

Owncloud on GCP

Linux Servers

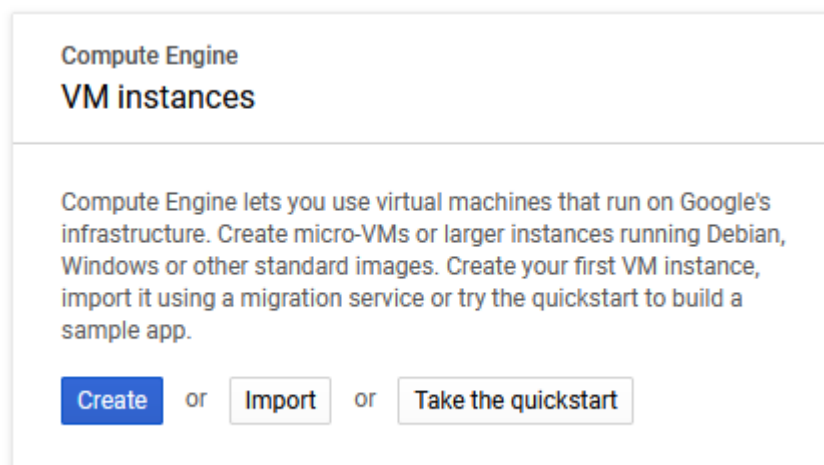
Alexander Andreev
K8684
TTV16S3

Sisältö

1	New Instance	2
2	Powershell login	6
3	Installing NGINX.....	10
4	Installing Owncloud	12
5	Installing PHP	14
6	Owncloud installation(Continuation)	20
7	Database.....	25
7.1	MariaDB.....	28
8	Debugging installation	29

1 New Instance

To host Owncloud on Google Cloud Platform, first we have to create new VM instance.



At first, I will be giving 15GB for CentOS installation. Afterwards I'm going to also attach extra disk.

Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in [Marketplace](#).

Public images Custom images Snapshots Existing disks

☐ Show images with Shielded VM features ?

Operating system
CentOS ▼



Version
CentOS 8 ▼
x86_64 built on 20200205


Boot disk type ?
SSD persistent disk ▼

Size (GB) ?
15

Adding 150GB disk, enough for test purposes, also credits won't burn down too fast


New disk (filedisk, Blank, 150 GB)




Name (Optional) 
Name is permanent

filedisk



Description (Optional)

Type 


Standard persistent disk

Snapshot schedule
Use snapshot schedules to automate disk backups. [Scheduled snapshots](#) 

No schedule

 Create snapshot schedules to automatically back up your data. [Learn more about creating snapshot schedules](#) 

Dismiss

Source type 

Blank disk

Image

Mode


☒ Read/write

☐ Read-only

Deletion rule
When deleting instance

☒ Keep disk

☐ Delete disk

Size (GB) 

150

Name ?

Name is permanent

owncloud1

Description (Optional)
Network Service Tier ?
☐ Premium (current project-level tier, [change](#)) ?

☒ Standard ?
IP version
☒ IPv4

☐ IPv6
Type
☒ Regional

☐ Global (to be used with Global forwarding rules. [Learn more](#))
Region ?

Region is permanent

us-central1 (Iowa)

Attached to ?

Some of the instances may be disabled due to the 'External IPs for VM instances' organisation policy. [Learn more](#)

owncloud1

Reserve

Cancel

Equivalent [REST](#) or [command line](#)

Also giving our VM a static IP address.

External IP addresses		Filter resources						
Firewall rules								
Routes								
<input type="checkbox"/>	Name	External Address	Region	Type	Version	In use by	Network Tier	Labels
<input type="checkbox"/>	owncloud1	35.206.115.220	us-central1	Static	IPv4	VM instance owncloud1 (Zone us-central1-a)	Standard	Change

2 Powershell login

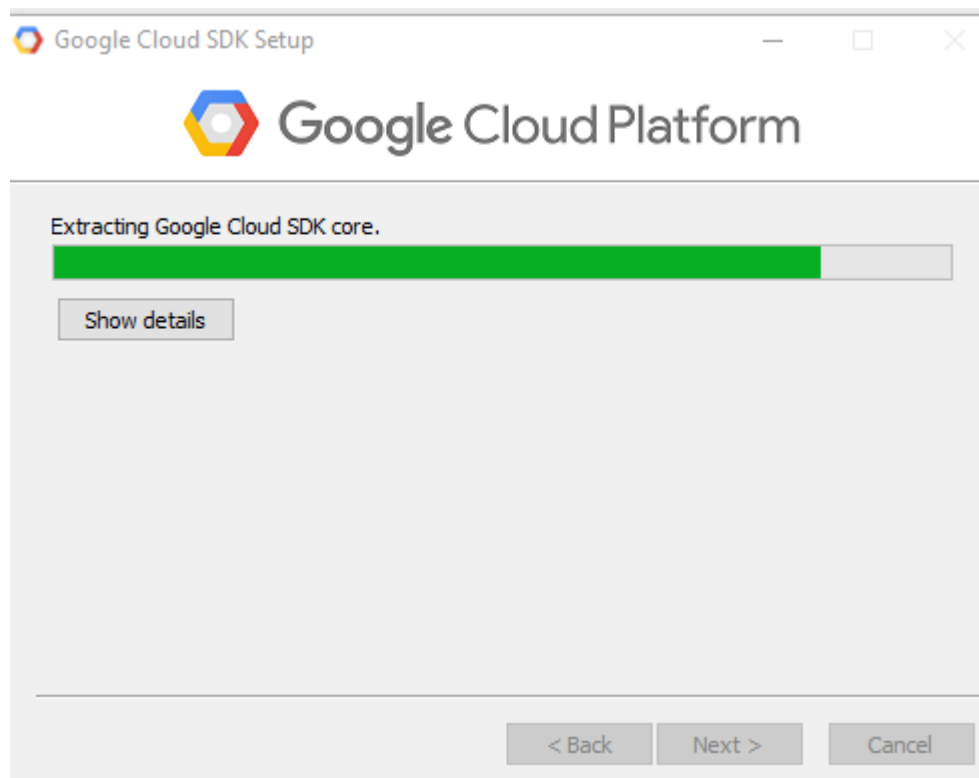
Next to make working process more comfortable, I'm going to install extra tools for windows Powershell. Not really mandatory at this point, but possible useful tool in future.

```
PS C:\Windows\system32> Install-Module GoogleCloud
```

Oh.. here we go again.

```
PS C:\Users\andre> gcloud init -Scope CurrentUser
gcloud : The term 'gcloud' is not recognized as the name of a cmdlet, function, script file, or operable program. Check
the spelling of the name, or if a path was included, verify that the path is correct and try again.
At line:1 char:1
+ gcloud init -Scope CurrentUser
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (gcloud:String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFoundException
```

So , let's try different approach. Graphical installator saves the day.



