Linux For Composer Documentation

Release 2.0.9.3

Foreach Code Factory

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CHAPTER 1

Configure and run Linux for PHP containers without ever touching the Docker command line!

You can create a custom configuration for each PHP project you have and launch the Linux for PHP containers directly from within your projects' working directories!

1.1 Installation

1.1.1 Prerequisites

Linux for Composer runs in the default Docker environment of each supported platform (operating system).

- All platforms:
 - Docker (https://www.docker.com/)
 - Composer (https://getcomposer.org/)
 - Git (https://git-scm.com/)
 - cURL (https://curl.haxx.se/)
- Unix/Mac/Linux: Bash,
- Windows 10: PowerShell,
- Windows 8: Bash for Windows (Docker Toolbox).

1.1.2 Installation using Composer

To install the **Linux for Composer** package, you can simply run the following commands:

```
$ composer require --dev linuxforphp/linuxforcomposer
$ php vendor/bin/linuxforcomposer.phar
```

Note: On Windows, please use the PHAR file in the vendor/linuxforphp/linuxforcomposer/bin folder.

You can install Linux for Composer for your entire system by copying the binary in a folder that is in your PATH:

```
$ cp vendor/linuxforphp/linuxforcomposer/bin/linuxforcomposer.phar /usr/local/bin/
→linuxforcomposer
```

You would then be able to invoke the binary directly from within the working directories of your PHP projects:

```
$ cd /my/favorite/php/project
$ linuxforcomposer docker:run start
```

Once installed, you will now be able to configure the linuxforcomposer.json file according to the specific needs of your project.

1.2 Configuration

To obtain a sample configuration file, please run this command in a **Composer**-enabled project's folder, once **Linux for Composer** has been installed:

```
$ php vendor/bin/linuxforcomposer.phar docker:run start
```

You will automatically initialize the project with the following default configuration:

```
"name": "linuxforphp/linuxforcomposer",
   "description": "A Composer interface to run 'Linux for PHP' Docker containers, ...
→Dockerfiles or docker-compose files.",
   "single": {
       "image": {
            "linuxforcomposer": {
                "php-versions": [
                    "7.4",
                    "7.3",
                    "7.2"
                ],
                "script": [
                    "echo '<?php phpinfo();' > /srv/www/index.php",
                    "lfphp --mysql --phpfpm --apache"
                "thread-safe": "false"
            },
            "dockerfile": {
                "url": "",
                "container-name": "",
                "username": "",
                "token": ""
        },
        "containers": {
            "modes": {
                "mode1": "detached",
                "mode2": "interactive",
```

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```
"mode3": "tty"
        },
        "ports": {
             "port1": [
                 "7474:80",
                 "7373:80",
                 "7272:80"
            ],
             "port2": [
                 "13306:3306",
                 "13307:3306",
                 "13308:3306"
        },
        "volumes": {
            "volume1": "",
            "volume2": ""
        "persist-data": {
            "mount": "false",
             "root-name": "",
             "directories": {
                 "directory1": "",
                 "directory2": "",
                 "directory3": ""
             }
        }
    }
},
"docker-compose": {
    "url": "",
    "username": "",
    "token": ""
},
"lfphp-cloud": {
    "account": "",
    "username": "",
    "token": ""
}
```

Linux for Composer has three main modes:

- Single mode
- Docker Compose mode
- · Linux for PHP Cloud mode

Only one of these modes can be used at one time.

When using the single mode, one must configure the image that should be used or built, and the containers that should be spun up.

The image can be configured through the image setting, and by using the linuxforcomposer standard mode, which uses **Linux for PHP** images in the background, or by using the dockerfile mode, which uses any of the images that you can find in the **Docker Hub** repositories. The dockerfile mode has precedence over the linuxforcomposer mode.

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Note: For more information on configuring the linuxforcomposer mode, please see the *Linux for Composer Mode* section.

Since the dockerfile mode has precedence over the linuxforcomposer mode, one can keep all of the linuxforcomposer configurations intact by simply adding a dockerfile configuration, which will cause the linuxforcomposer configurations to be totally ignored. This is useful when spinning up an ad hoc image to quickly test something in a project's code base.

Note: For more information on configuring the dockerfile mode, please see the *Dockerfile Mode* section.

Once the image is configured, the containers must be configured by using the containers setting. In this section, it is possible to configure the modes, ports, volumes and mount points for each container.

Note: For more information on configuring the containers setting, please see the *Containers* section.

When not using single mode, but when using the docker-compose mode instead, one must give the URL of a Git repository which contains a valid docker-compose.yml file in its root folder. Private repositories are also supported, but require that a username and an access token be given in this section of the linuxforcomposer. json file.

Note: For more information on configuring the docker-compose mode, please see the *Docker Compose Mode* section.

Finally, when not using either of the previous modes (single or docker-compose), but when using the lfphp-cloud mode in their place, it is possible to set up an automatic deployment of a project to the Linux for PHP Cloud, by configuring the account name, the username, and the public access token to a valid account.

Note: For more information on configuring the lfphp-cloud mode, please see the *Linux for PHP Cloud Mode* section.

For more details on how to get a Linux for PHP Cloud account, please see the Linux for PHP Cloud Services website.

1.2.1 Single Mode

In single mode, **Linux for Composer** will either use a **Linux for PHP** image, or an image that will be built using a Dockerfile. Once the image is ready, **Linux for Composer** will spin up one or more containers according to the options given in the *Containers* setting.

1.2.1.1 Image

The image section configures **Linux for Composer** to use and/or build an image. One must choose between the *Linux for Composer Mode* or *Dockerfile Mode* mode.

Note: The dockerfile mode has precedence over the linuxforcomposer mode.

1.2.1.1.1 Linux for Composer Mode

The main configuration settings for the linuxforcomposer mode are:

- PHP Versions
- Scripts
- Thread-Safety

PHP Versions

