PM MSK, Key ID 5b106c736feddc85
Source RPM : lynx-2.9.0-6.el10.src.rpm
Build Date : Fri 01 Nov 2024 01:03:33 PM MSK
Build Host : pb-913aa2bb-e2a2-4928-a48c-b613e15933c9-b-x86-64
Packager   : Rocky Linux Build System (Peridot) <relog@rockylinux.org>
Vendor     : Rocky Enterprise Software Foundation
URL        : https://lynx.invisible-island.net/
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@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 9: Установка и проверка lynx

Изучение документации (lynx)



```
root@localhost:~# rpm -ql lynx
/etc/lynx-site.cfg
/etc/lynx.cfg
/etc/lynx.lss
/usr/bin/lynx
/usr/lib/.build-id
/usr/lib/.build-id/69
/usr/lib/.build-id/69/febb96205311acd4b77a65d52b8e6f7eea76c3
/usr/share/doc/lynx
/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/IBMPD-charsets.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.netrics
/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/README.SOCKETSHR.announce
/usr/share/doc/lynx/docs/TCPWARE.announce
```

Рис. 10: Список файлов пакета lynx

Изучение документации (lynx)

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890dfdc/packages - sudo -i
```

```
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890dfdc/packages# x  
/usr/share/locale/zh_CN/LC_MESSAGES/Lynx.mo  
/usr/share/locale/zh_TW/LC_MESSAGES/Lynx.mo  
/usr/share/man/man1/Lynx.1.gz  
root@localhost:/var/cache/dnf/appstream-8f18e4146890dfdc/packages# rpm -qd lynx  
/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-charsets.announce  
/usr/share/doc/Lynx/docs/README.TRST  
/usr/share/doc/Lynx/docs/README.charttrans  
/usr/share/doc/Lynx/docs/README.cookies  
/usr/share/doc/Lynx/docs/README.defines  
/usr/share/doc/Lynx/docs/README.netrics  
/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  
/usr/share/doc/Lynx/docs/VMSHAITS.announce  
/usr/share/doc/Lynx/docs/djgpp.key  
/usr/share/doc/Lynx/docs/pdcurses.key  
/usr/share/doc/Lynx/docs/slang.key  
/usr/share/doc/Lynx/docs/win-386.announce  
/usr/share/doc/Lynx/Lynx.hlp  
/usr/share/doc/Lynx/Lynx_help/Lynx_users_guide.html  
/usr/share/doc/Lynx/Lynx_help/about_Lynx.html  
/usr/share/doc/Lynx/Lynx_help/help_files.txt  
/usr/share/doc/Lynx/Lynx_help/keystrokes/alt_edit_help.html
```

Рис. 11: Документация пакета lynx

Запуск и удаление lynx

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890: x spborisenkova@localhost:/usr/local/bin

LYNX(1)                                     Lynx - the text web browser                                     LYNX(1)

NAME
    lynx - a general purpose distributed information browser for the World Wide Web

SYNOPSIS
    lynx [options] [optional paths or URLs]

    lynx [options] [path or URL] -get_data
    data
    --

    lynx [options] [path or URL] -post_data
    data
    --

    Use "lynx -help" to display a complete list of current options.

DESCRIPTION
    lynx is a fully-featured World Wide Web (WWW) client for users running cursor-addressable, character-cell display devices (e.g., vt100 terminals, vt100 emulators running on Windows or any POSIX platform, or any other "curses-oriented" display). It will display hypertext markup language (HTML) documents containing links to files residing on the local system, as well as files residing on remote systems running Gopher, HTTP, FTP, WAIS, and NNTP servers.

    lynx has been ported to many systems, including all variants of Unix, Windows (since Windows 95), DOS DJGPP and OS/2, as well as VMS and OS/390.

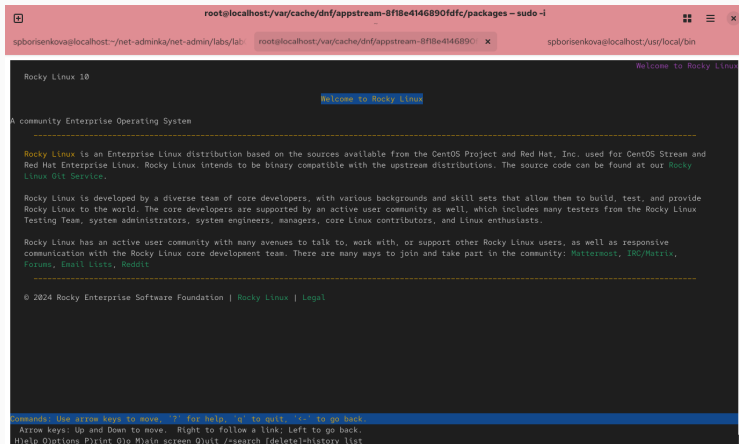
    lynx can be used to access information on the World Wide Web, or to build information systems intended primarily for local access. For example, lynx has been used to build several Campus Wide Information Systems (CWIS). In addition, lynx can be used to build systems isolated within a single LAN.

OPTIONS
    At start up, lynx will load any local file or remote URL specified at the command line. For help with URLs, press "?" or "H" while running lynx. Then follow the link titled, "Help on URLs."

Manual page lynx(1) line 1 (press h for help or q to quit)
```