Installation works, and now it is possible to login.

```
Welcome to the Google Cloud SDK! Run "gcloud -h" to get the list of available commands.
---
Welcome! This command will take you through the configuration of gcloud.

Your current configuration has been set to: [default]

You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

You must log in to continue. Would you like to log in (Y/n)? Y
```

Trying to connect with ssh through powershell

```
PS C:\Users\andre> gcloud beta compute --project "linuxservers-257311" ssh --zone "us-central1-a" "owncloud1"
You do not currently have this command group installed. Using it
requires the installation of components: [beta]

Restarting command:
$ gcloud components install beta

Installing component in a new window.

Please re-run this command when installation is complete.
$ gcloud beta compute --project linuxservers-257311 ssh --zone us-central1-a owncloud1
PS C:\Users\andre>
```

cmd.exe /c "c:\users\andre\appdata\local\temp\tmpuevxx\python\python.exe" "-S" "A:\GoogleCloudPlatform\google-cl

Your current Cloud SDK version is: 281.0.0
Installing components from version: 281.0.0

These components will be installed.		
Name	Version	Size
gcloud Beta Commands	2019.05.17	< 1 MiB

For the latest full release notes, please visit:
https://cloud.google.com/sdk/release_notes

Do you want to continue (Y/n)? Y

Creating update staging area

```
andre@owncloud1:~$ ls
[andre@owncloud1 ~]$
```



```
[andre@owncloud1 ~]$ cat /etc/os-release
NAME="CentOS Linux"
VERSION="7 (Core)"
ID="centos"
ID_LIKE="rhel fedora"
VERSION_ID="7"
PRETTY_NAME="CentOS Linux 7 (Core)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:centos:centos:7"
HOME_URL="https://www.centos.org/"
BUG_REPORT_URL="https://bugs.centos.org/"

CENTOS_MANTISBT_PROJECT="CentOS-7"
CENTOS_MANTISBT_PROJECT_VERSION="7"
REDHAT_SUPPORT_PRODUCT="centos"
REDHAT_SUPPORT_PRODUCT_VERSION="7"
```

Hm.. Not exactly the username I was aiming for, luckily gcloud allows us to specify username before connecting.

```
gcloud beta compute --project "linuxservers-257311" ssh --zone "us-central1-a" "meincrab@owncloud1"
```

Much better this time

```
Using username "meincrab".
Authenticating with public key "DESKTOP-0G4IF5T\andre@DESKTOP-0G4IF5T"
Last login: Tue Feb 25 18:45:40 2020 from dsl-jklbngl2-54fbaa-26.dhcp.inet.fi
[meincrab@owncloud1 ~]$
```

3 Installing NGINX

After researching for some time, I noticed what a lot of people are using NGINX instead of Apache, although it's not recommended by Owncloud documentation, it may be a nice experience to try something new, also according to tests, it should be a little bit faster than Apache.

First, I'm checking what system is able to see both of my disks. One for system, and one for upcoming Owncloud file storage.

```
[meincrab@owncloud1 ~]$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda          8:0    0   15G  0 disk
└─sda1       8:1    0   15G  0 part /
sdb          8:16   0  150G  0 disk
```

Next I'm running basic system update

```
[meincrab@owncloud1 ~]$ yum update
```

And afterwards coming up nginx installation.

```
[meincrab@owncloud1 ~]$ yum install nginx
```

Next, cause of default firewall, we have to add ports 80 and 443 to exceptions. 80 port for http, and 443 for https.

```
[meincrab@owncloud1 ~]$ sudo firewall-cmd --permanent --add-port=80/tcp
success
[meincrab@owncloud1 ~]$ sudo firewall-cmd --permanent --add-port=443/tcp
success
```

Restarting firewall and adding NGINX to startup

```
[meincrab@owncloud1 ~]$ sudo firewall-cmd --reload
```

```
[meincrab@owncloud1 ~]$ sudo systemctl enable nginx
Created symlink from /etc/systemd/system/multi-user.target.wants/nginx.service to /usr/lib/systemd/system/nginx.service.
```

Trying to start NGINX and this happens :

```
[meincrab@owncloud1 ~]$ systemctl start nginx
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to manage system services or units.
Authenticating as: root
Password:
polkit-agent-helper-1: pam_authenticate failed: Authentication failure
==== AUTHENTICATION FAILED ====
Failed to start nginx.service: Access denied
See system logs and 'systemctl status nginx.service' for details.
```

I totally forgot what by default GCP VM doesn't provide root password, let's fix this.

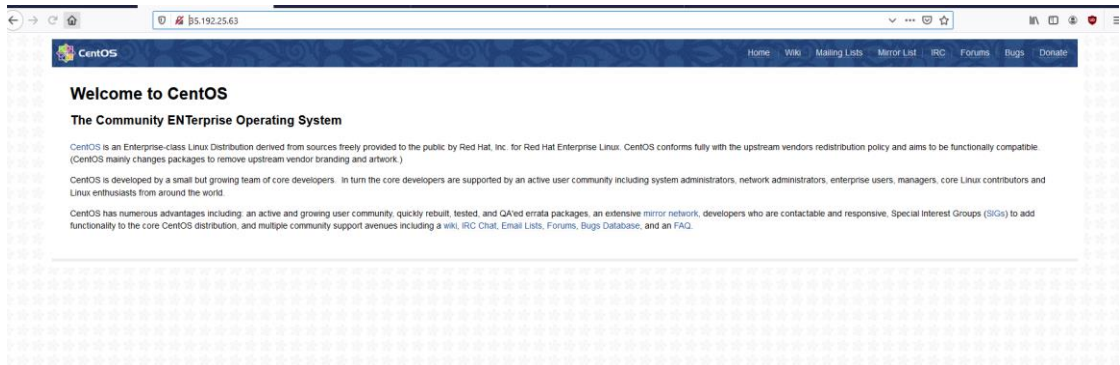
```
[meincrab@owncloud1 ~]$ sudo passwd
Changing password for user root.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

And now we can start NGINX

```
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to manage system services or units.
Authenticating as: root
Password:
==== AUTHENTICATION COMPLETE ====
```

Default page is now present on http port

Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
owncloud1	us-central1-a			10.128.0.2 (nic0)	35.192.25.63	SSH



4 Installing Owncloud

Going to official Owncloud page

Tarball

The installation via the ownCloud tarball is the most common option and is best for production environments. Aimed at experienced administrators, it offers the most customizable installation method.

release channel	version	release date						
Production	10.3.2	2019/11/12	Download Tar			Download Zip		
			md5	sha256	asc	md5	sha256	asc
Testing	10.4.0 RC3	2020/02/21	Download					

With help of the wget command downloading owncloud from the page. We are aiming for Tar archive.

