

# Презентация по лабораторной работе №4

Работа с программными пакетами

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18 сентября 2025

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## Цели и задачи работы

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Получить навыки работы с репозиториями и менеджерами пакетов в Linux.

## Ход выполнения работы

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```
root@aradzhigalieva: /home/aradzhigalieva#  
root@aradzhigalieva:/home/aradzhigalieva# cd /etc/yum.repos.d/  
root@aradzhigalieva:/etc/yum.repos.d# ls  
rocky-addons.repo rocky-devel.repo rocky-extras.repo rocky.repo  
root@aradzhigalieva:/etc/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  
countme=1  
metadata_expire=6h  
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-10  
  
[extras-debuginfo]  
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
```

Рис. 1: Просмотр содержимого репозитория

## Изучение репозиториев

```
root@aradzhigalieva:/etc/yum.repos.d# dnf search user
Rocky Linux 10 - BaseOS                                11 MB/s | 16 MB    00:01
Rocky Linux 10 - AppStream                             3.6 MB/s | 2.1 MB  00:00
Rocky Linux 10 - Extras                                8.7 kB/s | 4.9 kB  00:00
===== 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
accountsservice.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
```

Рис. 2: Список подключённых репозиториев

```
root@aradzhigalieva:/etc/yum.repos.d# dnf search nmap
Last metadata expiration check: 0:00:19 ago on Mon 15 Sep 2025 08:11:09 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@aradzhigalieva:/etc/yum.repos.d# dnf info nmap
Last metadata expiration check: 0:00:25 ago on Mon 15 Sep 2025 08:11:09 PM MSK.
Available Packages
Name           : nmap
Epoch         : 4
Version        : 7.92
Release        : 3.el10
Architecture   : x86_64
Size           : 5.6 M
Source         : nmap-7.92-3.el10.src.rpm
Repository     : appstream
Summary        : Network exploration tool and security scanner
URL            : http://nmap.org/
License        : LicenseRef-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 ncat), a utility
                  : for comparing scan results (ndiff), and a packet generation and response
                  : analysis tool (nping).
```

## Установка и удаление пакета nmap

```
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@aradzhigalieva:/etc/yum.repos.d# dnf remove nmap\*
Dependencies resolved.
=====
Package                        Architecture      Version           Size              Repository
=====
Removing:
  nmap-ncat                   x86_64            4:7.92-3.el10    470 k             @AppStream

Transaction Summary
=====
```

Рис. 4: Информация и установка nmap



## Удаление пакета nmap

```
root@aradzghigaliev: /etc/yum.repos.d# dnf groups list
Last metadata expiration check: 0:02:40 ago on Mon 15 Sep 2025 08:11:09 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
  Smart Card Support
  Console Internet Tools
  .NET Development
  Graphical Administration Tools
  Network Servers
  RPM Development Tools
  Scientific Support
  Security Tools
  System Tools
root@aradzghigaliev: /etc/yum.repos.d#
```

```
root@aradzhigalieva:/etc/yum.repos.d# dnf groups info "RPM Development Tools"
Last metadata expiration check: 0:03:20 ago on Mon 15 Sep 2025 08:11:09 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
root@aradzhigalieva:/etc/yum.repos.d# dnf groupinstall "RPM Development Tools"
Last metadata expiration check: 0:03:29 ago on Mon 15 Sep 2025 08:11:09 PM MSK.
Dependencies resolved.
```

```
=====
Package                                Architecture      Version           Repository
=====
Installing group/module packages:
  rpmdevtools                          noarch            9.6-9.el10        appstre:
Installing dependencies:
  python3-argcomplete                  noarch            3.2.2-4.el10      appstre:
Installing Groups:
  RPM Development Tools

Transaction Summary
=====
Install 2 Packages

Total download size: 175 k
```

```
root@aradzhigalieva:/etc/yum.repos.d# dnf groupremove "RPM Development Tools"
Dependencies resolved.
=====
Package                                Architecture      Version           Repository        Size
=====
Removing:
rpmdevtools                            noarch            9.6-9.el10        @appstream        198 k
Removing unused dependencies:
python3-argcomplete                     noarch            3.2.2-4.el10      @appstream        274 k
Removing Groups:
RPM Development Tools

Transaction Summary
=====
Remove 2 Packages

Freed space: 472 k
Is this ok [y/N]: y
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
```

Рис. 7: Установка группы RPM Development Tools

## Работа с историей dnf

```
root@aradzhigalieva:/etc/yum.repos.d# dnf history
ID      | Command line                                | Date and time | Action(s) | Altered
-----|-----|-----|-----|-----
 6 | groupremove RPM Development Tools          | 2025-09-15 20:15 | Removed   | 3
 5 | groupinstall RPM Development Tools          | 2025-09-15 20:14 | Install   | 3
 4 | remove nmap*                               | 2025-09-15 20:13 | Removed   | 1
 3 | remove nmap                                | 2025-09-15 20:13 | Removed   | 1
 2 | install nmap                               | 2025-09-15 20:12 | Install   | 1 <
 1 |                                             | 2025-09-05 10:48 | Install   | 1373 >E

root@aradzhigalieva:/etc/yum.repos.d# dnf history undo 6
Last metadata expiration check: 0:04:35 ago on Mon 15 Sep 2025 08:11:09 PM MSK.
Dependencies resolved.
=====
Package                        Architecture      Version           Repository        Size
=====
Installing group/module packages:
  xpmdevtools                  noarch            9.6-9.el10        appstream         87 k
Installing dependencies:
  python3-argcomplete         noarch            3.2.2-4.el10      appstream         88 k
Installing Groups:
  RPM Development Tools

