

Лабораторная работа 4

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Задача

1. Установите необходимые для работы HTTP-сервера пакеты (см. раздел 4.4.1).

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2. Запустите HTTP-сервер с базовой конфигурацией и проанализируйте его работу (см. разделы 4.4.2 и 4.4.3).

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3. Настройте виртуальный хостинг (см. раздел 4.4.4).
4. Напишите скрипт для Vagrant, фиксирующий действия по установке и настройке HTTP-сервера во внутреннем окружении виртуальной машины `server`. Соответствующим образом внесите изменения в `Vagrantfile` (см. раздел 4.4.5).

Выполнение

```

етение практических навыков по установке и
e
ановите необходимые для работы HTTP-сервер
устите HTTP-сервер с базовой конфигурацией
тройте виртуальный хостинг (см. раздел 4.4
ишите скрипт для Vagrant, фиксирующий дейс
изменения в Vagrantfile (см. раздел 4.4.5)
ение лабораторной работы
(./Screenshot_1.png)
л опыт работы с ...
льные вопросы
какой порт по умолчанию работает Apache?
CONSOLE TERMINAL PORTS
aring any previously set network interfaces..
paring network interfaces based on configurat
pter 1: nat
pter 2: intnet
warding ports...
(guest) => 2222 (host) (adapter 1)
ning 'pre-boot' VM customizations...
ting VM...
ting for machine to boot. This may take a few
address: 127.0.0.1:2222
username: vagrant
auth method: password
hine booted and ready!
dditions 7.0.12 running --- OK.
cking for guest additions in VM...
ting hostname...
figuring and enabling network interfaces...
ting shared folders...
grant => /home/danya/Documents/university/rud
hine already provisioned. Run 'vagrant provis
g to force provisioning. Provisioners marked
ning provisioner: common hostname (shell)...
ning: /tmp/vagrant-shell20231118-1570981-p3p2ie.sh
vagrant@127.0.0.1:~$

```

```

root@server:~
[vagrant@server ~]$ sudo -i
[root@server ~]# dnf -y groupinstall "Basic Web Server"
Rocky Linux 9 - BaseOS                5.2 kB/s | 4.1 kB | 00:00
Rocky Linux 9 - AppStream             10 kB/s | 4.5 kB | 00:00
Rocky Linux 9 - Extras                 6.7 kB/s | 2.9 kB | 00:00
Dependencies resolved.
=====
Package Arch Version Repository Size
=====
Installing group/module packages:
httpd x86_64 2.4.53-11.el9_2.5 appstream 47 k
httpd-manual noarch 2.4.53-11.el9_2.5 appstream 2.2 M
mod_fcgid x86_64 2.3.9-28.el9 appstream 74 k
mod_ssl x86_64 1:2.4.53-11.el9_2.5 appstream 110 k
Installing dependencies:
apr x86_64 1.7.0-11.el9 appstream 123 k
apr-util x86_64 1.6.1-20.el9_2.1 appstream 94 k
apr-util-bdb x86_64 1.6.1-20.el9_2.1 appstream 12 k
httpd-core x86_64 2.4.53-11.el9_2.5 appstream 1.4 M
httpd-filesystem noarch 2.4.53-11.el9_2.5 appstream 14 k
httpd-tools x86_64 2.4.53-11.el9_2.5 appstream 81 k
rocky-logos-httpd noarch 90.14-1.el9 appstream 24 k
Installing weak dependencies:
apr-util-openssl x86_64 1.6.1-20.el9_2.1 appstream 14 k
mod_http2 x86_64 1.15.19-4.el9_2.4 appstream 149 k
mod_lua x86_64 2.4.53-11.el9_2.5 appstream 61 k
Installing Groups:
Basic Web Server
Transaction Summary
=====
Install 14 Packages
Total download size: 4.4 M
Installed size: 14 M
Downloading Packages:
(1/14): rocky-logos-httpd-90.14-1.el9.noarch.rpm 100 kB/s | 24 kB | 00:00
(2/14): mod_lua-2.4.53-11.el9_2.5.x86_64.rpm 238 kB/s | 61 kB | 00:00
(3/14): mod_ssl-2.4.53-11.el9_2.5.x86_64.rpm 392 kB/s | 110 kB | 00:00
(4/14): httpd-2.4.53-11.el9_2.5.x86_64.rpm 1.8 MB/s | 47 kB | 00:00
(5/14): httpd-tools-2.4.53-11.el9_2.5.x86_64.rpm 1.9 MB/s | 81 kB | 00:00
(6/14): httpd-filesystem-2.4.53-11.el9_2.5.noar 424 kB/s | 14 kB | 00:00
(7/14): apr-util-openssl-1.6.1-20.el9_2.1.x86_6 440 kB/s | 14 kB | 00:00
(8/14): apr-util-bdb-1.6.1-20.el9_2.1.x86_64.rpm 380 kB/s | 12 kB | 00:00
(9/14): apr-util-1.6.1-20.el9_2.1.x86_64.rpm 1.4 MB/s | 94 kB | 00:00

