

# SimpliStor

NETWORK STORAGE SOLUTIONS BY



# White Paper

## Installing ownCloud Community Edition on SimpliStor

Date: June 14, 2017

Updated: Oct 5, 2017



## What is ownCloud?

ownCloud<sup>1</sup> is a self-hosted file sync and share server similar to Dropbox or Google Drive. It provides access to your data from mobile devices, personal computers, a web interface and WebDAV while providing view, sync and share access across devices easily — all under your control. ownCloud's open architecture is extensible via a simple but powerful API for applications and plugins, and it works with any backend storage. ownCloud can be hosted on the SimplStor storage system and present available storage to devices through an easy to use, native interface. When configured with an SSL certificate, synchronized, shared access to files across a wide variety of computers and mobile devices can be secured over the Internet. ownCloud can utilize Active Directory for authentication and access control.

ownCloud is available as both an open source community release (<https://owncloud.org>) and as a fully supported and enhanced enterprise release (<https://owncloud.com>). Enterprise enhancements include commercial support, integrated applications, simultaneous shared editing of files and company branding.

## Installing ownCloud<sup>2</sup> on RHEL7/CentOS7

Installation of ownCloud-9.1 on EL7 is documented on the ownCloud web site. We recommend using ownCloud-9.1 until PHP-5.6 becomes readily available as part of the mainstream EL7 distribution. The essential steps are summarized here along with the specifics usually encountered on a SimplStor system. ownCloud makes use of a database and will require a few packages that might not be installed on your system. Our assumption for this document is that MariaDB will be utilized. If not already done, configure MariaDB server prior to ownCloud.

```
# systemctl enable mariadb
# systemctl start mariadb
# mysql_secure_installation
(set the mariadb-server password and Y to the remaining questions)
```

Install some required PHP options and enable memcached

```
# yum -y install memcached policycoreutils-python
# yum -y [--enablerepo=rhel-7-server-optional-rpms] install php-mysql
php-ldap php-mbstring php-pecl-memcached php-posix php-gd php-xml
# systemctl enable memcached
# systemctl start memcached
```

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<sup>1</sup> [owncloud.org](https://owncloud.org)

<sup>2</sup> As of this writing, ownCloud-10 has been released but is not yet available in RPM package format.

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## ***ownCloud repositories***

The RPMs needed for ownCloud-9.1 are available for network installation of the software and configuration files. To access this repository, import the repo key and configure the “ce\_stable” repo.

```
# rpm --import
https://download.owncloud.org/download/repositories/stable/RHEL_7/repo
data/repomd.xml.key
# wget
http://download.owncloud.org/download/repositories/9.1/RHEL_7/ce:9.1.re
po -O /etc/yum.repos.d/ce:9.1.repo
```

You can now list and install the ownCloud components.

```
# yum --disablerepo=* --enablerepo=ce_stable list owncloud
# yum --disablerepo=* --enablerepo=ce_stable install owncloud
```

The ce\_9.1 repository is configured in the /etc/yum.repo.d/ce:9.1.repo file. By default this repository is enabled (“enabled = 1”). Depending on what other repositories are enabled on your system, you may choose to disable this by default (“enabled = 0”). We have found that this repo can be enabled successfully along with the normal Red Hat or CentOS server repositories. As of this writing, an older release of owncloud.noarch is included in the epel repository, so once installed as shown above it should not cause conflicts. Please confirm this with your yum configuration.

## ***ownCloud data space***

Typically, SimplStor provides the bulk of the storage space mounted on /data, /data1, /data2, etc. For our configuration, we will create a subdirectory on the SimplStor /data volume and allocated it to ownCloud. This can be any location of your choosing. Since this will be web accessible, update the ownership and SELinux context to allow httpd access.

```
# mkdir -p /data/owncloud/data
# chown apache:apache /data/owncloud/data
# chcon -R -t httpd_sys_content_t /data/owncloud/data
```

## ***Finish Setup***

Open a web browser on the localhost system to complete the initial setup via the browser interface.

```
# firefox http://localhost/owncloud &
```

