

# Лабораторная работа

Номер 5

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# Информация

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Приобретение практических навыков по расширенному конфигурированию HTTP-сервера Apache в части безопасности и возможности использования PHP.

# Запуск сервера

```
C:\Users\denis>cd C:\work_asp\dmmosharov\vagrant

C:\work_asp\dmmosharov\vagrant>vagrant up server
Bringing machine 'server' up with 'virtualbox' provider...
==> server: You assigned a static IP ending in ".1" or ":1" to this machine.
==> server: This is very often used by the router and can cause the
==> server: network to not work properly. If the network doesn't work
==> server: properly, try changing this IP.
==> server: You assigned a static IP ending in ".1" or ":1" to this machine.
==> server: This is very often used by the router and can cause the
==> server: network to not work properly. If the network doesn't work
==> server: properly, try changing this IP.
==> server: Clearing any previously set forwarded ports...
==> server: Clearing any previously set network interfaces...
==> server: Preparing network interfaces based on configuration...
    server: Adapter 1: nat
    server: Adapter 2: intnet
==> server: Forwarding ports...
    server: 22 (guest) => 2222 (host) (adapter 1)
==> server: Running 'pre-boot' VM customizations...
==> server: Booting VM...
==> server: Waiting for machine to boot. This may take a few minutes...
    server: SSH address: 127.0.0.1:2222
    server: SSH username: vagrant
    server: SSH auth method: password
```

**Рис. 1:** Запуск сервера

## Создание сертификата

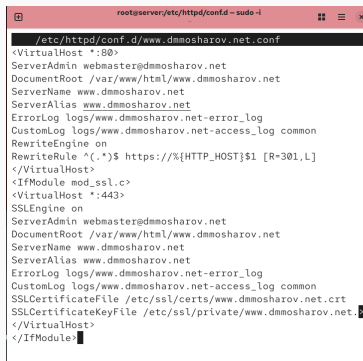
[illegible]

### Рис. 2: Создание сертификата

## Редактирование конфигурационного файла httpd

```
[root@server.dmmosharov.net private]# cd /etc/httpd/conf.d  
[root@server.dmmosharov.net conf.d]# nano /etc/httpd/conf.d  
/www.dmmosharov.net.conf
```

**Рис. 3:** Редактирование конфигурационного файла httpd



```
root@server:/etc/httpd/conf.d - sudo -i
/etc/httpd/conf.d/www.dmmosharov.net.conf
<VirtualHost *:80>
ServerAdmin webmaster@dmmosharov.net
DocumentRoot /var/www/html/www.dmmosharov.net
ServerName www.dmmosharov.net
ServerAlias www.dmmosharov.net
ErrorLog logs/www.dmmosharov.net-error_log
CustomLog logs/www.dmmosharov.net-access_log common
RewriteEngine on
RewriteRule ^(.*)$ https://%{HTTP_HOST}$1 [R=301,L]
</VirtualHost>
<IfModule mod_ssl.c>
<VirtualHost *:443>
SSLEngine on
ServerAdmin webmaster@dmmosharov.net
DocumentRoot /var/www/html/www.dmmosharov.net
ServerName www.dmmosharov.net
ServerAlias www.dmmosharov.net
ErrorLog logs/www.dmmosharov.net-error_log
CustomLog logs/www.dmmosharov.net-access_log common
SSLCertificateFile /etc/ssl/certs/www.dmmosharov.net.crt
SSLCertificateKeyFile /etc/ssl/private/www.dmmosharov.net.
</VirtualHost>
</IfModule>
```