Рис. 12: Запуск браузера lynx

Запуск и удаление lynx



```
root@localhost: /var/cache/dnf/appstream-8f18e4146890dfdc/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost: /var/cache/dnf/appstream-8f18e4146890dfdc/packages - sudo -i spborisenkova@localhost: /usr/local/bin

Rocky Linux 10
Welcome to Rocky Linux
A community Enterprise Operating System

Rocky Linux is an Enterprise Linux distribution based on the sources available from the CentOS Project and Red Hat, Inc. used for CentOS Stream and Red Hat Enterprise Linux. Rocky Linux intends to be binary compatible with the upstream distributions. The source code can be found at our Rocky Linux Git Service.

Rocky Linux is developed by a diverse team of core developers, with various backgrounds and skill sets that allow them to build, test, and provide Rocky Linux to the world. The core developers are supported by an active user community as well, which includes many testers from the Rocky Linux Testing Team, system administrators, system engineers, managers, core Linux contributors, and Linux enthusiasts.

Rocky Linux has an active user community with many avenues to talk to, work with, or support other Rocky Linux users, as well as responsive communication with the Rocky Linux core development team. There are many ways to join and take part in the community: Mattermost, IRC/Matrix, Forums, Email Lists, Reddit.

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Commands: Use arrow keys to move, '?' for help, 'q' to quit, 'b-' to go back.
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint Q)uit M)ain screen Q)uit /*search [delete]=history list
```

Рис. 13: Удаление lynx

Использование rpm (dnsmasq)

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# sudo -i
```

```
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab1$ root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# x spborisenkova@localhost:/usr/local/bin$
```

```
/usr/share/doc/lynx/test/bad.html.html  
/usr/share/doc/lynx/test/c1.html  
/usr/share/doc/lynx/test/circle.html  
/usr/share/doc/lynx/test/cp-1252.html  
/usr/share/doc/lynx/test/cp-1252a.html  
/usr/share/doc/lynx/test/idna-tr46.html  
/usr/share/doc/lynx/test/image.jpg  
/usr/share/doc/lynx/test/iso-8859-1.html  
/usr/share/doc/lynx/test/iso-8859-1a.html  
/usr/share/doc/lynx/test/iso-8859-2.html  
/usr/share/doc/lynx/test/iso-8859-2a.html  
/usr/share/doc/lynx/test/koi8-r.html  
/usr/share/doc/lynx/test/nobody  
/usr/share/doc/lynx/test/quikbrown.html  
/usr/share/doc/lynx/test/rw8bit.html  
/usr/share/doc/lynx/test/sgml.html  
/usr/share/doc/lynx/test/spaces.html  
/usr/share/doc/lynx/test/special_urls.html  
/usr/share/doc/lynx/test/square.html  
/usr/share/doc/lynx/test/tabtest.html  
/usr/share/doc/lynx/test/tags.html  
/usr/share/doc/lynx/test/test-styles.html  
/usr/share/doc/lynx/test/triangle.html  
/usr/share/doc/lynx/test/unicode.html  
/usr/share/doc/lynx/test/utf-8-demo.html  
/usr/share/man/man1/lynx.1.gz  
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# man lynx  
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# lynx  
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -q -lynx  
rpm: -lynx: unknown option  
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qc lynx  
/etc/lynx-site.cfg  
/etc/lynx.cfg  
/etc/lynx.lss  
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 14: Установка и проверка dnsmasq

Использование rpm (dnsmasq)

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages x spborisenkova@localhost:/usr/local/bin

/usr/share/doc/lynx/test/nobody
/usr/share/doc/lynx/test/quickbrown.html
/usr/share/doc/lynx/test/raw8bit.html
/usr/share/doc/lynx/test/sgml.html
/usr/share/doc/lynx/test/spaces.html
/usr/share/doc/lynx/test/special_urls.html
/usr/share/doc/lynx/test/square.html
/usr/share/doc/lynx/test/tabtest.html
/usr/share/doc/lynx/test/tags.html
/usr/share/doc/lynx/test/test-styles.html
/usr/share/doc/lynx/test/triangle.html
/usr/share/doc/lynx/test/unicode.html
/usr/share/doc/lynx/test/utf-8-demo.html
/usr/share/man/man1/lynx.1.gz
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# man lynx
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# lynx
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm qc -lynx
rpm: -lynx: unknown option
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qc lynx
/etc/lynx-site.cfg
/etc/lynx.cfg
/etc/lynx.lss
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# dnf list dnsmasq
Last metadata expiration check: 3:40:46 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Installed Packages
dnsmasq.x86_64                                2.90-4.el10                                @appstream
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# dnf install dnsmasq
Last metadata expiration check: 3:40:58 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Package dnsmasq-2.90-4.el10.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which dnsmasq
/sbin/dnsmasq
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 15: Информация о пакете dnsmasq

Документация и конфигурация dnsmasq

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab/ root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages x spborisenkova@localhost:/usr/local/bin

