

Awaiting list

List for applications, solutions to review.

- Android
- BookStack @SLES16 (openSUSE v16.1) (with Internet access)
- MacOS
 - To review
 - Research on alternative to native Calendar application in MacOS
- Windows XP
- Windows Nowdays
 - First adjustments to the fresh Windows 10/11
 - Useful system commands in Windows environment
- Linux
 - certbot
- Web applications

Android

BookStack @SLES16 (openSUSE v16.1) (with Internet access)

Let's deploy BookStack web application to the Internet reachable environment:

- Solution: BookStack ([www](#), [github](#))
- Resources: VM in the laptop lab.
- Stack:
 - mbp7dox2: openSUSE 16.1 + nginx + MariaDB

Create VM.

Preparations:

```
sudo su
zypper install \
  tmux \
  git \
  php \
  php-gd \
  php-zip \
  php-mysqlnd \
  php8-cli \
  php8-phar \
  php8-curl \
  php8-fileinfo \
  php8-mbstring \
  php8-pdo \
  php8-mysql \
```

Install MariaDB and perform recommended post-install

```
zypper install mariadb-server
```

```
systemctl enable --now mariadb
```

```
systemctl status mariadb
```

Secure the fresh setup

```
mariadb-secure-installation
```

```
mbp7dox2:/home/anton # mariadb-secure-installation
```

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB  
SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
```

```
In order to log into MariaDB to secure it, we'll need the current  
password for the root user. If you've just installed MariaDB, and  
haven't set the root password yet, you should just press enter here.
```

```
Enter current password for root (enter for none):
```

```
OK, successfully used password, moving on...
```

```
Setting the root password or using the unix_socket ensures that nobody  
can log into the MariaDB root user without the proper authorisation.
```

```
You already have your root account protected, so you can safely answer 'n'.
```

```
Switch to unix_socket authentication [Y/n]
```

```
Enabled successfully!
```

```
Reloading privilege tables..
```

```
... Success!
```

```
You already have your root account protected, so you can safely answer 'n'.
```

```
Change the root password? [Y/n]
```

```
New password:
```

```
Re-enter new password:
```

```
Password updated successfully!
```

```
Reloading privilege tables..
```

```
... Success!
```

```
By default, a MariaDB installation has an anonymous user, allowing anyone  
to log into MariaDB without having to have a user account created for  
them. This is intended only for testing, and to make the installation  
go a bit smoother. You should remove them before moving into a  
production environment.
```

```
Remove anonymous users? [Y/n]
```

```
... Success!
```

```
Normally, root should only be allowed to connect from 'localhost'. This  
ensures that someone cannot guess at the root password from the network.
```

```
Disallow root login remotely? [Y/n]
```

```
... Success!
```

```
By default, MariaDB comes with a database named 'test' that anyone can  
access. This is also intended only for testing, and should be removed  
before moving into a production environment.
```

```
Remove test database and access to it? [Y/n]
```

```
- Dropping test database...
```

```
... Success!
```

```
- Removing privileges on test database...
```

```
... Success!
```

```
Reloading the privilege tables will ensure that all changes made so far  
will take effect immediately.
```

```
Reload privilege tables now? [Y/n]
```

```
... Success!
```

```
Cleaning up...
```

```
All done! If you've completed all of the above steps, your MariaDB  
installation should now be secure.
```

```
Thanks for using MariaDB!
```

```
mbp7dox2:/home/anton #
```

Create database and application user

```
export db_pass="Very-Strong-Password123"

mariadb -u root --execute="CREATE DATABASE bookstack;"
mariadb -u root --execute="CREATE USER 'bookstack'@'localhost' IDENTIFIED BY '${db_pass}';"
mariadb -u root --execute="GRANT ALL ON bookstack.* TO 'bookstack'@'localhost'; FLUSH PRIVILEGES;"
```

Verify freshly created user can login

```
mariadb -u bookstack -p
```

```
mbp7dox2:/home/anton # mariadb -u bookstack -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 19
Server version: 11.8.6-MariaDB MariaDB package

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 [(none)]> SHOW DATABASES;
+-----+
| Database          |
+-----+
| bookstack         |
| information_schema |
+-----+
2 rows in set (0.001 sec)

MariaDB [(none)]> USE bookstack;
Database changed
MariaDB [bookstack]>
```

Setup nginx, enable SSL

```
zypper install nginx
systemctl enable --now nginx
systemctl status nginx
ss -ntap | grep nginx
```

```
LISTEN 0 511 0.0.0.0:80 0.0.0.0:*
users:(("nginx",pid=14387,fd=6),("nginx",pid=14386,fd=6))
LISTEN 0 511 [::]:80 [::]:* users:(("nginx",pid=14387,fd=7),("nginx",pid=14386,fd=7))
```

Create of self-signed certificates and Enable SSL

We have local running environment (virtualized local VM) and will use self-signed certificate in this scenario), alternatively, point cert and key accordingly.

```
sudo su
export dir="/data/certs/"
export fqdn="dox.${hostname}"
echo ${fqdn}

mkdir -p ${dir}/${fqdn}/current/
mkdir -p ${dir}/${fqdn}/archive/

openssl req -x509 \
  -nodes \
  -days 365 \
  -newkey rsa:2048 \
  -subj "/C=FI/ST=State/L=City/O=Home/OU=IT/CN=${fqdn}" \
  -out ${dir}/${fqdn}/current/${fqdn}.crt \
  -keyout ${dir}/${fqdn}/current/${fqdn}.key

ls -la ${dir}/${fqdn}/current/
```



```

server_name mbp7dox2;
access_log /var/log/nginx/mbp7dox2.access.log;
error_log /var/log/nginx/mbp7dox2.error.log;

return 301 https://$host$request_uri;
}

server {
    listen 443 ssl;

    server_name _;
    access_log /var/log/nginx/mbp7dox2.access.log;
    error_log /var/log/nginx/mbp7dox2.error.log;

    root /usr/share/nginx/html;

    ssl_certificate "/data/certs/mbp7dox2/current/mbp7dox2.crt";
    ssl_certificate_key "/data/certs/mbp7dox2/current/mbp7dox2.key";

    ssl_session_cache shared:SSL:1m;
    ssl_session_timeout 10m;
    ssl_ciphers PROFILE=SYSTEM;
    ssl_prefer_server_ciphers on;
}

```

SELinux

! TODO:fix context

Test config and reload it:

```

nginx -t
nginx -s reload
ss -ntap | grep nginx

```

```

mbp7dox2:/etc/nginx/vhosts.d #
mbp7dox2:/etc/nginx/vhosts.d #
mbp7dox2:/etc/nginx/vhosts.d # ss -ntap
State Recv-Q Send-Q Local Address:Port Peer Address:Port Process
LISTEN 0 4096 0.0.0.0:443 0.0.0.0:* users:(("nginx",pid=3906,fd=9),("nginx",pid=3904,fd=9))
LISTEN 0 80 127.0.0.1:3306 0.0.0.0:* users:(("mysqld",pid=3031,fd=24))
LISTEN 0 128 0.0.0.0:22 0.0.0.0:* users:(("sshd",pid=1047,fd=6))
LISTEN 0 100 0.0.0.0:25 0.0.0.0:* users:(("master",pid=1118,fd=13))
LISTEN 0 4096 0.0.0.0:80 0.0.0.0:* users:(("nginx",pid=3906,fd=5),("nginx",pid=3904,fd=8))
ESTAB 0 0 10.211.55.2:62418 10.211.55.2:62418 users:(("sshd-session",pid=2339,fd=7),("sshd-session",pid=2337,fd=7))
LISTEN 0 128 [::]:22 [::]:* users:(("sshd",pid=1047,fd=7))
mbp7dox2:/etc/nginx/vhosts.d #
mbp7dox2:/etc/nginx/vhosts.d #
mbp7dox2:/etc/nginx/vhosts.d #

```

Test it, requesting to show headers only, '-k' - will skip cert checks, as they will fail for not matching the CN (common name). Using local address to avoid DNS lookup.

```
curl -I https://127.0.0.1 -k
```

```
mbp7dox2:/etc/nginx/vhosts.d # curl -I https://127.0.0.1 -k
HTTP/1.1 404 Not Found
Server: nginx/1.27.2
Date: Tue, 09 Jun 2026 09:37:04 GMT
Content-Type: text/html
Content-Length: 153
Connection: keep-alive

mbp7dox2:/etc/nginx/vhosts.d #
```

Open firewall (create security policies to pass the traffic in)

```
firewall-cmd --add-service=http --permanent
firewall-cmd --add-service=https --permanent
firewall-cmd --reload
firewall-cmd --list-all
```

Foundation is done. We can proceed with application setup.

Install PHP-FPM

```
zypper install php-fpm

systemctl enable --now php-fpm
systemctl status php-fpm
```

We need to know, where PHP-FPM is listening, to point requests correctly from webserver below:

```
fgrep -irn listen /etc/php8/fpm/
```

```
mbp7dox2:/etc/nginx/vhosts.d # vi /etc/php8/fpm/php-fpm.d/www.conf
mbp7dox2:/etc/nginx/vhosts.d # fgrep -irn listen /etc/php8/fpm/
/etc/php8/fpm/php-fpm.d/www.conf:10;; - 'listen' (unixsocket)
/etc/php8/fpm/php-fpm.d/www.conf:35;; 'ip.addr:ess:port' - to listen on a TCP socket to a specific IPV4 address on
/etc/php8/fpm/php-fpm.d/www.conf:37;; '[ip:6:addr:ess]:port' - to listen on a TCP socket to a specific IPV6 address on
/etc/php8/fpm/php-fpm.d/www.conf:39;; 'port' - to listen on a TCP socket to all addresses
/etc/php8/fpm/php-fpm.d/www.conf:41;; '/path/to/unix/socket' - to listen on a unix socket.
/etc/php8/fpm/php-fpm.d/www.conf:43:listen = 127.0.0.1:9000
/etc/php8/fpm/php-fpm.d/www.conf:45;; Set listen(2) backlog.
/etc/php8/fpm/php-fpm.d/www.conf:47;;listen.backlog = 511
/etc/php8/fpm/php-fpm.d/www.conf:55;;listen.owner = wwwrun
/etc/php8/fpm/php-fpm.d/www.conf:56;;listen.group = www
```

port 9000 we shall be using and not local file socket

```
/etc/php8/fpm/php-fpm.d/www.conf:43:listen = 127.0.0.1:9000
```

Let's see which user and group is owning the php.

```
fgrep -irn user /etc/php8/fpm/ | grep -v \;
fgrep -irn group /etc/php8/fpm/ | grep -v \;
```

```
mbp7dox2:/etc/nginx/vhosts.d # fgrep -irn user /etc/php8/fpm/ | grep -v \;
/etc/php8/fpm/php-fpm.d/www.conf:2:user = wwwrun
/etc/php8/fpm/php.ini:754:user_dir =
/etc/php8/fpm/php.ini:1183:mysql.default_user =
mbp7dox2:/etc/nginx/vhosts.d # fgrep -irn group /etc/php8/fpm/ | grep -v \;
/etc/php8/fpm/php-fpm.d/www.conf:2:group = www
mbp7dox2:/etc/nginx/vhosts.d #
```

these are

```
user=wwwrun
group=www
```

Let's see which user and group nginx is running with

```
fgrep -irn user /etc/nginx/
ss -ntap | grep nginx
```

```
mbp7dox2:/etc/nginx/vhosts.d # vi /etc/nginx/nginx.conf
mbp7dox2:/etc/nginx/vhosts.d # ss -ntap | grep nginx
LISTEN 0      4096      0.0.0.0:443      0.0.0.0:*      users:(("nginx",pid=3906,fd=9),("nginx",pid=3904,fd=9))
LISTEN 0      4096      0.0.0.0:80       0.0.0.0:*      users:(("nginx",pid=3906,fd=8),("nginx",pid=3904,fd=8))
mbp7dox2:/etc/nginx/vhosts.d #
```

-"Aha!". Let's change PHP-FPM be run as `nginx`

```
vi /etc/php8/fpm/php-fpm.d/www.conf
```

Should be like this, using `nginx` user:

```
; user = wwwrun
user = nginx
; group = www
group = nginx
```

```
; user = wwwrun
user = nginx
; group = www
group = nginx
```

Remember to restart the service