Transaction Summary
=====
Install 2 Packages

Total download size: 175 k
Installed size: 472 k
Is this ok [y/N]: y
Downloading Packages:
```

Рис. 8: История использования dnf

## Установка пакета lynx через rpm

```
root@aradzhigalieva:/etc/yum/repos.d# dnf list lynx
Last metadata expiration check: 0:06:01 ago on Mon 15 Sep 2025 08:11:09 PM MSK.
Available Packages
lynx.x86_64                                2.9.0-6.el10                                appstream
root@aradzhigalieva:/etc/yum/repos.d# dnf install lynx --downloadonly
Last metadata expiration check: 0:06:13 ago on Mon 15 Sep 2025 08:11:09 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                                21 MB/s | 1.6 MB    00:00
-----
Total                                                    1.4 MB/s | 1.6 MB    00:01
Complete!

The downloaded packages were saved in cache until the next successful transaction.
You can remove cached packages by executing 'dnf clean packages'.
root@aradzhigalieva:/etc/yum/repos.d#
```

Рис. 9: Загрузка пакета lynx

## Установка пакета lynx через rpm

```
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -Uvh lynx-2.9.0-6.el10.x86_64.rpm
Verifying... ##### [100%]
Preparing... ##### [100%]
Updating / installing...
 1:lynx-2.9.0-6.el10 ##### [100%]
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which lynx
/usr/bin/lynx
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qf $(which lynx)
lynx-2.9.0-6.el10.x86_64
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi lynx
Name           : lynx
Version        : 2.9.0
Release        : 6.el10
Architecture   : x86_64
Install Date   : Mon 15 Sep 2025 08:22:40 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 5b106c736fedfc85
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) <releng@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@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

## Проверка информации о lynx

```
root@aradzhigalieva: /var/cache/dnf/appstream-8f18e4146890fdcf/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/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/IBMPCC-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.metrics
/usr/share/doc/lynx/docs/README.options
/usr/share/doc/lynx/docs/README.release
```

## Просмотр содержимого lynx

```
root@aradzhihalieva: /var/cache/dnf/appstream-8f18e4146890fd9c/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/IBMPC-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.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
/usr/share/doc/lynx/docs/VMSWAIS.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
```



```
aradzhigalieva@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890dfdc/packages – man lynx
/var/cache/dnf/appstream-8f18e4146890dfdc/packages

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.

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

# Запуск программы lynx

```
aradzhigalieva@aradzhigalieva:/var/cache/dnf/appstream-8f18e41468  aradzhigalieva@aradzhigalieva:/var/cache/dnf/appstream-8f18e41468 x
```

```
Rocky Linux 10Welcome to Rocky Linux
```

```

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, '<-' 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 G)o M)ain screen Q)uit /=search [delete]=history list

```

## Удаление пакета lynx

```
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# man lynx  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qc lynx  
/etc/lynx-site.cfg  
/etc/lynx.cfg  
/etc/lynx.lss  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -q --scripts lynx  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -e lynx  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# ls  
lynx-2.9.0-6.el10.x86_64.rpm  
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# █
```

Рис. 15: Удаление lynx

## Установка пакета dnsmasq

```
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# dnf list dnsmasq
Last metadata expiration check: 0:04:12 ago on Mon 15 Sep 2025 08:22:06 PM MSK.
Installed Packages
dnsmasq.x86_64                                2.90-4.el10                                @AppStream
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# dnf install dnsmasq
Last metadata expiration check: 0:04:22 ago on Mon 15 Sep 2025 08:22:06 PM MSK.
Package dnsmasq-2.90-4.el10.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which dnsmasq
/usr/sbin/dnsmasq
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qf $(which dnsmasq)
dnsmasq-2.90-4.el10.x86_64
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi $(which dnsmasq)
package /usr/sbin/dnsmasq is not installed
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi dnsmasq
Name       : dnsmasq
Version    : 2.90
Release    : 4.el10
Architecture: x86_64
Install Date: Fri 05 Sep 2025 10:50:15 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
```

Рис. 16: Информация о пакете dnsmasq

## Просмотр содержимого dnsmasq

```
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fd9c/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@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fd9c/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@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fd9c/packages#
```

DNSMASQ(8)

System Manager's Manual

DNSMASQ(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 bi-

Manual page dnsmasq(8) line 1 (press h for help or q to quit)

# Конфигурационные файлы и скрипты dnsmasq

```
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qc dnsmasq
/etc/dbus-1/system.d/dnsmasq.conf
/etc/dnsmasq.conf
root@aradzhigalieva:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# 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 '/usr/sbin/nologin' -c 'Dnsmasq DHCP and 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):

if [ $1 -eq 0 ] && [ -x "/usr/lib/systemd/systemd-update-helper" ]; then
    # Package removal, not upgrade
    /usr/lib/systemd/systemd-update-helper remove-system-units dnsmasq.service || :
fi
postuninstall scriptlet (using /bin/sh):
```

Рис. 19: Конфигурационные файлы и скрипты

## Вывод

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В ходе выполнения лабораторной работы я закрепила навыки управления пакетами в Linux с помощью инструментов dnf и rpm.

Я научилась подключать и изучать репозитории, искать и устанавливать пакеты, управлять групповыми наборами и просматривать историю изменений.

Кроме того, я освоила исследование содержимого пакетов rpm: документацию, конфигурационные файлы и установочные скрипты.

Полученный опыт важен для администрирования Linux и контроля за установленным программным обеспечением.