

SOR2 - AVALIAÇÃO 10 - DOCKER

Aluna: Beatriz Vidal Freire - P8 de Informática - IFCE Campus Fortaleza

Enunciado: Implementem e evidenciem o exemplo de uso de containers tal qual apresentado no vídeo no Youtube: <https://www.youtube.com/watch?v=Kzcz-EVKBEQ>

- **PRINTS** - Instalação do docker:

```
beatrizvidal@beatrizvidal-VirtualBox:~$ sudo apt-get update
[sudo] senha para beatrizvidal:
Atingido:1 http://br.archive.ubuntu.com/ubuntu focal InRelease
Obter:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Obter:3 http://br.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Obter:4 http://br.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Obter:5 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1.064 kB]
Obter:6 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [196 kB]
Obter:7 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [35,7 kB]
Obter:8 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [64,5 kB]
Obter:9 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 DEP-11 Metadata [2.464 B]
Baixados 1.699 kB em 14s (118 kB/s)
Lendo listas de pacotes... Pronto
beatrizvidal@beatrizvidal-VirtualBox:~$ sudo apt-get install \
> ca-certificates \
> curl \
> gnupg \
> lsb-release
Lendo listas de pacotes... Pronto
Construindo árvore de dependências
Lendo informação de estado... Pronto
lsb-release já é a versão mais recente (11.1.0ubuntu2).
lsb-release configurado para instalar manualmente.
gnupg já é a versão mais recente (2.2.19-3ubuntu2.1).
gnupg configurado para instalar manualmente.
Os NOVOS pacotes a seguir serão instalados:
  curl
Os pacotes a seguir serão atualizados:
  ca-certificates
1 pacotes atualizados, 1 pacotes novos instalados, 0 a serem removidos e 142 não atualizados.
```

```
Você quer continuar? [S/n] S
Obter:1 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 ca-certificates all 20210119-20.04.2 [145 kB]
Obter:2 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 curl amd64 7.68.0-1ubuntu2.7 [161 kB]
Baixados 307 kB em 6s (53,1 kB/s)
Pré-configurando pacotes ...
(Lendo banco de dados ... 175681 ficheiros e directórios actualmente instalados.)
A preparar para desempacotar .../ca-certificates_20210119-20.04.2_all.deb ...
A descompactar ca-certificates (20210119-20.04.2) sobre (20210119-20.04.1) ...
A seleccionar pacote anteriormente não seleccionado curl.
A preparar para desempacotar .../curl_7.68.0-1ubuntu2.7_amd64.deb ...
A descompactar curl (7.68.0-1ubuntu2.7) ...
Configurando ca-certificates (20210119-20.04.2) ...
Updating certificates in /etc/ssl/certs...
0 added, 1 removed; done.
Configurando curl (7.68.0-1ubuntu2.7) ...
A processar 'triggers' para man-db (2.9.1-1) ...
A processar 'triggers' para ca-certificates (20210119-20.04.2) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
beatrizvidal@beatrizvidal-VirtualBox:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --de
armor -o /usr/share/keyrings/docker-archive-keyring.gpg
beatrizvidal@beatrizvidal-VirtualBox:~$ echo \
> "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://d
ownload.docker.com/linux/ubuntu \
> $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
beatrizvidal@beatrizvidal-VirtualBox:~$
```

```
beatrizvidal@beatrizvidal-VirtualBox:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io
Lendo listas de pacotes... Pronto
Construindo árvore de dependências
Lendo informação de estado... Pronto
Os pacotes adicionais seguintes serão instalados:
  docker-ce-rootless-extras docker-scan-plugin git git-man liberror-perl pigz slirp4netns
Pacotes sugeridos:
  aufs-tools cgroupfs-mount | cgroup-lite git-daemon-run | git-daemon-sysvinit git-doc git-el git-email
  git-gui gitk gitweb git-cvs git-mediawiki git-svn
Os NOVOS pacotes a seguir serão instalados:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras docker-scan-plugin git git-man
  liberror-perl pigz slirp4netns
0 pacotes atualizados, 10 pacotes novos instalados, 0 a serem removidos e 142 não atualizados.
É preciso baixar 103 MB de arquivos.
Depois desta operação, 447 MB adicionais de espaço em disco serão usados.
Você quer continuar? [S/n] S
Obter:1 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io amd64 1.4.12-1 [23,7 MB]
Obter:2 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57,4 kB]
```

