IMAS Docker example prepared by B.Pogodzinski, M.Owsiak, tested and modified by D. Yadykin (Poznan ACH)

Environment Preparation - what do you need?

- Docker
  - https://docs.docker.com/desktop/install/mac-install/
  - https://docs.docker.com/desktop/install/windows-install/
  - https://docs.docker.com/desktop/install/linux-install/
- Git
  - https://git-scm.com/download/mac
  - https://git-scm.com/download/win
  - https://git-scm.com/download/linux

Environment Preparation

- Get the example code (please note that you need an active Gateway account)

```
> git clone git@gitlab.eufus.psnc.pl :ach/cicd-imas-example.git (needs ssh key in the repo)
> git clone https://gitlab.eufus.psnc.pl/ach/cicd-imas-example.git  (prompts
username/password)
```

- Get the Docker image (please note that you need an active Gateway account)

```
> docker login gitlab.eufus.psnc.pl:5050
> docker pull gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest
```

```
[bpogodzinski@docker-builder:~/work-bpogodzinski] $ git clone git@gitlab.eufus.psnc.pl:ach/cicd-imas-example.git
Cloning into 'cicd-imas-example'...
remote: Enumerating objects: 81, done.
remote: Counting objects: 100% (21/21), done.
remote: Compressing objects: 100% (21/21), done.
remote: Total 81 (delta 12), reused 0 (delta 0), pack-reused 60
Receiving objects: 100% (81/81), 22.84 KiB | 1.43 MiB/s, done.
Resolving deltas: 100% (43/43), done.
[bpogodzinski@docker-builder:~/work-bpogodzinski] 2s $ docker login gitlab.eufus.psnc.pl:5050
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /home/bpogodzinski/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
[bpogodzinski@docker-builder:~/work-bpogodzinski] $ docker pull gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest
latest: Pulling from containerization/imas/imas-installer/rockylinux8.6/ual
Digest: sha256:f6776ddc7d1f636f18acadc0659914b1e1fd96197fcae3cda782a889ed6b6117
Status: Downloaded newer image for gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest
gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest
[bpogodzinski@docker-builder:~/work-bpogodzinski] 2s $
```

Running the environment and mounting folders (Linux)

```
> docker run --rm --interactive --tty \                    # we are running in interactive mode
    -v `pwd`/cicd-imas-example:/root/example \              # local file system will be visible inside Docker
                                                            # `pwd`/cicd-imas-example -> /root/example
                                                            # this long line below is a name of our image
    gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest \
    bash --login                                            # this is the command that will be started inside
                                                            # the container
```

Running the environment and mounting folders (Windows)

```
> docker run --rm --interactive --tty \                    # we are running in interactive mode
   -v Absolute\ path\ to\ folder\cicd-imas-example:/root/example \          # local file system will be
                                                                            # visible inside Docker
                                                           # `pwd`/cicd-imas-example -> /root/example
                                                           # this long line below is a name of our image
    gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest \
    bash --login                                           # this is the command that will be started inside
                                                           # the container
```

Note: need configuration of the Docker Desktop to allow folder to be shared with the Docker (Settings/Resources/File Sharing)

```
[bpogodzinski@docker-builder:~/work-bpogodzinski] 130 $ docker run --rm --interactive --tty \
> -v `pwd`/cicd-imas-example:/root/example \
> gitlab.eufus.psnc.pl:5050/containerization/imas/imas-installer/rockylinux8.6/ual:latest \
> bash --login
[root@47e30b3f433a ~]# pwd
/root
[root@47e30b3f433a ~]# module load IMAS
[root@47e30b3f433a ~]# cd example/
[root@47e30b3f433a example]#
```

Test database with example directory

In this example we will:

1. create database `test`
2. initialize it with some example data
3. read data back

```
> cd example                    # this is the directory we have mounted
> imasdb test                   # this command creates empty storage for
                                # MDSPlus files
> python ids_put.py             # simple Python code that creates database
                                # with IDSes
> python ids_get.py             # simple Python code that reads data back
```

```
[root@854cd9d16beb example]# imasdb test
[root@854cd9d16beb example]# python ids_put.py
[root@854cd9d16beb example]# python ids_get.py
Time  = [0. 1. 2. 3. 4. 5. 6. 7. 8. 9.]
Value  = [ 0.  2.  4.  6.  8. 10. 12. 14. 16. 18.]
[root@854cd9d16beb example]#
```