Anaconda-2021.05 Installation

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Intended audience

ICT Staff -- Werkplekbeheer, Digital Exam environment

Overview

This procedure describes how to install the TU Delft software portal Anaconda version;

- the Anaconda base versions is the Anaconda Individual Edition 2021.05. See menu option Products
- the installation assumes MULTIPLE users (referred to as: "system installation")
- as per recommendation by Anaconda, Anaconda users sharing a system installation are grouped and granted read and write permissions for the root folder and folders below
- a single base environment (a.k.a. environment anaconda3), as created and configured in the official installation procedure by Anaconda, residing in C:\ProgramData\Anaconda3
- the installation has to be multi platform;
 - o for Windows (X86 64)
 - for MacOS
 - for Linux
- the TU Delft stylesheet tudelft.css will not be installed in the system install, but distributed separately
- this installation includes, among others, Spyder, VS Code, Jupyter Notebook, JupyterLab, and RStudio
- this installation includes scikit-learn, TensorFlow, and PyTorch, for Machine Learning
- the Individual Edition is an all-open-source installation (no licenses required). This includes the installation of PyCharm
 Professional with Anaconda Plugin offered and promoted as part of the official installation, and free-for-academic use, a
 free Community Edition of the JetBrains Datalore for online editing and execution of Jupyter notebooks, and a trial version of
 IBM Watson Studio for Anaconda users, that lets you run IBM Notebooks on IBM's Watson Studio for Al and data science, in
 the cloud.

After this installation, and after adding a few extra packages as per demand by various users in the Faculties, the packaging can commence and the final packaged version can be transferred to the TU Delft Software Portal.

Remark

Students or Staff requiring an installation under *their own user account* can download and installer from the Anaconda site, install, and activate or install the additional packages themselves. If for a minimum installation or just for a Python interpreter, they may want to install miniconda.

Resources

- 1. Anaconda Individual Edition 2021.05
- 2. Introduction Anaconda Individual Edition
- 3. Installation procedure for multiple users -- system installation
- 4. PyCharm Professional with Anaconda plugin
- 5. Packages
- 6. Miniconda resources
- 7. Hashes

Installation -- what steps need to be undertaken?

- Stage 1: install Anaconda Individual Edition (details are given below)
- Stage 2: post-install the extra packages as specified by Faculties during the Consultation Round (see below)

Stage 1: Install Anaconda Individual Edition

- 1. download the installer from the download site, for Windows, MacOs, or Linux (see below)
- 2. install the software as it comes; select multiple users (all users) for a system install
- 3. make a user group Anaconda-Users and adjust the file access rights for this group as specified in the installation procedure
- 4. verify that the installation has been successful (see below)

Documentation Windows installation procedure

- 1. single user
- 2. multiple user

MacOS installation procedure

- 1. single user
- 2. command line install

Linux installation procedure

- 1. single user
- 2. multiple users

Verification the Installation

See here how to verify the installation. Also, see here. This page also gives some pointers.

Troubleshooting

Problems and troubleshooting

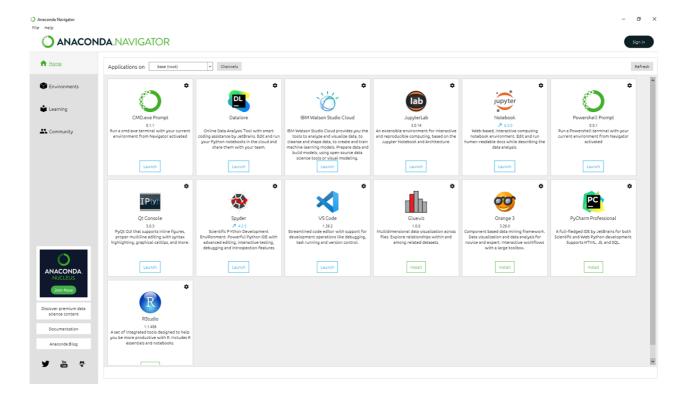
FAQ

Frequently asked questions

Stage 2:

1. add (post-install) the extra packages to complete the installation as desired by the participants in the Consultation round (see specifications below)

Start by opening **Anaconda-Navigator** (from the Windows Start Menu) and from that environment launch PowerShell-Prompt (see image below).



In the PowerShell thus provided, check if the *base environment* anaconda3 is selected (as reflected in the prompt; here:

anaconda3, which is good) and check if python and conda are in the path, by prompting their versions. The output should show something like:

```
(anaconda3) PS C:\Users\bhmgerritsen> python --version
Python 3.8.8
(anaconda3) PS C:\Users\bhmgerritsen> conda --version
conda 4.10.1
(anaconda3) PS C:\Users\bhmgerritsen>
```

We are now good to go installing the extra packages using conda commands on the command line. To install, issue the command in the rightmost column, in the table below, one-by-one:

package name	channel	command		
slycot	conda-forge	conda install -c conda-forge slycot		
control	conda-forge	conda install -c conda-forge control		
nidaqmx-python	conda-forge	conda install -c conda-forge nidaqmx-python		
pulp	conda-forge	conda install -c conda-forge pulp		

Finally, still in the PowerShell like above, use pip to install packages that cannot be installed by conda. Usually, conda figures out for each of the packages to be installed, which *version* is needed to keep the entire environment sane. Generally, pip does not do that. To that end, Anaconda has its own pip, to overcome this lack of *version control*:

```
conda list pip
pip 21.1.2 pypi_0 pypi
```

Use it to install the remaining packages that insist on pip, like so:

```
python -m pip install salabim
python -m pip install coolprop
```

and:

```
python -m pip install opencv-python
```

and:

```
python -m pip install tsp
```

Verify. Done.