- **PRINT** - Teste com container hello world

```
beatrizvidal@beatrizvidal-VirtualBox:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:cc15c5b292d8525effc0f89cb299f1804f3a725c8d05e158653a563f15e4f685
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
```

- **PRINTS** - Mysql

```
Dockerfile
1 FROM mysql
2 ENV MYSQL_ROOT_PASSWORD atividadedocker
```

Atividades Terminal 13 de dez 16:35

beatrizvidal@beatrizvidal-VirtualBox: ~/Documentos/docker

<https://docs.docker.com/get-started/>

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker build -t mysql-image -f api/db/Dockerfile .
Sending build context to Docker daemon 3.072kB
Step 1/2 : FROM mysql
latest: Pulling from library/mysql
ffbb094f4f9e: Pull complete
df186527fc46: Pull complete
fa362a6aa7bd: Pull complete
5af7cb1a200e: Pull complete
949da226cc6d: Pull complete
bce007079ee9: Pull complete
eab9f076e5a3: Pull complete
8a57a7529e8d: Pull complete
b1ccc6ed6fc7: Pull complete
b4af75e64169: Pull complete
3aed6a9cd681: Pull complete
23390142f76f: Pull complete
Digest: sha256:ff9a288d1ecf4397967989b5d1ec269f7d9042a46fc8bc2c3ae35458c1a26727
Status: Downloaded newer image for mysql:latest
--> bbf6571db497
Step 2/2 : ENV MYSQL_ROOT_PASSWORD atividadedocker
--> Running in 83fb22f2ac82
Removing intermediate container 83fb22f2ac82
--> 7f4e874db09d
Successfully built 7f4e874db09d
Successfully tagged mysql-image:latest
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$
```

```
Atividades Terminal 13 de dez 16:39
beatrizvidal@beatrizvidal-VirtualBox: ~/Documentos/docker

eab9f076e5a3: Pull complete
8a57a7529e8d: Pull complete
b1ccc6ed6fc7: Pull complete
b4af75e64169: Pull complete
3aed6a9cd681: Pull complete
23390142f76f: Pull complete
Digest: sha256:ff9a288d1ecf4397967989b5d1ec269f7d9042a46fc8bc2c3ae35458c1a26727
Status: Downloaded newer image for mysql:latest
---> bbf6571db497
Step 2/2 : ENV MYSQL_ROOT_PASSWORD atividadedocker
---> Running in 83fb22f2ac82
Removing intermediate container 83fb22f2ac82
---> 7f4e874db09d
Successfully built 7f4e874db09d
Successfully tagged mysql-image:latest
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
mysql-image latest 7f4e874db09d 2 minutes ago 516MB
mysql latest bbf6571db497 11 days ago 516MB
hello-world latest feb5d9fea6a5 2 months ago 13.3kB
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker run -d --rm --name mysql-container mysql-image
ba064c6d968b63236eb8f867e5cebf5ce40d5553b76bcc6e041e43f6304144e2
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAME
ba064c6d968b mysql-image "docker-entrypoint.s..." 9 seconds ago Up 4 seconds 3306/tcp, 33060/tcp mysql
l-container
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$
```

