

Министерство науки и высшего образования Российской Федерации
федеральное государственное автономное образовательное
учреждение
высшего образования
«Национальный исследовательский университет ИТМО»

Факультет программной инженерии и компьютерной техники

Дисциплина «Технологии виртуализации»

Лабораторная работа №2

Группа: Р34102

Выполнил: Конаныхина А.А.

Проверил:

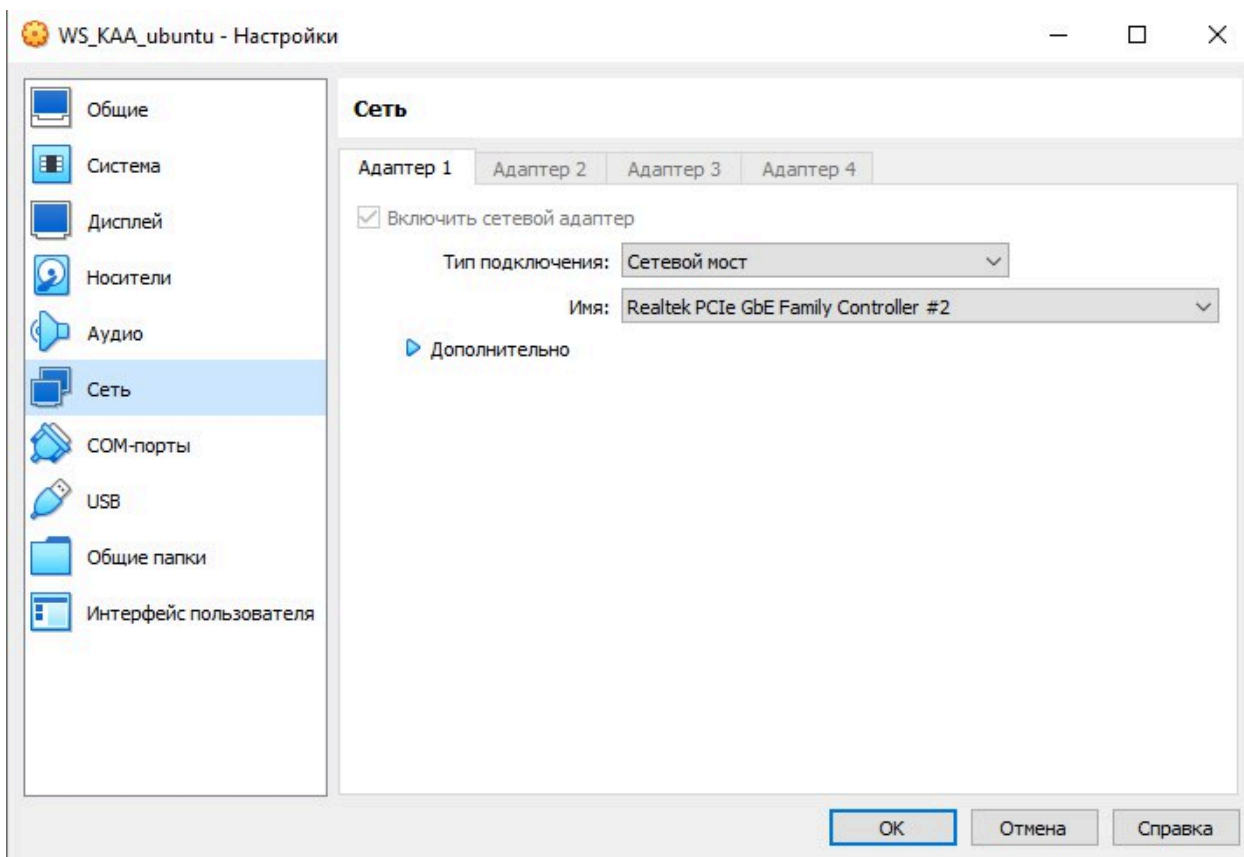
к.т.н. преподаватель Белозубов А.В.

Санкт-Петербург, 2023 г.

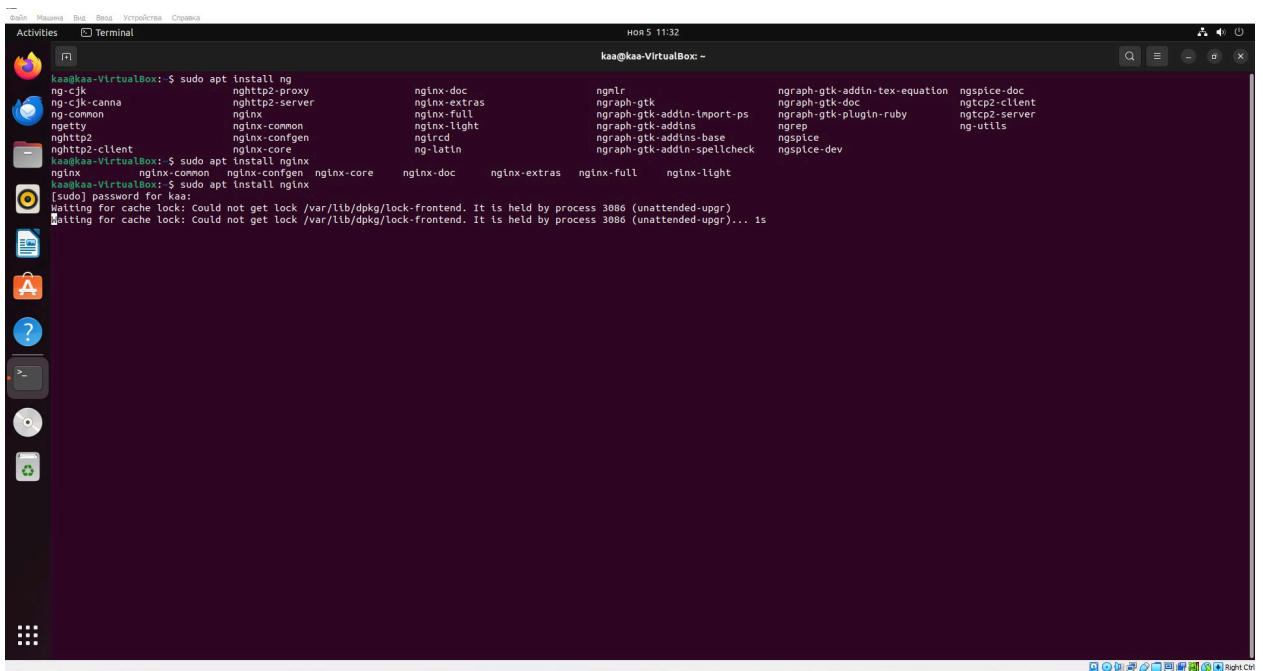
Цели работы

Получить практические знания о работе сетевых приложений и сервисов на виртуальных машинах.

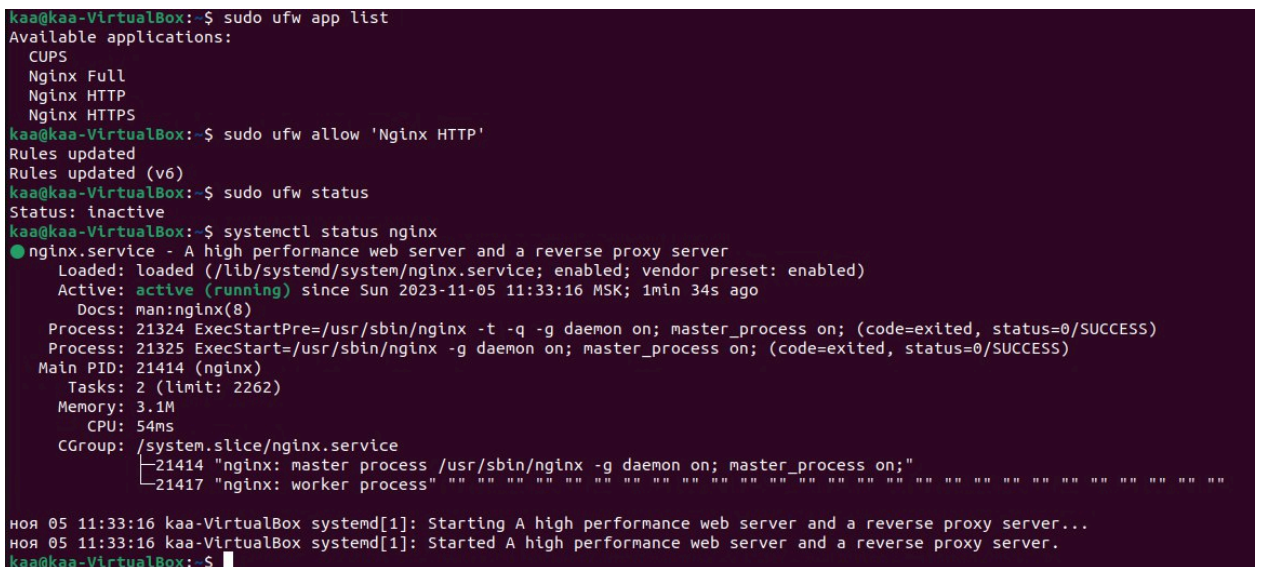
Выполнение



Подключаем сетевой адаптер виртуальной машины к сетевому мосту.



Включаем виртуальную машину, и устанавливаем nginx.



Проверяем, что nginx установлен и запущен.

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

Сворачиваем виртуальную машину, и проверяем что стандартная страница nginx работает.

```
kaa@kaa-VirtualBox:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7 libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-template-perl libmecab2 libprotobuf-lite23 mecab-ipadic
  mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  libipc-sharedcache-perl mailx tinycsa
The following NEW packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7 libevent-pthreads-2.1-7 libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-template-perl libmecab2 libprotobuf-lite23 mecab-ipadic
  mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 20 newly installed, 0 to remove and 29 not upgraded.
Need to get 29,2 MB of archives.
After this operation, 242 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

```
kaa@kaa-VirtualBox:~$ sudo systemctl start mysql.service
kaa@kaa-VirtualBox:~$ sudo mysql_secure_installation
```

Securing the MySQL server deployment.

Connecting to MySQL using a blank password.

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No: y

There are three levels of password validation policy:

LOW Length >= 8

MEDIUM Length >= 8, numeric, mixed case, and special characters

STRONG Length >= 8, numeric, mixed case, special characters and dictionary

file

Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 0

Устанавливаем и настраиваем mysql.

```
kaa@kaa-VirtualBox:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 26
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

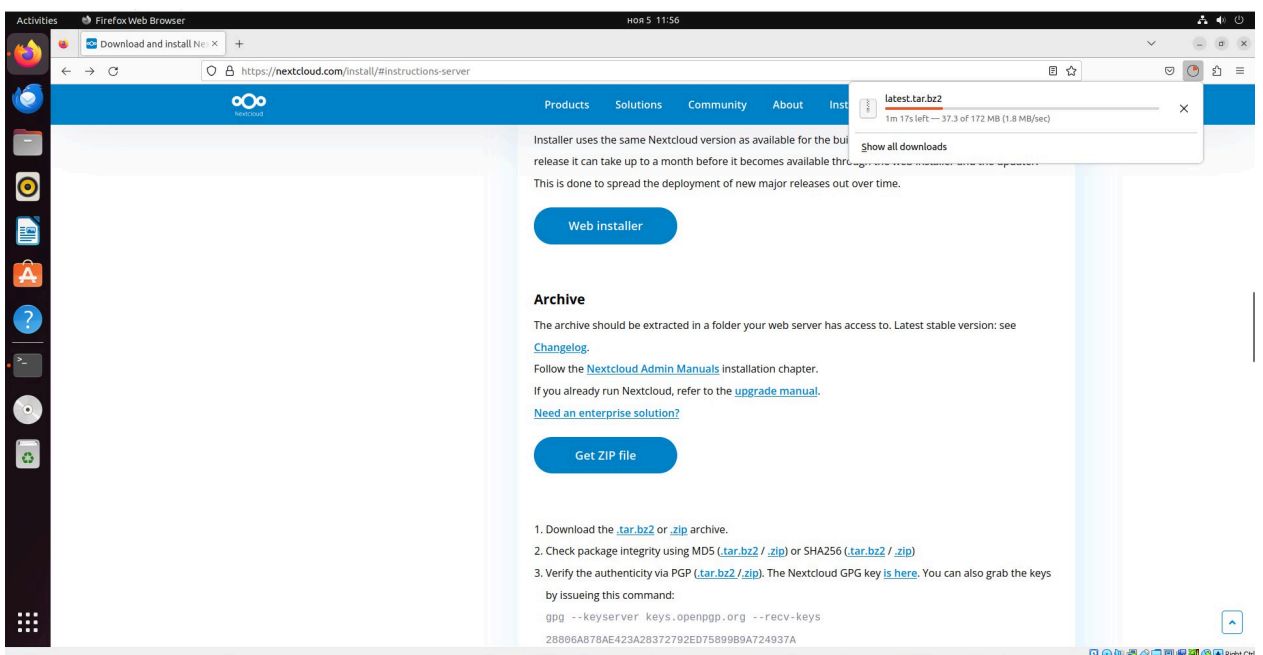
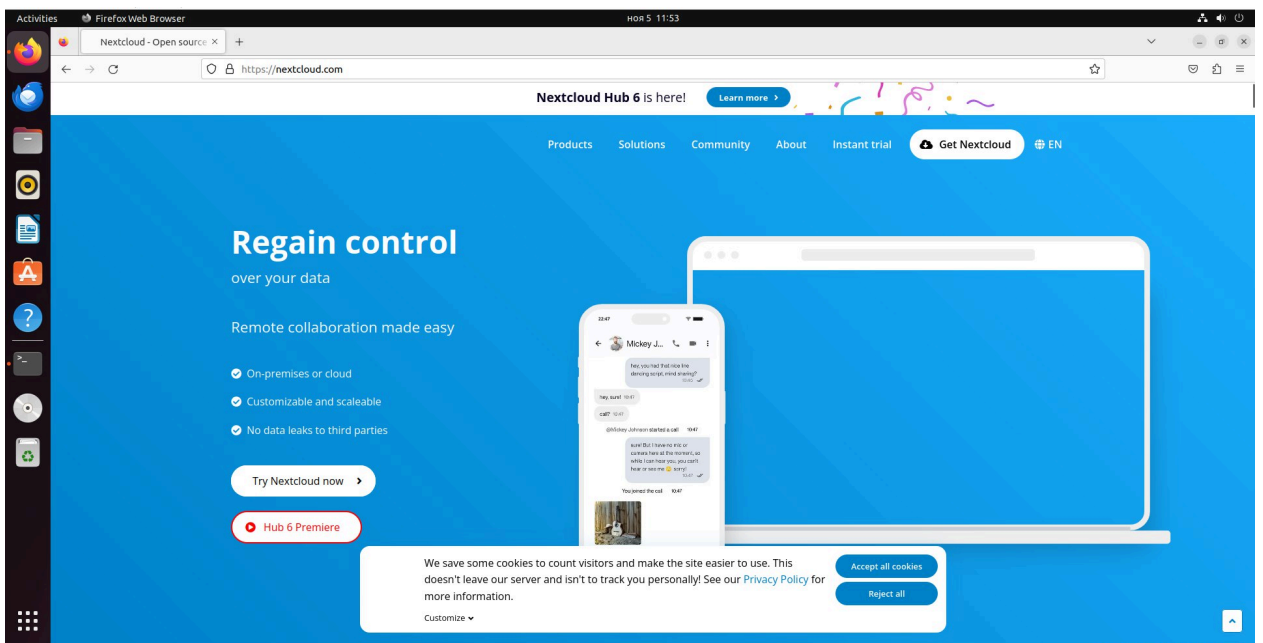
Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Проверяем, что оно работает.



