INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DO CEARÁ
CAMPUS **FORTALEZA**
TELEMÁTICA

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Disciplina**: Administração de serviços de rede** (01.302.25)

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Avaliação 10 – MQTT

1. O MQTT (Message Queuing Telemetry Trasport) é um protocolo leve que implementa o modelo de transporte PUB/SUB (*publish*/*subscribe*). Esse modelo é usado em aplicações de mensageria. O MQTT é principalmente usando em aplicações IOT (internet das coisas). Essa atividade tem como objetivo implementar uma aplicação MQTT usando o `docker-compose`.

   Evidenciar o funcionamento da aplicação usando *prints*. Sugerimos usar o Play with Docker com o `docker-compose`. Observar os links de artigos apresentando esse tema anexos abaixo. Trabalho com equipes de no máximo três alunos.

```
##########################################################
#                      WARNING!!!!                       #
# This is a sandbox environment. Using personal credentials  #
# is HIGHLY! discouraged. Any consequences of doing so are   #
# completely the user's responsibilites.                 #
#                                                        #
# The PWD team.                                          #
##########################################################
[node1] (local) root@192.168.0.13 ~
$ apk add docker-compose
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.18/community/x86_64/APKINDEX.tar.gz
(1/3) Installing docker-cli (23.0.6-r7)
(2/3) Installing docker-bash-completion (23.0.6-r7)
(3/3) Installing docker-cli-compose (2.17.3-r8)
Executing busybox-1.36.1-r2.trigger
OK: 543 MiB in 165 packages
[node1] (local) root@192.168.0.13 ~
$ vi docker-compose.yml
[node1] (local) root@192.168.0.13 ~
$ cat docker-compose.yml
version: "3"
services:
  mosquitto:
    image: eclipse-mosquitto
    network_mode: host
    volumes:
      - ./conf:/mosquitto/conf
      - ./data:/mosquitto/data
      - ./log:/mosquitto/log

[node1] (local) root@192.168.0.13 ~
$ docker compose up
[+] Running 4/4
 ✓ mosquitto 3 layers [::::::]      0B/0B        Pulled                                          1.7s
   ✓ c926b61bad3b Pull complete                                                                  0.2s
   ✓ a87e6a8c3b38 Pull complete                                                                  0.2s
   ✓ 4e2ff55c815a Pull complete                                                                  0.1s
[+] Building 0.0s (0/0)                                                              docker:default
[+] Running 1/1
 ✓ Container root-mosquitto-1  Created                                                           0.1s
Attaching to root-mosquitto-1
root-mosquitto-1  | 1701527300: mosquitto version 2.0.18 starting
root-mosquitto-1  | 1701527300: Config loaded from /mosquitto/config/mosquitto.conf.
root-mosquitto-1  | 1701527300: Starting in local only mode. Connections will only be possible from clients running on this machine.
root-mosquitto-1  | 1701527300: Create a configuration file which defines a listener to allow remote access.
root-mosquitto-1  | 1701527300: For more details see https://mosquitto.org/documentation/authentication-methods/
root-mosquitto-1  | 1701527300: Opening ipv4 listen socket on port 1883.
root-mosquitto-1  | 1701527300: Opening ipv6 listen socket on port 1883.
root-mosquitto-1  | 1701527300: Error: Address not available
root-mosquitto-1  | 1701527300: mosquitto version 2.0.18 running

^CGracefully stopping... (press Ctrl+C again to force)
```

Figura 1. Instalação do Mosquitto pelo docker-compose.

```
Aborting on container exit...
[+] Stopping 1/1
 ✓ Container root-mosquitto-1  Stopped                                                           0.2s
canceled
[node1] (local) root@192.168.0.13 ~
$ mkdir -p /mosquitto/config
[node1] (local) root@192.168.0.13 ~
$ vi /mosquitto/config/mosquitto.conf
[node1] (local) root@192.168.0.13 ~
$ cat /m
media/      mnt/        mosquitto/
[node1] (local) root@192.168.0.13 ~
$ cat /mosquitto/config/mosquito.conf
cat: can't open '/mosquitto/config/mosquito.conf': No such file or directory
[node1] (local) root@192.168.0.13 ~
$ cat d
data/               docker-compose.yml
[node1] (local) root@192.168.0.13 ~
$ cat docker-compose.yml
version: "3"
services:
  mosquitto:
    image: eclipse-mosquitto:2.0.18
    volumes:
      - /mosquitto/config:/mosquitto/config
      - /mosquitto/data:/mosquitto/data
      - /mosquitto/log:/mosquitto/log
    ports:
      - 1883:1883[node1] (local) root@192.168.0.13 ~
$ docker compose up
[+] Running 1/1
 ✓ mosquitto Pulled                                                                              0.2s
[+] Building 0.0s (0/0)                                                              docker:default
[+] Running 2/2
 ✓ Network root_default       Created                                                            0.0s
 ✓ Container root-mosquitto-1  Recreated                                                         0.1s
Attaching to root-mosquitto-1
root-mosquitto-1  | 1701527914: mosquitto version 2.0.18 starting
root-mosquitto-1  | 1701527914: Config loaded from /mosquitto/config/mosquitto.conf.
root-mosquitto-1  | 1701527914: Opening ipv4 listen socket on port 1883.
root-mosquitto-1  | 1701527914: Opening ipv6 listen socket on port 1883.
root-mosquitto-1  | 1701527914: mosquitto version 2.0.18 running
```

Figura 2. Configuração do Mosquitto pela criação do arquivo mosquitto.conf.