```
[meincrab@owncloud1 owncloud]$ wget https://download.owncloud.org/community/owncloud-10.3.2.tar.bz2  
-bash: wget: command not found
```

And command not found, let's install it with Yum manager. And after few moments.

```
[meincrab@owncloud1 owncloud]$ ls  
owncloud-10.3.2.tar.bz2
```

Before unpacking we need to install bzip2 file compression software.

```
[meincrab@owncloud1 owncloud]$ sudo yum install bzip2
```

Now we need to unpack it with -xvjf flags, where

x - extract

v – shows the .tar file progress

j - filter the archive through bzip2

f – File name type of the archive file

```
[meincrab@owncloud1 owncloud]$ sudo tar -xvjf owncloud-10.3.2.tar.bz2 -C /var/www/  
tar: /var/www: Cannot open: No such file or directory  
tar: Error is not recoverable: exiting now
```

Hmm. seems like Nginx doesn't create /var/www by default. So, we are going to create it manually, and add path to the folder into the conf file afterwards.

After unpacking we have our owncloud path in

```
[meincrab@owncloud1 owncloud]$ pwd  
/var/www/owncloud
```

And this is a glorious moment when I suddenly remembered about totally forgetting to install PHP and Database



5 Installing PHP

According to recommendations on official page, it's recommended to use owncloud with 7.2+ version of PHP due to EOL of old versions.

According to internet, to install PHP 7.2 on centos, we have to turn on EPEL(Extra packages for enterprise Linux) and Remi(which provides latest versions of software) repos.

```
Package epel-release-7-12.noarch already installed and latest version  
Nothing to do
```

Epel release is installed by default

```
[meincrab@owncloud1 www]$ sudo yum install http://rpms.remirepo.net/enterprise/r  
emi-release-7.rpm
```

Turning remi on, and also we need yum-utils

```
[meincrab@owncloud1 www]$ sudo yum install yum-utils
```

Enabling remi-php7.2 and running yum update

```
[meincrab@owncloud1 www]$ sudo yum-config-manager --enable remi-php72
Loaded plugins: fastestmirror
===== repo: remi-php72 =====
```

```
[meincrab@owncloud1 www]$ sudo yum update
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: us.mirror.nsec.pt
* epel: mirror.grid.uchicago.edu
* extras: us.mirror.nsec.pt
* remi-php72: mirror.team-cymru.com
* remi-safe: mirror.team-cymru.com
* updates: us.mirror.nsec.pt
remi-php72 | 3.0 kB 00:00
remi-php72/primary_db | 234 kB 00:00
No packages marked for update
```

And finally we can install php 7.2 and few recommended php packages

```
[meincrab@owncloud1 www]$ sudo yum install php72
```

```
[meincrab@owncloud1 www]$ sudo yum install php72-php-fpm php72-php-gd php72-php-
json php72-php-mbstring php72-php-mysqldb php72-php-xml php72-php-xmlrpc php72-
php-opcache
```

Hmm... `php -v` / `php --version` still doesn't work. After some googling I noticed what I missed `php-cli`

```
[meincrab@owncloud1 www]$ sudo yum install php-cli
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: us.mirror.nsec.pt
* epel: mirror.steadfastnet.com
* extras: us.mirror.nsec.pt
* remi-php72: mirror.team-cymru.com
* remi-safe: mirror.team-cymru.com
* updates: us.mirror.nsec.pt
Resolving Dependencies
--> Running transaction check
---> Package php-cli.x86_64 0:7.2.28-1.el7.remi will be installed
--> Processing Dependency: php-common(x86-64) = 7.2.28-1.el7.remi for package: p
hp-cli-7.2.28-1.el7.remi.x86_64
--> Running transaction check
---> Package php-common.x86_64 0:7.2.28-1.el7.remi will be installed
--> Processing Dependency: php-json(x86-64) = 7.2.28-1.el7.remi for package: php
-common-7.2.28-1.el7.remi.x86_64
```

Now works.

```
[meincrab@owncloud1 www]$ php -v
PHP 7.2.28 (cli) (built: Feb 18 2020 11:07:04) ( NTS )
Copyright (c) 1997-2018 The PHP Group
Zend Engine v3.2.0, Copyright (c) 1998-2018 Zend Technologies
```

Afterwards we need to turn on php for nginx

```
[meincrab@owncloud1 www]$ sudo systemctl enable php72-php-fpm.service
Created symlink from /etc/systemd/system/multi-user.target.wants/php72-php-fpm.s
ervice to /usr/lib/systemd/system/php72-php-fpm.service.
```



```
[meincrab@owncloud1 www]$ sudo systemctl status php72-php-fpm.service
● php72-php-fpm.service - The PHP FastCGI Process Manager
   Loaded: loaded (/usr/lib/systemd/system/php72-php-fpm.service; enabled; vendor preset: disabled)
   Active: active (running) since Thu 2020-02-27 20:25:48 UTC; 13s ago
   Main PID: 1464 (php-fpm)
   Status: "Processes active: 0, idle: 5, Requests: 0, slow: 0, Traffic: 0req/sec"
   CGroup: /system.slice/php72-php-fpm.service
           └─1464 php-fpm: master process (/etc/opt/remi/php72/php-fpm.conf)
             └─1465 php-fpm: pool www
               └─1466 php-fpm: pool www
                 └─1467 php-fpm: pool www
                   └─1468 php-fpm: pool www
                     └─1469 php-fpm: pool www

Feb 27 20:25:48 owncloud1 systemd[1]: Starting The PHP FastCGI Process Mana....
Feb 27 20:25:48 owncloud1 systemd[1]: Started The PHP FastCGI Process Manager.
Hint: Some lines were ellipsized, use -l to show in full.
[meincrab@owncloud1 www]$
```

In PHP conf we need to set user and group to nginx;

This must be fixed



```
[meincrab@owncloud1 var]$ sudo nano /etc/nginx/sites-available/owncloud
sudo: nano: command not found
```

```
[meincrab@owncloud1 var]$ sudo yum install nano
```

```
[meincrab@owncloud1 www]$ egrep '^(user|group)' /etc/nginx/nginx.conf
user nginx;
[meincrab@owncloud1 www]$ nano /etc/opt
openldap/ opt/
[meincrab@owncloud1 www]$ nano /etc/opt/remi/php72/php-fpm.d/www.conf
```


