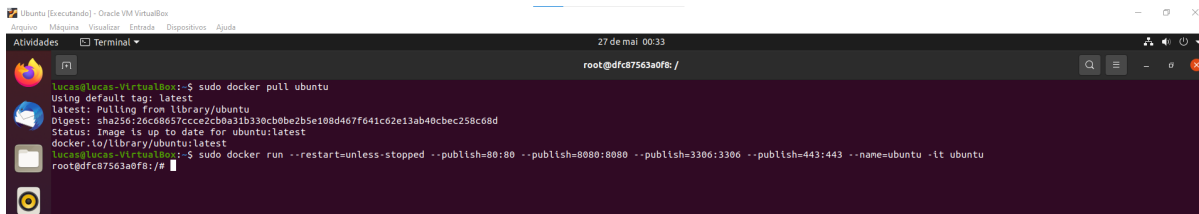


Prints e passo a passo:

(Caso os prints não fiquem claros no documento, os disponibilizarei também no repositório)

Começamos puxando uma imagem ubuntu (latest) do dockerhub e rodando (em um terminal em modo interativo) um container baseado nessa mesma imagem. Nele foram configurados:

- Portas
- Uma configuração para sempre reiniciar até que o contêiner seja parado
- Nome



```
lucas@lucas-VirtualBox:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:2cc0657fccc2c8a3b330c0be2b5e108d467f641c02e13ab40cbec258c68d
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest
lucas@lucas-VirtualBox:~$ sudo docker run --restart=unless-stopped --publish=80:80 --publish=8080:8080 --publish=3306:3306 --publish=443:443 --name=ubuntu -it ubuntu
root@dfc87563a0f8:/#
```

Após isso, atualizei o ubuntu dentro do contêiner e instalei as dependências necessárias para “ser” um LAMP. Dentre elas estão o PHP, MySQL e o Apache. Nesse passo foram necessárias algumas configurações irrelevantes relacionadas à localização.

```
root@dfc87563a0f8:/# apt update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [155 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [109 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4653 B]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [71.8 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [156 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [4653 B]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [268 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [124 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [157 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [1202 B]
Fetched 21.2 MB in 7s (2840 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
5 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@dfc87563a0f8:/# apt install apache2 mysql-server php libapache2-mod-php php-mysql -y
```

Após esse procedimento, é necessário que iniciemos tanto os serviços do Apache quanto do MySQL.

```
root@313f7441f07f:/# service apache2 start
* Starting Apache httpd web server apache2
AH00558: apache2: could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
root@313f7441f07f:/# service mysql start
* Starting MySQL database server mysqld
su: warning: cannot change directory to /nonexistent: No such file or directory
root@313f7441f07f:/#
```

Iniciados os serviços, nós instalaremos agora o PhpMyAdmin e realizaremos algumas configurações quanto ao dbconfig-common (digitamos yes), a escolha de servidor (no caso, o Apache) e a senha do MySQL. (As configurações não foram printadas).

```
root@313f7441f07f:/# apt install phpmyadmin php-mbstring php-zip php-gd php-json php-curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
dbconfig-common dbconfig-mysql fontconfig-config fonts-dejavu-core gcc-profiles-free javascript-common libdeflate0 libfontconfig1 libfreetype6 libgd3 libjpeg-turbo8 libjpeg8 libjs-bootstrap4
libjs-codemirror libjs-jquery libjs-jquery-mousewheel libjs-jquery-timepicker libjs-jquery-ui libjs-popper.js libjs-sizzle libjs-sphinxdoc libjs-underscore libpng16-16 libtiff5 libwebp7
libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxpm4 libxslt1.1 libzip4 node-jquery php-bz2 php-curl php-gd php-google-recaptcha php-json php-mariadb-mysql-kbs php-mbstring php-mbstring-motranslator
php-phpmyadmin-shaperfile php-phpmyadmin-sql-parser php-phpscclb php-psr-cache php-psr-container php-psr-log php-symfony-cache php-symfony-cache-contracts php-symfony-config
php-symfony-dependency-injection php-symfony-deprecation-contracts php-symfony-expression-language php-symfony-filesystem php-symfony-polyfill-php80 php-symfony-polyfill-php81
php-symfony-service-contracts php-symfony-var-exporter php-tcpdf php-twig php-twig-l18n-extension php-xml php8.1-bz2 php8.1-curl php8.1-gd php8.1-mbstring php8.1-xml php8.1-zip
Suggested packages:
libgd-tools libjs-requre.js libjs-jquery-ui-docs php-dbase php-libsodium php-libnct php-gmp php-symfony-yaml php-symfony-finder php-symfony-proxy-manager-bridge php-lmagick php-twig-doc php-recode
www-browser php-gd2 php-pragmarx-google2fa-qr-code php-sanyoul-u2f-php-server
Recommended packages:
php-mcrypt
The following NEW packages will be installed:
dbconfig-common dbconfig-mysql fontconfig-config fonts-dejavu-core gcc-profiles-free javascript-common libdeflate0 libfontconfig1 libfreetype6 libgd3 libjpeg-turbo8 libjpeg8 libjs-bootstrap4
libjs-codemirror libjs-jquery libjs-jquery-mousewheel libjs-jquery-timepicker libjs-jquery-ui libjs-popper.js libjs-sizzle libjs-sphinxdoc libjs-underscore libpng16-16 libtiff5 libwebp7
libx11-6 libx11-data libxau6 libxcb1 libxdmcp6 libxpm4 libxslt1.1 libzip4 node-jquery php-bz2 php-curl php-gd php-google-recaptcha php-json php-mariadb-mysql-kbs php-mbstring php-mbstring-motranslator
php-phpmyadmin-shaperfile php-phpmyadmin-sql-parser php-phpscclb php-psr-cache php-psr-container php-psr-log php-symfony-cache php-symfony-cache-contracts
php-symfony-config php-symfony-dependency-injection php-symfony-deprecation-contracts php-symfony-expression-language php-symfony-filesystem php-symfony-polyfill-php80 php-symfony-polyfill-php81
php-symfony-service-contracts php-symfony-var-exporter php-tcpdf php-twig php-twig-l18n-extension php-xml php8.1-bz2 php8.1-curl php8.1-gd php8.1-mbstring php8.1-xml php8.1-zip phpmyadmin
0 upgraded, 74 newly installed, 0 to remove and 4 not upgraded.
Need to get 21.6 MB of archives.
After this operation, 94.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libpng16-16 amd64 1.6.37-2build5 [191 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 libxau6 amd64 1:1.0.9-1build5 [7634 B]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 libxdmcp6 amd64 1:1.1.3-0ubuntu5 [10.9 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/main amd64 libxcb1 amd64 1.14-3ubuntu3 [49.0 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy/main amd64 libx11-data all 2:1.7.5-1 [119 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/main amd64 libx11-6 amd64 2:1.7.5-1 [666 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/universe amd64 dbconfig-common all 2.0.21 [597 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy/universe amd64 dbconfig-mysql all 2.0.21 [138 B]
Get:9 http://archive.ubuntu.com/ubuntu jammy/main amd64 fonts-dejavu-core all 2.37-2build1 [1041 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/main amd64 fontconfig-config all 2.13.1-4.2ubuntu5 [29.1 kB]
```