С официального сайта nextcloud скачиваем программу и распакуем архив.


```
GNU nano 6.2 /etc/nginx/conf.d/nextcloud.conf
server {
    listen 80;
    listen [::]:80;
    server_name 192.168.0.106;

    # Add headers to serve security related headers
    add_header X-Content-Type-Options nosniff;
    add_header X-XSS-Protection "1; mode=block";
    add_header X-Robots-Tag none;
    add_header X-Download-Options noopen;
    add_header X-Permitted-Cross-Domain-Policies none;
    add_header Referrer-Policy no-referrer;

    #I found this header is needed on Ubuntu, but not on Arch Linux.
    add_header X-Frame-Options "SAMEORIGIN";

    # Path to the root of your installation
    root /var/www/nextcloud/;

    access_log /var/log/nginx/nextcloud.access;
    error_log /var/log/nginx/nextcloud.error;

    location = /robots.txt {
        allow all;
        log_not_found off;
        access_log off;
    }

    # The following 2 rules are only needed for the user_webfinger app.
    # Uncomment it if you're planning to use this app.
    #rewrite ^/.well-known/host-meta /public.php?service=host-meta last;
    #rewrite ^/.well-known/host-meta.json /public.php?service=host-meta-json
    # last;

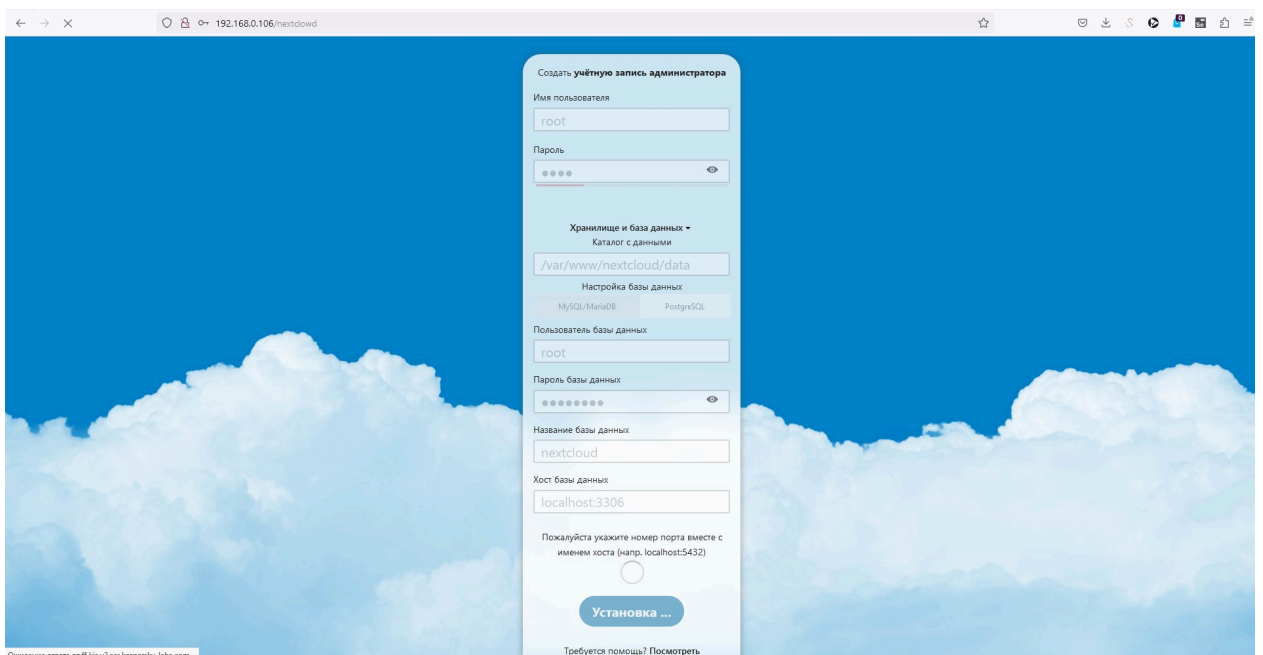
    location = /.well-known/carddav {
        return 301 $scheme://$host/remote.php/dav;
    }
    location = /.well-known/caldav {
        return 301 $scheme://$host/remote.php/dav;
    }

    location ~ /.well-known/acme-challenge {
        allow all;
    }
}
```

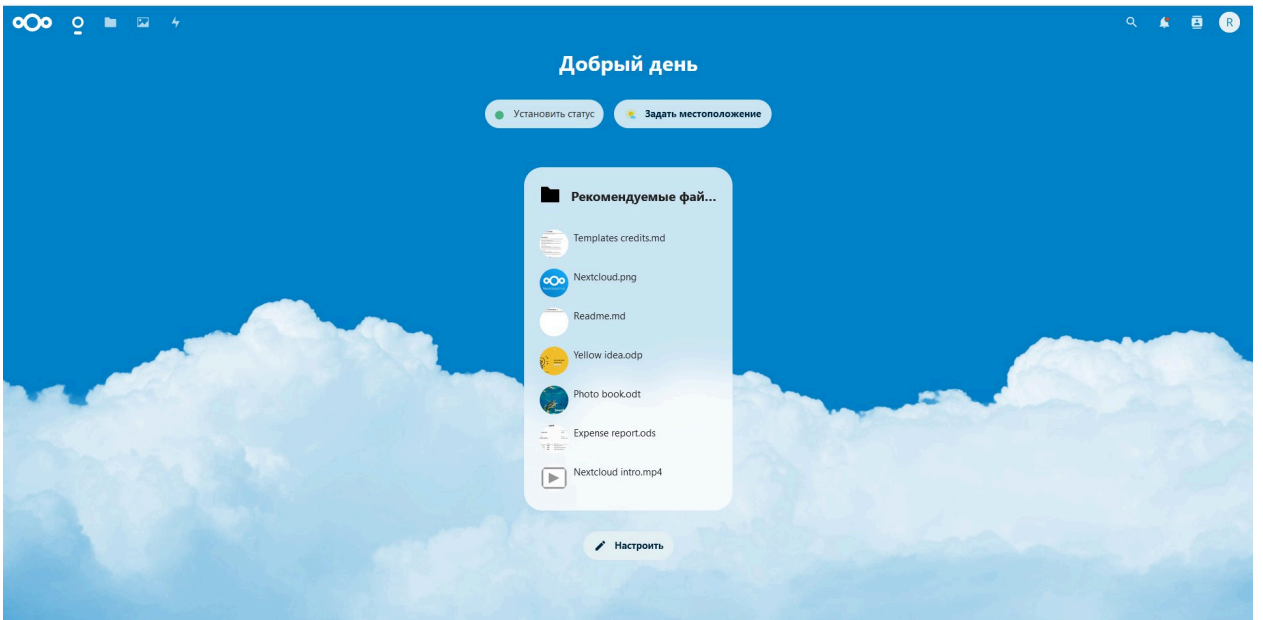
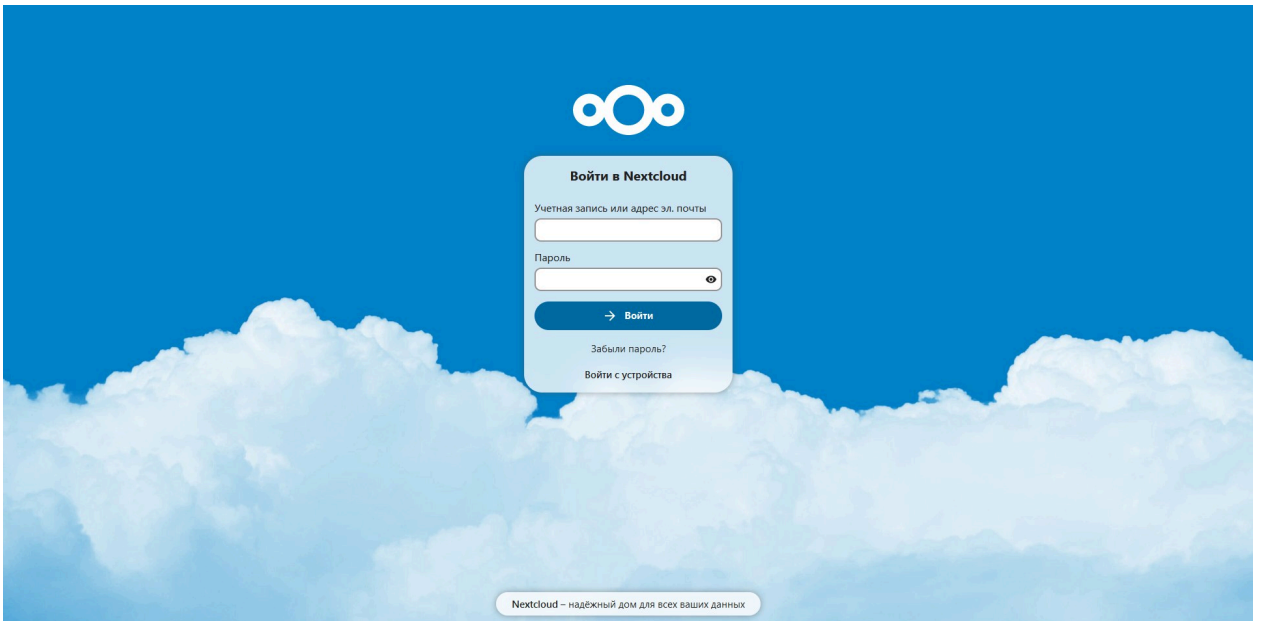
Запишем в конфигурационные файлы параметры.

```
kaa@kaa-VirtualBox:~/nextcloud$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
kaa@kaa-VirtualBox:~/nextcloud$ sudo systemctl restart nginx
kaa@kaa-VirtualBox:~/nextcloud$
```

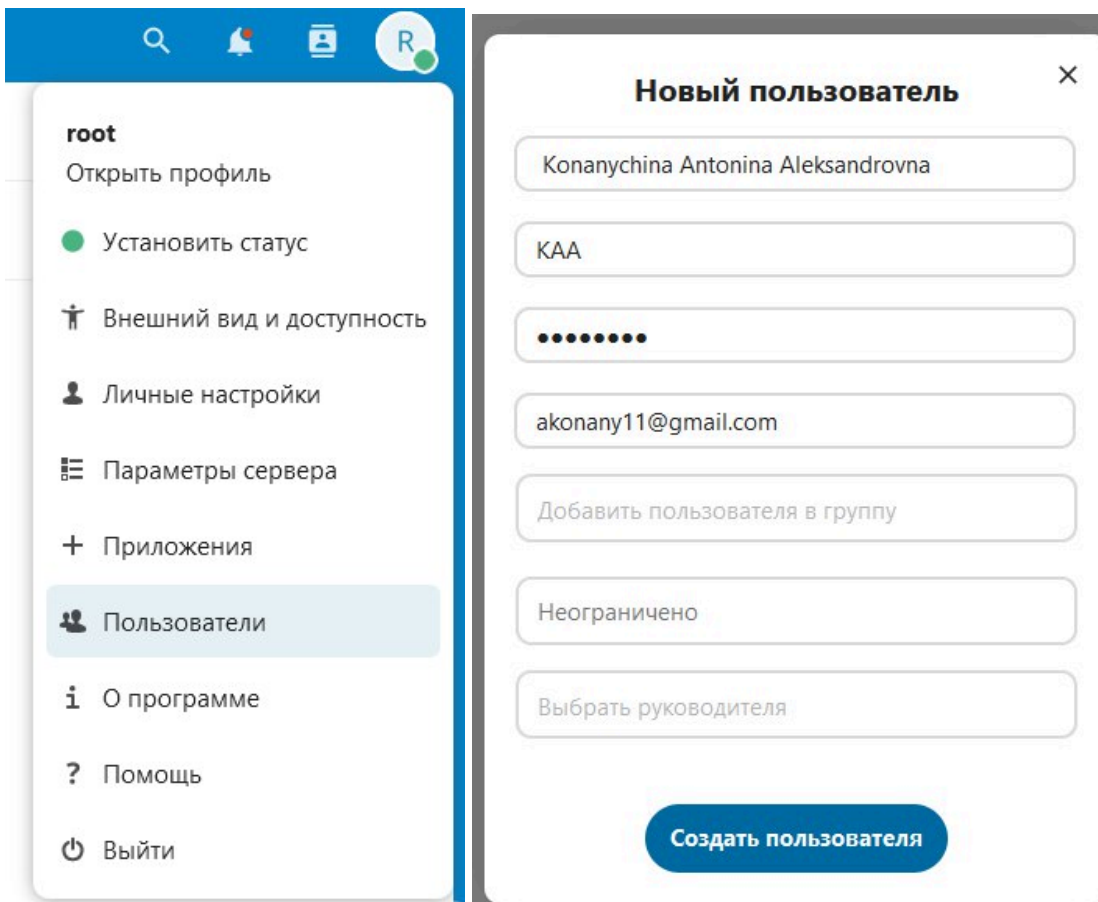
Перезапустим nginx.