```
user = nginx
; RPM: Keep a group allowed to write in log dir.
group = nginx
```

And now only thing left, updating nginx config to activate php support

```
## enable php support ##
location ~ /\.php$ {
    root /usr/share/nginx/html;
    fastcgi_pass 127.0.0.1:9000;
    fastcgi_index index.php;
    include fastcgi_params;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
```


← → ↻ 🏠 35.192.25.63/foo.php

PHP Version 7.2.28



System	Linux owncloud1 3.10.0-1062.12.1.el7.x86_64 #1 SMP Tue Feb 4 23:02:59 UTC 2020 x86_64
Build Date	Feb 18 2020 11:22:21
Server API	FPM/FastCGI
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/opt/remi/php72
Loaded Configuration File	/etc/opt/remi/php72/php.ini
Scan this dir for additional .ini files	/etc/opt/remi/php72/php.d
Additional .ini files parsed	/etc/opt/remi/php72/php.d/10-opcache.ini, /etc/opt/remi/php72/php.d/20-bz2.ini, /etc/opt/remi/php72/php.d/20-calendar.ini, /etc/opt/remi/php72/php.d/20-ctype.ini, /etc/opt/remi/php72/php.d/20-curl.ini, /etc/opt/remi/php72/php.d/20-dom.ini, /etc/opt/remi/php72/php.d/20-exif.ini, /etc/opt/remi/php72/php.d/20-fileinfo.ini, /etc/opt/remi/php72/php.d/20-ftp.ini, /etc/opt/remi/php72/php.d/20-gd.ini, /etc/opt/remi/php72/php.d/20-gettext.ini, /etc/opt/remi/php72/php.d/20-iconv.ini, /etc/opt/remi/php72/php.d/20-json.ini, /etc/opt/remi/php72/php.d/20-mbstring.ini, /etc/opt/remi/php72/php.d/20-mysqlnd.ini, /etc/opt/remi/php72/php.d/20-pdo.ini, /etc/opt/remi/php72/php.d/20-phar.ini, /etc/opt/remi/php72/php.d/20-simplexml.ini, /etc/opt/remi/php72/php.d/20-sockets.ini, /etc/opt/remi/php72/php.d/20-sqlite3.ini, /etc/opt/remi/php72/php.d/20-tokenizer.ini, /etc/opt/remi/php72/php.d/20-xml.ini, /etc/opt/remi/php72/php.d/20-xmlwriter.ini, /etc/opt/remi/php72/php.d/20-xsl.ini, /etc/opt/remi/php72/php.d/30-mysqli.ini, /etc/opt/remi/php72/php.d/30-pdo_mysqli.ini, /etc/opt/remi/php72/php.d/30-pdo_sqlite.ini, /etc/opt/remi/php72/php.d/30-wddx.ini, /etc/opt/remi/php72/php.d/30-xmlreader.ini, /etc/opt/remi/php72/php.d/30-xmlrpc.ini
PHP API	20170718
PHP Extension	20170718
Zend Extension	320170718
Zend Extension Build	API320170718,NTS
PHP Extension Build	API20170718,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
IPv6 Support	enabled
DTrace Support	available, disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, compress.bzip2, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, sslv3, tls, tlsv1.0, tlsv1.1, tlsv1.2
Registered Stream Filters	zlib.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed, dechunk, bzip2.*, convert.iconv.*

This program makes use of the Zend Scripting Language Engine:
 Zend Engine v3.2.0, Copyright (c) 1998-2018 Zend Technologies
 with Zend OPcache v7.2.28, Copyright (c) 1999-2018, by Zend Technologies



Configuration

bz2

BZip2 Support	Enabled
Stream Wrapper support	compress.bzip2://
Stream Filter support	bzip2.decompress, bzip2.compress
BZip2 Version	1.0.6, 6-Sept-2010

calendar

Calendar support	enabled
------------------	---------

cgi-fcgi

php-fpm	active
---------	--------

Directive	Local Value	Master Value
cgi.discard_path	0	0
cgi.fix_pathinfo	1	1
cgi.force_redirect	1	1
cgi.nph	0	0
cgi.redirect_status_env	no value	no value
cgi.rfc2616_headers	0	0
fastcgi.error_header	no value	no value
fastcgi.logging	1	1
tpm.config	no value	no value

Core

6 Owncloud installation(Continuation)

```
[meincrab@owncloud1 var]$ sudo chown -R nginx:nginx /var/www/owncloud/
[meincrab@owncloud1 var]$ sudo chown -R 755 /var/www/owncloud/
```

Still Forbidden error, something is wrong.



Should be something with SELinux, according to official documentation

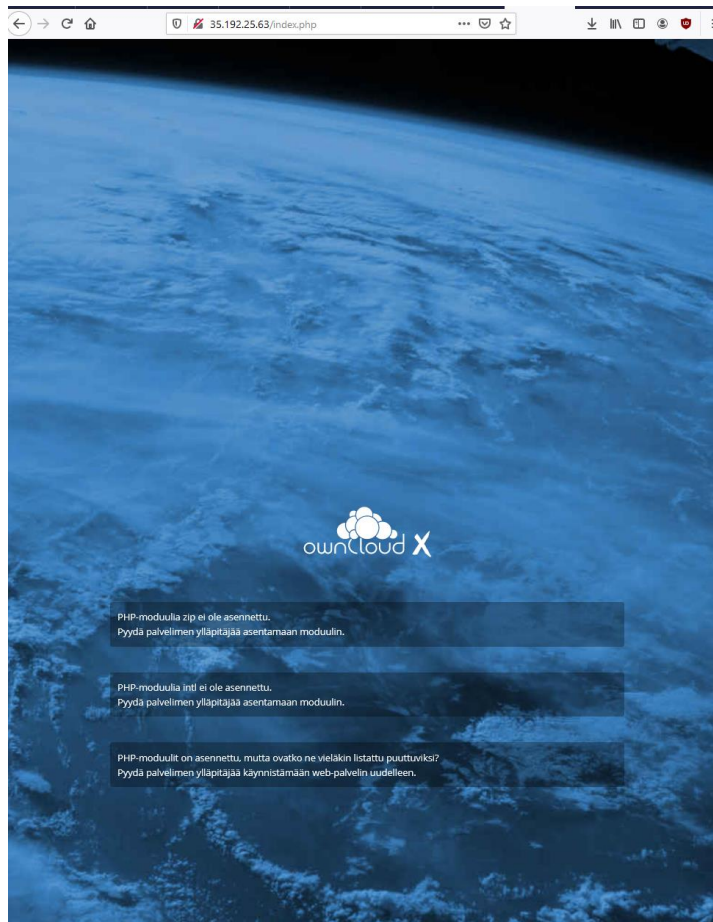
When you have SELinux enabled on your Linux distribution, you may run into permissions problems after a new ownCloud installation, and see `permission denied` errors in your ownCloud logs.

The following settings should work for most SELinux systems that use the default distro profiles. Run these commands as root, and remember to adjust the filepaths in these examples for your installation