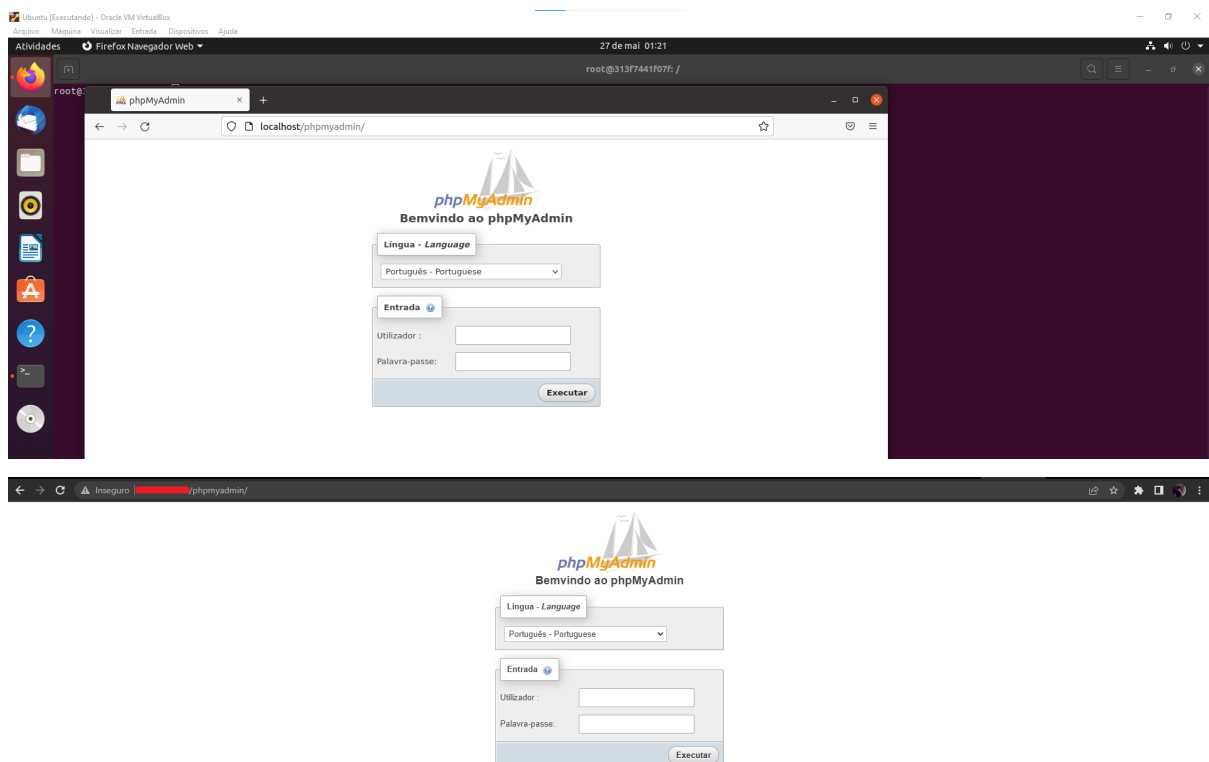
Feito isso, é necessário que habilitemos a extensão PHP mbstring e reiniciemos o Apache para as configurações serem reconhecidas. Além

disso, é necessária a instalação do systemctl (ferramenta de gerenciamento) para realizarmos esse restart de forma mais “amigável”.