```
php-versions (Required - Default: none)
```

A list of the available pre-compiled versions can be found in the Linux for PHP repository on Docker Hub.

If many versions are chosen at once, Linux for Composer will start a detached container for each chosen version.

If you wish to obtain an interactive shell, enter /bin/bash in the script section (see *Scripts*) and do not ask for the 'detached' mode in the modes section (see *Modes*).

Finally, if you enter a version number like 8.0 (without the 'dev' part), **Linux for Composer** will COMPILE the latest version from source!!! Now, that's really bleeding edge, isn't it?

Scripts

```
script (Optional - Default: 'lfphp')
```

You can enter any command that you wish to execute as soon as the **Linux for PHP** container has finished starting. The most common ones are 'lfphp' and '/bin/bash'. But, you could also execute a PHP script directly or launch one of the recipes from the Linux for PHP documentation. You may enter as many commands as you need, as long as you enter one command per line of the script setting.

For example, to install **Drupal** automatically, you could enter:

```
"lfphp-get cms drupal testapp"
```

Another example would be to install Laravel:

```
"lfphp-get php-frameworks laravel testapp"
```

And, then, to start the LAMPP stack only:

```
"lfphp --mysql --phpfpm --apache"
```

Thread-Safety

```
thread-safe (Optional - Default: 'false')
```

It is possible to run a Zend thread-safe ('true') or a non-thread safe ('false') version of PHP.

1.2.1.1.2 Dockerfile Mode

```
dockerfile (Optional - Default: none)
```

When configuring the dockerfile mode, one must give the url of the Dockerfile that is to be used, and a name (container-name) to the image and its subsequently-created container. The file's URL can be local (path) or

1.2. Configuration 7

remote (http/https protocols only). If a remote Dockerfile requires authentication, it is possible to add a username and an access token to access a private repository, for example.

```
"dockerfile": {
    "url": "Dockerfile",
    "container-name": "specialproject",
    "username": "",
    "token": ""
}
```

Or,

```
"dockerfile": {
    "url": "https://example.com/repo/Dockerfile",
    "container-name": "specialproject2",
    "username": "user1",
    "token": "roviquerhoqiuerhvoqierbvoi"
}
```

Note: Please make sure cURL and Git are available on your system when trying to access remote files.

1.2.1.2 Containers

The main configuration settings for the containers section are:

- Modes
- Ports
- Volumes
- Persist Data

1.2.1.2.1 Modes

modes (Optional - Default: detached mode)

There are three possible modes when running Docker containers with Linux for Composer:

- Detached
- Interactive
- TTY

Whenever, you ask for the detached mode, it will take precedence over any other mode that you ask for in the linuxforcomposer.json file.

Note: For more information on Docker modes, please read the Docker documentation.

1.2.1.2.2 Ports

ports (Optional - Default: none)

You can share ports from the host system with your containers.

If you enter many port mappings for each shared port, **Linux for Composer** will share each mapping with one container in the order they were given. For example, 'port1' contains two mappings (8181:80 and 8282:80) and so does 'port2' (13306:3306 and 13307:3306). The first element of each mapping (8181:80 and 13306:3306) will be given to container 1, which corresponds to the first given PHP version in the php-versions section (see *PHP Versions*). The second element of each mapping (8282:80 and 13307:3306) will be given to container 2.

1.2.1.2.3 Volumes

volumes (Optional - Default: none)

You can share volumes between the host and your containers.

Note: Each volume will be shared with each and every container.

Linux/Unix/Mac users can insert Bash environment variables in this part of the JSON file. For example, you can share your current working directory with your containers by entering: "\${PWD}/:/srv/www". This will make your working directory available to the web server inside the Linux for PHP container.

On Windows 10 (PowerShell), please share the volume by using the following format:

"c:/Users/test:/srv/test"

On Windows 8 (Bash), please use the following format:

"/c/Users/test:/srv/test"

Note: Windows users must make sure to turn volume sharing on in the Docker settings.

1.2.1.2.4 Persist Data

persist-data (Optional - Default: false)

You can persist data by using **Docker** volumes and mounting them inside a container or sharing them between containers.

To mount **Docker** volumes to persist data from inside the container, one must set the mount setting to true, give a root name to the mounted volumes (we recommend setting it to the unique name of the project), and giving the names of the container's directories that should be persisted. For example, one could persist the container's '/srv' folder like so:

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```
"persist-data": {
    "mount": "true",
    "root-name": "unique_name_of_my_project",
    "directories": {
        "directory1": "/srv",
        "directory2": "",
        "directory3": ""
    }
}
```