```
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/data(/.*)?'
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/config(/.*)?'
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/apps(/.*)?'
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/apps-external(/.*)?'
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/.htaccess'
semanage fcontext -a -t httpd_sys_rw_content_t '/var/www/html/owncloud/.user.ini'

restorecon -Rv '/var/www/html/owncloud/'
```

Those commands may help, let's try



Something starts to work, but few modules are missing, let's fix it

First checking installed packages with `rpm -qa | grep php`

```
[meincrab@owncloud1 www]$ rpm -qa | grep php
php72-php-common-7.2.28-1.el7.remi.x86_64
php72-php-gd-7.2.28-1.el7.remi.x86_64
php-json-7.2.28-1.el7.remi.x86_64
php72-php-json-7.2.28-1.el7.remi.x86_64
php72-php-cli-7.2.28-1.el7.remi.x86_64
php72-php-xml-7.2.28-1.el7.remi.x86_64
php72-php-pdo-7.2.28-1.el7.remi.x86_64
php72-php-mbstring-7.2.28-1.el7.remi.x86_64
php72-php-xmlrpc-7.2.28-1.el7.remi.x86_64
php72-php-fpm-7.2.28-1.el7.remi.x86_64
php-common-7.2.28-1.el7.remi.x86_64
php72-runtime-2.0-1.el7.remi.x86_64
php72-2.0-1.el7.remi.x86_64
php72-php-mysqlnd-7.2.28-1.el7.remi.x86_64
php72-php-opcache-7.2.28-1.el7.remi.x86_64
php-cli-7.2.28-1.el7.remi.x86_64
```

Installing missing zip

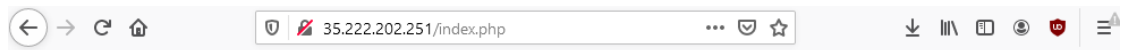
```
yum install php72-php-pecl-zip
```

```
[meincrab@owncloud1 www]$ yum install php72-intl
```

Restarting

```
[meincrab@owncloud1 www]$ systemctl restart nginx
```

And after reboot - blank page, great.



```
==== AUTHENTICATION COMPLETE ====  
[meincrab@owncloud1 files]$ yum --enablerepo=remi install php-intl  
Loaded plugins: fastestmirror
```

Still tells what one of the modules is missing.



It's finally time to try following official documentation.

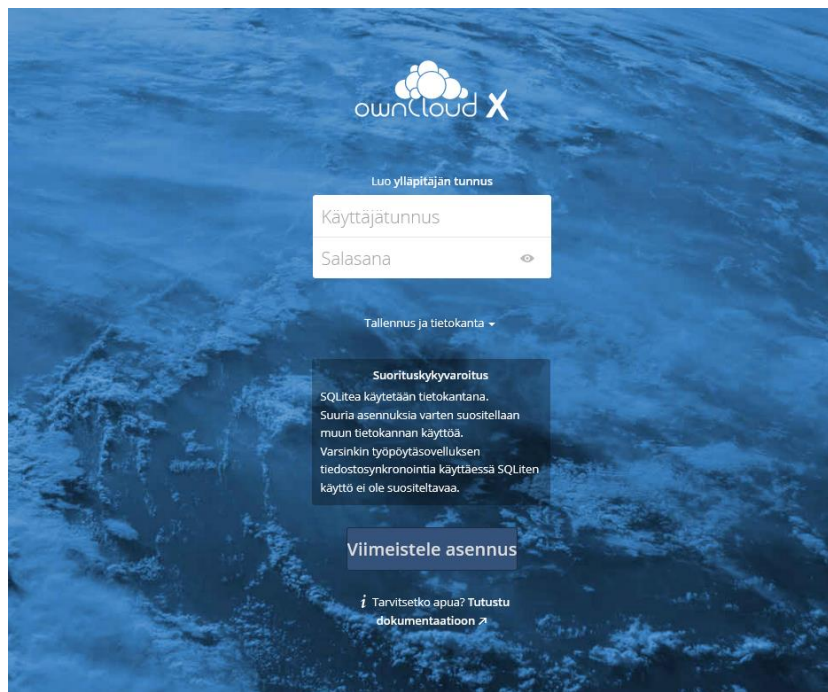
CentOS 7

```
sudo yum install -y -q epel-release http://rpms.remirepo.net/enterprise/remi-release-7.rpm yum-
&& sudo yum-config-manager --enable remi-php72 \
&& sudo yum update -y -q \
&& sudo yum install -y -q \
    httpd mariadb-server php72 php72-php php72-php-gd \
    php72-php-mbstring php72-php-mysqlnd php72-php-cli \
    php72-pecl-apcu redis php72-php-pecl-redis php72-php-common php72-php-opcache \
    php72-php-ldap mariadb-server mariadb \
    && sudo scl enable php72 bash
```

Some researches and I finally found missing package. Nice little package ignored in official installation documentation and almost all others guides on the internet. Although it is mandatory for system to work.

```
[meincrab@owncloud1 ~]$ sudo yum install php72-php-intl
Loaded plugins: fastestmirror
```

And finally something that looks like a working result



When trying to create new user getting this error.



Creating data folder and giving it permissions

```
drwxr-xr-x.  2 nginx nginx    6 Feb 28 23:12 data
```

Next I'm going to mount /dev/sdb (my 150gb disk) to data, so it will be used as storage.

```
[meincrab@owncloud1 ~]$ sudo mkfs.ext4 /dev/sdb
mke2fs 1.42.9 (28-Dec-2013)
/dev/sdb is entire device, not just one partition!
Proceed anyway? (y,n) y
```

```
sudo mount /dev/sdb /var/www/html/owncloud/data/
```

7 Database

Official documentation suggests using MariaDB/MySQL as database, but I'm going to use PostgreSQL because why not.

First, I'm going to install PostgreSQL php extension.

```
[meincrab@owncloud1 ~]$ sudo yum install php72-php-pgsql
```

According to ini file I hope It is activated by default.