```
systemctl restart php-fpm
```

Install Composer and make available globally.

ref to

```
https://getcomposer.org/download/
```

as a normal user, not root

```
mkdir -p ~/utils/composer
cd ~/utils/composer/

php -r "copy('https://getcomposer.org/installer', 'composer-setup.php');"

php -r "if (hash_file('sha384', 'composer-setup.php') ===
'c8b085408188070d5f52bcfe4ecfbee5f727afa458b2573b8eaaaf77b3419b0bf2768dc67c86944da1544f06fa544fd47') { echo 'Installer verified'.PHP_EOL; } else { echo 'Installer corrupt'.PHP_EOL; unlink('composer-setup.php');
exit(1); }"
```

```
anton@mbp7d0x2:~/utils/composer> php -r "copy('https://getcomposer.org/installer', 'composer-setup.php');"
anton@mbp7d0x2:~/utils/composer>
anton@mbp7d0x2:~/utils/composer> php -r "if (hash_file('sha384', 'composer-setup.php') === 'c8b085408188070d5f52bcfe4ecfbee5f727afa458b2573b8eaaaf77b3419b0bf2768dc67c86944da1544f06fa544fd47') { echo 'Installer verified'.PHP_EOL; } else { echo 'Installer corrupt'.PHP_EOL; unlink('composer-setup.php'); exit(1); }"
Installer verified
anton@mbp7d0x2:~/utils/composer>
```

```
php composer-setup.php
```

```
php -r "unlink('composer-setup.php');"
```

```
php composer.phar
```

```
sudo mv composer.phar /usr/local/bin/composer
```

```
anton@mbp7dox2:~/utils/composer> php composer.phar
```



```
Composer version 2.10.1 2026-06-04 10:25:59
```

Usage:

```
command [options] [arguments]
```

Options:

```
-h, --help                Display help for the given command. When no command is given display help for the list command
-q, --quiet                Do not output any message
-V, --version              Display this application version
--ansi|--no-ansi          Force (or disable --no-ansi) ANSI output
-n, --no-interaction       Do not ask any interactive question
--profile                  Display timing and memory usage information
--no-plugins               Whether to disable plugins.
--no-scripts               Skips the execution of all scripts defined in composer.json file.
-d, --working-dir=WORKING-DIR If specified, use the given directory as working directory.
--no-cache                 Prevent use of the cache
-v|vv|vvv, --verbose       Increase the verbosity of messages: 1 for normal output, 2 for more verbose output and 3 for debug
```

Available commands:

```
about                    Shows a short information about Composer
archive                  Creates an archive of this composer package
audit                    Checks for security vulnerability advisories for installed packages
browse                   [home] Opens the package's repository URL or homepage in your browser
bump                     Increases the lower limit of your composer.json requirements to the currently installed versions
check-platform-reqs     Check that platform requirements are satisfied
clear-cache              [clearcache|cc] Clears composer's internal package cache
completion               Dump the shell completion script
config                   Sets config options
create-project            Creates new project from a package into given directory
depends                   [why] Shows which packages cause the given package to be installed
diagnose                 Diagnoses the system to identify common errors
dump-autoload            [dumpautoload] Dumps the autoloader
exec                     Executes a vendored binary/script
fund                     Discover how to help fund the maintenance of your dependencies
global                  Allows running commands in the global composer dir ($COMPOSER_HOME)
help                     Display help for a command
init                     Creates a basic composer.json file in current directory
install                  [i] Installs the project dependencies from the composer.lock file if present, or falls back on the composer.json
licenses                 Shows information about licenses of dependencies
list                     List commands
outdated                 Shows a list of installed packages that have updates available, including their latest version
policy                   Manages custom dependency policies and their sources
prohibits                [why-not] Shows which packages prevent the given package from being installed
reinstall                Uninstalls and reinstalls the given package names
remove                   [rm|uninstall] Removes a package from the require or require-dev
repository               [repo] Manages repositories
require                  [r] Adds required packages to your composer.json and installs them
run-script                [run] Runs the scripts defined in composer.json
search                   Searches for packages
self-update              [selfupdate] Updates composer.phar to the latest version
show                     [info] Shows information about packages
status                   Shows a list of locally modified packages
suggests                 Shows package suggestions
update                   [ul|upgrade] Updates your dependencies to the latest version according to composer.json, and updates the composer.lock file
validate                 Validates a composer.json and composer.lock
```

```
anton@mbp7dox2:~/utils/composer> sudo mv composer.phar /usr/local/bin/composer
```

```
[sudo] password for anton:
```

```
anton@mbp7dox2:~/utils/composer>
```

```
anton@mbp7dox2:~/utils/composer>
```

Prepare home for application

Naming convention: application.host, in my case it is. Always bear in mind, that one host may have more than one application. If there are direct FQDN, then use it to make management easier.

```
whoami
sudo su

# privileged user (you)
export pu="anton"

export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}"
echo ${dir}

mkdir -p ${dir}

# permit privileged user to own app directory
chown -R ${pu}:${pu} ${dir}
exit

# as privileged user, not as root
export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}"
cd ${dir}
```

Create application-specific configuration file in the webserver

```
sudo su
export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}"

cat << _EOF_ > /etc/nginx/vhosts.d/${app}.conf
server {
    listen 443 ssl;
```

```
server_name ${app};

access_log /var/log/nginx/${app}_access.log;
error_log /var/log/nginx/${app}_error.log;

ssl_certificate "/data/certs/${app}/current/${app}.cert";
ssl_certificate_key "/data/certs/${app}/current/${app}.key";

ssl_protocols TLSv1.2;
ssl_prefer_server_ciphers on;
ssl_session_cache shared:SSL:1m;
ssl_session_timeout 10m;
ssl_ciphers PROFILE=SYSTEM;

root ${dir}/BookStack/public;
index index.php;

client_max_body_size 1G;
fastcgi_buffers 64 4K;

location / {
    try_files $uri $uri/ /index.php?$query_string;
}

location ~ \.php(?:$|/) {
    fastcgi_split_path_info ^(.+\.(php|\.+))$;
    include fastcgi_params;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
    fastcgi_param PATH_INFO $fastcgi_path_info;
    fastcgi_pass 127.0.0.1:9000;
}

