



MDK, Docker and tests: streamline your development workflow

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#MootUS19

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Tests

MDK
Docker

MDK: install

- Installation and docs:
 - https://docs.moodle.org/dev/Moodle_Development_kit
 - <https://github.com/FMCorz/mdk>
- Moodle Development Kit
- Windows is not supported
- Developed by Frédéric Massart
- Python
- Instance: Moodle version + DB



MDK: configure

~/moodle-sdk/config.json

```
{
  "dirs": {
    "www": "/Users/vmdef/Sites/MootUS19/www",
    "storage": "/Users/vmdef/Sites/MootUS19/www"
  },
  "diffUrlTemplate": "https://github.com/vmdef/moodle/compare/%headcommit%..%branch%",
  "repositoryUrl": "git://github.com/vmdef/moodle.git",
  "wwwDir": "moodle",
  "upstreamRemote": "origin",
  "myRemote": "github",
  "db": {
    "mysql": {
      "host": "localhost",
      "port": "3306",
      "user": "oooooooo",
      "passwd": "*****"
    }
  },
  "masterBranch": 38,
  "host": "moodle.mootus1",
  "tracker": {
    "username": "vmdef"
  },
  "remotes": {
    "mine": "git@github.com:vmdef/moodle.git"
  },
  "path": "",
  "php": "/usr/local/bin/php",
  "defaultEngine": "mysql",
  "forceCfg": {
    "allowthemechangeonurl": true,
    "tool_generator_users_password": "test",
    "themedesignermode": false
  }
}
```

```
$ mdk config list
```

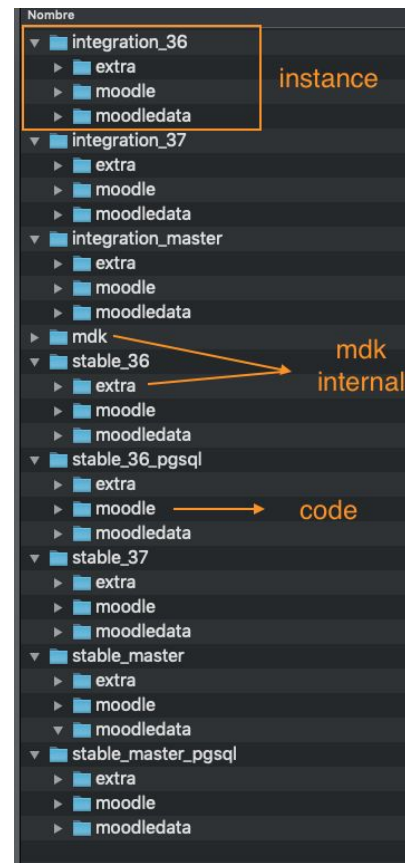
```
$ mdk config set defaultEngine pgsql
```

```
// Moodle Development Kit configuration file.
// A comment in this file MUST be preceded by white spaces or nothing.
// This configuration file will be looked for in these directories:
- ./moodle-sdk/config.json
- /etc/moodle-sdk/conf.d/*.json
- $HOME/.moodle-sdk/config.json
// Directories to work with.
// All of them must exist and must be writable by the current user.
// www and storage CANNOT point to the same directory and must be writable.
"dirs": {
  // The web directory you are going to access Moodle from, typically your virtual host DocumentRoot.
  "www": "/www",
  // It is optional if the web directory of your Moodle instance will be created here.
  "storage": "/storage",
  // The directory where the instances will be stored.
  "storage": "~/.moodle",
  // A directory used by MDK to store different kind of things such as scripts and backups.
  "moodle": "~/.moodle",
  // Used for cached repositories and stuff which could be stored system-wide.
  "cache": "~/.moodle-cache"
},
// List of remotes to work with.
// The integration branch MUST end with integration.git.
"remotes": {
  "mine": {
    "url": "git://git.moodle.org/moodle.git",
    "integration": "https://github.com/vmdef/moodle-integration.git",
    "user": "github.com:vmdef@moodle.git",
    "security": "https://github.com/vmdef/moodle-integration-security.git"
  }
},
// Database access
"db": {
  // Name prefix for all databases created by mdk. Affects the database name only, not the tables.
  "namePrefix": "mdk",
  "mysql": {
    "mysql": {
      "host": "localhost",
      "port": "3306",
      "user": "root",
      "passwd": "root"
    }
  },
  "pgsql": {
    "mysql": "localhost",
    "port": "3306",
    "user": "root",
    "passwd": "root"
  },
  "pgsql": {
    "host": "localhost",
    "port": "5432",
    "user": "root",
    "passwd": "root"
  },
  "mysql": {
    "host": "localhost",
    "port": "5432",
    "user": "root",
    "passwd": "root"
  }
},
// Define the way your want things to be called
"tracker": {
  // How to name your instances
  "prefix": "mdk",
  "prefixIntegration": "integration",
  "prefixTracker": "tracker",
  "prefixDesigner": "designer",
  "prefixDesigner": "designer",
  // How to name your branches
  // Read the doc about Python regular expressions if you need to modify them.
  "branchFormat": "MDK-{{instanceName}}",
  "branchFormatIntegration": "MDK-{{instanceName}}-integration",
  "branchFormatTracker": "MDK-{{instanceName}}-tracker",
  "branchFormatDesigner": "MDK-{{instanceName}}-designer",
  // How to name your Moodle installation
  "integration": "integration",
  "tracker": "tracker",
  "designer": "designer",
  "moodle": "moodle",
  "pgsql": "pgsql",
  "mysql": "mysql",
  "pgsql": "pgsql",
  "mysql": "mysql"
},
// CI Server related settings
"ci": {
  "url": "https://integration.moodle.org",
  "token": null
},
// The information for integrating MMD with Jira
"tracker": {
  "url": "https://tracker.moodle.org",
  "username": "jira",
  "password": "jira",
  "url": "https://tracker.moodle.org",
  "url": "https://tracker.moodle.org"
}
```

