

Лабораторная работа №4

Работа с программными пакетами

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Цель работы

Получить навыки работы с репозиториями и менеджерами пакетов **dnf** и **rpm** в Linux.

Ход выполнения работы

- Изучены файлы конфигурации в `/etc/yum.repos.d`
- Получен список репозиториях: *AppStream, BaseOS, Extras*
- Выполнен поиск пакетов с ключевым словом *user*

```
root@mhembraev:/etc/yum.repos.d#  
root@mhembraev:/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@mhembraev:/etc/yum.repos.d# dnf search user  
Last metadata expiration check: 6 days, 8:02:19 ago on Tue 09 Sep 2025 11:13:52 AM 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  
sanba-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. 1: Список репозиториях

- Изучен пакет `nmap`
- `dnf install nmap` — установка основного пакета
- `dnf install nmap*` — установка всех связанных компонентов
- Удаление пакетов: `dnf remove nmap`, `dnf remove nmap*`

```
-----
Total                                                                14 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@mhembraev:/etc/yum.repos.d# dnf install nmap\*
Last metadata expiration check: 0:00:26 ago on Mon 15 Sep 2025 07:17:47 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@mhembraev:/etc/yum.repos.d#
```

Рис. 2: Установка пакета `nmap`

- Получен список доступных групп
- Изучена группа **RPM Development Tools**
- Установлена и удалена через `dnf groupinstall` и `dnf groupremove`

```
root@mheeraev: /etc/yum.repos.d# dnf groups info "RPM Development Tools"
Last metadata expiration check: 0:02:02 ago on Mon 15 Sep 2025 07:17:47 PM MSK.
Group: RPM Development Tools
Description: Tools used for building RPMs, such as rpmbuild.
Mandatory Packages:
  redhat-rpm-config
  rpm-build
Default Packages:
  rpmbuild
root@mheeraev: /etc/yum.repos.d# dnf groupinstall "RPM Development Tools"
Last metadata expiration check: 0:02:13 ago on Mon 15 Sep 2025 07:17:47 PM MSK.
Dependencies resolved.
=====
Package                                Architecture      Version            Repository          Size
=====
Installing group/module packages:
rpmbuild                               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: 477 k
```

Рис. 3: Информация о группе RPM Development Tools

- Использована команда `dnf history`
- Отменено действие с помощью `dnf history undo`

```
root@mhemraev:/etc/yum.repos.d# dnf history
ID      | Command line                                     | Date and time   | Action(s)      | Altered
-----|-----
7 | groupremove RPM Development Tools               | 2025-09-15 19:21 | Removed        | 3
6 | groupinstall RPM Development Tools               | 2025-09-15 19:20 | Install        | 3
5 | remove nmap*                                     | 2025-09-15 19:18 | Removed        | 1
4 | remove nmap                                       | 2025-09-15 19:18 | Removed        | 1
3 | install nmap                                     | 2025-09-15 19:18 | Install        | 1
2 | install mc -y                                    | 2025-09-09 11:13 | Install        | 1 <
1 |                                                    | 2025-09-05 10:15 | Install        | 1373 >E

root@mhemraev:/etc/yum.repos.d# dnf history undo 6
Last metadata expiration check: 0:04:26 ago on Mon 15 Sep 2025 07:17:47 PM MSK.
Dependencies resolved.
Nothing to do.
Complete!
Warning, the following problems occurred while running a transaction:
  Package nevra "python3-argcomplete-3.2.2-4.el10.noarch" not installed for action "Removed".
  Package nevra "rpmdevtools-9.6-9.el10.noarch" not installed for action "Removed".
  Group id 'rpm-development-tools' is not installed.
root@mhemraev:/etc/yum.repos.d# dnf history undo 7
Last metadata expiration check: 0:04:41 ago on Mon 15 Sep 2025 07:17:47 PM MSK.
Dependencies resolved.
=====
Package                        Architecture      Version           Repository        Size
=====
```

Рис. 4: История DNF

- Скачан пакет **lynx** и установлен через **rpm -Uhv**
- Проверено расположение исполняемого файла (**/usr/bin/lynx**)
- Получена информация о пакете и документации
- Удаление пакета — **rpm -e lynx**

```
root@mhembraev:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# which lynx
/usr/bin/lynx
root@mhembraev:/var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qf $(which lynx)
lynx-2.9.0-6.el10.x86_64
root@mhembraev:/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 07:27:02 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@mhembraev:/var/cache/dnf/appstream-8f18e4146890fdcf/packages#
```

- Установлен пакет **dnsmasq**
- Определены исполняемые, конфигурационные и документационные файлы
- Изучены установочные скрипты (создание пользователя, регистрация службы)
- Удаление пакета — **rpm -e dnsmasq**

```
root@mhenraev: /var/cache/dnf/appstream-8f18e4146890fdcf/packages#  
root@mhenraev: /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@mhenraev: /var/cache/dnf/appstream-8f18e4146890fdcf/packages# rpm -qc dnsmasq  
/etc/dbus-1/system.d/dnsmasq.conf  
/etc/dnsmasq.conf  
root@mhenraev: /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
```

Итоги работы

В ходе лабораторной работы изучены механизмы управления пакетами с помощью **dnf** и **rpm**.
Полученные знания позволяют администрировать программное обеспечение, управлять зависимостями и обеспечивать безопасность установки пакетов.