```



```

root@server:~
GNU nano 5.6.1 /etc/httpd/conf/httpd.conf
#
# DocumentRoot: The directory out of which you will serve your
# documents. By default, all requests are taken from this directory, but
# symbolic links and aliases may be used to point to other locations.
#
DocumentRoot "/var/www/html"
#
# Relax access to content within /var/www.
#
<Directory "/var/www">
    AllowOverride None
    # Allow open access:
    Require all granted
</Directory>

# Further relax access to the default document root:
<Directory "/var/www/html">
    #
    # Possible values for the Options directive are "None", "All",
    # or any combination of:
    #   Indexes Includes FollowSymLinks SymLinksifOwnerMatch ExecCGI MultiViews
    #
    # Note that "MultiViews" must be named *explicitly* --- "Options All"
    # doesn't give it to you.
    #
    # The Options directive is both complicated and important. Please see
    # http://httpd.apache.org/docs/2.4/mod/core.html#options
    # for more information.
    #
    Options Indexes FollowSymLinks

    #
    # AllowOverride controls what directives may be placed in .htaccess files.
    # It can be "All", "None", or any combination of the keywords:
    #   Options FileInfo AuthConfig Limit
    #
    AllowOverride None

    #
    # Controls who can get stuff from this server.

```

```
[root@server ~]# nano /etc/httpd/conf/
httpd.conf magic
[root@server ~]# nano /etc/httpd/conf/
httpd.conf magic
[root@server ~]# nano /etc/httpd/conf/httpd.conf
[root@server ~]# nano /etc/httpd/conf.d/
autoindex.conf fcgid.conf manual.conf README ssl.conf userdir.conf welcome.conf
[root@server ~]# nano /etc/httpd/conf.d/welcome.conf
[root@server ~]# nano /etc/httpd/conf.d/ssl.conf
[root@server ~]# nano /etc/httpd/conf.d/README
[root@server ~]# cat /etc/httpd/conf.d/autoindex.conf
#
# Directives controlling the display of server-generated directory listings.
#
# Required modules: mod_authz_core, mod_authz_host,
#                  mod_autoindex, mod_alias
#
# To see the listing of a directory, the Options directive for the
# directory must include "Indexes", and the directory must not contain
# a file matching those listed in the DirectoryIndex directive.
#
#
# IndexOptions: Controls the appearance of server-generated directory
# listings.
#
IndexOptions FancyIndexing HTMLTable VersionSort

# We include the /icons/ alias for FancyIndexed directory listings. If
# you do not use FancyIndexing, you may comment this out.
#
Alias /icons/ "/usr/share/httpd/icons/"

<Directory "/usr/share/httpd/icons">
    Options Indexes MultiViews FollowSymlinks
    AllowOverride None
    Require all granted
</Directory>

#
# AddIcon* directives tell the server which icon to show for different
# files or filesystem extensions. There are only displayed for
```

```
The job identifier is 520.
^Z
[1]+  Stopped                  journalctl -x -f
[root@server ~]# bg
[1]+ journalctl -x -f &
[root@server ~]# firewall-cmd --add-service=http
Warning: ALREADY_ENABLED: 'http' already in 'public'
success
[root@server ~]# Nov 18 13:38:31 server.user.net firewalld[625]: WARNING: ALREADY_ENABLED: 'http' already in 'public'

[root@server ~]# firewall-cmd --add-service=http --permanent
Warning: ALREADY_ENABLED: http
success
[root@server ~]# Nov 18 13:38:35 server.user.net firewalld[625]: WARNING: ALREADY_ENABLED: http

[root@server ~]# systemctl enable --now httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
Nov 18 13:38:49 server.user.net systemd[1]: Reloading.
Nov 18 13:38:49 server.user.net systemd-rc-local-generator[6639]: /etc/rc.d/rc.local is not marked executable, skipping.
Nov 18 13:38:50 server.user.net systemd[1]: Starting One-time temporary TLS key generation for httpd.service...
  Subject: A start job for unit httpd-init.service has begun execution
  Defined-By: systemd
  Support: https://access.redhat.com/support

  A start job for unit httpd-init.service has begun execution.

The job identifier is 2736.
Nov 18 13:38:50 server.user.net systemd[1]: Starting dnf makecache...
```