<https://github.com/FMCorz/mdk/blob/master/mdk/config-dist.json>

MDK: managing instances

```
// create master version instance
$ mdk create
// instance from the integration remote. Launch installation script
$ mdk create -v stable_36 -i -t
// master version using PostgreSQL
$ mdk create -e pgsql -n stable_master_pgsql
// backup an instance
$ mdk backup stable_master
// remove an instance
$ mdk remove stable_master_pgsql
// uninstall an instance
$ mdk uninstall stable_37
```



MDK: managing instances II

```
// update an instance
$ mdk update stable_master
// run the upgrade script of the instance
$ mdk upgrade stable_master
// update and upgrade all instances
$ mdk update -u --all
// get information about the instances on the system
$ mdk info
// purge the cache
$ mdk purge
// run scripts to customize the instance
$ mdk run scriptname
You can write your own scripts in PHP or shell scripting!!
```

- **dev**
enable development mode
- **enrol**
enrols users in any course
- **makecourse**
creates a test course
- **mindev**
minimalist set of dev settings
- **setup**
setup for development
- **undev**
reverts dev and mindev
- **users**
creates a set of users
- **version**
fixes downgrade conflicts

MDK: working with issues

```
// backports current branch to the version 3.6 and 3.7
$ mdk backport --version 36 37
// create branch from issue number MDL-12345
$ mdk fix 12345
// pulls a patch using the information from a tracker issue
$ mdk pull --testing 12345
// push a branch to your remote
$ mdk push
// also adds the diff information to the tracker issue
$ mdk push -t
// gets some information about the issue on the tracker
$ mdk tracker 34321
```

Misc. commands:

```
alias
css
doctor
js
plugin
precheck
rebase
```

MDK: tests

https://docs.moodle.org/dev/Running_acceptance_test#1._Background

Add to **config.php**:

```
$CFG->behat_profiles = [  
    'default' => [  
        'browser' => 'chrome',  
        'extensions' => [  
            'Behat\MinkExtension' => [  
                'selenium2' => [  
                    'browser' => 'chrome',  
                ]  
            ]  
        ]  
    ]  
];
```

```
$ mdk behat -r --tags=@editor_atto
```

```
$ mdk phpunit -u repository/tests/repositorylib_test.php -r
```