```
GNU nano 2.3.1      File: 20-pgsql.ini
; Enable pgsql extension module
extension=pgsql
```

Installing PostgreSQL

```
[meincrab@owncloud1 ~]$ sudo yum install postgresql-server postgresql-contrib
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
* base: us.mirror.nsec.pt
* epel: mirror.grid.uchicago.edu
* extras: us.mirror.nsec.pt
* remi-php72: mirror.team-cymru.com
```

```
[meincrab@owncloud1 ~]$ sudo postgresql-setup initdb
Initializing database ... OK
```

Starting and enabling Database

```
[meincrab@owncloud1 ~]$ sudo systemctl start postgresql
[meincrab@owncloud1 ~]$ sudo systemctl enable postgresql
Created symlink from /etc/systemd/system/multi-user.target.wants/postgresql.service to /usr/lib/systemd/system/postgresql.service.
```

Changing password for user created by default

```
[meincrab@owncloud1 lib]$ sudo passwd postgres
Changing password for user postgres.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

Loggins in as postgres user with new password

```
[meincrab@owncloud1 ~]$ su - postgres
Password:
Last login: Fri Feb 28 22:00:09 UTC 2020 on pts/0
-bash-4.2$
```

Logging to postgres shell ,and listing all users

```
Last login: Fri Feb 28 22:00:09 UTC 2020 on pts/0
-bash-4.2$ psql -Upostgres template1
psql (9.2.24)
Type "help" for help.

template1=# select * from pg_user;
 username | usesysid | usecreatedb | usesuper | usecatupd | userepl | passwd | valuntil | useconfig
-----+-----+-----+-----+-----+-----+-----+-----+-----
 postgres |      10 | t           | t        | t         | t       | ***** |          | 
 username |    16384 | t           | f        | f         | f       | ***** |          | 
(2 rows)

template1=#
```

Removing test user

```
template1=# DROP USER username;
DROP ROLE
template1=# select * from pg_user;
 username | usesysid | usecreatedb | usesuper | usecatupd | userepl | passwd | valuntil | useconfig
-----+-----+-----+-----+-----+-----+-----+-----+-----
 postgres |      10 | t           | t        | t         | t       | ***** |          | 
(1 row)
```

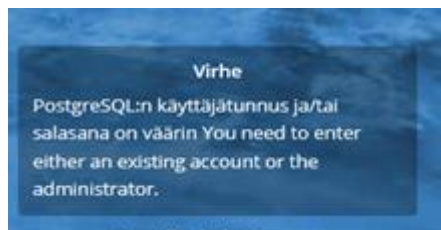
Creating new user and database for owncloud purposes

```
template1=# CREATE USER owncloudUser CREATEDB;
CREATE ROLE
template1=# CREATE DATABASE owncloud OWNER owncloudUser;
CREATE DATABASE
```

```
[meincrab@owncloud1 data]$ sudo -u postgres psql -d templatel
psql (9.2.24)
Type "help" for help.

templatel=#
templatel=# CREATE USER username CREATEDB;
CREATE ROLE
templatel=# CREATE DATABASE owncloud OWNER username;
CREATE DATABASE
```

For some reason, no matter what I try, seems like Owncloud can't connect to PostgreSQL database.



```

{"reqId":"xekNKLmNIuJ2zLt6gQdY","level":2,"time":"2020-02-29T01:17:12+00:00","remoteAddr":"84.251.170.26","user":"--","app":"no app in context","method":"POST","url":"/index.php","message":"Error occurred while checking PostgreSQL version, assuming >= 9"}

```

So..

7.1 MariaDB

After wasting few hours with no result looking at logs and googling, I made a decision switching to recommended database.

First installing required php extension for MariaDB

```
meincrab@owncloud1 data]$ yum install php72-php-pdo
loaded plugins: fastestmirror
you need to be root to perform this command.
meincrab@owncloud1 data]$ sudo yum install php72-php-pd
```

Installing database by itself

```
[meincrab@owncloud1 data]$ sudo yum install mariadb-server
```

Creating user will be used as admin

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 2
Server version: 5.5.64-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [mysql]> CREATE USER 'dbadmin'@'localhost' IDENTIFIED BY 'Apassword';
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> GRANT ALL PRIVILEGES ON *.* TO 'dbadmin'@'localhost' WITH GRANT OPTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> exit
Bye
meincrab@owncloud1 data]$
```

8 Debugging installation

Looks fine right now, after removing postgresql and installing MariaDB.

owncloud X

Luo ylläpitäjän tunnus

meincrab

●●●●●●●●●●●●

Hyvä salasana

Tallennus ja tietokanta ▼

Datakansio

/var/www/html/owncloud/di

Muokkaa tietokantaa

SQLite MySQL/MariaDB

dbadmin

●●●●●●●●●●●●

owncloud

localhost

Määritä portin numero palvelimen nimen yhteydessä (esim. localhost: 5432).

Viimeistelee asennus

i Tarvitsetko apua? Tutustu dokumentaatioon ↗

And here starts my personal hell



Looking at Ngnix logs , only sense making error

```
\SessionNotAvailableException\  
\SessionNotAvailableException\  
\SessionNotAvailableException\  
\SessionNotAvailableException\  
| \SessionNotAvailableException\  
\SessionNotAvailableException\  
\SessionNotAvailableException\  
\SessionNotAvailableException\  
\SessionNotAvailableException\
```

Also changed default language to make it easy googling.


```
?php
$CONFIG = array (
    'instanceid' => 'oc700p83rzps',
    'default_language' => "en",
)
;
```

Although trying to google didn't help much. Almost all answers cost of two messages "Post More Logs".

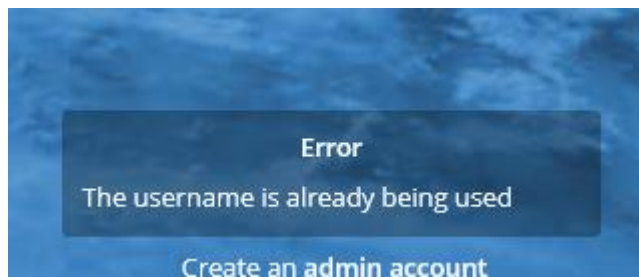
```
[meincrab@owncloud1 conf.d]$ ls -al
total 4
drwxr-xr-x. 2 root root 27 Mar 1 06:30 .
drwxr-xr-x. 4 root root 4096 Feb 25 19:15 ..
-rw-r--r--. 1 nginx nginx 0 Mar 1 06:30 owncloud.conf
[meincrab@owncloud1 conf.d]$ pwd
/etc/nginx/conf.d
```

After hours of searching for error with no progress, removed owncloud folder and tried to make new installation

```
[root@owncloud1 html]# umount /dev/sdb
[root@owncloud1 html]# rm -rf owncloud/
```