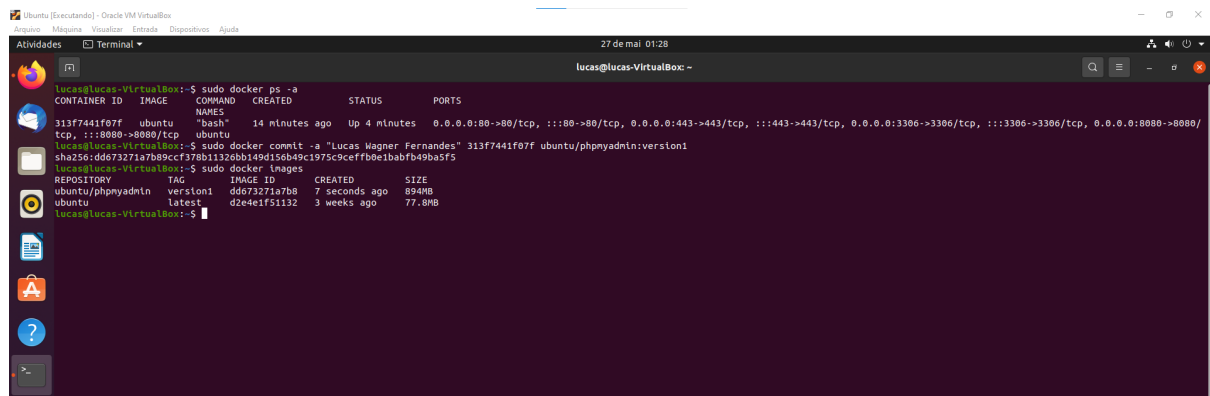
```
root@313f7441f07f:/# phpenmod mbstring
root@313f7441f07f:/# apt install systemctl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libmpdec3 libpython3-stdlib libpython3.10-minimal libpython3.10-stdlib libreadline8 python3 python3-minimal python3.10 python3.10-minimal readline-common
Suggested packages:
  python3-doc python3-tk python3-venv python3.10-venv python3.10-doc binutils bintnt-support readline-doc tini | dumb-init
The following NEW packages will be installed:
  libmpdec3 libpython3-stdlib libpython3.10-minimal libpython3.10-stdlib libreadline8 python3 python3-minimal python3.10 python3.10-minimal readline-common systemctl
0 upgraded, 11 newly installed, 0 to remove and 4 not upgraded.
Need to get 5796 kB of archives.
After this operation, 21.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libpython3.10-minimal amd64 3.10.4-3 [809 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3.10-minimal amd64 3.10.4-3 [2246 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy/main amd64 python3-minimal amd64 3.10.4-0ubuntu2 [24.4 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/main amd64 libmpdec3 amd64 2.5.1-2build2 [86.8 kB]
48% [4 libmpdec3 0 B/86.8 kB 0%]
```

```
root@313f7441f07f:/# systemctl restart apache2
root@313f7441f07f:/#
```

Para verificarmos se deu tudo certo, acessaremos o PhpMyAdmin via web tanto dentro, como fora do contêiner.



Como último passo, commitaremos o nosso contêiner como solicitado na atividade. Nesse commit, eu passo a flag -a que indica o autor, defino uma versão para ele (version1) e commito ele à partir do ID.



The screenshot shows a terminal window titled "Ubuntu [Executando] - Oracle VM VirtualBox" with a dark purple background. The terminal displays the following commands and output:

```
lucas@lucas-VirtualBox:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS
313f7441f07f   ubuntu   "bash"    14 minutes ago   Up 4 minutes   0.0.0.0:80->80/tcp, :::80->80/tcp, 0.0.0.0:443->443/tcp, :::443->443/tcp, 0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 0.0.0.0:8080->8080/tcp, :::8080->8080/tcp
lucas@lucas-VirtualBox:~$ sudo docker commit -a "Lucas Wagner Fernandes" 313f7441f07f ubuntu/phpmyadmin:version1
sha256:dd673271a7b89ccf378b11326bb149d156b49c1975c9ceffb0e1babfb49ba5f5
lucas@lucas-VirtualBox:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
ubuntu/phpmyadmin   version1   dd673271a7b8   7 seconds ago   894MB
ubuntu          latest    d2e4e1f51132   3 weeks ago   77.8MB
lucas@lucas-VirtualBox:~$
```

E é isso! Temos uma imagem Docker funcional, com o LAMP!