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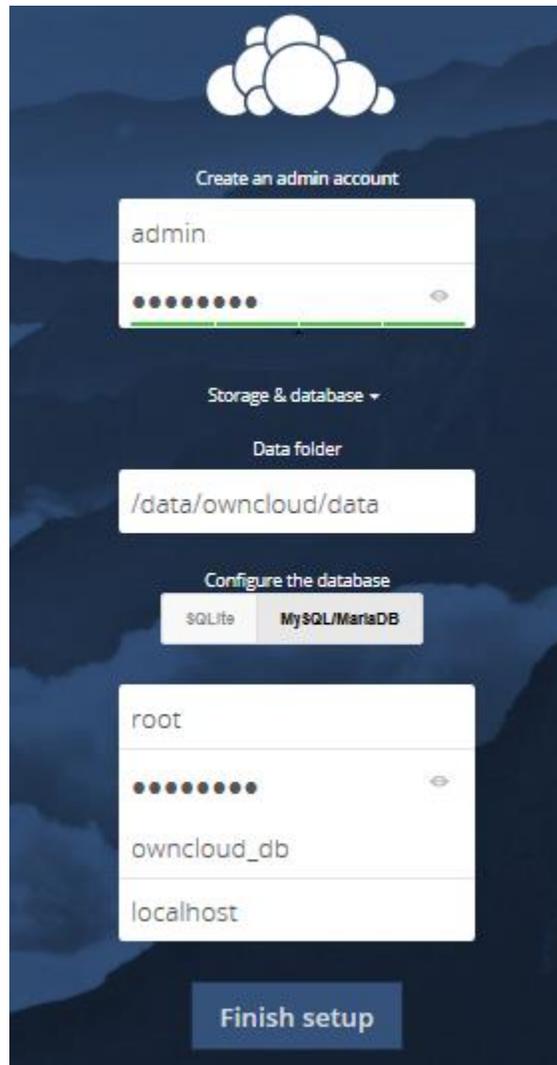
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Enter the desired admin username and password. This will be your “admin” account for ownCloud once it is up and running. Expand “Storage & database” and enter the data storage location (also created above), select MySQL/MariaDB database and fill in the database “root” access essentials, then click “Finish setup”.



ownCloud logo

Create an admin account

admin

Storage & database ▾

Data folder

/data/owncloud/data

Configure the database

SQLite MySQL/MariaDB

root

owncloud\_db

localhost

Finish setup

A database user account and randomized password is established for ownCloud and the configuration parameters will be written to the `/var/www/html/owncloud/config/config.php` file. Generally, you do not want to modify this file manually, but at a minimum you will want to

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update the “trusted\_domain” array to include the web server URLs that your ownCloud installation will be known as.

```
'trusted_domains' =>
  array (
    0 => 'localhost',
    1 => 'cloud.example.com',
    2 => '192.168.1.50',
  ),
```

At this point you should be able to login to the admin account via a web browser and complete the additional configuration steps as documented by ownCloud.

The screenshot shows the ownCloud Admin interface. The top navigation bar includes the ownCloud logo, the word "Admin", and a user profile dropdown menu for "admin". The left sidebar lists various configuration categories: Security & setup warnings, Sharing, Server-side encryption, Federation, File handling, Generate Config Report, Mail Templates, Cron, Email server, Log, and Tips & tricks. The main content area is titled "Sharing" and contains several checkboxes for sharing settings. A user menu is open on the right, showing options: Personal, Users, Admin, Help, and Log out.

ownCloud needs to periodically run some background jobs. Create the following cron file for this purpose.

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```
# cat /etc/cron.d/owncloud
*/15 * * * * apache php -f /var/www/html/owncloud/cron.php
```

## ***Apache Virtualhost and SSL on EL7***

Let's assume you want your ownCloud server to be encrypted by SSL and appear on the network as virtual host with URL `https://cloud.example.com`. This will require that you obtain an SSL certificate signed by a trusted certificate authority. You will usually need to create a certificate signing request (CSR) and follow the instructions indicated by your provider to obtain the certificate.

```
# cd /etc/pki/tls/certs
# make cloud.example.com.csr
(answer prompts for the signing request)
```

You should receive from your provider a certificate and possibly a certificate chain – both CRT files. Copy these files to `/etc/pki/tls/certs/` and then add the proper references to the Apache config files.

To setup the Apache VirtualHost, create a file such as `/etc/httpd/conf.d/virtualhost.conf`. Refer to your Apache documentation and consider using the Mozilla SSL Configuration Generator to optimize the security and performance of your SSL configuration (<https://mozilla.github.io/server-side-tls/ssl-config-generator/>).