Last metadata expiration check: 3:40:58 ago on Sat 27 Sep 2025 05:57:58 PM MSK.
Package dnsmasq-2.90-4.el10.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which dnsmasq
/sbin/dnsmasq
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi dnsmasq
Name       : dnsmasq
Version    : 2.90
Release    : 4.el10
Architecture: x86_64
Install Date: Thu 04 Sep 2025 10:20:25 AM MSK
Group      : Unspecified
Size       : 794976
License    : GPL-2.0-only OR GPL-3.0-only
Signature  : RSA/SHA256, Thu 22 May 2025 03:17:11 AM MSK, Key ID 5b106c736fedfc85
Source RPM : dnsmasq-2.90-4.el10.src.rpm
Build Date : Thu 31 Oct 2024 02:46:28 PM MSK
Build Host : pb-6df20f45-04b4-477b-bded-5a041ce1b59d-b-x86-64
Packager   : Rocky Linux Build System (Peridot) <releng@rockylinux.org>
Vendor     : Rocky Enterprise Software Foundation
VCS        : git:git://thekelleys.org.uk/dnsmasq.git
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
static and dynamic DHCP leases and BOOTP for network booting of disk-less
machines.
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 16: Список файлов и документации dnsmasq

Документация и конфигурация dnsmasq

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages x spborisenkova@localhost:/usr/local/bin

with DHCP-allocated addresses to appear in the DNS with names configured
either in each host or in a central configuration file. Dnsmasq supports
static and dynamic DHCP leases and BOOTP for network booting of disk-less
machines.
root@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -ql dnsmasq
/etc/dbus-1/system.d/dnsmasq.conf
/etc/dnsmasq.conf
/etc/dnsmasq.d
/usr/lib/.build-id
/usr/lib/.build-id/c9
/usr/lib/.build-id/c9/a4bb4576977dbef150b40955510f869d246b34
/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@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# 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@localhost:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 17: Руководство dnsmasq

Документация и конфигурация dnsmasq

```
root@localhost:/var/cache/dnf/appstream-8f18e4146890dfdc/packages - sudo -i
spborisenkova@localhost:~/net-adminka/net-admin/labs/lab: root@localhost:/var/cache/dnf/appstream-8f18e4146890dfdc/packages x spborisenkova@localhost:/usr/local/bin

DNMASQ(8)                                     System Manager's Manual                                     DNMASQ(8)

NAME
  dnsmasq - A lightweight DHCP and caching DNS server.

SYNOPSIS
  dnsmasq [OPTION]...

DESCRIPTION
  dnsmasq is a lightweight DNS, TFTP, PXE, router advertisement and DHCP server. It is intended to provide coupled DNS and DHCP service to a LAN.

  Dnsmasq accepts DNS queries and either answers them from a small, local, cache or forwards them to a real, recursive, DNS server. It loads the contents of /etc/hosts so that local hostnames which do not appear in the global DNS can be resolved and also answers DNS queries for DHCP configured hosts. It can also act as the authoritative DNS server for one or more domains, allowing local names to appear in the global DNS. It can be configured to do DNSSEC validation.

  The dnsmasq DHCP server supports static address assignments and multiple networks. It automatically sends a sensible default set of DHCP options, and can be configured to send any desired set of DHCP options, including vendor-encapsulated options. It includes a secure, read-only, TFTP server to allow net/PXE boot of DHCP hosts and also supports BOOTP. The PXE support is full featured, and includes a proxy mode which supplies PXE information to clients whilst DHCP address allocation is done by another server.

  The dnsmasq DHCPv6 server provides the same set of features as the DHCPv4 server, and in addition, it includes router advertisements and a neat feature which allows naming for clients which use DHCPv4 and stateless autoconfiguration only for IPv6 configuration. There is support for doing address allocation (both DHCPv6 and RA) from subnets which are dynamically delegated via DHCPv6 prefix delegation.

  Dnsmasq is coded with small embedded systems in mind. It aims for the smallest possible memory footprint compatible with the supported functions, and allows unneeded functions to be omitted from the compiled binary.

OPTIONS
  Note that in general missing parameters are allowed and switch off functions, for instance "--pid-file" disables writing a PID file. On BSD, unless the GNU getopt library is linked, the long form of the options does not work on the command line; it is still recognised in the configuration file.

  --test Read and syntax check configuration file(s). Exit with code 0 if all is OK, or a non-zero code otherwise. Do not start up dnsmasq.
Manual page dnsmasq(8) line 1 (press h for help or q to quit)
```

Рис. 18: Конфигурация и скрипты dnsmasq

Контрольные вопросы

- `rpm -qf /usr/sbin/useradd` — поиск пакета по файлу
- `dnf group list`, `dnf group info` — работа с группами
- `rpm -Uvh package.rpm` — установка rpm из файла
- `rpm -qp --scripts package.rpm` — просмотр скриптов
- `rpm -qd package_name` — документация пакета
- `rpm -qf /path/to/file` — поиск пакета по файлу

Итоги работы

В ходе работы были изучены команды **dnf** и **rpm**.

Выполнены операции поиска, установки, удаления и анализа пакетов, а также работа с группами пакетов и документацией.