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

location ~ ^/(?:\.(htaccess|data|config|db_structure\.xml|README) {
    deny all;
}
```

```
}  
_EOF_
```

Verify

```
ls -la /etc/nginx/vhosts.d/${app}.conf
```

Prepare hostnames to match certificates CNs (for local usage)

```
vi /etc/hosts
```

```
127.0.0.1 localhost mbp7dox2 dox.mbp7dox2
```

Test and reload the webserver:

```
nginx -t  
nginx -s reload  
  
export host="$(hostname)"  
export app="dox.${host}"  
echo ${app}  
  
curl https://${app} -k
```

Installation of BookStack application

Change directory before cloning the repo. As a normal user, not root

```
export host="$(hostname)"  
export app="dox.${host}"  
export dir="/var/www/${app}/"  
  
cd ${dir}  
pwd
```

```
/var/www/dox.lt58dox1
```

Clone repo

```
git clone https://github.com/BookStackApp/BookStack.git --branch release --single-branch
```

```
ls -la
```

```
anton@mbp7dox2:~/var/www/dox.mbp7dox2$ git clone https://github.com/BookStackApp/BookStack.git --branch release --single-branch
Cloning into 'BookStack'...
remote: Enumerating objects: 76161, done.
remote: Counting objects: 100% (585/585), done.
remote: Compressing objects: 100% (418/418), done.
remote: Total 76161 (delta 223), reused 397 (delta 167), pack-reused 75576 (from 3)
Receiving objects: 100% (76161/76161), 50.91 MiB | 522.00 KiB/s, done.
Resolving deltas: 100% (55683/55683), done.
anton@mbp7dox2:~/var/www/dox.mbp7dox2$ ls -la
total 0
drwxr-xr-x. 1 anton anton 18 Jun  9 12:04 .
drwxr-xr-x. 1 root  root  24 Jun  9 11:55 ..
drwxr-xr-x. 1 anton anton 714 Jun  9 12:06 BookStack
anton@mbp7dox2:~/var/www/dox.mbp7dox2$
```

Build an application

```
cd Bookstack
```

```
which composer
```

```
composer update
```

```
composer install --no-dev
```

Should be built successfully:

```
anton@mbp7dox2:~/var/www/dox.mbp7dox2/BookStack$ composer install --no-dev
> @php -r "if(file_exists('bootstrap/cache/services.php')) { @unlink('bootstrap/cache/services.php'); }"
Installing dependencies from lock file
Verifying lock file contents can be installed on current platform.
Nothing to install, update or remove
Generating optimized autoload files
> Illuminate\Foundation\ComposerScripts::postAutoloadDump
> @php artisan package:discover --ansi

  INFO  Discovering packages.

laravel/socialite ..... DONE
laravel/tinker ..... DONE
nesbot/carbon ..... DONE
nunomaduro/termwind ..... DONE
socialiteproviders/manager ..... DONE

62 packages you are using are looking for funding.
Use the `composer fund` command to find out more!
> @php artisan cache:clear

  INFO  Application cache cleared successfully.

> @php artisan view:clear

  INFO  Compiled views cleared successfully.

anton@mbp7dox2:~/var/www/dox.mbp7dox2/BookStack$
```

Creating missing directories

issue

```
#3 /var/www/dox.lt58dox1/BookStack/vendor/la...; PHP message: PHP Fatal error: Uncaught  
UnexpectedValueException: The stream or file "/var/www/dox.lt58dox1/BookStack/storage/logs/laravel.log"  
could not be opened in append mode: Failed to open stream: Permission denied
```

```
sudo su

export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}/"

ls -la ${dir}/BookStack/storage/logs/

# Create an empty log and directory for views
touch ${dir}/BookStack/storage/logs/laravel.log

chown nginx:nginx ${dir}/BookStack/storage/logs/laravel.log
namei -mo ${dir}/BookStack/storage/logs/laravel.log
```

```
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # namei -mo ${dir}/BookStack/storage/logs/laravel.log
f: /var/www/dox.mbp7dox2//BookStack/storage/logs/laravel.log
drwxr-xr-x root root /
drwxr-xr-x root root var
drwxr-xr-x root root www
drwxr-xr-x anton anton dox.mbp7dox2
drwxr-xr-x anton anton BookStack
drwxr-xr-x anton anton storage
drwxr-xr-x anton anton logs
-rw-r--r-- nginx nginx laravel.log
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
```

Configure application

Copy template, generate salt and configure .env

```
sudo su

export host="$(hostname)"
```

```
export app="dox.${host}"
export dir="/var/www/${app}"
cd ${dir}/BookStack/
pwd

cp .env.example .env
php artisan key:generate
```

Are you sure you want to run this command? Yes [Enter]

```
vi .env
```

Should be simple as

```
APP_KEY=base64:goKejWQsFFboBGOSF5+eti2Yv1auP4rXvxVbQ4lupgc=
APP_URL=https://dox.lt58dox1

DB_HOST=localhost
DB_DATABASE=bookstack
DB_USERNAME=bookstack
DB_PASSWORD=Very-Strong-Password123

# not in use
MAIL_DRIVER=smtp
MAIL_FROM_NAME="BookStack"
MAIL_FROM=bookstack@example.com
MAIL_HOST=localhost
MAIL_PORT=587
MAIL_USERNAME=null
MAIL_PASSWORD=null
MAIL_ENCRYPTION=null
```

Create database schema