Рис. 4: www.dmmosharov.net.conf



# Настройка фаервола

```
[root@server.demosharov.net conf.d]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http ssh
[root@server.demosharov.net conf.d]# firewall-cmd --get-services
@AD RH-Satellite-6 RH-Satellite-6-capsule afp alvr amanda-client amanda-k5-client anqp a
npps anno-1682 anno-1680 apcupsd aseqnet audit ausertsapp2 bacula bacula-client bareos-dl
rector bareos-filerdemon bareos-storage bb bpf bitcoind bitcoind-rpc bitcoind-testnet bitcoi
n-testnet-rpc bittorrent-lsd ceph ceph-exporter ceph-mon cfeengine checkmk-agent civilizati
on-iv civilization-v cockpit collectd condor-collector cratedb ctdb dds dds-multicast dd
s-unicast dhcp dhcpv6 dhcpv6-client distcc dns dns-over-qtcp dns-over-tls docker-registry
docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server factorio finger foren
an foreman-proxy freeipa-4 freeipa-ldap freeipa-ldaps freeipa-replication freeipa-trust f
tp galera ganglia-client ganglia-master git gnomd grafana gre high-availability http http3
https ident isap isapi iperf2 iperf3 ipfs ipso ipso-client ipsec irc ircs ircs-target ism
s jenkins kademln kdeconnect kerberos kibana klogind kpasswd kprop kshell kube-api kube-api
server kube-control-plane kube-control-plane-secure kube-controller-manager kube-controll
er-manager-secure kube-nodeport-services kube-scheduler kube-scheduler-secure kube-worke
r kubelet kubelet-readonly kubelet-worker ldap ldaps libvirt libvirt-tls lightning-network
llnmx llmn-client llmn-tcp llmn-udp manageweb matrix mdns memcached minicraft minid
na mdp songdb nosh mountd ntp ntpd ntp-tls ntp-wet ntpd ntpd ntpd ntpd ntpd ntpd ntpd ntpd
or-speed-most-wanted netbios-ns netdata-dashboard nfs nfs3 nmap-0183 nmap ntp nut openal
eometry openvpn ovirt-imageio ovirt-storageconsole ovirt-vnconsole plex pmd pproxy pweb
api pwebapi pop3 pop3s postgresql privoxy prometheus prometheus-node-exporter proxy-dhc
p ps2link ps3netrvr ptp pulseaudio puppetmaster quassel radius radsec rdp redis redis-sen
tinel rootd rpc-bind rquoted rsh rsyncd rtsp salt-master samba samba-client samba-dc sane
settlers-history-collection sip slims slimev slp smtp smtp-submission snmp snmpd
snmpd-tls trap snmptrap spidevack-lansync spotify-sync squid ssh sshd sshd sshd sshd sshd
ansfer steam-streaming stellaris stronghold-crusader stun stuns subversion supertuxkart s
vdrp svn syncthing syncthing-gui syncthing-relay synergy syscomlan syslog syslog-tls teln
et tentacle terraria tfpt tile38 tinc tor-socks transmission-client turn turns ump-clien
t vdsn vnc-server vzrp warpinator wbee-http wbee-https wireguard ws-discovery ws-discover
y-client ws-discovery-host ws-discovery-tcp ws-discovery-udp wssd wssd-http wssm wssms
xdrpc xmpp-bosh xmpp-client xmpp-local xmpp-server xmpp-agent xmpp-agent xmpp-agent xmpp-agent
x-server xmpp-tx xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp xmpp
[root@server.demosharov.net conf.d]# firewall-cmd --add-service=https
success
[root@server.demosharov.net conf.d]# firewall-cmd --add-service=https --permanent
success
[root@server.demosharov.net conf.d]# firewall-cmd --reload
success
[root@server.demosharov.net conf.d]#
```

