

Лабораторная работа №4

Работа с программными пакетами

Сулейм Гамбердов

17 сентября 2025

Российский университет дружбы народов, Москва, Россия

Цель работы

Получить навыки работы с репозиториями и менеджерами пакетов в Linux.

Ход выполнения работы

```
root@sigamberdov:/home/sigamberdov# cd /etc/yum.repos.d/
root@sigamberdov:/etc/yum.repos.d# ls
rocky-addons.repo rocky-devel.repo rocky-extras.repo rocky.repo
root@sigamberdov:/etc/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-$releasever$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]
```

Список репозиториев

```
root@sigamberdov:/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@sigamberdov:/etc/yum.repos.d# dnf search user
Last metadata expiration check: 0:38:38 ago on Wed 17 Sep 2025 01:40:21 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
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
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
criu.x86_64 : Tool for Checkpoint/Restore in User-space
```

```
root@sigamberdov:/etc/yum.repos.d#  
root@sigamberdov:/etc/yum.repos.d# dnf search nmap  
Last metadata expiration check: 0:39:00 ago on Wed 17 Sep 2025 01:40:21 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@sigamberdov:/etc/yum.repos.d# dnf info nmap  
Last metadata expiration check: 0:39:10 ago on Wed 17 Sep 2025 01:40:21 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).  
  
root@sigamberdov:/etc/yum.repos.d#
```

Установка и удаление nmap

```
Total                                                                 8.1 MB/s | 5.6 MB      00:00
Rocky Linux 10 - AppStream                                           1.6 MB/s | 1.6 kB      00:00
Importing GPG key 0x6FEDFC85:
  Userid      : "Release Engineering (Rocky Linux 10) <releng@rockylinux.org>"
  Fingerprint: FC22 6859 C086 0BF0 DDB9 5B08 5B10 6C73 6FED FC85
  From        : /etc/pki/rpm-gpg/RPM-GPG-KEY-Rocky-10
Is this ok [y/N]: y
Key imported successfully
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@sigamberdov:/etc/yum.repos.d# dnf install nmap*
Last metadata expiration check: 0:39:51 ago on Wed 17 Sep 2025 01:40:21 PM MSK.
Package nmap-4:7.92-3.el10.x86_64 is already installed.
Package nmap-ncat-4:7.92-3.el10.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
root@sigamberdov:/etc/yum.repos.d# █
```


Установка и удаление nmap

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

Transaction Summary
=====
Remove 1 Package

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

Рис. 5: Удаление пакета nmap

```
root@sigamberdov:/etc/yum.repos.d#  
root@sigamberdov:/etc/yum.repos.d# dnf groups list  
Last metadata expiration check: 0:40:49 ago on Wed 17 Sep 2025 01:40:21 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@sigamberdov:/etc/yum.repos.d#
```

```
root@sigamberdov:/etc/yum.repos.d# dnf groups info "RPM Development Tools"
Last metadata expiration check: 0:42:29 ago on Wed 17 Sep 2025 01:40:21 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@sigamberdov:/etc/yum.repos.d# dnf groupinstall "RPM Development Tools"
Last metadata expiration check: 0:42:42 ago on Wed 17 Sep 2025 01:40:21 PM MSK.
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
Installing group/module packages:				
rpmdevtools	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

Работа с группами пакетов

```
root@sigamberdov:/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.
Running transaction
  Preparing      :                                1/1
  Erasing       : rpmdevtools-9.6-9.el10.noarch  1/2
  Erasing       : python3-argcomplete-3.2.2-4.el10.noarch 2/2
  Running scriptlet: python3-argcomplete-3.2.2-4.el10.noarch 2/2

Removed:
  python3-argcomplete-3.2.2-4.el10.noarch      rpmdevtools-9.6-9.el10.noarch

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

История транзакций dnf

```
root@sigamberdov:/etc/yum.repos.d# dnf history
```

ID	Command line	Date and time	Action(s)	Altered
6	groupremove RPM Development Tools	2025-09-17 14:23	Removed	3
5	groupinstall RPM Development Tools	2025-09-17 14:23	Install	3
4	remove nmap*	2025-09-17 14:20	Removed	1
3	remove nmap	2025-09-17 14:20	Removed	1
2	install nmap	2025-09-17 14:19	Install	1 <
1		2025-09-17 12:58	Install	1373 >E

```
root@sigamberdov:/etc/yum.repos.d# dnf history undo 6
```

Last metadata expiration check: 0:44:31 ago on Wed 17 Sep 2025 01:40:21 PM MSK.
Dependencies resolved.

