

# Лабораторная работа №4

Работа с программными пакетами

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## Цель работы

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Получение навыков работы с репозиториями и менеджерами пакетов в Linux.

## Ход выполнения работы

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- Проверка репозиторий в `/etc/yum.repos.d`
- Просмотр списка доступных репозиторий `dnf repolist`
- Поиск пакетов по ключевому слову `dnf search user`

```
root@ehatamov:/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@ehatamov:/etc/yum.repos.d# dnf search user
Last metadata expiration check: 0:30:22 ago on Thu 18 Sep 2025 02:50:21 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-storaged.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
```

## Установка и удаление пакета nmap

- Поиск и информация о пакете `dnf search nmap`, `dnf info nmap`
- Установка:
  - `dnf install nmap`
  - `dnf install nmap*`
- Удаление:
  - `dnf remove nmap`
  - `dnf remove nmap*`

```
Total                                                                 5.9 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
```

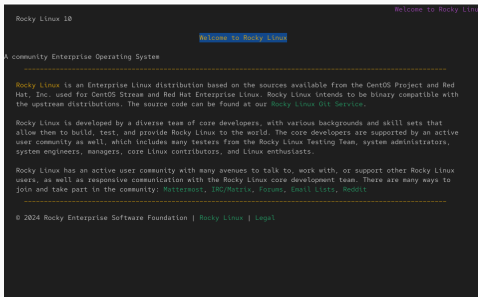
- Просмотр групп: `dnf groups list`
- Информация: `dnf groups info "RPM Development Tools"`
- Установка: `dnf groupinstall "RPM Development Tools"`
- Удаление: `dnf groupremove "RPM Development Tools"`

```
root@ehatamov:/etc/yum.repos.d# dnf groups info "RPM Development Tools"
Last metadata expiration check: 0:35:37 ago on Thu 18 Sep 2025 02:50:21 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@ehatamov:/etc/yum.repos.d# dnf groupinstall "RPM Development Tools"
Last metadata expiration check: 0:35:47 ago on Thu 18 Sep 2025 02:50:21 PM MSK.
Dependencies resolved.
```

Package	Architecture	Version	Repository	Size
Installing group/module packages:				
<b>rpmdevtools</b>	noarch	9.6-9.el10	appstream	87 k
Installing dependencies:				
<b>python3-argcomplete</b>	noarch	3.2.2-4.el10	appstream	88 k
Installing Groups:				
RPM Development Tools				
Transaction Summary				
Install 2 Packages				

# Использование rpm (lynx)

- Загрузка пакета: `dnf install lynx --downloadonly`
- Установка: `rpm -Uhv lynx.rpm`
- Проверка:
  - `which lynx`
  - `rpm -qi lynx`
  - `rpm -ql lynx`, `rpm -qd lynx`
- Удаление: `rpm -e lynx`



```
Rocky Linux 10                                     Welcome to Rocky Linux

Welcome to Rocky Linux

A community Enterprise Operating System

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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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```



# Использование rpm (dnsmasq)

- Проверка:
  - `which dnsmasq`
  - `rpm -qi dnsmasq`
  - `rpm -qc dnsmasq`
  - `rpm -q --scripts dnsmasq`

```
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 auto-configuration 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.

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

## Итоги работы

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- Освоены приёмы работы с пакетами в Linux:
  - поиск, установка и удаление пакетов с помощью **dnf**
  - работа с группами пакетов
  - управление rpm-пакетами вручную
- Получены практические навыки администрирования ПО в Linux