Теперь в браузере можем настроить nextcloud.

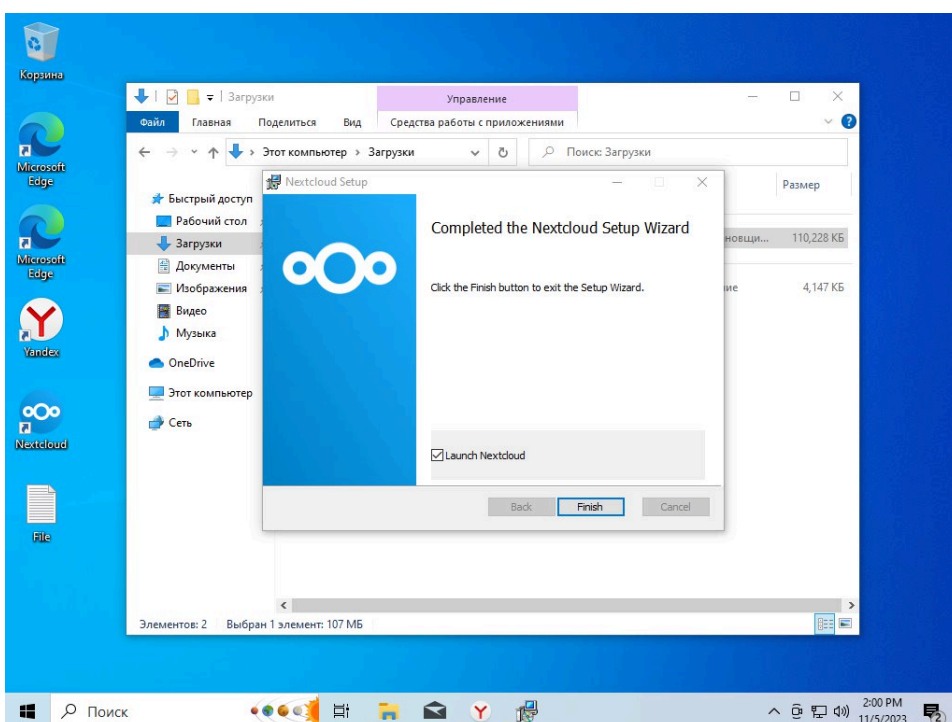


Теперь можем зайти в аккаунт админа.

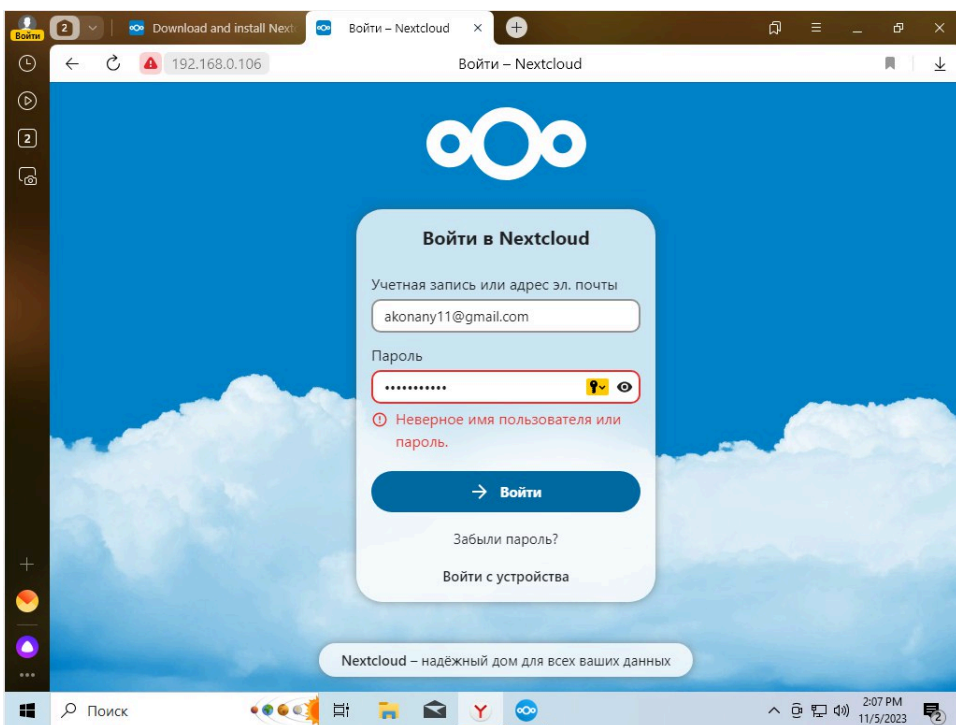
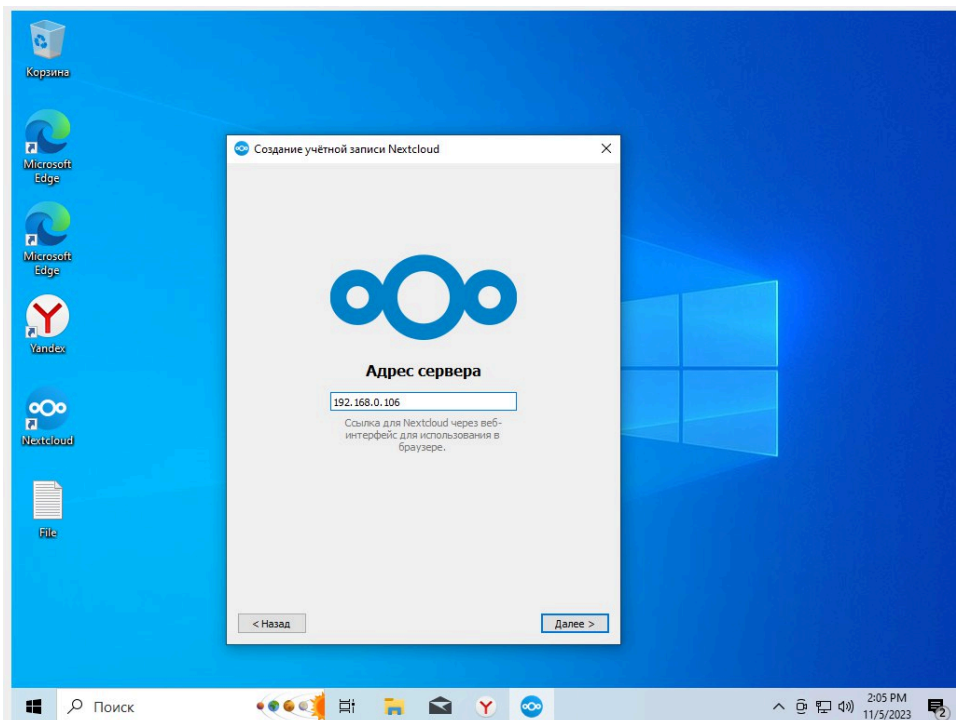


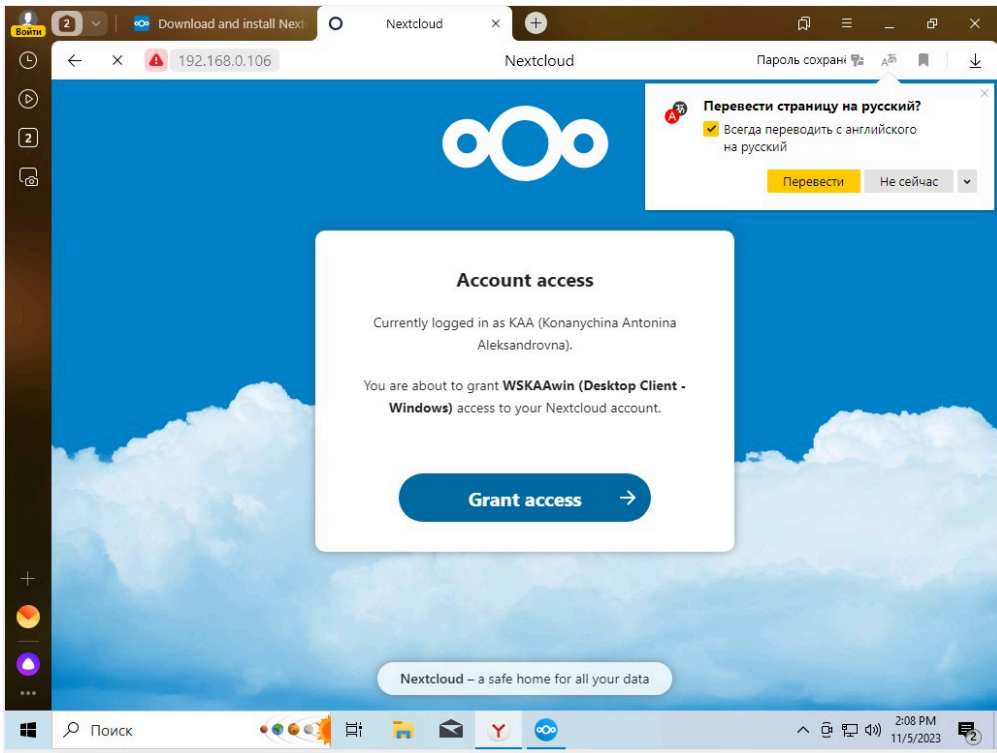
Имя пользователя	Пароль	Адрес эл. почты	Участник групп	Администратор групп	Квота	Руководитель
КАА Konanychina Antonina Aleksandrovna		akonany11@gmail.com	Пользователи		Неограничено (использовано 0 В)	
BAV Belozubov A.V.			Пользователи		Неограничено (использовано 0 В)	

Теперь создадим аккаунты для пользователей.

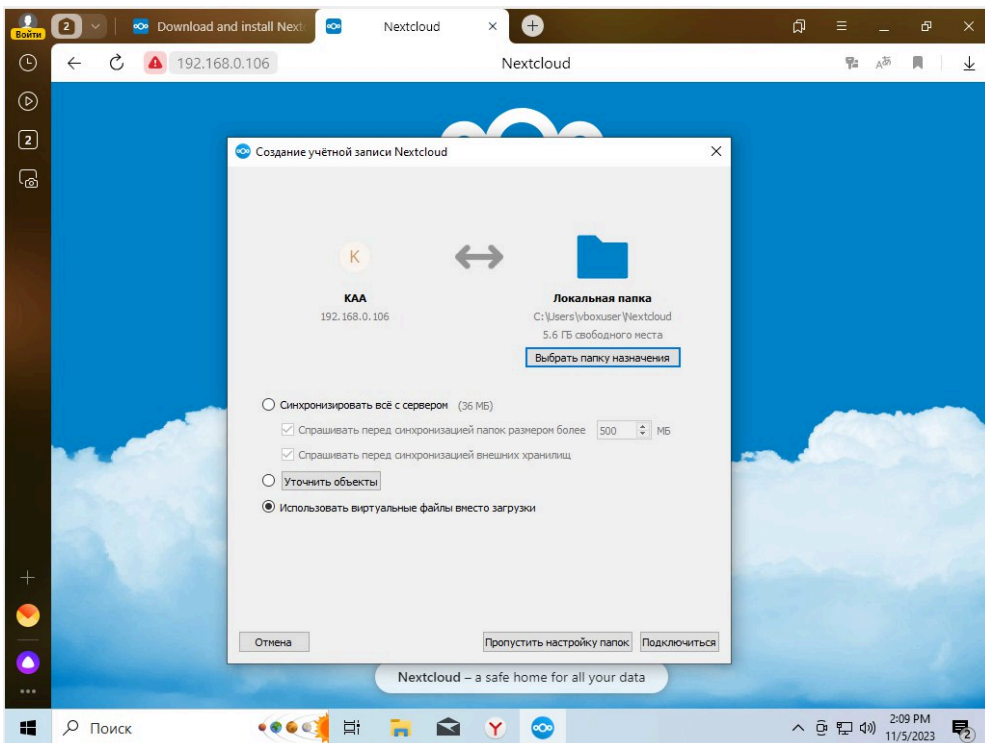


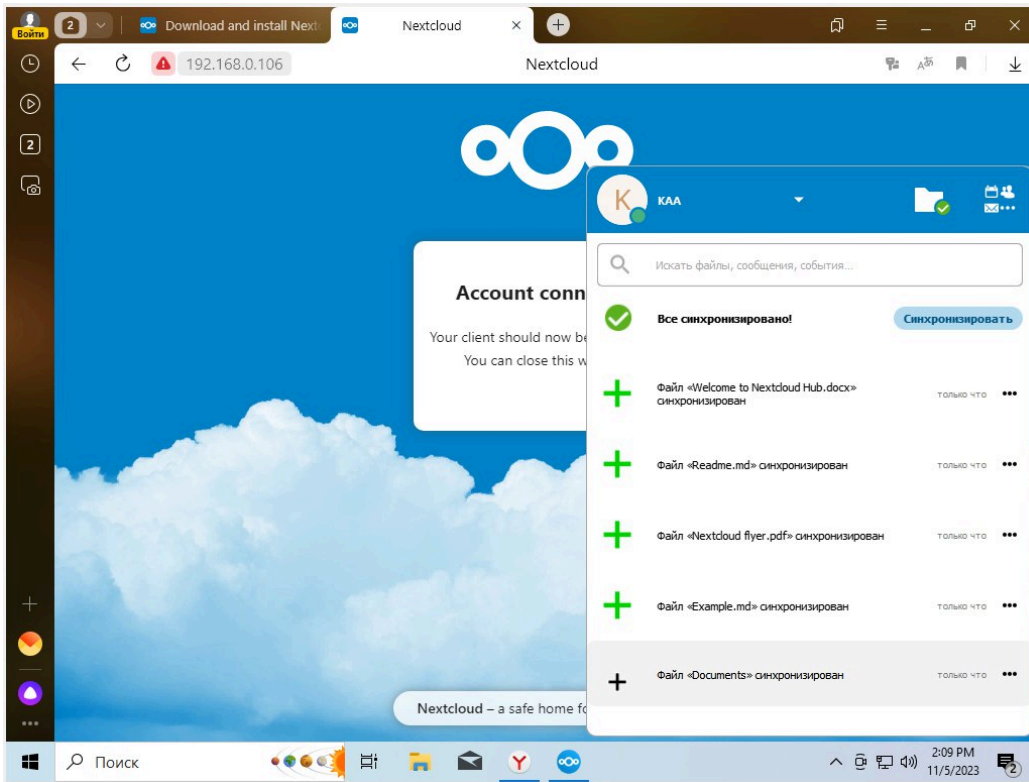
Запустим виртуальную машину windows и установим на нее клиентское приложение nextcloud.