```
php artisan migrate
```

```
anton@mbp7dox2:~$ cd /var/www/dox.mbp7dox2/
anton@mbp7dox2:/var/www/dox.mbp7dox2$ cd BookStack/
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack$ php artisan migrate
```

APPLICATION IN PRODUCTION.

Are you sure you want to run this command?

Yes

Preparing database.

Creating migration table 15.79ms DONE

Running migrations.

2014_10_12_000000_create_users_table	204.89ms	DONE
2014_10_12_100000_create_password_resets_table	13.10ms	DONE
2015_07_12_114933_create_books_table	2.06ms	DONE
2015_07_12_190027_create_pages_table	2.32ms	DONE
2015_07_13_172121_create_images_table	1.98ms	DONE
2015_07_27_172342_create_chapters_table	2.05ms	DONE
2015_08_08_200447_add_users_to_entities	29.92ms	DONE
2015_08_09_093534_create_page_revisions_table	2.23ms	DONE
2015_08_16_142133_create_activities_table	2.28ms	DONE
2015_08_29_105422_add_roles_and_permissions	57.40ms	DONE
2015_08_30_125859_create_settings_table	2.12ms	DONE
2015_08_31_175240_add_search_indexes	0.01ms	DONE
2015_09_04_165821_create_social_accounts_table	10.59ms	DONE
2015_09_05_164707_add_email_confirmation_table	14.02ms	DONE
2015_11_21_145609_create_views_table	2.48ms	DONE
2015_11_26_221857_add_entity_indexes	80.26ms	DONE
2015_12_05_145049_fulltext_weighting	0.01ms	DONE
2015_12_07_195238_add_image_upload_types	13.86ms	DONE
2015_12_09_195748_add_user_avatars	3.33ms	DONE
2016_01_11_210908_add_external_auth_to_users	7.76ms	DONE
2016_02_25_184030_add_slug_to_revisions	14.36ms	DONE
2016_02_27_120329_update_permissions_and_roles	28.08ms	DONE
2016_02_28_084200_add_entity_access_controls	43.76ms	DONE
2016_03_09_203143_add_page_revision_types	7.93ms	DONE
2016_03_13_082138_add_page_drafts	7.70ms	DONE
2016_03_25_123157_add_markdown_support	7.04ms	DONE
2016_04_09_100730_add_view_permissions_to_roles	8.10ms	DONE
2016_04_20_192649_create_joint_permissions_table	49.77ms	DONE
2016_05_06_185215_create_tags_table	18.08ms	DONE
2016_07_07_181521_add_summary_to_page_revisions	3.40ms	DONE
2016_09_29_101449_remove_hidden_roles	11.61ms	DONE
2016_10_09_142037_create_attachments_table	10.89ms	DONE
2017_01_21_163556_create_cache_table	6.89ms	DONE
2017_01_21_163602_create_sessions_table	7.52ms	DONE
2017_03_19_091553_create_search_index_table	22.17ms	DONE
2017_04_20_185112_add_revision_counts	13.50ms	DONE
2017_07_02_152834_update_db_encoding_to_utf8mb4	0.02ms	DONE
2017_08_01_130541_create_comments_table	17.69ms	DONE
2017_08_29_102650_add_cover_image_display	4.06ms	DONE
2018_07_15_173514_add_role_external_auth_id	8.09ms	DONE
2018_08_04_115700_create_bookshelves_table	57.81ms	DONE
2019_07_07_112515_add_template_support	8.88ms	DONE
2019_08_17_140214_add_user_invites_table	10.18ms	DONE
2019_12_29_120917_add_api_auth	15.27ms	DONE
2020_08_04_111754_drop_joint_permissions_id	13.25ms	DONE
2020_08_04_131052_remove_role_name_field	4.36ms	DONE
2020_09_19_094251_add_activity_indexes	8.82ms	DONE
2020_09_27_210059_add_entity_soft_deletes	14.49ms	DONE
2020_09_27_210528_create_deletions_table	16.58ms	DONE
2020_11_07_232321_simplify_activities_table	26.67ms	DONE
2020_12_30_173528_add_ommed_by_field_to_entities	37.50ms	DONE
2021_01_30_225441_add_settings_type_column	3.45ms	DONE
2021_03_08_215138_add_user_slug	9.15ms	DONE
2021_05_15_173110_create_favourites_table	10.95ms	DONE
2021_06_30_173111_create_mfa_values_table	10.24ms	DONE
2021_07_03_085038_add_mfa_enforced_to_roles_table	3.59ms	DONE
2021_08_28_161743_add_export_role_permission	0.97ms	DONE
2021_09_26_044614_add_activities_ip_column	4.91ms	DONE
2021_11_26_070438_add_index_for_user_ip	4.66ms	DONE
2021_12_07_111343_create_webhooks_table	21.49ms	DONE
2021_12_13_152024_create_jobs_table	7.78ms	DONE
2021_12_13_152120_create_failed_jobs_table	7.20ms	DONE
2022_01_03_154041_add_webhooks_timeout_error_columns	14.71ms	DONE
2022_04_17_101741_add_editor_change_field_and_permission	5.70ms	DONE
2022_04_25_140741_update_polymorphic_types	4.41ms	DONE
2022_07_16_170051_drop_joint_permission_type	21.71ms	DONE
2022_08_17_092941_create_references_table	21.43ms	DONE
2022_09_02_082910_fix_shelf_cover_image_types	0.17ms	DONE
2022_10_07_091406_flatten_entity_permissions_table	19.47ms	DONE
2022_10_08_104202_drop_entity_restricted_field	18.27ms	DONE
2023_01_24_104625_refactor_joint_permissions_storage	23.23ms	DONE
2023_01_28_141230_copy_color_settings_for_dark_mode	0.29ms	DONE
2023_02_20_093655_increase_attachments_path_length	6.02ms	DONE
2023_02_23_200227_add_updated_at_index_to_pages	4.71ms	DONE
2023_06_10_071823_remove_guest_user_secondary_roles	0.54ms	DONE
2023_06_25_181952_remove_bookshelf_create_entity_permissions	0.01ms	DONE
2023_07_25_124945_add_receive_notifications_role_permissions	1.03ms	DONE
2023_07_31_104430_create_watches_table	15.25ms	DONE
2023_08_21_174248_increase_cache_size	5.16ms	DONE
2023_12_02_104541_add_default_template_to_books	4.42ms	DONE
2023_12_17_140913_add_description_html_to_entities	11.51ms	DONE
2024_01_01_104542_add_default_template_to_chapters	5.40ms	DONE
2024_02_04_141358_add_views_updated_index	4.86ms	DONE
2024_05_04_154409_rename_activity_relation_columns	7.07ms	DONE
2024_09_29_140340_ensure_editor_value_set	0.65ms	DONE
2024_10_29_114420_add_import_role_permission	1.11ms	DONE
2024_11_02_160700_create_imports_table	6.84ms	DONE
2024_11_27_171039_add_instance_id_setting	1.78ms	DONE
2025_01_29_180933_create_sort_rules_table	2.66ms	DONE
2025_02_05_150842_add_sort_rule_id_to_books	3.76ms	DONE
2025_04_18_215145_add_content_refs_and_archived_to_comments	12.02ms	DONE
2025_09_02_111542_remove_unused_columns	12.19ms	DONE
2025_09_15_132850_create_entities_table	45.38ms	DONE
2025_09_15_134701_migrate_entity_data	2.53ms	DONE
2025_09_15_134751_update_entity_relation_columns	117.90ms	DONE
2025_09_15_134813_drop_old_entity_tables	7.47ms	DONE
2025_10_18_163331_clean_user_id_references	66.48ms	DONE
2025_10_22_134507_update_comments_relation_field_names	7.00ms	DONE
2025_11_23_161812_create_slug_history_table	18.78ms	DONE
2025_12_15_140219_create_mention_history_table	11.07ms	DONE
2025_12_19_103417_add_views_viewable_type_index	4.38ms	DONE

Set least necessary permissions for application