```
script.sql (/home/beatrizvidal/Documentos/docker/api/db) - N...
File Edit Search View Encoding Language Settings Run
1 CREATE DATABASE IF NOT EXISTS
2 atvddocker;
3 USE atvddocker;
4
5 CREATE TABLE IF NOT EXISTS products (
6 id INT(11) AUTO INCREMENT,
7 name VARCHAR(255),
8 price DECIMAL(10, 2),
9 PRIMARY KEY (id)
10 );
11
12 INSERT INTO products VALUE (0, 'Curso Front-end especialista', 2500);
13 INSERT INTO products VALUE (0, 'Curso JS Fullsatck', 900);|
SQL Ln 13, col 59 Sel 0 (1) 320 chars, 13 lines
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo
o docker exec -i mysql-container mysql -uroot -patividadedock
er < api/db/script.sql
mysql: [Warning] Using a password on the command line interfa
ce can be insecure.
```

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker exec -it mysql-container /bin/bash
root@ba064c6d968b:/# mysql -uroot -patividadedocker
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.27 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use atvddocker;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select * from products;
+-----+-----+
| id | name | price |
+-----+-----+
| 1 | Curso Front-end especialista | 2500.00 |
| 2 | Curso JS Fullsatck | 900.00 |
+-----+-----+
2 rows in set (0.00 sec)
```

- PRINTS - Node JS

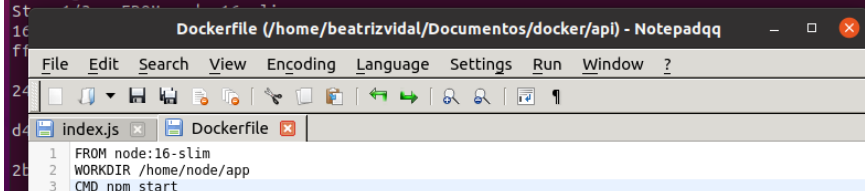
```
beatrizvidal@beatrizvidal-VirtualBox:~$ curl -sL https://deb.nodesource.com/setup_14.x | sudo -E bash -  
## Installing the NodeSource Node.js 14.x repo...  
  
## Populating apt-get cache...  
  
+ apt-get update  
Atingido:1 https://download.docker.com/linux/ubuntu focal InRelease  
Atingido:2 https://lts.archive.ubuntu.com/ubuntu focal InRelease
```

```
beatrizvidal@beatrizvidal-VirtualBox:~$ sudo apt-get install -y nodejs  
Lendo listas de pacotes... Pronto  
Construindo árvore de dependências  
Lendo informação de estado... Pronto  
Os NOVOS pacotes a seguir serão instalados:  
  nodejs  
0 pacotes atualizados, 1 pacotes novos instalados, 0 a serem removidos e 142 não atualizados.  
É preciso baixar 25,1 MB de arquivos.  
Depois desta operação, 122 MB adicionais de espaço em disco serão usados.  
Obter:1 https://deb.nodesource.com/node_14.x focal/main amd64 nodejs amd64 14.18.2-deb-1nodesource1 [25,1 MB]  
Baixados 25,1 MB em 9s (2.934 kB/s)
```

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker/api$ sudo npm install -g npm@8.3.0  
  
removed 8 packages, changed 24 packages, and audited 215 packages in 20s  
  
10 packages are looking for funding  
  run `npm fund` for details  
  
3 moderate severity vulnerabilities  
  
To address all issues, run:  
  npm audit fix  
  
Run `npm audit` for details
```

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker/api$ npm install --save-dev nodemon  
  
added 116 packages, and audited 117 packages in 1m  
  
15 packages are looking for funding  
  run `npm fund` for details  
  
found 0 vulnerabilities  
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker/api$ npm install --save express mysql  
  
added 65 packages, and audited 182 packages in 37s  
  
15 packages are looking for funding  
  run `npm fund` for details  
  
found 0 vulnerabilities
```

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker build -t node-image  
-f api/Dockerfile .  
Sending build context to Docker daemon 198.3MB  
Step 1/3: FROM node:16-slim  
Step 2/3: WORKDIR /home/node/app  
Step 3/3: CMD npm start
```