Рис. 5: Настройка фаервола

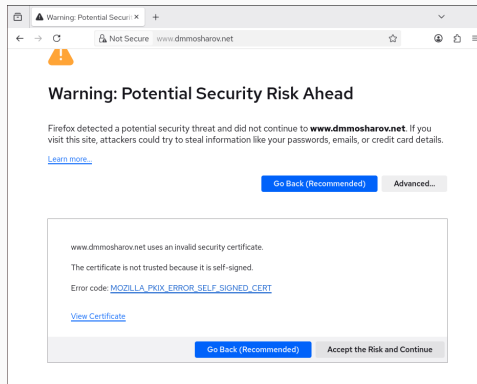
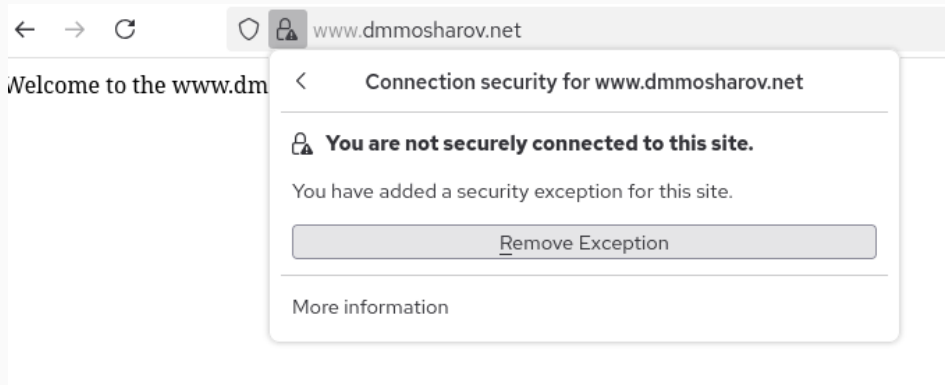


Рис. 6: Предупреждение

## Подключение к сайту



**Рис. 7:** Подключение к сайту

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# Установка php

```
[root@server.dnmosharov.net conf.d]# dnf -y install php
Extra Packages for Enterprise Linux 10 - x86_64      2.3 kB/s | 12 kB    00:05
Extra Packages for Enterprise Linux 10 - x86_64      1.2 MB/s | 5.6 MB    00:04
Rocky Linux 10 - BaseOS                             288 B/s | 4.3 kB    00:15
Rocky Linux 10 - BaseOS                             18 MB/s | 8.7 MB    00:00
Rocky Linux 10 - AppStream                          573 B/s | 4.3 kB    00:07
Rocky Linux 10 - AppStream                          2.4 MB/s | 2.1 MB    00:00
Rocky Linux 10 - CRB                                14 kB/s | 4.3 kB    00:00
Rocky Linux 10 - CRB                                1.0 MB/s | 498 kB    00:00
Rocky Linux 10 - Extras                              6.5 kB/s | 3.1 kB    00:00
Rocky Linux 10 - Extras                              8.8 kB/s | 5.9 kB    00:00
Dependencies resolved.
=====
Package                Architecture Version      Repository    Size
=====
Installing:
php                    x86_64      8.3.26-1.el10_1 appstream     9.1 k
Installing dependencies:
capstone              x86_64      5.0.1-6.el10 appstream     1.0 M
nginx-filesystem      noarch      2:1.26.3-1.el10 appstream     11 k
php-common            x86_64      8.3.26-1.el10_1 appstream     716 k
Installing weak dependencies:
php-cli               x86_64      8.3.26-1.el10_1 appstream     3.6 M
php-fpm               x86_64      8.3.26-1.el10_1 appstream     1.9 M
php-mbstring          x86_64      8.3.26-1.el10_1 appstream     519 k
php-opcache           x86_64      8.3.26-1.el10_1 appstream     364 k
php-pdo               x86_64      8.3.26-1.el10_1 appstream     86 k
php-xml               x86_64      8.3.26-1.el10_1 appstream     147 k
Transaction Summary
=====
Install 10 Packages
```

Рис. 9: Установка php

## Замена файла index.html на index.php

```
[root@server.dmmosharov.net conf.d]# touch /var/www/html/www.dmmosharov.net/index.php
[root@server.dmmosharov.net conf.d]# nano /var/www/html/www.dmmosharov.net/index.php
[root@server.dmmosharov.net conf.d]# rm /var/www/html/www.dmmosharov.net/index.html
rm: remove regular file '/var/www/html/www.dmmosharov.net/index.html'? y
[root@server.dmmosharov.net conf.d]#
```

**Рис. 10:** Замена файла index.html на index.php

A screenshot of a GNU nano 8.1 text editor window. The title bar at the top shows the file path: /var/www/html/www.dmmosharov.net/index.php. The editor contains three lines of PHP code: the opening tag <?php in green, the function call phpinfo(); in grey, and the closing tag ?> in green. A black cursor is positioned at the end of the third line.

```
GNU nano 8.1 /var/www/html/www.dmmosharov.net/index.php
<?php
phpinfo();
?>
```