```
export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}"

# not inside app dir, but level up (not to be affected by itself)
vi fixperm-${app}.sh
```

```
#!/bin/bash

export host="$(hostname)"
export app="dox.${host}"
export dir="/var/www/${app}/BookStack/"

# privileged user
export pu="anton"

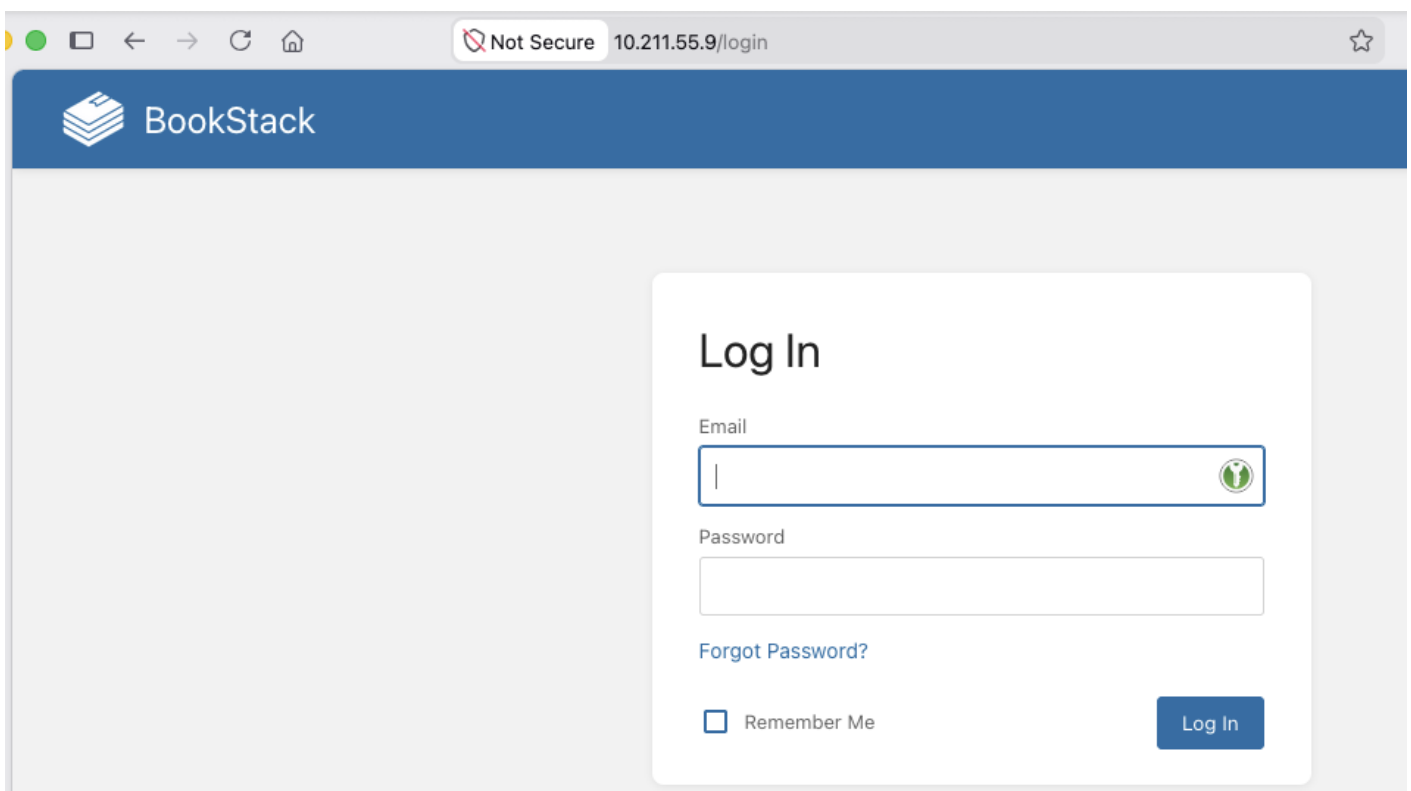
# webserver's user
export wsu="nginx"

chown -R ${wsu}:${pu} ${dir}
subdirs=("/storage/" "/bootstrap/cache/" "/public/uploads/")
for subdir in "${subdirs[@]}"; do
    echo "--[ subdir: ${subdir} ]--"
    chown -R ${wsu}:${pu} ${dir}/${subdir}
done
for subdir in "${subdirs[@]}"; do
    echo "--[ subdir: ${subdir} ]--"
    find ${dir}/${subdir} -type d -exec chmod 0770 {} \+
    find ${dir}/${subdir} -type f -exec chmod 0660 {} \+
done
```

```
chmod +x ./fixperm.sh
./fixperm.sh
```

```
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # export host="$(hostname)"
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # export app="dox.${host}"
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # export dir="/var/www/${app}"
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # vi fixperm.sh
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # chmod +x ./fixperm.sh
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
mbp7dox2:/var/www/dox.mbp7dox2/BookStack # ./fixperm.sh
--[ subdir: ]--
--[ subdir: /storage/ ]--
--[ subdir: /bootstrap/cache/ ]--
--[ subdir: /public/uploads/ ]--
--[ subdir: ]--
--[ subdir: /storage/ ]--
--[ subdir: /bootstrap/cache/ ]--
--[ subdir: /public/uploads/ ]--
mbp7dox2:/var/www/dox.mbp7dox2/BookStack #
```

Application is ready



Used space:

Minimal openSUSE16.1 + webservice + PHP-FPM + MariaDB