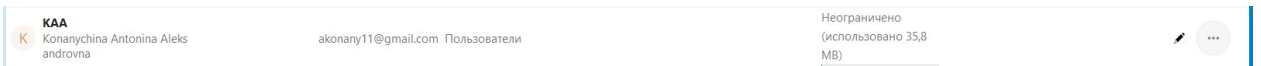


Войдем в аккаунт, который мы создали для пользователя.





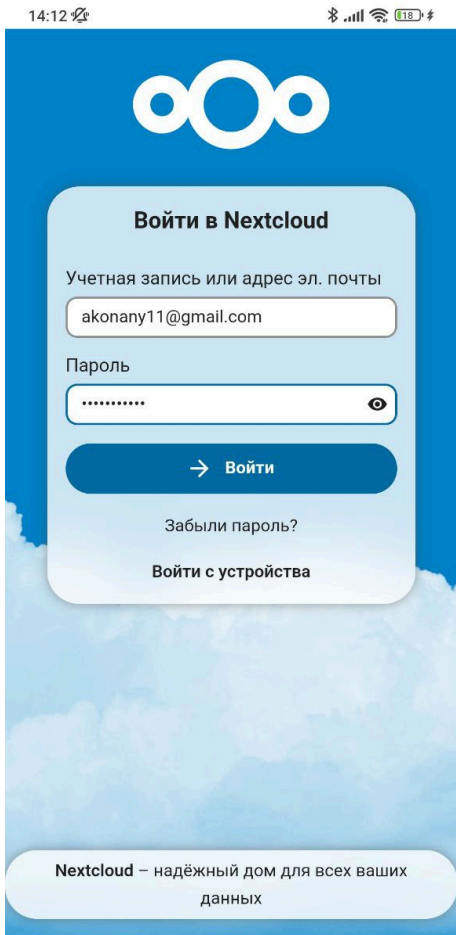
Выберем папку, куда будут загружаться файлы.



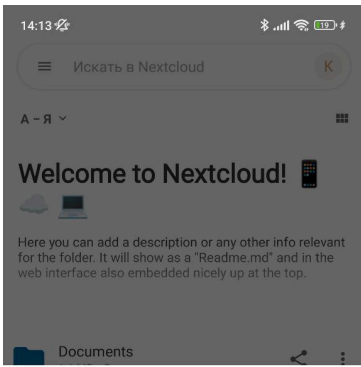
С аккаунта админа видно, сколько места занимает пользователь.









Скачаем на телефон приложение nextcloud.

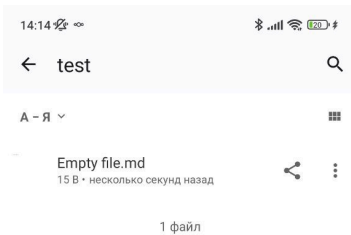


Войдем в аккаунт.

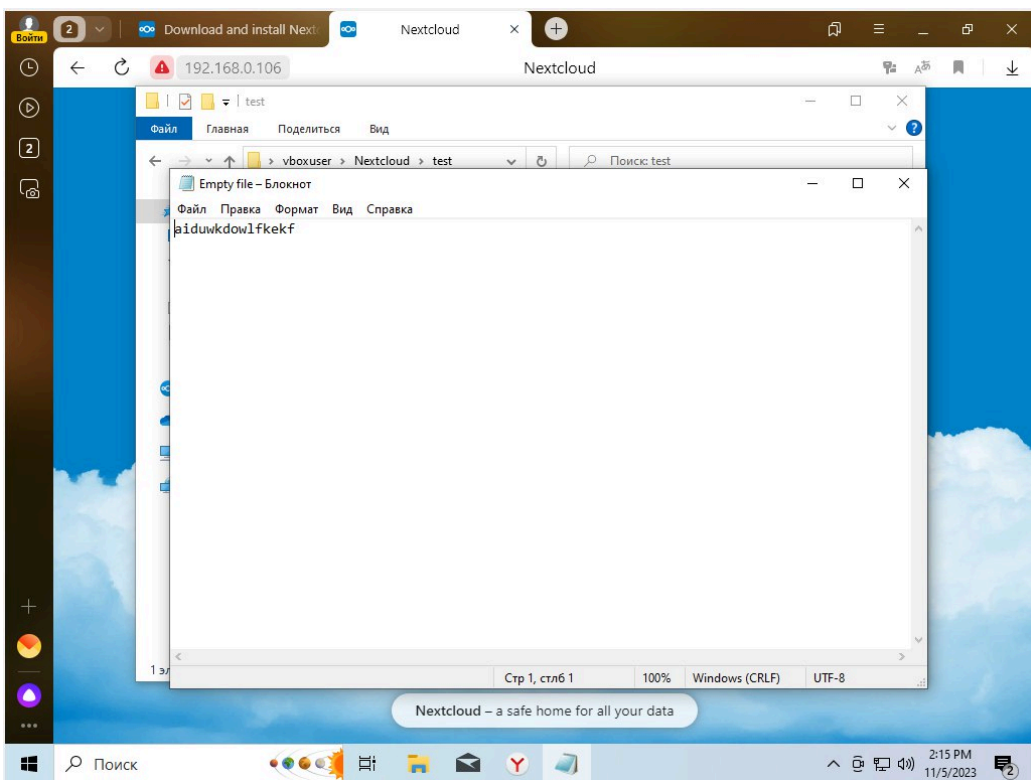
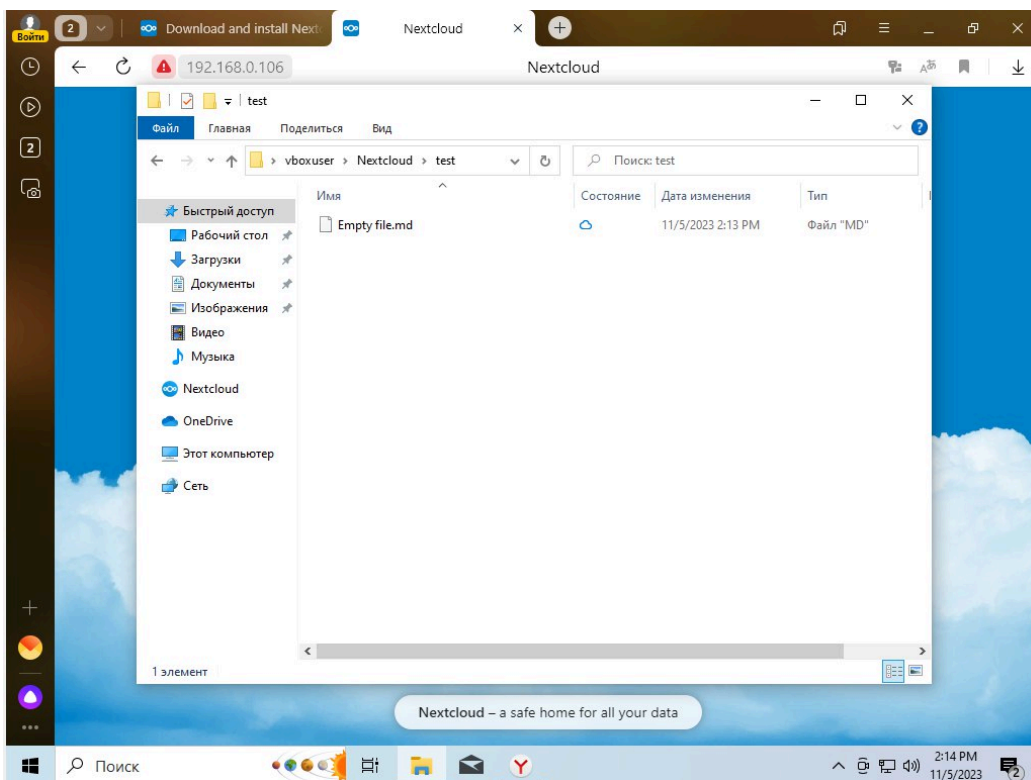


Добавить в Nextcloud

-  Отправить файлы
-  Отправить из других приложений
-  Передача фотографий камеры
-  Сканировать документ через камеру
-  Создать папку
-  Создать text document



Создадим файл, запишем туда что-нибудь и сохраним.



Проверим что файл создался в облаке, и его содержимое совпадает.

APACHE OFBiz

Home Getting Started News Documentation Community Demos

Getting Started - Developers

HOME / GETTING STARTED / DEVELOPERS

- Pre-Requisites
- Download
- Build and Run
- Browse Repository
- Tutorial
- Documentation and Help
- Demo

Pre-Requisites

- For 18.12, the ofbiz-framework trunk and ofbiz-plugins trunk the minimum requirement you need installed is java 1.8 SDK.
- Apache OFBiz can be downloaded and run on both Unix based and Windows based systems

NOTE: if you are running an older release or branch then please refer to our [Wiki](#) for details

Download

There are two ways to download the OFBiz source code

- Using a Download Mirror**
Download your required version from one of our [download mirrors](#) and extract the zip file
- Checkout the Source Code**
Checkout the source code from the repository

Anyone can checkout or [browse the source code](#) in the OFBiz public gitbox or GitHub repositories.

To checkout the source code, simply use the following command (if you are using a GUI client, configure it appropriately).

We have split OFBiz into ofbiz-framework and ofbiz-plugins, so if you want to use the ofbiz-plugins you need to checkout both trunks.

[Waiting for analytics.apache.org...](#)

Установим с официального сайта ofbiz.

```
kaa@kaa-VirtualBox:~/Downloads$ sudo unzip -d /opt/gradle gradle-8.4-bin.zip
Archive: gradle-8.4-bin.zip
  creating: /opt/gradle/gradle-8.4/
  inflating: /opt/gradle/gradle-8.4/LICENSE
  inflating: /opt/gradle/gradle-8.4/NOTICE
  inflating: /opt/gradle/gradle-8.4/README
  creating: /opt/gradle/gradle-8.4/init.d/
  inflating: /opt/gradle/gradle-8.4/init.d/readme.txt
  creating: /opt/gradle/gradle-8.4/bin/
  inflating: /opt/gradle/gradle-8.4/bin/gradle
  inflating: /opt/gradle/gradle-8.4/bin/gradle.bat
  creating: /opt/gradle/gradle-8.4/lib/
  inflating: /opt/gradle/gradle-8.4/lib/gradle-runtime-api-info-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-installation-beacon-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-api-metadata-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-launcher-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-kotlin-dsl-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-build-events-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-tooling-api-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-core-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-jvm-services-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-file-collections-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-execution-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-model-groovy-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-internal-instrumentation-api-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-model-core-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-build-cache-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-core-api-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-persistent-cache-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-resources-8.4.jar
  inflating: /opt/gradle/gradle-8.4/lib/gradle-worker-processes-8.4.jar
```

Скачаем и распакуем gradle

```
kaa@kaa-VirtualBox:~/Downloads/apache-ofbiz-18.12.08$ ./gradlew
> Task :compileJava
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/start/src/main/java/org/apache/ofbiz/base/start/StartupControlPanel.java:216: warning: [deprecation] newInstance() in Class has been deprecated
StartupLoader loader = (StartupLoader) loaderClass.newInstance();
^
where T is a type-variable:
T extends Object declared in class Class
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/UtilCodec.java:144: warning: [deprecation] newInstance() in Class has been deprecated
Object obj = customPolicyClass.newInstance();
^
where T is a type-variable:
T extends Object declared in class Class
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/UtilCodec.java:458: warning: [deprecation] newInstance() in Class has been deprecated
Object obj = customPolicyClass.newInstance();
^
where T is a type-variable:
T extends Object declared in class Class
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/SSLUtl.java:250: warning: [deprecation] X509Certificate in javax.security.cert has been deprecated
javax.security.cert.X509Certificate[] peerCerts;
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/SSLUtl.java:252: warning: [deprecation] getPeerCertificateChain() in SSLSession has been deprecated
peerCerts = session.getPeerCertificateChain();
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/SSLUtl.java:258: warning: [deprecation] X509Certificate in javax.security.cert has been deprecated
for (javax.security.cert.X509Certificate peerCert: peerCerts) {
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/base/src/main/java/org/apache/ofbiz/base/uttl/KeyStoreUtl.java:142: warning: [deprecation] X509Certificate in javax.security.cert has been deprecated
public static Map<String, String> getCertX509Map(javax.security.cert.X509Certificate cert) {
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/entity/src/main/java/org/apache/ofbiz/entity/jdbc/AbstractCursorHandler.java:64: warning: [deprecation] getProxyClass(ClassLoader,Class<?>...) in Proxy has been deprecated
Class<?> proxyClass = Proxy.getProxyClass(loader, tmpClass);
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/framework/mnlang/src/main/java/org/apache/ofbiz/mnlang/method/entityops/RemoveByAnd.java:62: warning: [deprecation] @Deprecated annotation has no effect on th
is variable declaration
String entityName = entityNameFe.expandString(methodContext.getEnvMap());
^
/home/kaa/Downloads/apache-ofbiz-18.12.08/applications/product/src/main/java/org/apache/ofbiz/product/price/PriceServices.java:603: warning: [deprecation] divide(BigDecimal,int) in BigDecimal has been dep
recated
BigDecimal taxMultiplier = ONE_BASE.add(taxPercentage.divide(PERCENT_SCALE, taxCalcScale));
^
```