This will instruct **Linux for Composer** to create a **Docker** volume with the name unique_name_of_my_project_srv and to share it with the container(s) created in the *Linux for Composer Mode*, or the container created in the *Dockerfile Mode*.

Upon creation of the volume, **Linux for Composer** will sync the new volume with the data that it will find in the designated directory.

Note: Windows containers are still NOT supported as of version 2.0.0 of Linux for Composer.

1.2.2 Docker Compose Mode

docker-compose (Optional - Default: none)

When configuring the docker-compose mode, one must give the url of the Git repository that has the main docker-compose.yml file in its root folder. The repository's URL can be local (path) or remote (Git supported protocols only). If the remote repository requires authentication, it is possible to add a username and a token to access the repository.

```
"docker-compose": {
    "url": "asclinux-docker-compose",
    "username": "",
    "token": ""
},
```

Or,

```
"docker-compose": {
    "url": "https://github.com/andrewscaya/asclinux-docker-compose",
    "username": "",
    "token": ""
},
```

Note: Please make sure cURL and Git are available on your system when trying to access remote files.

1.2.3 Linux for PHP Cloud Mode

```
lfphp-cloud (Optional - Default: none)
```

When configuring the lfphp-cloud mode, one must give the name of the account, the username and the public access token of the Linux for PHP Cloud Services for the account that should to be used.

```
"lfphp-cloud": {
    "account": "johnsmithexamplecom1",
    "username": "john.smith@example.com",
    "token": "rnvaernlaiurnaliurnfgalriunvaernveiruneirug"
}
```

Note: Not all Linux for Composer settings are available on all Linux for PHP Cloud hosting plans. For more information, please see the Linux for PHP Cloud Services website.

1.3 Usage

1.3.1 linuxforcomposer docker:run start

Once you are done modifying the JSON file, you can start the container or containers by issuing the following command:

```
$ php vendor/bin/linuxforcomposer.phar docker:run start
```

1.3.2 linuxforcomposer docker:run stop

In order to stop all the containers that were started using **Linux for Composer**, please enter the following command:

```
$ php vendor/bin/linuxforcomposer.phar docker:run stop
```

The docker:run stop command will automatically ask you if you want to commit each and every container that you have started before stopping and removing them.

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```
vagrant@zend: /workspace/projects/linuxforcomposer
                                                                                 ×
File Edit View Search Terminal Help
vagrant@zend:/workspace/projects/linuxforcomposer$ php app.php docker:run stop
CONTAINER ID
                    IMAGE
                                                    COMMAND
                                                                              CREA
TED
                STATUS
                                    PORTS
                                                            NAMES
da35c3ce583d
                    asclinux/linuxforphp-8.1:src
                                                    "/bin/bash -c 'lfphp-"
                                                                              38 m
                Up 20 seconds
                                    0.0.0.0:8181->80/tcp
inutes ago
                                                            angry gates
Commit container da35c3ce583d? (y/N)
```

If you do wish to save them, you will be asked to give each commit a unique name and you will also be asked if you wish to save the new name to the linuxforcomposer.json file for use the next time you start containers with Linux for Composer.