```
df -hT | sort
```

```
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> vi .env
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> date
Tue Jun 9 01:45:08 PM CEST 2026
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> df -hT | sort
/dev/sda1      vfat      128M   12M   117M   9% /boot/efi
/dev/sda2      btrfs     62G    3.4G   57G    6% /
/dev/sda2      btrfs     62G    3.4G   57G    6% /boot/grub2/arm64-efi
/dev/sda2      btrfs     62G    3.4G   57G    6% /home
/dev/sda2      btrfs     62G    3.4G   57G    6% /opt
/dev/sda2      btrfs     62G    3.4G   57G    6% /root
/dev/sda2      btrfs     62G    3.4G   57G    6% /.snapshots
/dev/sda2      btrfs     62G    3.4G   57G    6% /srv
/dev/sda2      btrfs     62G    3.4G   57G    6% /usr/local
/dev/sda2      btrfs     62G    3.4G   57G    6% /var
devtmpfs      devtmpfs  4.0M    0    4.0M   0% /dev
efivarfs      efivarfs  104K    5.9K   99K    6% /sys/firmware/efi/efivars
Filesystem    Type      Size  Used Avail Use% Mounted on
tmpfs         tmpfs     1.0M    0    1.0M   0% /run/credentials/getty@tty1.service
tmpfs         tmpfs     1.0M    0    1.0M   0% /run/credentials/systemd-journald.service
tmpfs         tmpfs     1.5G    0    1.5G   0% /dev/shm
tmpfs         tmpfs     1.5G    0    1.5G   0% /tmp
tmpfs         tmpfs     297M   20K   297M   1% /run/user/1000
tmpfs         tmpfs     593M   944K   592M   1% /run
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack>
```