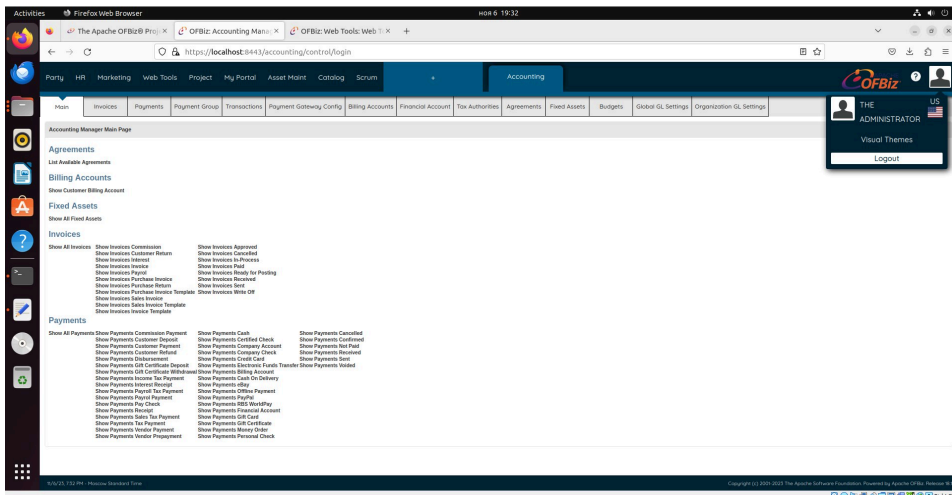
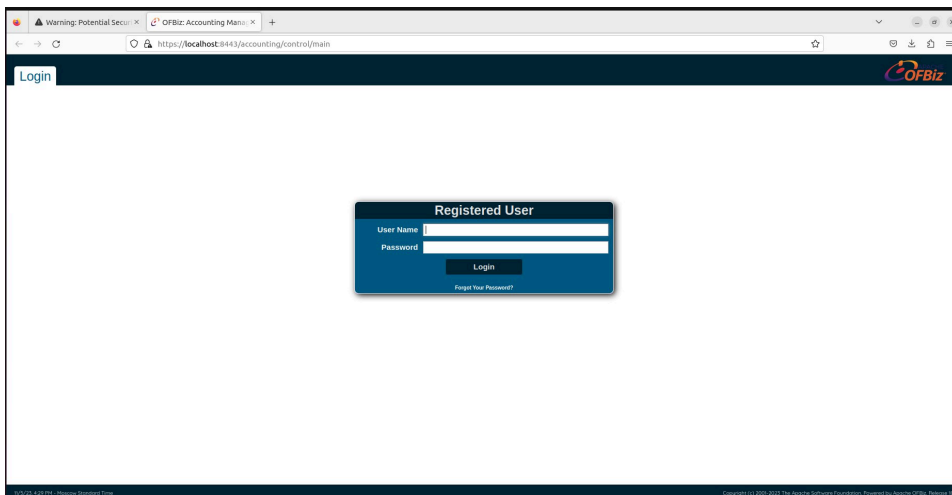
```

kaa@kaa-VirtualBox: ~/Downloads/apache-ofbiz-18.12.08$ ./gradlew ofbiz
> Task :compileJava UP-TO-DATE
> Task :compileGroovy UP-TO-DATE
> Task :processResources UP-TO-DATE
> Task :classes UP-TO-DATE
> Task :jar UP-TO-DATE
> Task :startScripts UP-TO-DATE
> Task :distTar UP-TO-DATE
> Task :distZip UP-TO-DATE
> Task :assemble UP-TO-DATE
> Task :checkstyleMain UP-TO-DATE
> Task :compileTestJava UP-TO-DATE
> Task :compileTestGroovy UP-TO-DATE
> Task :processTestResources NO-SOURCE
> Task :testClasses UP-TO-DATE
> Task :checkstyleTest UP-TO-DATE
> Task :test UP-TO-DATE
> Task :check UP-TO-DATE
> Task :build UP-TO-DATE

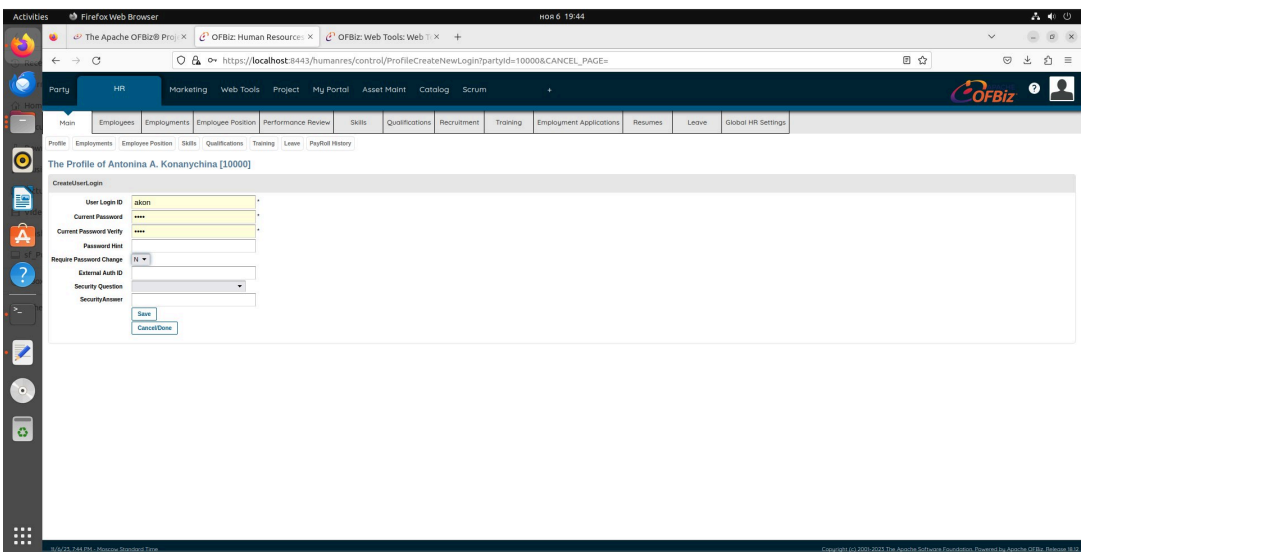
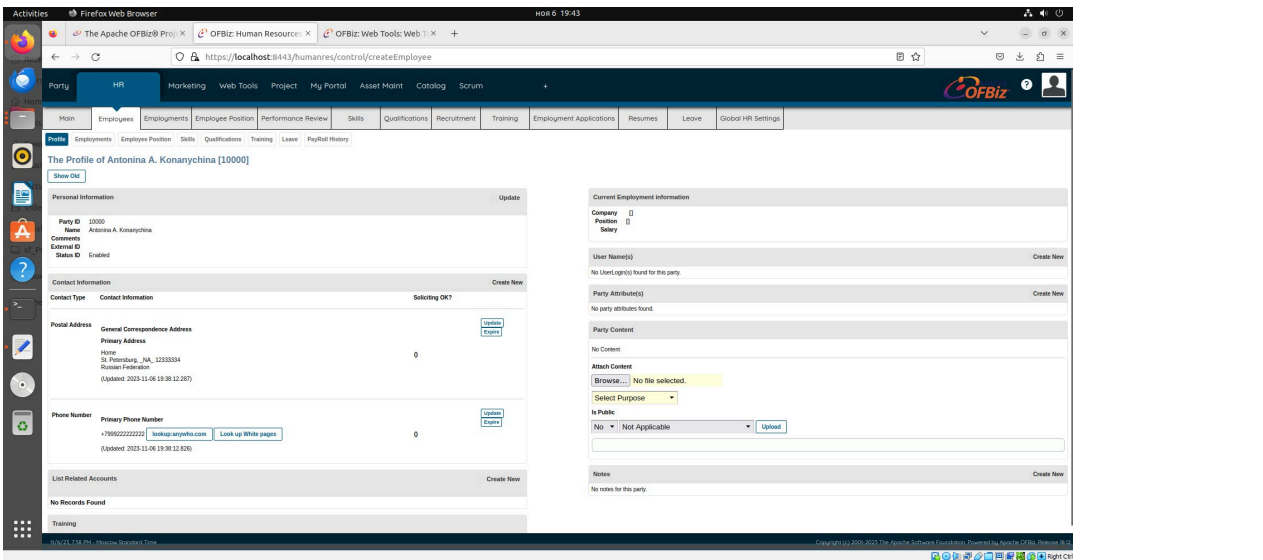
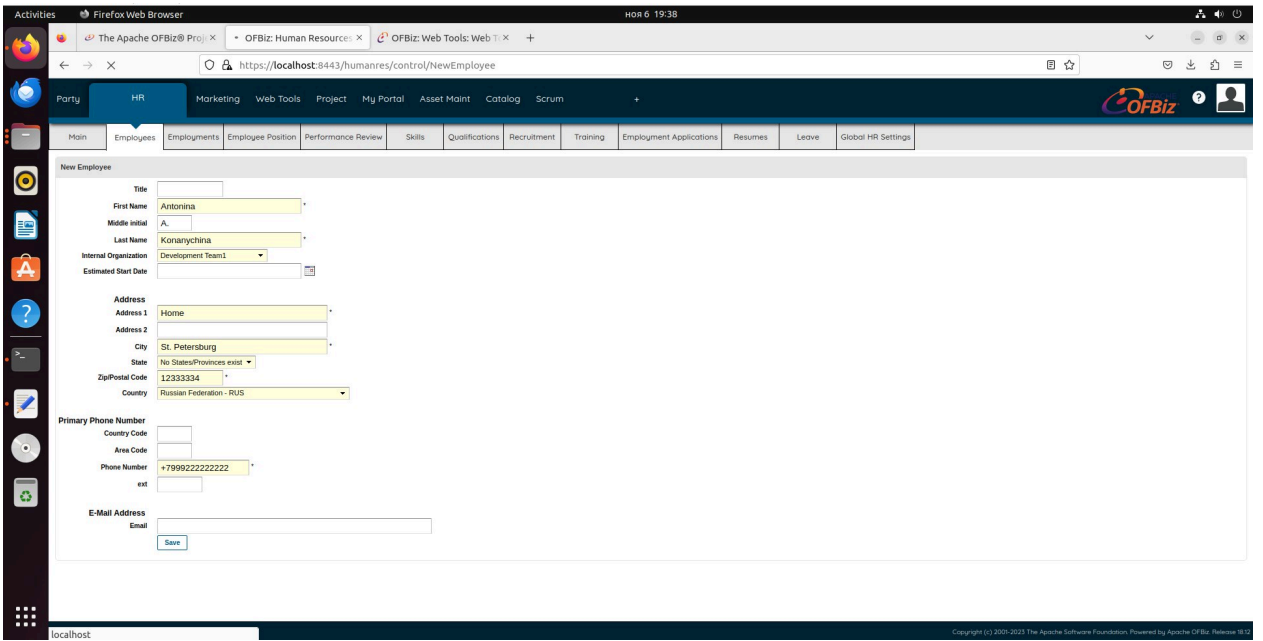
> Task :ofbiz
Config.java using configuration file start.properties
Set OFBIZ_HOME to - /home/kaa/Downloads/apache-ofbiz-18.12.08
Admin socket configured on - /127.0.0.1:10523

```

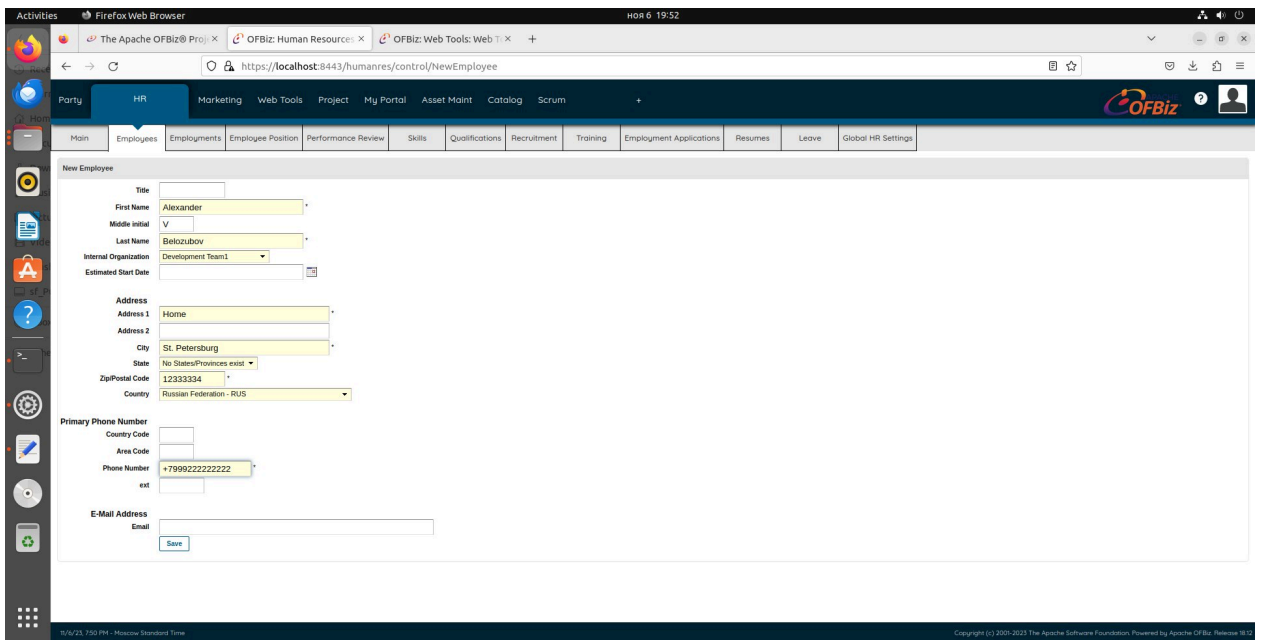
Скачаем и запустим ofbiz.