```
Dockerfile (/home/beatrizvidal/Documentos/docker/api) - Notepadqq  
File Edit Search View Encoding Language Settings Run Window ?  
1 FROM node:16-slim  
2 WORKDIR /home/node/app  
3 CMD npm start
```

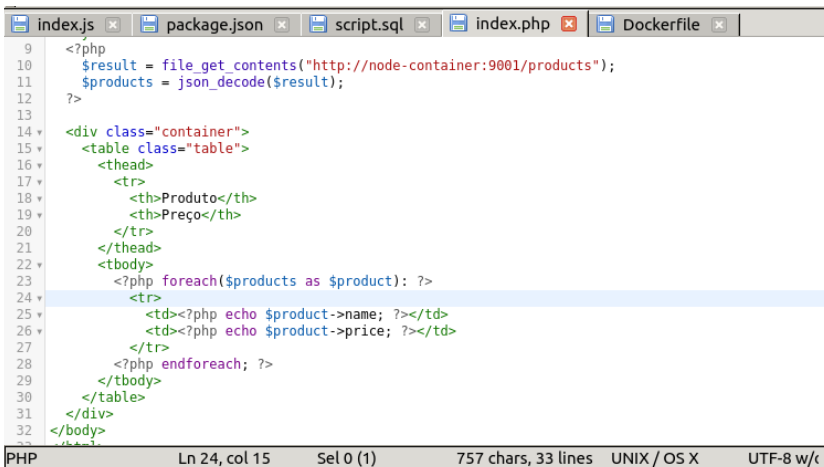
```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker run -d -v $(pwd)/api:/home/node/app -p 9001:9001 --rm --name node-container node-image  
ecf9354d3bffd68a4029b514cc494246e2404d5c519272c4d0cacddec54355df
```



```
index.js package.json script.js index.php Dockerfile  
1 const express = require('express');  
2 const mysql = require('mysql');  
3  
4 const app = express();  
5  
6 const connection = mysql.createConnection({  
7   host: 'mysql-container',  
8   user: 'root',  
9   password: 'atividadedocker',  
10  database: 'atvdocker'  
11 });  
12  
13 connection.connect();  
14  
15 app.get('/products', function(req, res) {  
16   connection.query('select * from products', function (error, results) {  
17     if (error) {  
18       throw error  
19     };  
20   });  
21   res.send(results.map(item => ({ name: item.name, price: item.price })));  
22 }
```

● PRINTS - PHP

```
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker build -t php-image -f website/Dockerfile .
Sending build context to Docker daemon 198.3MB
Step 1/2 : FROM php:7.2-apache
7.2-apache: Pulling from library/php
6ec7b7d162b2: Pulling fs layer
db606474d60c: Pulling fs layer
Status: Downloaded newer image for php:7.2-apache
--> c61d277263e1
Step 2/2 : WORKDIR /var/www/html
--> Running in 40241ecf27a0
Removing intermediate container 40241ecf27a0
--> 5e32210b61fc
Successfully built 5e32210b61fc
Successfully tagged php-image:latest
beatrizvidal@beatrizvidal-VirtualBox:~/Documentos/docker$ sudo docker run -d -v $(pwd)/website:/var/www/html -p 8888:80 --link node-container --rm --name php-container php-image
2cb287edb9e72179e94aa70081191819547bfc4c68a979e0f2497c89b834884f
```



```
index.js x package.json x script.sql x index.php x Dockerfile x
9      <?php
10      $result = file_get_contents("http://node-container:9001/products");
11      $products = json_decode($result);
12      ?>
13
14      <div class="container">
15      <table class="table">
16      <thead>
17      <tr>
18      <th>Produto</th>
19      <th>Preço</th>
20      </tr>
21      </thead>
22      <tbody>
23      <?php foreach($products as $product): ?>
24      <tr>
25      <td><?php echo $product->name; ?></td>
26      <td><?php echo $product->price; ?></td>
27      </tr>
28      <?php endforeach; ?>
29      </tbody>
30      </table>
31      </div>
32      </body>
```

PHP Ln 24, col 15 Sel 0 (1) 757 chars, 33 lines UNIX / OS X UTF-8 w/c