**Рис. 11:** Содержимое index.php

## Исправление настроек доступа

```
[root@server.dmmosharov.net conf.d]# chown -R apache:apache /var/www  
[root@server.dmmosharov.net conf.d]# restorecon -vR /etc  
[root@server.dmmosharov.net conf.d]# restorecon -vR /var/www  
[root@server.dmmosharov.net conf.d]# systemctl restart httpd  
[root@server.dmmosharov.net conf.d]#
```

**Рис. 12:** Исправление настроек доступа



## Отображение сайта

[illegible]

### Рис. 13: Отображение сайта

# Сохранение конфигурации

```
[root@server.dmosharov.net private]# cd /vagrant/provision/server/http
[root@server.dmosharov.net http]# cp -R /etc/httpd/conf.d/* /vagrant/provision/server/http/etc/httpd/conf.d
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/autotindex.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/fcgid.conf'? cp -R /var/www
y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/manual.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/php.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/README'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/server.dmosharov.net.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/sa1.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/userdir.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/welcome.conf'? y
cp: overwrite '/vagrant/provision/server/http/etc/httpd/conf.d/www.dmosharov.net.conf'? y
[root@server.dmosharov.net http]# y
bash: y: command not found...
[root@server.dmosharov.net http]# y
bash: y: command not found...
[root@server.dmosharov.net http]# y
bash: y: command not found...
[root@server.dmosharov.net http]# cp -R /var/www/html/* /vagrant/provision/server/http/var/www/html
cp: overwrite '/vagrant/provision/server/http/var/www/html/server.dmosharov.net/index.html'? y
cp: overwrite '/vagrant/provision/server/http/var/www/html/server.dmosharov.net/www.dmosharov.conf'? y
cp: overwrite '/vagrant/provision/server/http/var/www/html/www.dmosharov.net/index.php'? y
[root@server.dmosharov.net http]# y
bash: y: command not found...
[root@server.dmosharov.net http]# y
bash: y: command not found...
[root@server.dmosharov.net http]# mkdir -p /vagrant/provision/server/http/etc/pki/tls/private
[root@server.dmosharov.net http]# mkdir -p /vagrant/provision/server/http/etc/pki/tls/certs
[root@server.dmosharov.net http]# cp -R /etc/pki/tls/private/www.dmosharov.net.key /vagrant/provision/server/http/etc/pki/tls/private
cp: overwrite '/vagrant/provision/server/http/etc/pki/tls/private/www.dmosharov.net.key'? y
[root@server.dmosharov.net http]# cp -R /etc/pki/tls/certs/www.dmosharov.net.crt /vagrant/provision/server/http/etc/pki/tls/certs
cp: overwrite '/vagrant/provision/server/http/etc/pki/tls/certs/www.dmosharov.net.crt'?
```

Рис. 14: Сохранение конфигурации

```
GNU nano 8.1 /vagrant/provision/server/http.sh
#!/bin/bash
echo "Provisioning script $0"
echo "Install needed packages"
dnf -y groupinstall "Basic Web Server"
echo "Copy configuration files"
cp -R /vagrant/provision/server/http/etc/httpd/* /etc/httpd
cp -R /vagrant/provision/server/http/var/www/* /var/www
chown -R apache:apache /var/www
restorecon -vR /etc
restorecon -vR /var/www
echo "Configure firewall"
firewall-cmd --add-service=http
firewall-cmd --add-service=http --permanent
echo "Start http service"
systemctl enable httpd
systemctl start httpd

echo "install php"
dnf -y install php
echo "configure firewall for https"
firewall-cmd --list-services
firewall-cmd --get-services
firewall-cmd --add-services=https
firewall-cmd --add-service=https --permanent
firewall-cmd --reload
echo "restart httpd"
systemctl restart httpd
```

Рис. 15: http.sh

В результате выполнения лабораторной работы были получены навыки по конфигурированию HTTP-сервера Apache и https