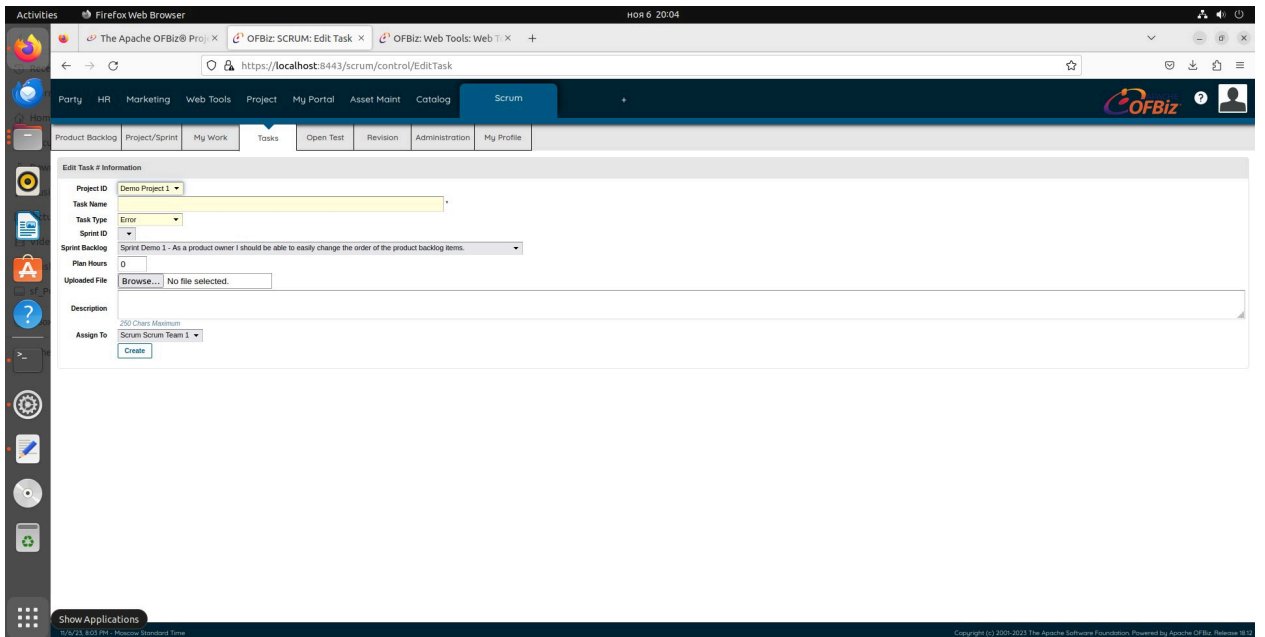
Войдем в аккаунт админа.



Добавим нового сотрудника



Добавим еще одного сотрудника.



Создадим проект.

Firefox Web Browser | HR 6 20:14

https://localhost:8443/projectmgr/control/addResource

Lookup Party by Name

Party ID: [10000] | Party Type ID: [Person] | First name: [Antonina] | Last name: [Konanychina] | Group Name: [Accounting department]

Party ID	Party Type ID	First name	Last name	Group Name
10000	Person	Antonina	Konanychina	
10001	Person	Alexander	Belozubov	
ACCOUNTING	Party Group			Accounting department
AUTHOR_BROAL	Person	Ilg	AI	
AUTHOR_MADMAX	Person	Mad	Max	
Customer 1, ManagerP1				
Customer 2, ManagerP2				
Customer 3, Billing				
Employee, Demo				
Konanychina, Antonina A.				
Manager, Peter				

E-Mail Address	Phone Number	Purpose	Remove
ofbiztest@example.com			Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	801 555-5555		Remove
ofbiztest@example.com	+799622222222	Primary Phone Number	Remove
ofbiztest@example.com	801 555-5555		Remove

10/6/21 8:14 PM - Moscow Standard Time

Firefox Web Browser | HR 6 20:15

https://localhost:8443/projectmgr/control/addResource

Party HR Marketing Web Tools **Project** My Portal Asset Maint Catalog Scrum

My Tasks My Time Projects Tasks Resources Timesheet Skill Type Request List

Profile Role(s) Projects Tasks Rates Billing

The Profile of Alexander V Belozubov [10001]

Add a Resource

Party ID: [10001] | Role Type ID: [Provider Manager]

Resource Name	E-Mail Address	Phone Number	Purpose	Remove
ADMINISTRATOR, THE PRIVILEGED	ofbiztest@example.com			Remove
Analyst1, Jo	ofbiztest@example.com	801 555-5555		Remove
Analyst2, Tom	ofbiztest@example.com	801 555-5555		Remove
Belozubov, Alexander V		+799622222222	Primary Phone Number	Remove
Customer 1, ManagerP1	ofbiztest@example.com	801 555-5555		Remove
Customer 2, ManagerP2	ofbiztest@example.com	801 555-5555		Remove
Customer 3, Billing	ofbiztest@example.com	801 555-5555		Remove
Employee, Demo	ofbiztest@example.com	801 555-5555		Remove
Konanychina, Antonina A.		+799622222222	Primary Phone Number	Remove
Manager, Peter	ofbiztest@example.com	801 555-5555		Remove

10/6/21 8:15 PM - Moscow Standard Time

Добавляем пользователям роли.

Firefox Web Browser | HOR 0 2016 | https://localhost:8443/projectmgr/control/ListWorkEffortPartyAssigns

Party HR Marketing Web Tools **Project** My Portal Asset Maint Catalog Scrum

Main My Tasks My Time Projects **Tasks** Resources Timesheet Skill Type Request List

Current Project: Test project[10000]

Add Resource Assignment

Party ID Antonina A. Konanyshina [10000] Change
 Role Type Provider Functional
 From Date 11/6/2023
 Through Date

Party ID	Role Type	From Date	Through Date	Expire
Your Company Name Here	Internal Organization	11/6/23, 7:54:14 PM		<input type="button" value="Expire"/>
Alexander V Belozubov	Provider Manager	11/6/23, 12:00:00 AM		<input type="button" value="Expire"/>

8/9/23, 9:10 PM - Moscow Standard Time | Copyright (c) 2001-2023 The Apache Software Foundation. Powered by Apache OFBiz. Release 18.10

Firefox Web Browser | HOR 0 2016 | https://localhost:8443/projectmgr/control/projectView?projectId=10000

Party HR Marketing Web Tools **Project** My Portal Asset Maint Catalog Scrum

Main My Tasks My Time Projects **Tasks** Resources Timesheet Skill Type Request List

Current Project: Test project[10000]

Project Information

Project Name Test project
 Status Created
 Priority
 Parent Project Name
 Estimated Start Date
 Estimated Completion Date
 Actual Start Date
 Actual Completion Date
 Planned Hours
 Original Actual Hours
 Actual Hours
 Mailing List E-mail

Sub Projects
 No Records Found

Phases

Wbs ID	Phase	Current Status ID	Priority	Start Date	Completion Date	Planned Hours	Actual Hours
10000	1	Created					

Tasks

Wbs ID	Task	Phase Name	First Resource	Current Status ID	Prio.	Start Date	Est.Compl.	Act.Compl.	Planned Hours	Actual Hours
--------	------	------------	----------------	-------------------	-------	------------	------------	------------	---------------	--------------

Resources

Providers

Name	Role Type ID	From Date	Through Date	Actual Hours	Non Billed Hours
Belozubov, Alexander V [10001]	Provider Manager	11/6/23, 12:00:00 AM		0	
Konanyshina, Antonina A. [10000]	Provider Functional	11/6/23, 12:00:00 AM		0	

Companies

Name	Role Type ID	From Date	Through Date	Currency
Your Company Name Here [Company]	Internal Organization	11/6/23, 7:54:14 PM		American Dollar

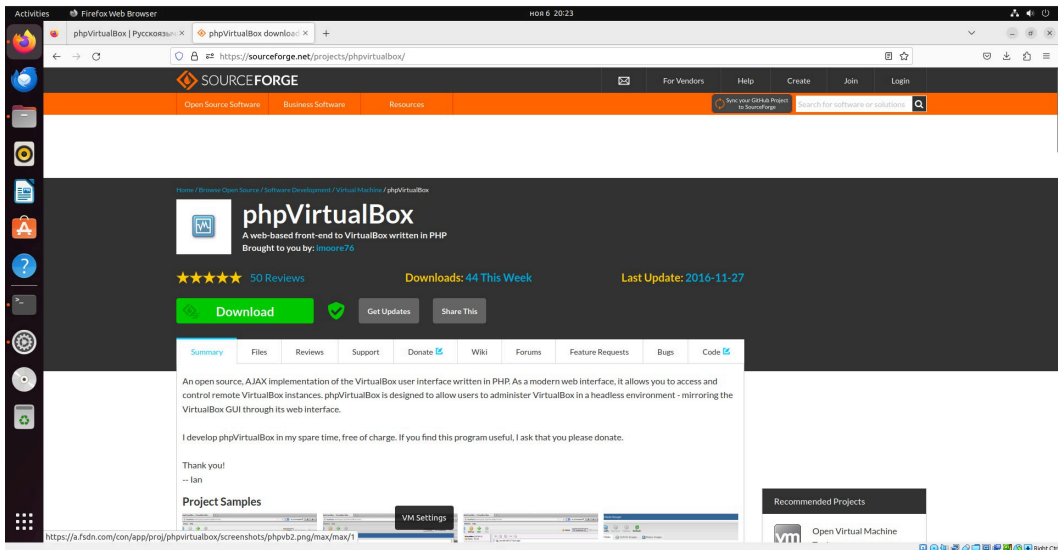
Notes
 No Notes for this Project.

Project Content List
 No Records Found

List Order
 No Records Found

8/9/23, 9:10 PM - Moscow Standard Time | Copyright (c) 2001-2023 The Apache Software Foundation. Powered by Apache OFBiz. Release 18.10

Теперь можно добавить в проект лидера.



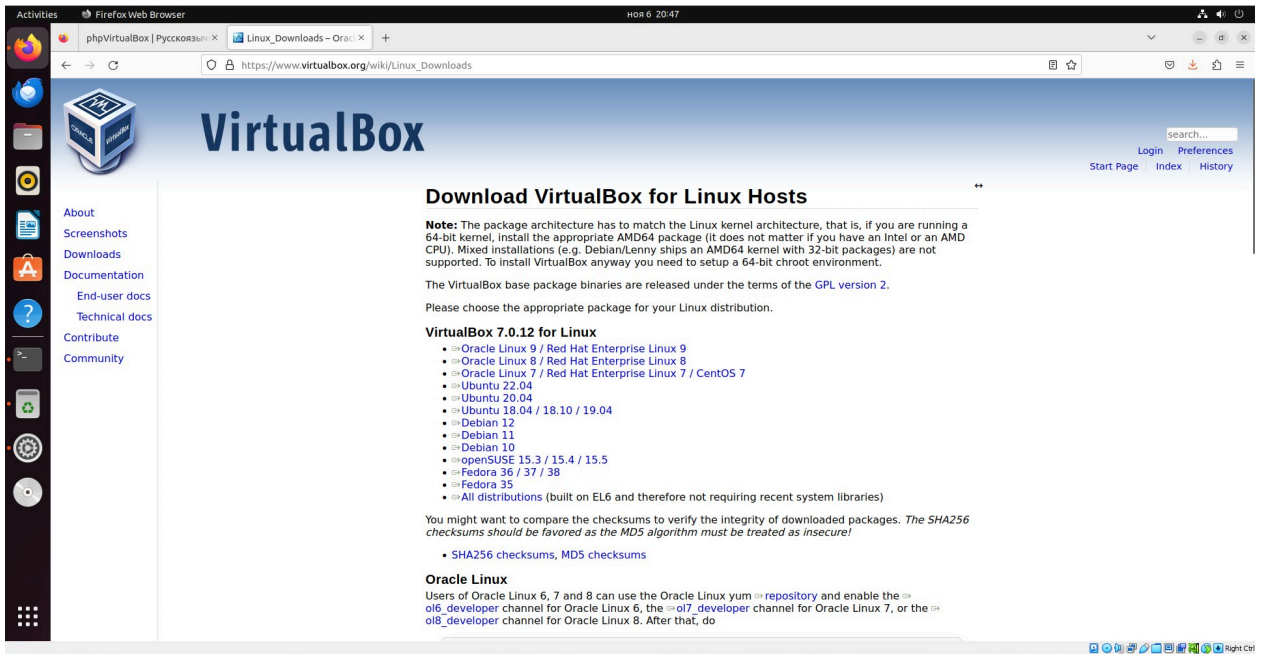
Скачаем с официального сайта phpVirtualBox.

```
kaa@kaa-VirtualBox:~$ sudo mkdir /var/www/pvb
[sudo] password for kaa:
kaa@kaa-VirtualBox:~$ sudo chown -R www-data:www-data /var/www/pvb
kaa@kaa-VirtualBox:~$ sudo apt-get install php5-common php5-mysql php5-suhosin php5-fpm php-pear
```

```
kaa@kaa-VirtualBox:~$ cd /var/www/pvb
kaa@kaa-VirtualBox:/var/www/pvb$ sudo cp ~/Downloads/phpvirtualbox-5.0-5.zip ./
kaa@kaa-VirtualBox:/var/www/pvb$ ls
phpvirtualbox-5.0-5.zip
kaa@kaa-VirtualBox:/var/www/pvb$
```

```
kaa@kaa-VirtualBox:/var/www/pvb$ sudo unzip phpvirtualbox-5.0-5.zip
Archive:  phpvirtualbox-5.0-5.zip
  creating:  phpvirtualbox-5.0-5/
  inflating:  phpvirtualbox-5.0-5/.dockerignore
  inflating:  phpvirtualbox-5.0-5/.gitignore
  inflating:  phpvirtualbox-5.0-5/CHANGELOG.txt
  inflating:  phpvirtualbox-5.0-5/config.php-example
  creating:  phpvirtualbox-5.0-5/css/
  inflating:  phpvirtualbox-5.0-5/css/jquery-ui.css
  inflating:  phpvirtualbox-5.0-5/css/jquery.projectPlugins.css
  inflating:  phpvirtualbox-5.0-5/css/layout.css
  inflating:  phpvirtualbox-5.0-5/css/tipped.css
  inflating:  phpvirtualbox-5.0-5/docker-compose.yml
  inflating:  phpvirtualbox-5.0-5/Dockerfile
  creating:  phpvirtualbox-5.0-5/endpoints/
  inflating:  phpvirtualbox-5.0-5/endpoints/api.php
  inflating:  phpvirtualbox-5.0-5/endpoints/config.js
  extracting:  phpvirtualbox-5.0-5/endpoints/index.html
```

Создадим папки и распакуем туда.