```
# VirtualHost for owncloud
<VirtualHost *:80>
    ServerName cloud.example.com
    DocumentRoot /var/www/html/owncloud
    Redirect permanent / https://cloud.example.com/
</VirtualHost>
<VirtualHost *:443>
    ServerName cloud.example.com:443
    DocumentRoot /var/www/html/owncloud
#   Enable/Disable SSL for this virtual host.
    SSLEngine on
# SSL Certificate parameters:
#   Server Private Key (created by CRS for Provider):
    SSLCertificateKeyFile /etc/pki/tls/private/cloud.example.com.key
#   Server Certificate (from Provider):
    SSLCertificateFile /etc/pki/tls/certs/belebfdc83.crt
#   Server Certificate Chain (from Provider):
    SSLCertificateChainFile /etc/pki/tls/certs/bundle-g2.crt
```

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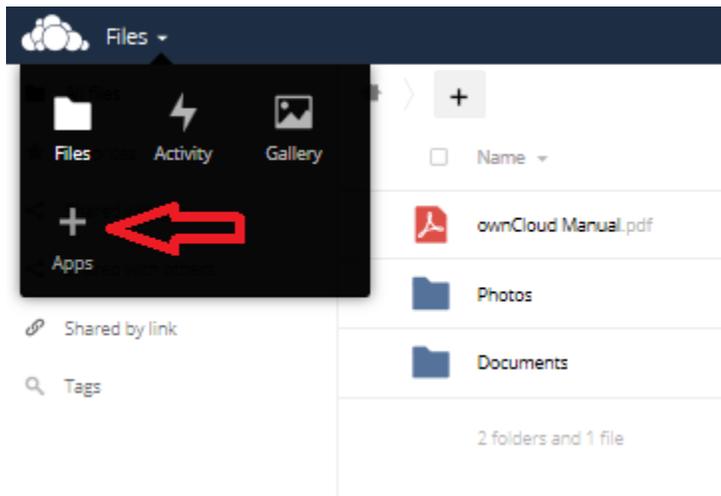
```

# See Mozilla SSL Config Generator:
# https://mozilla.github.io/server-side-tls/ssl-config-generator/
# HSTS (mod_headers is required) (15768000 seconds = 6 months)
#   Header always set Strict-Transport-Security "max-age=15768000"
# SSL Protocol support. Disable SSLv2 and SSLv3 access by default:
#   SSLProtocol all -SSLv2 -SSLv3
# SSL Cipher Suite:
#   SSLCipherSuite ECDHE-ECDSA-CHACHA20-POLY1305:ECDHE-RSA-
CHACHA20-POLY1305:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-AES128-GCM-S
HA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-RSA-AES256-GCM-SHA384:DHE-
RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES12
8-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-
AES256-SHA384:ECDHE-RSA-AES128-SHA:ECDHE-ECDSA-AES256-SHA384:ECDHE-
ECDSA-AES256-SHA:ECDHE-RSA-AES256-SHA:DHE-RSA-AES128-SHA256:DHE-RSA-
AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES256-SHA:ECDHE-ECDSA-D
ES-CBC3-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES128-GCM-
SHA256:AES256-GCM-SHA384:AES128-SHA256:AES256-SHA256:AES128-SHA:AE
S256-SHA:DES-CBC3-SHA:!DSS
#   SSLHonorCipherOrder      on
#   SSLCompression          off
</VirtualHost>

```

## User Authentication with Active Directory

ownCloud includes an LDAP application that allows you to authenticate your users against an LDAP directory, including Microsoft Active Directory. Configuration of this feature is well documented in the ownCloud administration manual. To get started, you must first enable this application in ownCloud. Log in as the admin, go to the “Apps” menu.



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On the resulting screen, select “Not enabled”, find “LDAP user and group backend” and click “Enable”. You will now see the configuration screen for LDAP on the Admin panel.

#### LDAP

The screenshot shows the LDAP configuration interface. At the top, there is a navigation bar with tabs for 'Server', 'Users', 'Login Attributes', 'Groups', 'Advanced', and 'Expert'. The 'Server' tab is selected. Below the navigation bar, there is a list of servers with '1. Server' selected. The configuration fields include: Host, Port, Detect Port, User DN, Password, One Base DN per line, Detect Base DN, Test Base DN, and a checkbox for 'Manually enter LDAP filters (recommended for large directories)'. At the bottom, there is a 'Configuration incomplete' message, a 'Continue' button, and a 'Help' link.

You will need an AD account (owncloud) with at least “Windows Authorization Access Group” privileges on your AD server. The password should ideally not expire as this will cause authentication failures for all ownCloud users. Enter the Host as “ldap://adsvr.company.com” and the User DN as “cn=owncloud,cn=users,dc=company,dc=com”.