```
vagrant@zend: /workspace/projects/linuxforcomposer
                                                                                  ×
File Edit View Search Terminal Help
vagrant@zend:/workspace/projects/linuxforcomposer$ php app.php docker:run stop
CONTAINER ID
                    IMAGE
                                                     COMMAND
                                                                               CREA
                                     P0RTS
                STATUS
                                                             NAMES
TED
                                                     "/bin/bash -c 'lfphp-"
da35c3ce583d
                    asclinux/linuxforphp-8.1:src
                                                                               38 m
inutes ago
                Up 20 seconds
                                     0.0.0.0:8181->80/tcp
                                                             angry gates
Commit container da35c3ce583d? (y/N)y
Please enter the name of the new commit: 7.2.11-zftest
Save to linuxforcomposer.json file? (y/N)y
```

1.3.3 linuxforcomposer docker:run stop-force

In order to force stop all the containers that were started using **Linux for Composer** without being asked to commit each and every container, please use the following command:

```
$ php vendor/bin/linuxforcomposer.phar docker:run stop-force
```

The docker:run stop-force command will automatically stop and remove each and every container that you have started.

1.3.4 linuxforcomposer docker:run deploy

In order to deploy your current configuration file to the Linux for PHP Cloud Services, please use the following command:

```
$ php vendor/bin/linuxforcomposer.phar docker:run deploy
```

The docker:run deploy command will automatically post your configuration to the Linux for PHP Cloud Services.

Note: Please note that some configurations might be restricted due to the limitations of your service plan. Please see https://linuxforphp.com/account for more details on your service plan.

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1.3.5 linuxforcomposer list

Use the following to list the currently available commands:

\$ php vendor/bin/linuxforcomposer.phar list

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Usage: command [options] [arguments]

Table 1: Options

Simple	Readable	Description
-h	-help	Display this help message
-q	-quiet	Do not output any message
-V	-version	Display this application version
	-ansi	Force ANSI output
	-no-ansi	Disable ANSI output
-n	-no-interaction	Do not ask any interactive questions
-V	-verbose	Increase the verbosity of messages:
		"v" for normal output,
		"vv" for more verbose output and
		"vvv" for debug

Table 2: Available Commands:

Command	Description
help	Displays help for a command
list	Lists commands
docker:commit	Docker commit commands
docker:manage	Run Docker management commands
docker:parsejson	Parse JSON file for instructions for Docker
docker:run	Run 'Linux for PHP' containers

1.4 What's New

1.4.1 What's New in Version 2.0.9.3 (2021-07-22)

- Fixes a minor issue when containers are missing.
- Updates the test matrix.

1.4.2 What's New in Version 2.0.9.2 (2021-05-07)

• Updates the test matrix.

1.4.3 What's New in Version 2.0.9.1 (2021-05-06)

• Adds support for PHP 8.

1.4.4 What's New in Version 2.0.9 (2020-07-10)

- Fixes some issues when some configuration settings are missing.
- Fixes an issue when the 'build' and 'run' keywords are used in scripts.
- Optimizes the 'Parsejson' command.

1.4.5 What's New in Version 2.0.8 (2020-06-15)

- Fixes an issue when using only a Dockerfile as the minimum configuration.
- Fixes some failures when using Linux for Composer without Composer.

1.4.6 What's New in Version 2.0.7 (2020-05-18)

• Fixes an issue with clean restarts on local/Windows computers.

1.4.7 What's New in Version 2.0.6 (2020-05-04)

• Fixes an issue when restarting an LfC container using Docker.

1.4.8 What's New in Version 2.0.5 (2020-05-01)

• Fixes an issue when reading from environment variables.

1.4.9 What's New in Version 2.0.4 (2020-04-30)

- Fixes an issue when the JSON file is invalid.
- Fixes a minor regression when compiling PHP from source.
- Replaces the flocker driver by the local driver for Docker shared volume creation.

1.4.10 What's New in Version 2.0.3 (2020-04-09)

• Adds the shared Docker volume size feature for the LfPHP Cloud.

1.4.11 What's New in Version 2.0.2 (2020-03-19)

- Fixes an issue when changing from a Dockerfile to Linux for Composer in order to start containers.
- Updates the LfPHP client to take into account the new Cloud API.
- Adds the '-version' option.

1.4.12 What's New in Version 2.0.1 (2020-03-09)

• Fixes an issue with volume paths on Windows.

1.4. What's New

1.4.13 What's New in Version 2.0.0 (2020-02-24)

- Adds new Dockerfile and docker-compose functionality.
- Adds data persistence through mounted storage.
- Adds a 'stop-force' command.
- Updates the PHP versions to the Linux for PHP 8.2.0 pre-compiled versions.
- Adds new deployment functionality for the LfPHP Cloud.

1.4.14 What's New in Version 1.0.2 (2019-01-15)

• Updates the PHP versions to the Linux for PHP 8.1.3 pre-compiled versions.

1.4.15 What's New in Version 1.0.1 (2019-01-13)

- Fixes an issue whereby the Linux for Composer PID file could be deleted by the 'composer update' command.
- Fixes an issue with the JSON formatting of the main configuration file.

1.4.16 What's New in Version 1.0.0 (2018-11-07)

- Adds a new 'commit' feature when stopping containers.
- · Adds official documentation.
- Fixes an issue with Docker commands on Windows 10.

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Version 2.0, January 2004

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END OF TERMS AND CONDITIONS

CHAPTER 2

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