Скачаем VirtualBox на виртуальную машину.

```
kaa@kaa-VirtualBox:/var/www/pvb$ sudo service vboxweb-service start
kaa@kaa-VirtualBox:/var/www/pvb$
```

Запустим сервис для web-интерфейса virtualbox.

Create Virtual Machine

Virtual machine Name and Operating System


Please choose a descriptive name and destination folder for the new virtual machine. The name you choose will be used throughout VirtualBox to identify this machine. Additionally, you can select an ISO image which may be used to install the guest operating system.

Name: ✓

Folder:


ISO Image:

Edition:

Type: 

Version:

Skip Unattended Installation

 No ISO image is selected, the guest OS will need to be installed manually.

Create Virtual Machine

Hardware

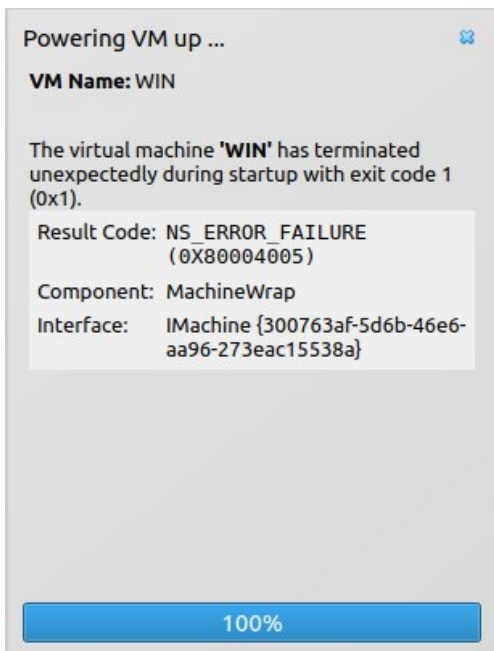
You can modify virtual machine's hardware by changing amount of RAM and virtual CPU count. Enabling EFI is also possible.

Base Memory: 2048 MB

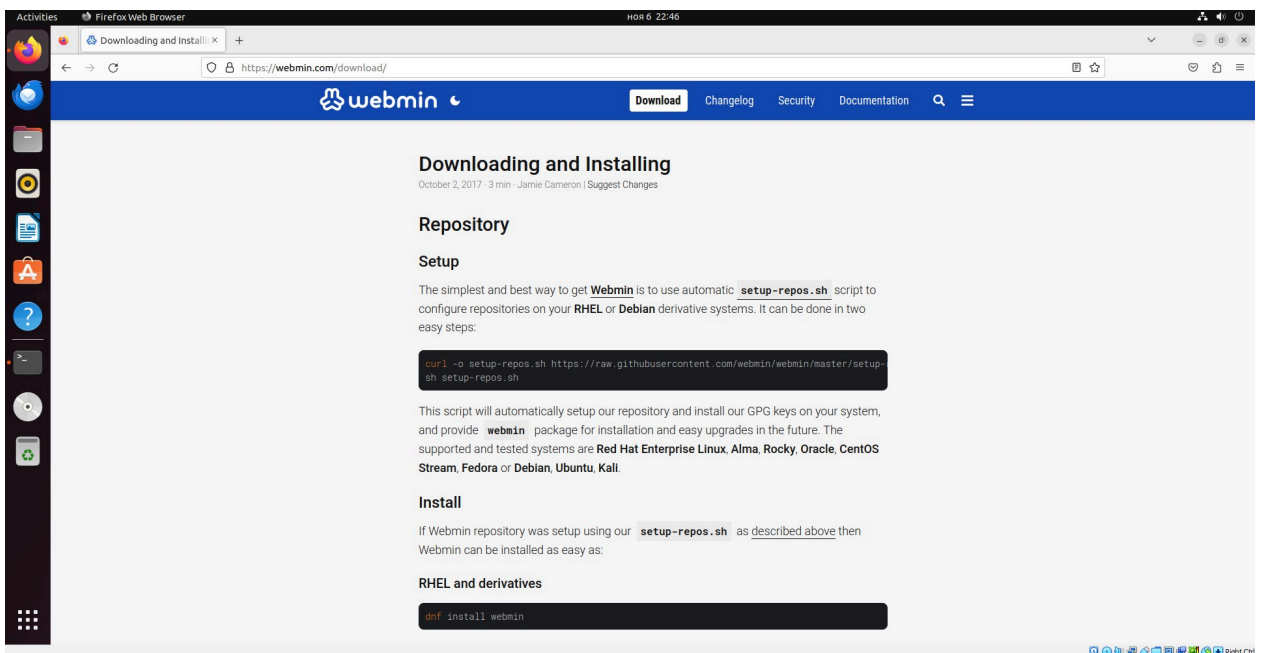
Processors: 1 CPU

Enable EFI (special OSes only)

Через веб-интерфейс можно создать новую ВМ.



Попытка запустить процесс завершилась неудачно. Предположительно, из-за отсутствия в ВМ каких-то необходимых аппаратных средств для работы ВМ.

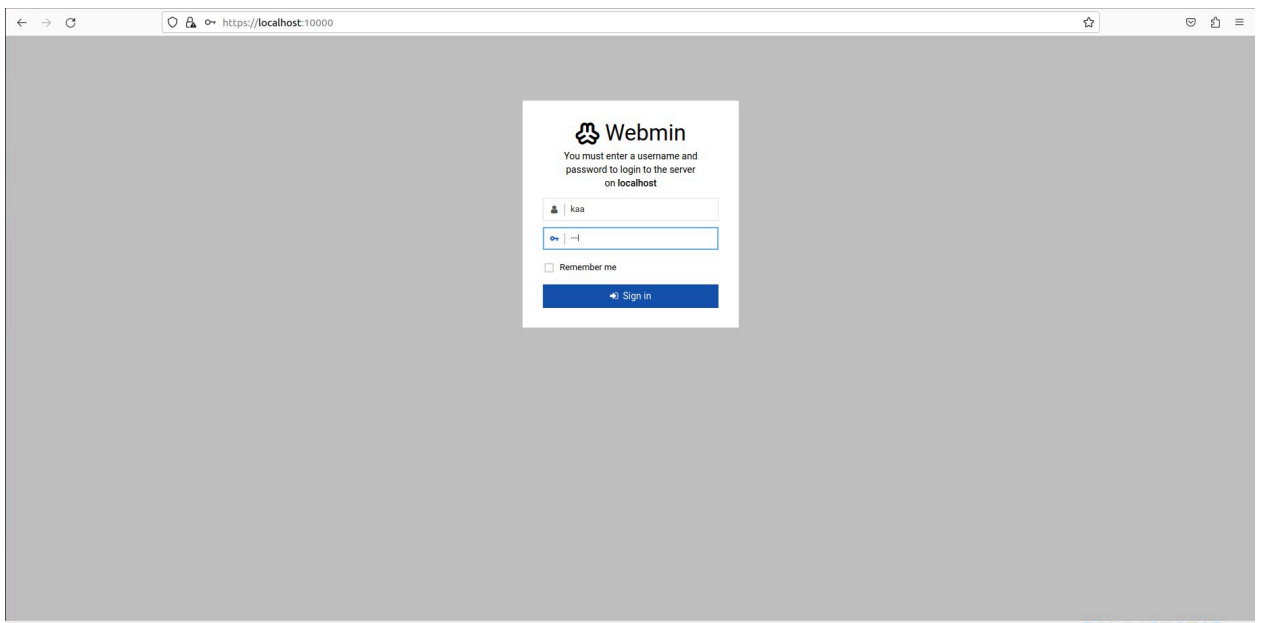


На официальном сайте найдем инструкцию по установке webmin.

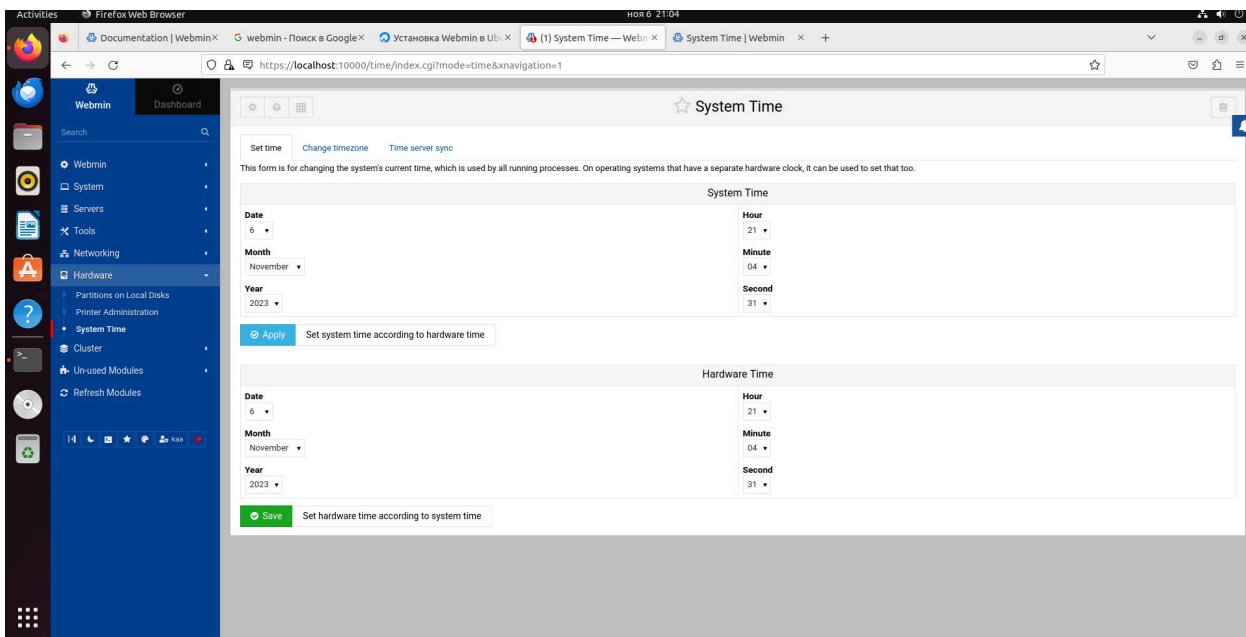
```
kaa@kaa-VirtualBox:~$ curl -o setup-repos.sh https://raw.githubusercontent.com/w
ebmin/webmin/master/setup-repos.sh
sh setup-repos.sh
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 5268    100 5268    0     0 13184    0 --:--:-- --:--:-- --:--:-- 13170
Error: `setup-repos.sh` script must be run as root!
kaa@kaa-VirtualBox:~$ sudo sh setup-repos.sh
Setup repository? (y/N) |
```

```
Setup repository? (y/N) y
Downloading Webmin key ..
.. done
Installing Webmin key ..
.. done
Setting up Webmin repository ..
.. done
Cleaning repository metadata ..
.. done
Downloading repository metadata ..
.. done
Webmin package can now be installed using apt-get install --install-recom
ebmin command.
kaa@kaa-VirtualBox:~$ sudo apt-get install --install-recommends webmin
Reading package lists... Done
```

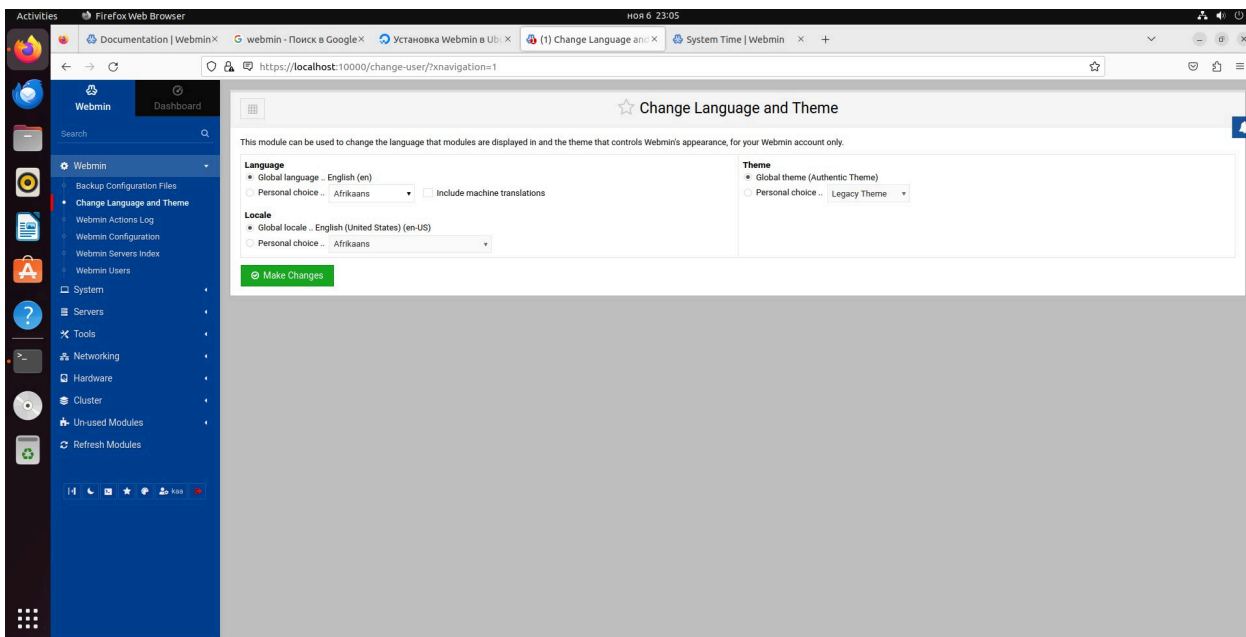
Установим webmin.