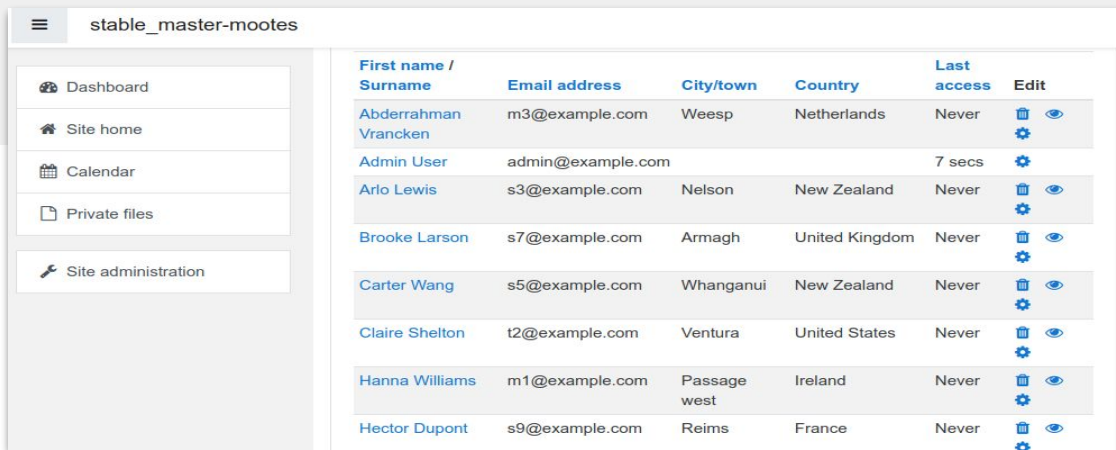

MDK: create dev environment

```
$ mdk create --help
```

```
$ mdk create -v master -i -n stable_master-mootes
```

```
$ cd stable_master-mootes/moodle
```

```
$ mdk run setup
```

A screenshot of the Moodle user management interface. The page title is 'stable_master-mootes'. On the left is a sidebar menu with options: Dashboard, Site home, Calendar, Private files, and Site administration. The main content area shows a table of users with columns for First name / Surname, Email address, City/town, Country, Last access, and Edit. The table contains 10 rows of user data.

First name / Surname	Email address	City/town	Country	Last access	Edit
Abderrahman Vrancken	m3@example.com	Weesp	Netherlands	Never	
Admin User	admin@example.com			7 secs	
Arlo Lewis	s3@example.com	Nelson	New Zealand	Never	
Brooke Larson	s7@example.com	Armagh	United Kingdom	Never	
Carter Wang	s5@example.com	Whanganui	New Zealand	Never	
Claire Shelton	t2@example.com	Ventura	United States	Never	
Hanna Williams	m1@example.com	Passage west	Ireland	Never	
Hector Dupont	s9@example.com	Reims	France	Never	

MDK: testing a patch

```
$ mdk pull -t MDL-1234
```

```
$ mdk phpunit --help
```

```
$ mdk phpunit -r -u badges/tests/privacy_test.php
```

```
$ mdk behat --help
```

```
$ mdk behat -r -n 'Add a badge'
```

MDK: fixing a bug

```
$ mdk fix MDL-1234
```

```
--- Make the required changes ----
```

```
$ git commit . -m "MDL-1234 codearea: commit message"
```

```
$ mdk push --help
```

```
$ mdk push -t
```

```
$ mdk backport --help
```

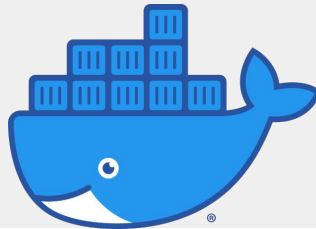
```
$ mdk backport -v 35 -p -t
```

moodle - docker



moodle-docker - <https://github.com/moodlehq/moodle-docker>

- Open source
- Packaged application
- Containers
- Images
- Onboarding, starting project
- Environments: PROD = DEV
- Platform agnostic: portability
- Testing
- Secure
- Lightweight



- All DB supported
- All PHP versions supported
- All PHP extensions enabled
- Behat/Selenium
- SMTP server with web UI
- Zero configuration approach
- Backed by automated tests

<https://github.com/moodlehq/moodle-docker>



moodle-docker: download and configure

Clone moodle-docker

```
$ git clone https://github.com/moodlehq/moodle-docker.git
$ cd moodle-docker
```

Configuration

```
$ export MOODLE_DOCKER_WWWROOT=~/.Sites/MootUS19/www
$ export MOODLE_DOCKER_DB=mysql
$ export MOODLE_DOCKER_PHP_VERSION=7.3
$ export MOODLE_DOCKER_BROWSER=chrome
$ export MOODLE_DOCKER_WEB_HOST=moodle.mootus
$ export MOODLE_DOCKER_PHPUNIT_EXTERNAL_SERVICES=true
```

moodle-docker: start up

Images download and start up containers

```
$ bin/moodle-docker-compose up -d
```