Рис. 4: httpd

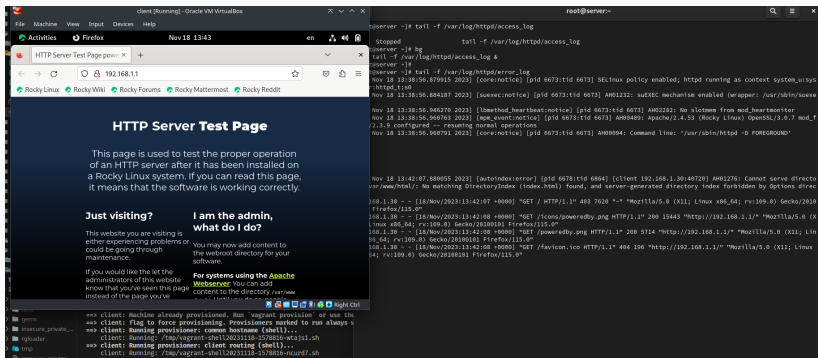


Рис. 5: httpd

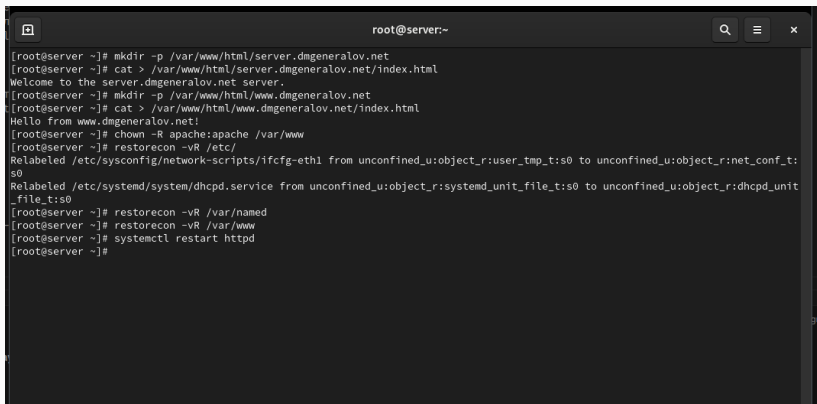
```
root@server:~
GNU nano 5.6.1 /var/named/master/fz/dmgeneralov.net
$ORIGIN .
$TTL 86400 ; 1 day
dmgeneralov.net IN SOA dmgeneralov.net. server.dmgeneralov.net. (
    2023118603 ; serial
    86400      ; refresh (1 day)
    3600       ; retry (1 hour)
    604800     ; expire (1 week)
    10800      ; minimum (3 hours)
)
                NS      dmgeneralov.net.
                A        192.168.1.1
$ORIGIN dmgeneralov.net.
dhcp            A        192.168.1.1
ns              A        192.168.1.1
server          A        192.168.1.1
www             A        192.168.1.1
```

```
GNU nano 5.6.1 /var/named/master/rz/192.168.1
$ORIGIN .
$TTL 86400 ; 1 day
1.168.192.in-addr.arpa IN SOA 1.168.192.in-addr.arpa. server.dmgeneralov.net. (
                                2023111800; serial
                                86400 ; refresh (1 day)
                                3600 ; retry (1 hour)
                                604800 ; expire (1 week)
                                10800 ; minimum (3 hours)
                                )
                                NS 1.168.192.in-addr.arpa.
                                A 192.168.1.1
                                PTR server.dmgeneralov.net.
$ORIGIN 1.168.192.in-addr.arpa.
1 PTR server.dmgeneralov.net.
PTR ns.dmgeneralov.net.
PTR dhcp.dmgeneralov.net.
PTR www.dmgeneralov.net.
```