```
[meincrab@owncloud1 ~]$ sudo cp -r owncloud /var/www/html/
```

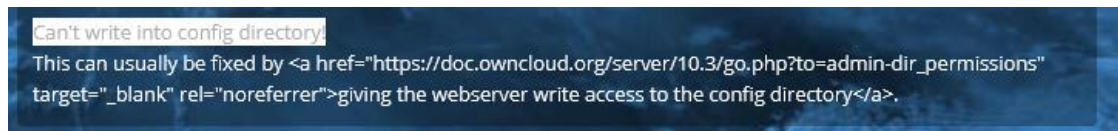
At first forgot to drop old database



```
MariaDB [owncloud]> select * from oc_users
Empty set (0.00 sec)
```

```
MariaDB [owncloud]> TRUNCATE oc_users;
```

```
MariaDB [(none)]> DROP DATABASE owncloud
-> ;
```



After removing old database and creating new user got:

404 Not Found

nginx/1.16.1

Few screenshots of config files what I have used

```

GNU nano 2.3.1                                     File: gcpowncloud.conf
server {
    listen 80;
    server_name _;
    return 301 https://$server_name$request_uri;
}

server {
    listen 443 ssl;
    server_name _;

    ssl_certificate /etc/nginx/ssl/cert.pem;
    ssl_certificate_key /etc/nginx/ssl/cert.key;

    root /var/www/html/gowncloud;

    add_header Strict-Transport-Security "max-age=31536000; includeSubDomains" always;
    client_max_body_size 10G;
    fastcgi_buffers 64 4K;

    rewrite ^/caldav(.*)$ /remote.php/caldav$1 redirect;
    rewrite ^/carddav(.*)$ /remote.php/carddav$1 redirect;
    rewrite ^/webdav(.*)$ /remote.php/webdav$1 redirect;

    index index.php;
    error_page 403 = /core/templates/403.php;
    error_page 404 = /core/templates/404.php;

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

    location ~ ^/(data|config|\.ht|db_structure\.xml|README) {
        deny all;
    }

    location / {
        rewrite ^/.well-known/host-meta /public.php?service=host-meta last;
        rewrite ^/.well-known/host-meta.json /public.php?service=host-meta-json last;
        rewrite ^/.well-known/caldav /remote.php/caldav/ redirect;
        rewrite ^/.well-known/caldav /remote.php/caldav/ redirect;
        rewrite ^/(core/doc/[^/]+)/$ $1/index.html;
        try_files $uri $uri/ index.php;
    }

    location ~ ^(\.?.php) (/.*)?$ {
        try_files $1 = 404;
        include fastcgi_params;
        fastcgi_param SCRIPT_FILENAME $document_root$1;
        fastcgi_param PATH_INFO $2;
        fastcgi_param HTTPS on;
        fastcgi_pass 127.0.0.1:9000;
    }

    location ~* ^.+\. (jpg|jpeg|gif|bmp|ico|png|css|js|swf)$ {
        expires modified +30d;
        access_log off;
    }
}

```

```

Mar 01 08:12:15 owncloud: nginx[1789]: nginx: [emerg] cannot load certificate "/etc/nginx/ssl/cert.pem": BIO_new_file() failed (SSL: error:02001000:system library:fopen:Permission denied:fopen("/etc/nginx/ssl/cert.pem","r") error:02001000:system library:fopen:Permission denied:fopen("/etc/nginx/ssl/cert.pem","r") error:02001000:system library:fopen:Permission denied)
Mar 01 08:12:15 owncloud: nginx[1789]: nginx: configuration file /etc/nginx/nginx.conf test failed

```

```

[meincrab@owncloud ~]$ openssl req -new -x509 -days 1461 -nodes -out cert.pem -keyout cert.key -subj "/C=RU/ST=SPb/L=SPb/O=Global Security/OU=IT Department/CN=35.206.115.220 /CN=owncloud"
Generating a 2048 bit RSA private key
.....+++++
writing new private key to 'cert.key'
-----

```

```

sudo chown nginx:nginx cert.key
sudo chown nginx:nginx cert.pem

```

```
[meincrab@owncloud1 ssl]$ sudo ausearch -m avc -ts today | audit2allow

#===== httpd_t =====

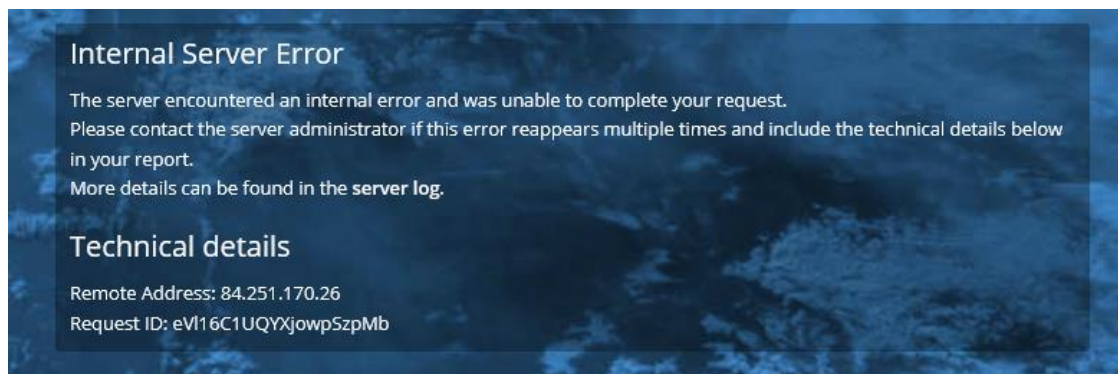
#!!!! This avc can be allowed using the boolean 'httpd_unified'
allow httpd_t httpd_sys_content_t:dir write;

#!!!! This avc can be allowed using the boolean 'httpd_read_user_content'
allow httpd_t user_home_t:file read;
```

Did recreate ssl keys right in ssl folder. At first time by mistake did call a command in home folder

```
[meincrab@owncloud1 ssl]$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
```

And.. again –



But now at least it runs in https, progress after dozen of hours..

<https://35.206.115.220>

```
[meincrab@owncloud1 owncloud]$ sudo -u nginx php72 occ
The posix extensions are required - see http://php.net/manual/en/book.posix.php
```

```
meincrab@owncloud1 owncloud]$ sudo yum install php72-php-posix
```

```
[meincrab@owncloud1 owncloud]$ sudo -u nginx php72 occ maintenance:update:htaccess
.htaccess has been updated
```

```
[root@owncloud1 owncloud]# sudo -u nginx php72 occ status
- installed: true
- first_install_version: 10.3.2.2
- version: 10.3.2.2
- versionstring: 10.3.2
- edition: Community
root@owncloud1 owncloud1#
```

PHP Version 7.2.28

After hours wasted, this was a moment where I did understand suddenly, what I mixed up nextcloud and owncloud... Nextcloud was the one I was looking for originally, because at this moment it has larger community and still updating continuously, also it uses same code-base for open-source and paid version