```
date
```

```
export dir="/var/www/${app}"
```

```
df -hT ${dir}
```

```
du -h ${dir} --max-depth=1
```

```
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> date
Tue Jun 9 01:46:43 PM CEST 2026
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> export dir="/var/www/${app}"
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> df -hT ${dir}
Filesystem    Type      Size  Used Avail Use% Mounted on
/dev/sda2      btrfs     62G    3.4G   57G    6% /var
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack>
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack> du -h ${dir} --max-depth=1
199M    /var/www/dox.mbp7dox2
199M    /var/www/
anton@mbp7dox2:/var/www/dox.mbp7dox2/BookStack>
```

MacOS

MacOS

To review

QR Journal

QR Capture

KeePassXC

KeePassXC extention for Firefox

AltTab

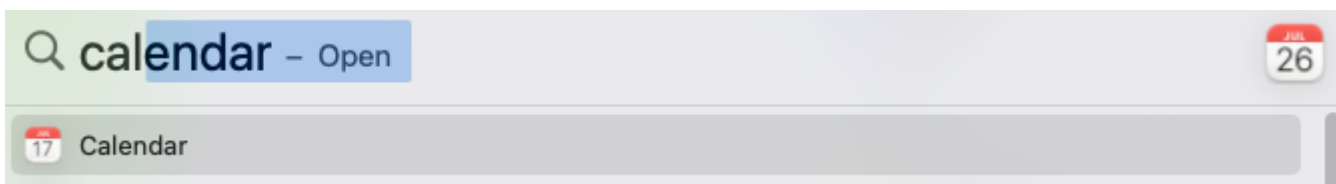
Flameshot

Hidden Bar

Scroll Reverser

Research on alternative to native Calendar application in MacOS

Disadvantages or "What could be done better"



Creating overlapping event

The biggest challenge in the native calendar app on Macintosh is to get the new meeting of the new event created in the middle of the day because there is many layers of events overlapping and it's impossible to click into the empty space without being selected another event.

In the screenshot below, it is demonstrated that it is impossible to create an event on 10.30 on Friday without selecting the green event.

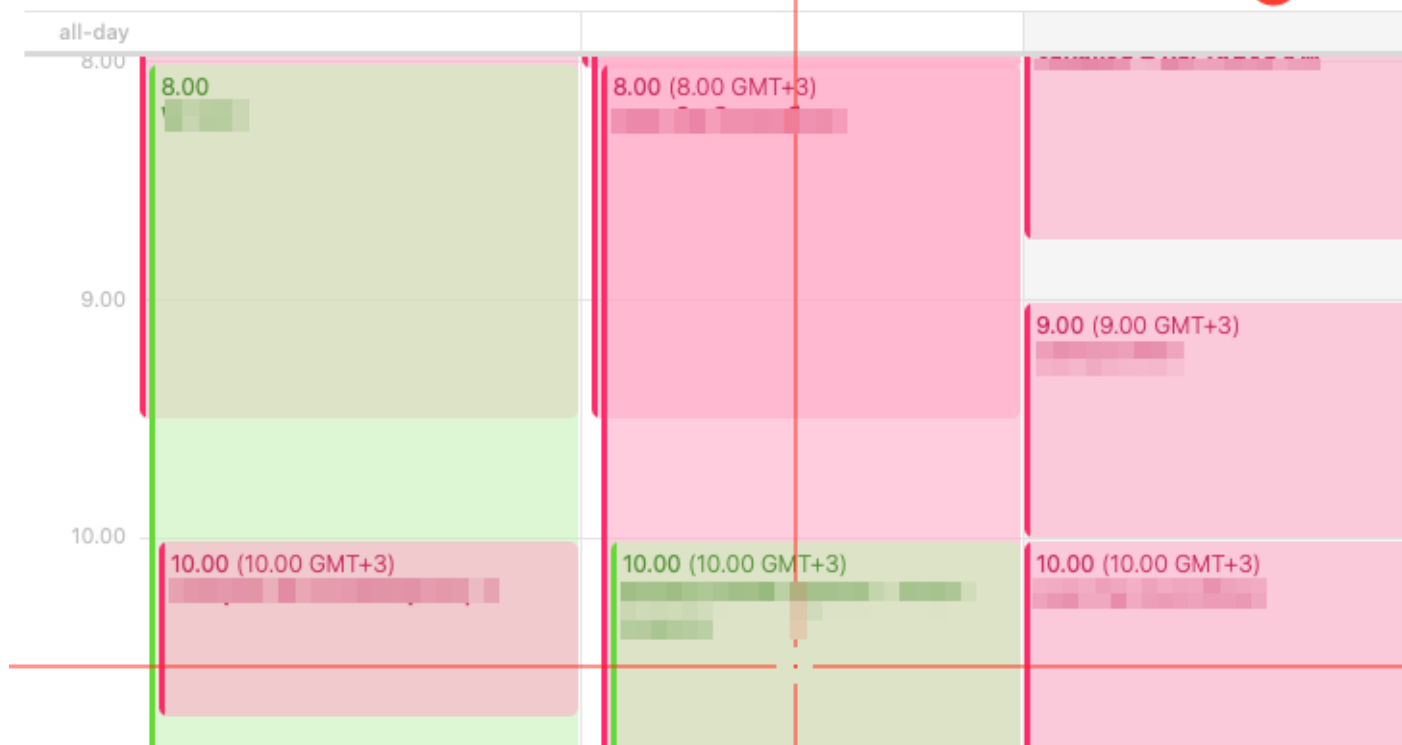
July 2025

W30

Thu 24

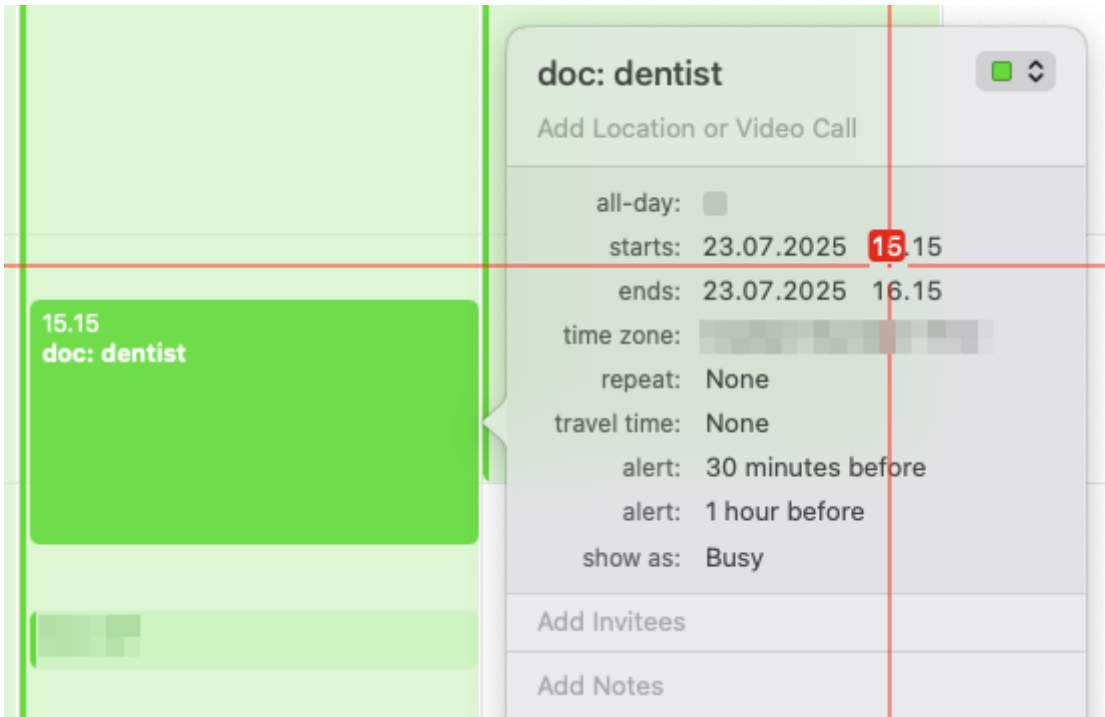
Fri 25

Sat 26



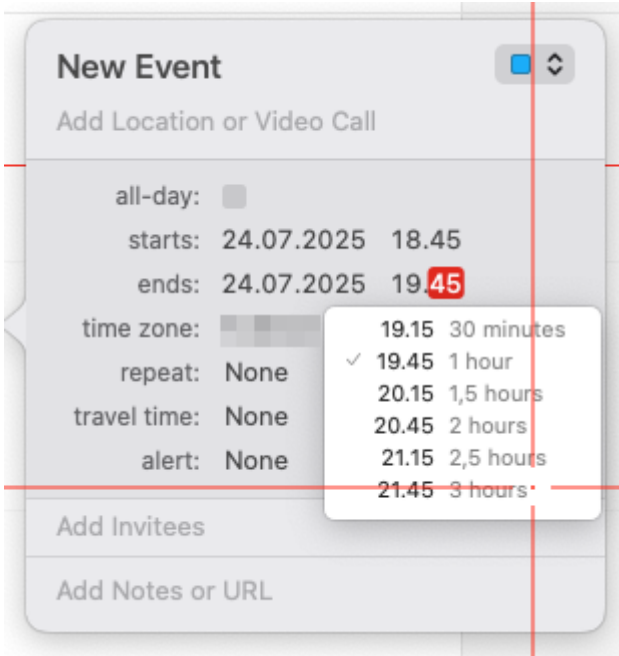
Setting up the time is non-intuitive and difficult

Another challenge is to set the time when event beings and ends. it is necessary to press [Space], follown by [Tabulator] several times to move from one field to another.



Advantages or what I like:

It is positive that the duration of event can be chosen.



Windows XP

Windows Nowadays

Useful system commands in Windows environment

Remote Desktop	mstsc /v:N.N.N.N	
Network adapters	ncpa.cpl	
Command Line	cmd	
SSH Client	ssh user@host	

Linux

Linux

certbot

All commands executed in priviledged mode

Show certificates in certbot registry

```
certbot certificates
```

Renew (with and without dry-run)

```
certbot renew --dry-run  
certbot renew
```

Interactive deletion

```
certbot delete
```

Remove cert from certbot's registry

```
certbot delete --cert-name (domain)
```

You will need to review nginx's config and disable sites to avoid 'nginx -t' negative response.

Web applications