Рис. 7: dns

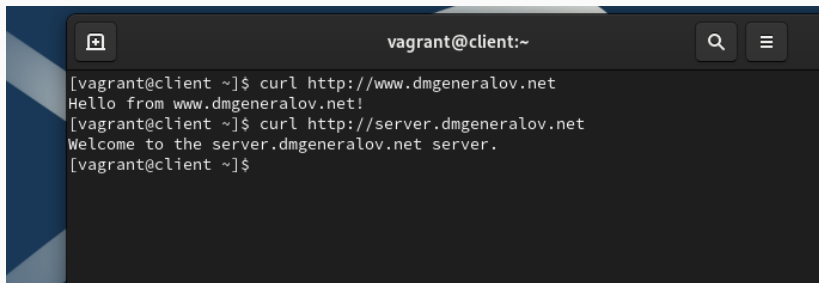
```
root@server ~]# systemctl restart named
root@server ~]# nano /etc/httpd/conf.d/server.dmgeneralov.net.conf
root@server ~]# nano /etc/httpd/conf.d/^C .dmgeneralov.net.conf
root@server ~]# nano /etc/httpd/conf.d/server.dmgeneralov.net.conf /etc/httpd/conf.d/www.dmgeneralov.net.conf
root@server ~]# cat /etc/httpd/conf.d/server.dmgeneralov.net.conf
VirtualHost *:80>
    ServerAdmin webmaster@dmgeneralov.net
    DocumentRoot /var/www/html/server.dmgeneralov.net
    ServerName server.dmgeneralov.net
    ErrorLog logs/server.dmgeneralov.net-error_log
    CustomLog logs/server.dmgeneralov.net-access_log common
</VirtualHost>
root@server ~]# cat /etc/httpd/conf.d/www.dmgeneralov.net.conf
VirtualHost *:80>
    ServerAdmin webmaster@dmgeneralov.net
    DocumentRoot /var/www/html/www.dmgeneralov.net
    ServerName www.dmgeneralov.net
    ErrorLog logs/www.dmgeneralov.net-error_log
    CustomLog logs/www.dmgeneralov.net-access_log common
</VirtualHost>
root@server ~]#
```

Рис. 8: httpd



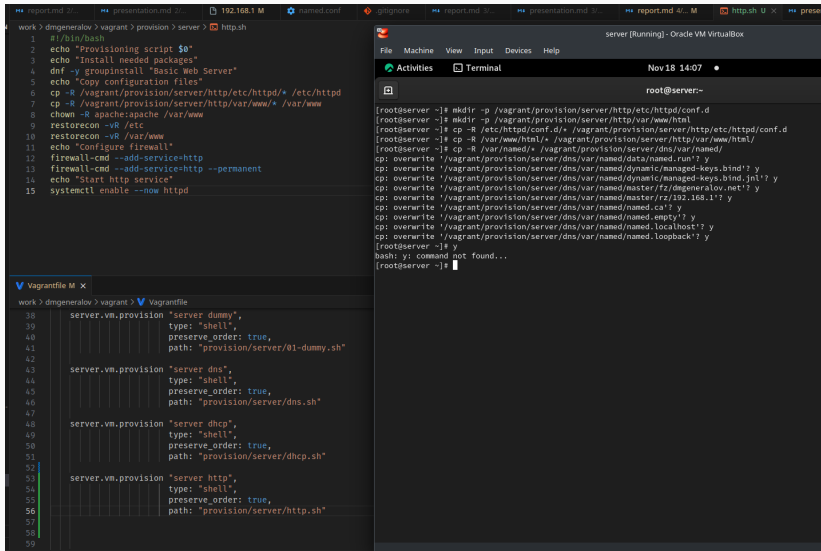
```
root@server:~  
[root@server ~]# mkdir -p /var/www/html/server.dmgeneralov.net  
[root@server ~]# cat > /var/www/html/server.dmgeneralov.net/index.html  
Welcome to the server.dmgeneralov.net server.  
[root@server ~]# mkdir -p /var/www/html/www.dmgeneralov.net  
[root@server ~]# cat > /var/www/html/www.dmgeneralov.net/index.html  
Hello from www.dmgeneralov.net!  
[root@server ~]# chown -R apache:apache /var/www  
[root@server ~]# restorecon -vR /etc/  
Relabeled /etc/sysconfig/network-scripts/ifcfg-eth1 from unconfined_u:object_r:user_tmp_t:s0 to unconfined_u:object_r:net_conf_t:s0  
Relabeled /etc/systemd/system/dhcpd.service from unconfined_u:object_r:systemd_unit_file_t:s0 to unconfined_u:object_r:dhcpd_unit_file_t:s0  
[root@server ~]# restorecon -vR /var/named  
[root@server ~]# restorecon -vR /var/www  
[root@server ~]# systemctl restart httpd  
[root@server ~]#
```

Рис. 9: httpd

A terminal window titled 'vagrant@client:~' with search and menu icons in the top right. The terminal shows two curl commands and their responses. The first command is 'curl http://www.dmgeneralov.net' and the response is 'Hello from www.dmgeneralov.net!'. The second command is 'curl http://server.dmgeneralov.net' and the response is 'Welcome to the server.dmgeneralov.net server.'.

```
[vagrant@client ~]$ curl http://www.dmgeneralov.net
Hello from www.dmgeneralov.net!
[vagrant@client ~]$ curl http://server.dmgeneralov.net
Welcome to the server.dmgeneralov.net server.
[vagrant@client ~]$
```

Рис. 10: httpd



Я получил опыт настройки сервера Apache, в частности настройки виртуального хостинга.