Wait for DB to come up

```
$ bin/moodle-docker-wait-for-db
```

```
$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES	
4db7179f2401	moodlehq/moodle-php-apache:7.3	"docker-php-entripoi..."	About an hour ago	Up	About an hour	0.0.0.0:8000->80/tcp	moodle-docker_webserver_1
f2fe452b955f	mysql:5	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	3306/tcp, 33060/tcp	moodle-docker_db_1
c186ad4bc5eb	memcached:1.4	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	11211/tcp	moodle-docker_memcached1_1
6246a9eb27d5	moodlehq/moodle-exttests	"docker-php-entripoi..."	About an hour ago	Up	About an hour	80/tcp	moodle-docker_exttests_1
fb008fad2f74	redis:3	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	6379/tcp	moodle-docker_redis_1
974f61c167f3	selenium/standalone-chrome:3	"/opt/bin/entry_poin..."	About an hour ago	Up	About an hour	4444/tcp	moodle-docker_selenium_1
02966518e9d6	larrycai/openldap	"/bin/sh -c 'slapd -..."	About an hour ago	Up	About an hour	389/tcp	moodle-docker_ldap_1
bb9f35fdd0d7	mongo:4.0	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	27017/tcp	moodle-docker_mongo_1
228b1a808561	solr:6.5	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	8983/tcp	moodle-docker_solr_1
86ca09b6c393	memcached:1.4	"docker-entrypoint.s..."	About an hour ago	Up	About an hour	11211/tcp	moodle-docker_memcached0_1
6047d329a2bc	mailhog/mailhog	"MailHog"	About an hour ago	Up	About an hour	1025/tcp, 8025/tcp	moodle-docker_mailhog_1

moodle-docker: start up II



moodle-docker: other commands

Stop containers

```
$ bin/moodle-docker-compose stop
```

Shut down and destroy containers

```
$ bin/moodle-docker-compose down
```

Start containers

```
$ bin/moodle-docker-compose start
```

Access into a container

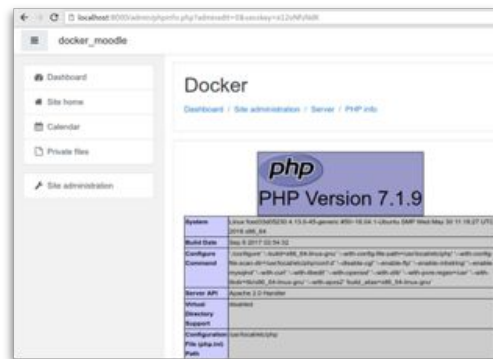
```
$ docker exec -it container_name bash
```

moodle-docker: manual testing

Initialize database

```
$ bin/moodle-docker-compose exec webserver php\  
  admin/cli/install_database.php --agree-license\  
  --fullname="Docker moodle" --shortname="docker_moodle"\  
  --adminpass="test" --adminemail="admin@example.com"
```

Default URL <http://localhost:8000>



moodle-docker: phpunit testing

Initialize phpunit environment

```
$ bin/moodle-docker-compose exec webserver php\  
    admin/tool/phpunit/cli/init.php
```

Run tests

```
$ bin/moodle-docker-compose exec webserver\  
    vendor/bin/phpunit auth_manual_testcase\  
    auth/manual/tests/manual_test.php
```

moodle-docker: behat testing

Initialize behat environment

```
$ bin/moodle-docker-compose exec webserver php\  
    admin/tool/behat/cli/init.php
```

Run tests

```
$ bin/moodle-docker-compose exec webserver php\  
    admin/tool/behat/cli/run.php --tags=@auth_manual
```

behat faildump directory is exposed at http://localhost:8000/_/faildumps/

The Moodle logo is displayed in a bold, orange, lowercase sans-serif font. A black graduation cap is positioned above the letter 'm'. The background of the entire slide is a faded photograph of a man in a black t-shirt with 'e-learning' written on it, kneeling on a stone plaza in front of a large, classical building with a portico. Another person is visible in the background.

moodle

Empowering educators to improve our world

#MootUS19

A second instance of the Moodle logo is shown in a light pink color, positioned in the foreground of the faded background image. It is partially obscured by the man kneeling in front of it.

moodle

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