Отчёт по лабораторной работе №4

Работа с программными пакетами

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Цель работы

Цель

Получить навыки работы с репозиториями и менеджерами пакетов в Linux.

Выполнение лабораторной работы

Работа с репозиториями

```
dsyakovleva@dsyakovleva:~$ su
Password:
root@dsyakovleva:/home/dsyakovleva#
root@dsyakovleva:/home/dsyakovleva# cd /etc/yum.repos.d/
root@dsyakovleva:/etc/yum.repos.d# ls
rocky-addons.repo  rocky-devel.repo  rocky-extras.repo  rocky.repo
root@dsyakovleva:/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-$releasever-debug$rlty
pe
#baseurl=http://dl.rockylinux.org/$contentdir/$releasever/BaseOS/$basearch/debug/tree/
gpgcheck=1
```

Поиск и установка пакетов

```
root@dsyakovleva:/etc/yum.repos.d#
root@dsyakovleva:/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@dsyakovleva:/etc/yum.repos.d# dnf search user
Rocky Linux 10 - BaseOS                                          3.3 MB/s |  16 MB     00:05
Rocky Linux 10 - AppStream                                       287 kB/s | 2.1 MB     00:07
Rocky Linux 10 - Extras                                          7.3 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
```

Рис. 2: Поиск пакетов по слову user

Поиск и установка пакетов

```
root@dsyakovleva:/etc/yum.repos.d# dnf search nmap
Last metadata expiration check: 0:01:04 ago on Sat 13 Sep 2025 02:36:02 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@dsyakovleva:/etc/yum.repos.d# dnf info nmap
Last metadata expiration check: 0:01:16 ago on Sat 13 Sep 2025 02:36:02 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@dsyakovleva:/etc/yum.repos.d#
```


Рис. 3: Информация о пакете nmap

Установка и удаление пакетов

```
Total                                                          95 kB/s | 5.6 MB     01:00
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@dsyakovleva:/etc/yum.repos.d# dnf install nmap\*
Last metadata expiration check: 0:03:13 ago on Sat 13 Sep 2025 02:36:02 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@dsyakovleva:/etc/yum.repos.d#
```

Рис. 4: Установка nmap

Установка и удаление пакетов

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

Complete!
root@dsyakovleva:/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
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing        :                                                                    1/1
  Running scriptlet: nmap-ncat-4:7.92-3.el10.x86_64                                     1/1
  Erasing          : nmap-ncat-4:7.92-3.el10.x86_64                                     1/1
  Running scriptlet: nmap-ncat-4:7.92-3.el10.x86_64                                     1/1

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

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

Работа с группами пакетов

```
root@dsyakovleva:/etc/yum.repos.d#
root@dsyakovleva:/etc/yum.repos.d# LANG=C dnf groups list
Last metadata expiration check: 0:04:39 ago on Sat Sep 13 14:36:02 2025.
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@dsyakovleva:/etc/yum.repos.d# dnf groups info "RPM Development Tools"
Last metadata expiration check: 0:05:12 ago on Sat 13 Sep 2025 02:36:02 PM MSK.
Group: RPM Development Tools
 Description: Tools used for building RPMs, such as rpmbuild.
 Mandatory Packages:
   redhat-rpm-config
```

Работа с группами пакетов

```
root@dsyakovleva:/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@dsyakovleva:/etc/yum.repos.d#
```

Использование rpm (lynx)

```
root@dsyakovleva:/etc/yum.repos.d#
root@dsyakovleva:/etc/yum.repos.d# dnf list lynx
Last metadata expiration check: 0:07:22 ago on Sat 13 Sep 2025 02:36:02 PM MSK.
Available Packages
lynx.x86_64                                2.9.0-6.el10                                appstream
root@dsyakovleva:/etc/yum.repos.d# dnf install lynx --downloadonly
Last metadata expiration check: 0:07:39 ago on Sat 13 Sep 2025 02:36:02 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                                    11 MB/s | 1.6 MB     00:00
------------------------------------------------------------------------------------------------
Total                                                          3.4 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@dsyakovleva:/etc/yum.repos.d#
```