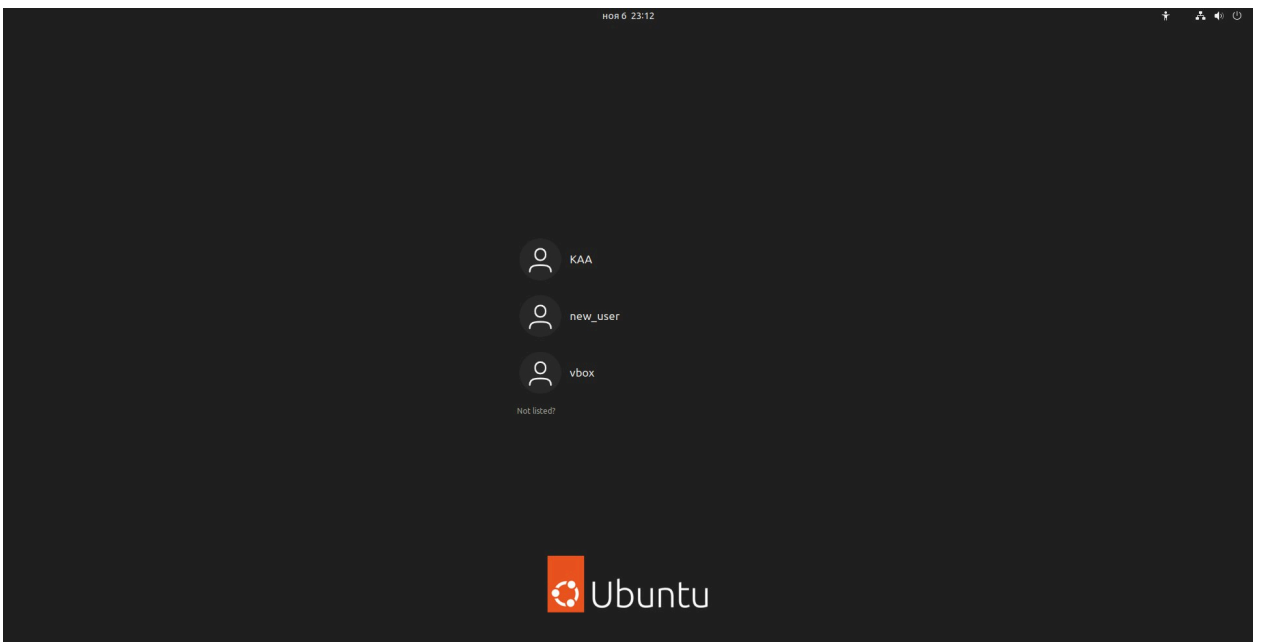
Войдем в аккаунт.



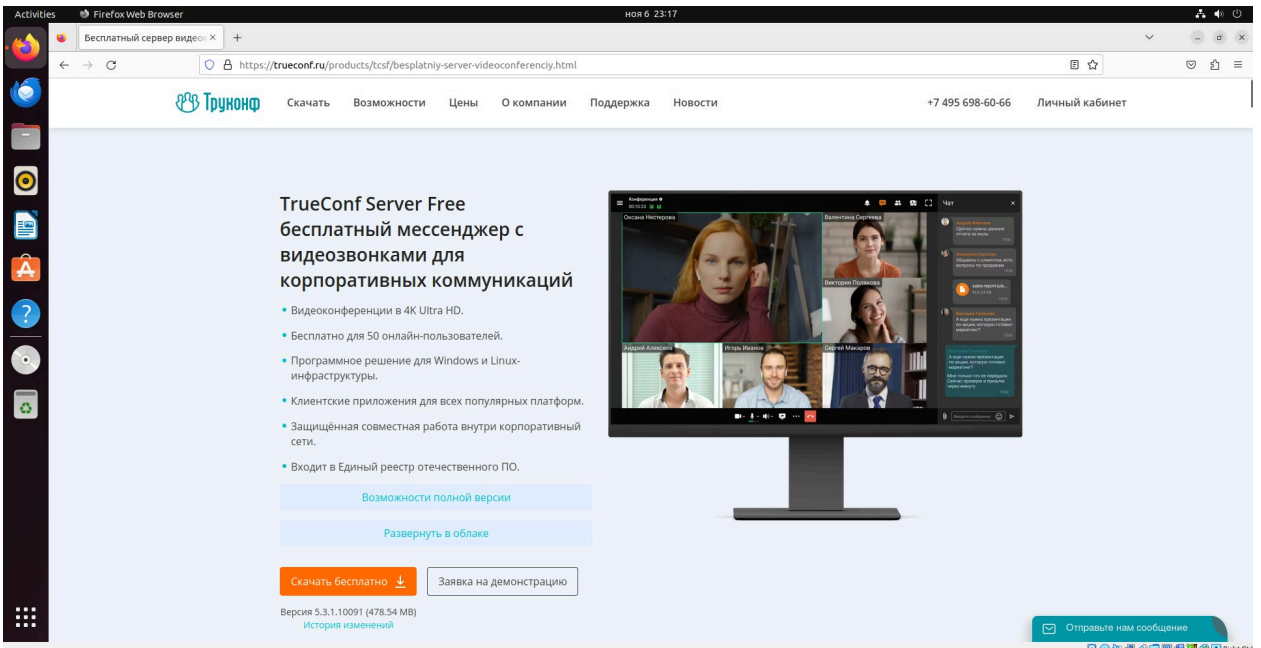
Настроим время и проверим, что время изменилось.



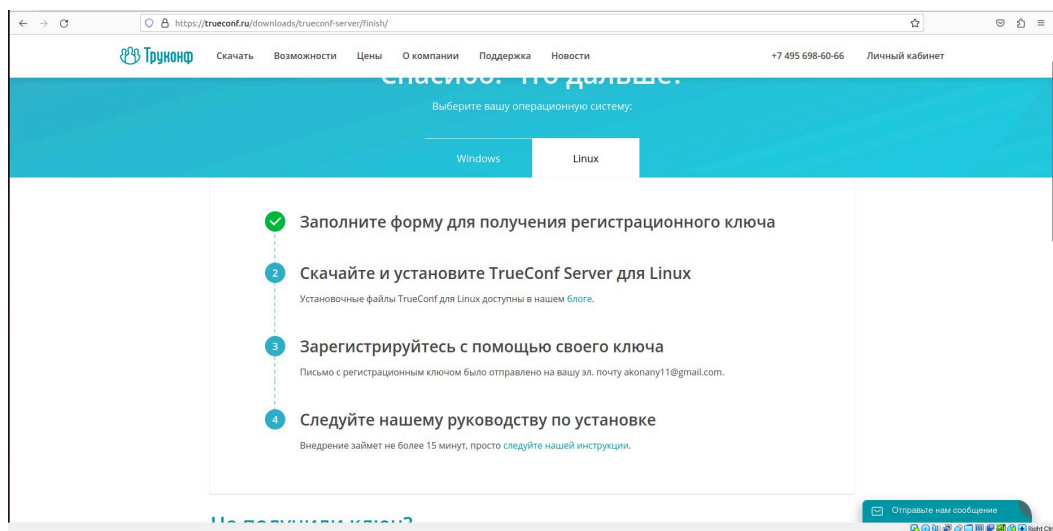
Также можем поменять язык.



Блокируем систему и проверяем что он создался.



Заходим на официальный сайт труконф.



```
kaa@kaa-VirtualBox:~/Downloads$ sudo apt install ./trueconf_server_debian12_amd64.deb
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Note, selecting 'trueconf-server' instead of './trueconf_server_debian12_amd64.deb'
The following packages were automatically installed and are no longer required:
  apport-symptoms dctrl-tools dkms libalgorithm-c3-perl libauthen-pam-perl
  libb-hooks-endofscope-perl libb-hooks-op-check-perl libclass-c3-perl
  libclass-c3-xs-perl libclass-data-inheritable-perl libclass-inspector-perl
  libclass-method-modifiers-perl libclass-singleton-perl
  libclass-xsaccessor-perl libdata-optlist-perl libdatetime-locale-perl
  libdatetime-perl libdatetime-timezone-perl libdevel-callchecker-perl
  libdevel-caller-perl libdevel-lexalias-perl libdevel-stacktrace-perl
  libdouble-conversion3 libdynamloader-functions-perl libencode-detect-perl
  libeval-closure-perl libexception-class-perl libfile-sharedir-perl
  libgsoap-2.8.117 libio-pty-perl liblzf1 libmd4c0
  libmodule-implementation-perl libmodule-runtime-perl libmro-compatible-perl
  libnamespace-autoclean-perl libnamespace-clean-perl libpackage-stash-perl
```

И, следуя инструкции, скачиваем и устанавливаем.

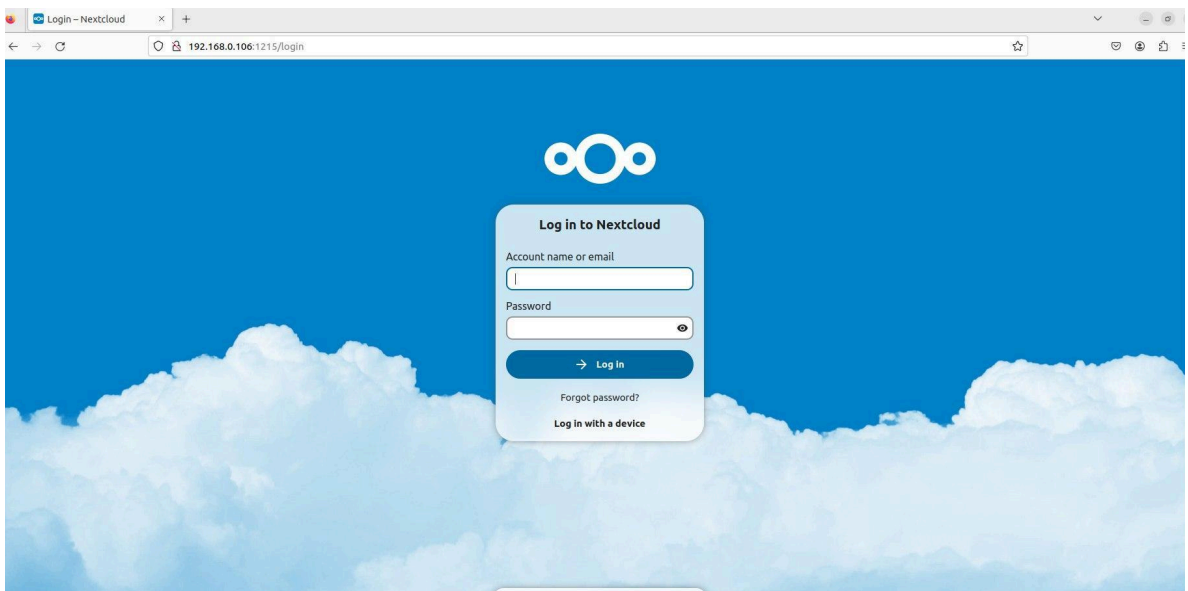
```
trueconf-web.service - TrueConfWebServer
Loaded: loaded (/etc/systemd/system/trueconf-web.service; disabled; vendor preset: enabled)
Active: failed (Result: exit-code) since Mon 2023-11-20 21:11:03 MSK; 46s ago
CPU: 70ms
ноя 20 21:11:02 kaa-VirtualBox systemd[1]: Starting TrueConfWebServer...
ноя 20 21:11:03 kaa-VirtualBox apache2[22272]: httpd: syntax error on line 35 of /opt/trueconf/server/etc/webmanager/httpd.conf: Cannot load lib/webmanager/mod_http2.so into server: /opt/trueconf/server
ноя 20 21:11:03 kaa-VirtualBox systemd[1]: trueconf-web.service: Control process exited, code=exited, status=1/FAILURE
ноя 20 21:11:03 kaa-VirtualBox systemd[1]: trueconf-web.service: Failed with result 'exit-code'.
ноя 20 21:11:03 kaa-VirtualBox systemd[1]: Failed to start TrueConfWebServer.
```

Не запускается, так как судя по ошибке trueconf не может найти функции из одного из модулей ядра, хотя функции из модуля присутствуют и сам модуль присутствует. Попытки поставить модуль отдельно не исправили ошибку.

Заключение

В ходе лабораторной работы на VM были установлены и запущены различные сетевые сервисы и приложения. Была проверена их работоспособность и выполнен набор действий в каждой из них.

Дополнительное задание



Убедимся, что порт поменялся.