```
sudo chown nginx:nginx nextcloud/ -R
```

```
www/html
```

```
mount /dev/sdb /var/www/html/nextcloud/data/
```

```
ssl_certificate /etc/nginx/ssl/cert.crt;
ssl_certificate_key /etc/nginx/ssl/cert.key;
```

9 Nextcloud

So, because of almost identical installation of both projects, I already had needed base and knowledge for fast installation

Downloaded, unpacked, gave permissions, chown nginx:nginx and chmod 755. Connected database and created new ssl keys. (For some reason, nginx couldn't boot with old .key files).

Luckily nextcloud's user base is larger, so it was much easier looking for solutions.

So, after initial installation, I have created user with no problems, but couldn't login.



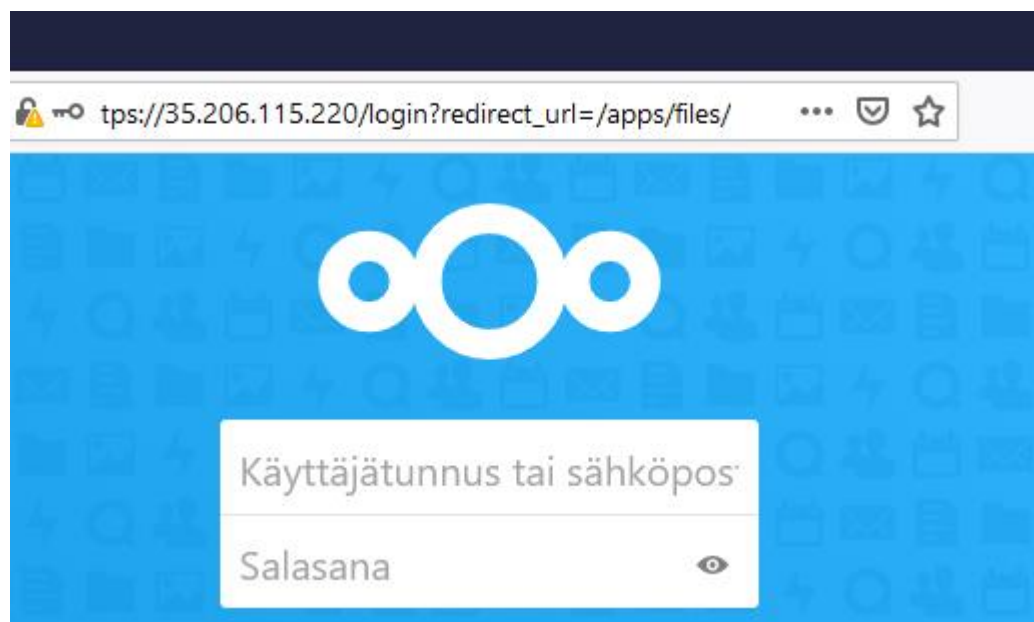
All login attempts were redirecting me back into login page with no result.

After trying different approaches (tried to edit nextcloud own config.php file and nginx .conf for nextcloud what I took from official page) , playing around with .conf

files didn't help much with my problem, only led to internal server error again. Suddenly I ran into post on forum, talking about php permissions, which got broken after system update.

I went to look at them, and Yes, they were owned by root. Changing owner to nginx saved the day , and I was finally able to login into nextcloud after few dozens of hours.

```
[meincrab@owncloud1 php72]$ sudo chown nginx:nginx /var/opt/remi/php72/lib/php/session/ -R
```



The screenshot shows a web browser window displaying the Nextcloud interface. The address bar shows the URL `https://35.206.115.220/apps/files/?dir=/&fileid=6`. The interface includes a top navigation bar with the Nextcloud logo and a sidebar with a menu icon. The main content area shows a file manager view with a list of files and folders. Below the file list, there is a promotional banner for the Nextcloud App Store.

Files and Folders:

- Example.md (Äskettäin muokattu)
- Example.odt (Äskettäin muokattu)
- Nextcloud.png (Äskettäin muokattu)
- Readme.md (Äskettäin muokattu)
- Nextcloud flyer.pdf (Äskettäin muokattu)
- Nextcloud intro.mp4 (Äskettäin muokattu)
- Documents (396 KB, tunti sitten)

Nextcloud App Store Banner:

turvallinen koti kaikille tiedostoillesi

Löydä yli 100 eri sovellusta Nextcloud-sovelluskaupasta pilvesi muokkaamiseksi:

- Työryhmäohjelmistot kuten kalenteri, yhteystiedot ja sähköposti
- Yhteydenpito Nextcloud Talkilla
- Yhteistyösovellukset asiakkaiden muokkaukseen
- Tietoturva- ja tunnistautumisominaisuuksia kuten kaksivaiheinen tunnistautuminen, kertakirjautuminen ja suoja kiristysohjelmia vastaan
- Paljon muuta kuten musiikkisoitin, salasanaohjaus, kanban-sovellus, lataushallinta ja markdown-muokkain

[Selaa sovelluskauppaa](#)

```
[root@owncloud1 meincrab]# cd files/
[root@owncloud1 files]# ls
Documents  Nextcloud intro.mp4  Nextcloud Manual.pdf  Nextcloud.png  Photos  TASK5.pdf
```

<input type="checkbox"/>	Nimi	Koko	Muokattu
<input type="checkbox"/>	Documents	396 KB	tunti sitten
<input type="checkbox"/>	Photos	5.4 MB	tunti sitten
<input type="checkbox"/>	Nextcloud.png	49 KB	tunti sitten
<input type="checkbox"/>	Nextcloud intro.mp4	3.8 MB	tunti sitten
<input type="checkbox"/>	Nextcloud Manual.pdf	6.5 MB	tunti sitten
<input type="checkbox"/>	TASK5.pdf	558 KB	kuukausi sitten
2 kansiota ja 4 tiedostoa			16.7 MB

10 Conclusion

At the beginning of installation, I couldn't even imagine how much problem will I have. It would be ten times easier if I did go with nextcloud right from the start, because community and a lot of information is a thing that saves the day.

It took few dozens of hours to make this installation work, and it still far away from being "Usable". SSL must be configured more carefully, for example with LetsEncrypt, which uses OpenSSL to generate certificates and sign them with own service.

File encryption would be nice, there is an app for nextcloud which provides this stuff, so probably I will activate it when I will be rising nextcloud on my raspberry later.

But at least I did learn a lot of things during installation process.