Рис. 8: Загрузка пакета lynx

Использование rpm (lynx)

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# which lynx
/usr/bin/lynx
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# rpm -qf $(which lynx)
lynx-2.9.0-6.el10.x86_64
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# rpm -qi lynx
Name        : lynx
Version     : 2.9.0
Release     : 6.el10
Architecture: x86_64
Install Date: Sat 13 Sep 2025 02:44:56 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@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
```

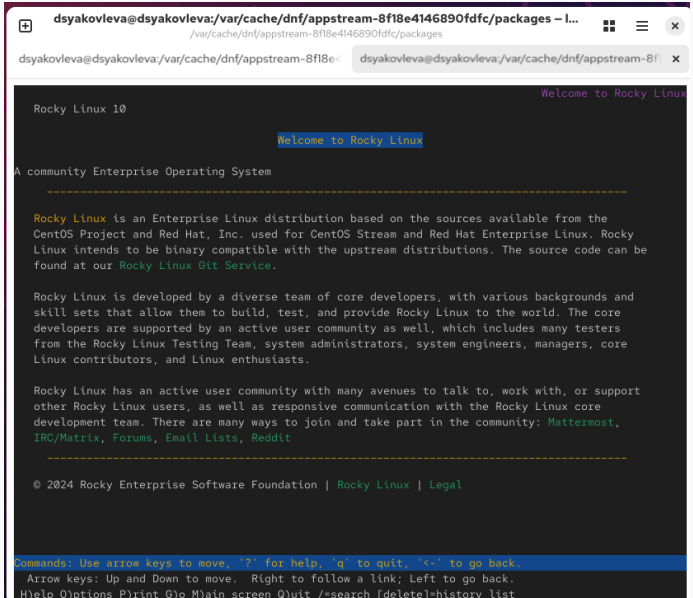
Изучение документации (lynx)

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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/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
```

Изучение документации (lynx)

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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
```

Запуск и удаление lynx



Запуск и удаление lynx

Рис. 13: Удаление lynx

Использование rpm (dnsmasq)

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# dnf list dnsmasq
Last metadata expiration check: 0:21:45 ago on Sat 13 Sep 2025 02:36:02 PM MSK.
Installed Packages
dnsmasq.x86_64                              2.90-4.el10                              @AppStream
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# dnf install dnsmasq
Last metadata expiration check: 0:21:59 ago on Sat 13 Sep 2025 02:36:02 PM MSK.
Package dnsmasq-2.90-4.el10.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# which dnsmasq
/usr/sbin/dnsmasq
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# rpm -qf $(which dnsmasq)
dnsmasq-2.90-4.el10.x86_64
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
```

Рис. 14: Установка и проверка dnsmasq

Использование rpm (dnsmasq)

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# rpm -qi dnsmasq
Name        : dnsmasq
Version     : 2.90
Release     : 4.el10
Architecture: x86_64
Install Date: Mon 01 Sep 2025 06:49:00 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@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
```

Рис. 15: Информация о пакете dnsmasq

Документация и конфигурация dnsmasq

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages#
```

Документация и конфигурация dnsmasq

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.

Документация и конфигурация dnsmasq

```
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/packages# rpm -qc dnsmasq
/etc/dbus-1/system.d/dnsmasq.conf
/etc/dnsmasq.conf
root@dsyakovleva:/var/cache/dnf/appstream-8f18e4146890fdfc/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 serv
er' '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):


if [ $1 -ge 1 ] && [ -x "/usr/lib/systemd/systemd-update-helper" ]; then
```

Рис. 18: Конфигурация и скрипты dnsmasq

Контрольные вопросы

Основные команды

- `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

Вывод

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.