Package	Architecture	Version	Repository	Size
Installing group/module packages:				
rpmdevtools	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:

(1/2): python3-argcomplete-3.2.2-4.el10.noarch.rpm	554 kB/s 88 kB	00:00
(2/2): rpmdevtools-9.6-9.el10.noarch.rpm	519 kB/s 87 kB	00:00
Total	392 kB/s 175 kB	00:00

```
root@sigamberdov:/etc/yum.repos.d# dnf list lynx
Last metadata expiration check: 0:45:26 ago on Wed 17 Sep 2025 01:40:21 PM MSK.
Available Packages
lynx.x86_64 2.9.0-6.el10 appstream
root@sigamberdov:/etc/yum.repos.d# dnf install lynx --downloadonly
Last metadata expiration check: 0:45:40 ago on Wed 17 Sep 2025 01:40:21 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 3.4 MB/s | 1.6 MB 00:00
-----
Total 2.0 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@sigamberdov:/etc/yum.repos.d#
```

```
root@sigamberdov:/etc/yum.repos.d# find /var/cache/dnf/ -name lynx*
/var/cache/dnf/appstream-8f18e4146890fdcf/packages/lynx-2.9.0-6.el10.x86_64.rpm
root@sigamberdov:/etc/yum.repos.d# cd /var/cache/dnf/appstream-8f18e4146890fdcf/packages/
root@sigamberdov:/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@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which lynx
/usr/bin/lynx
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qf $(which lynx)
lynx-2.9.0-6.el10.x86_64
```

Рис. 11: Поиск и установка пакета lynx

Проверка и информация о lynx

```
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi lynx
Name           : lynx
Version        : 2.9.0
Release        : 6.el10
Architecture   : x86_64
Install Date   : Wed 17 Sep 2025 02:26:51 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@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

Рис. 12: Проверка принадлежности файла пакету

Проверка и информация о lynx

```
root@stgamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/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/IBMPG-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/SHR.announce
/usr/share/doc/lynx/docs/TCPWARE.announce
/usr/share/doc/lynx/docs/VMSWAIS.announce
/usr/share/doc/lynx/docs/djgpp.key
```

Содержимое и документация lynx

```
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fdcf/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/IBMPG-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/SHR.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  
/usr/share/doc/lynx/lynx_help/about lynx.html
```

```
sigamberdov@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages -- man l...  
/var/cache/dnf/appstream-8f18e4146890fdcf/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)
```

Конфигурация и запуск lynx

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

sigamberdov@sigamberdov:/var/cache/dnf/appstream-8f18e41: sigamberdov@sigamberdov:/var/cache/dnf/appstream-8f18e41: x

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

-----

© 2024 Rocky Enterprise Software Foundation | Rocky Linux | Legal

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
```

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

Рис. 17: Конфигурационные файлы lynx

Установка и проверка файла


```
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages#  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages# dnf list dnsmasq  
Last metadata expiration check: 0:51:55 ago on Wed 17 Sep 2025 01:40:21 PM MSK.  
Installed Packages  
dnsmasq.x86_64                                2.90-4.el10                                @AppStream  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages# dnf install dnsmasq  
Last metadata expiration check: 0:52:08 ago on Wed 17 Sep 2025 01:40:21 PM MSK.  
Package dnsmasq-2.90-4.el10.x86_64 is already installed.  
Dependencies resolved.  
Nothing to do.  
Complete!  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages# which dnsmasq  
/usr/sbin/dnsmasq  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages#  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages# rpm -qf $(which dnsmasq)  
dnsmasq-2.90-4.el10.x86_64  
root@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fd9c/packages# █
```

Рис. 18: Установка и проверка расположения исполняемого файла

Информация о пакете

```
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qi dnsmasq  
Name       : dnsmasq  
Version    : 2.90  
Release    : 4.el10  
Architecture: x86_64  
Install Date: Wed 17 Sep 2025 12:59:39 PM 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@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

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

```
sigamberdov@sigamberdov:/var/cache/dnf/appstream-8f18e4146890fdcf/packages - man d...
/var/cache/dnf/appstream-8f18e4146890fdcf/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 automati-
    cally 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 fea-
    tured, and includes a proxy mode which supplies PXE information to clients whilst DHCP address al-
    location 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 ad-
    dress allocation (both DHCPv6 and RA) from subnets which are dynamically delegated via DHCPv6 pre-
    fix 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

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

Конфигурационные файлы dnsmasq

```
root@sigamberdov: /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@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fd9c/packages# man dnsmasq
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fd9c/packages#
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fd9c/packages# rpm -qc dnsmasq
/etc/dbus-1/system.d/dnsmasq.conf
/etc/dnsmasq.conf
root@sigamberdov: /var/cache/dnf/appstream-8f18e4146890fd9c/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' 'd
nsmasq' || :
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
```

Итоги работы

В ходе работы были изучены приёмы управления пакетами в Linux с помощью **dnf** и **rpm**: установка, удаление, работа с группами, проверка документации и анализ содержимого пакетов.