Appendix I

Looking for additional packages (for Stage 2) proceeds as follows. Open a PowerShell Prompt from the Anaconda-Navigator, as shown above. Next:

- 1. to check if a package is installed, use conda list <package name>
- 2. to search for info on a package on the web, in a specfic *channel*, use conda search -c <channel-name> --info <package name>

Example: see if numpy has already been installed on our system installation:

```
conda list numpy
```

yields the output:

informing us that numpy 1.20.1 has already been installed in environment C:\ProgramData\Anaconda3 (i.e. the base environment for all users), along with its dependencies.

If not installed, search the web for a package can be done as follows.

Example: search the web (channel Conda-Forge) for an additional package, by the name slycot:

```
conda search -c conda-forge --info slycot
```

yielding a long list of output:

```
. . .
slycot 0.4.0.0 py39he12218f_4
file name : slycot-0.4.0.0-py39he12218f_4.tar.bz2
         : slycot
: 0.4.0.0
version
build
          : py39he12218f_4
build number: 4
size
           : 1.2 MB
license : GPL-2.0-only
subdir : win-64
         : https://conda.anaconda.org/conda-forge/win-64/slycot-0.4.0.0-py39he12218f_4.tar.bz2 : 8cf28be61e4902a72f3cb01aa13b2189
url
timestamp : 2020-11-01 08:41:31 UTC
dependencies:
  - libblas >=3.8.0,<4.0a0
  - libcblas >=3.8.0,<4.0a0
 - libflang >=5.0.0
  - liblapack >=3.8.0,<4.0a0
  - numpy >=1.19.2,<2.0a0
  - python >=3.9,<3.10.0a0
  - python_abi 3.9.* *_cp39
  - vc >=14.1,<15.0a0
  - vs2015_runtime >=14.16.27012
  - libflang <6.0.0.a0
. . .
```

informing us that the Microsoft VisualStudio 2015 runtime needs to be installed, and that this version requires at least Python 3.9

.

Appendix II

List of packages installed in the base environment (anaconda3).

```
(anaconda3) PS C:\Users\bhmgerritsen> conda list --show-channel-urls
# packages in environment at C:\Users\bhmgerritsen\anaconda3:
                                     Build
py38_0
pyhd3eb1b0_0
pyhd8ed1ab_0
py38 @
                          Version
                                                    Build Channel
_ipyw_jlab_nb_ext_conf 0.1.0
                                                   py38_0 defaults
alabaster 0.7.12 alembic 1.6.4
                                                             defaults
conda-forge
                                            py38_0 defaults
                         2021.05
anaconda
anaconda 2021.05
anaconda-client 1.7.2
anaconda-navigator 2.0.3
anaconda-project 0.9.1
anyio 2.2.0
appdirs 1.4.4
                                                             defaults
                                          pyhd3eb1b0_1
                                                    py38_0
                                                              defaults
                                                             defaults
                   py38haa95532_2
1.4.4 py_0
0.26.2 py38_0
20.1.0 py38h2bbfffb_1
1.4.0 nv 0
                         2.2.0
                                          py38haa95532_2
                                                             defaults
                                                             defaults
appdirs
                                                              defaults
argh
argon2-cffi
                                                             defaults
                                                             defaults
asn1crypto
                        2.5
4.2.1
                                         py38haa95532_1
                                                             defaults
astroid
                                         py38h2bbff1b_1
                                                              defaults
astropy
async_generator
                                            pyhd3eb1b0_0
                                                             defaults
                         1.4.0
atomicwrites
                                                      py_0
                                                             defaults
                                           pyhd3eb1b0_0
pyhd3eb1b0_0
pyhd3eb1b0_0
                         20.3.0
1.5.6
                                                             defaults
defaults
attrs
autopep8
                         2.9.0
babel
                                                             defaults
                0.2.0
                                            pyhd3eb1b0_0
                                                             defaults
backcall
                                            pyhd3eb1b0_2
backports
                          1.0
                                                              defaults
backports.functools_lru_cache 1.6.4
                                                  pyhd3eb1b0_0 defaults
```

```
pyhd3eb1b0_3 defaults
backports.shutil_get_terminal_size 1.0.0
backports.tempfile
                        1.0
                                            pyhd3eb1b0_1
                                                            defaults
backports.weakref
                         1.0.post1
                                                   py_1
                                                            defaults
                                          py38he774522_0
bcrypt
                         3.2.0
                                                            defaults
beautifulsoup4
                         4.9.3
                                            pyha847dfd_0
                                                            defaults
bitarray
                         1.9.2
                                          py38h2bbff1b_1
                                                            defaults
                                                            defaults
bkcharts
                         a 2
                                                  py38_0
                         19.10b0
black
                                                    py_0
                                                            defaults
                         1.0
                                                            defaults
blas
                                                    mkl
                         3.3.0
                                            pyhd3eb1b0_0
                                                            defaults
bleach
                                              h19a0ad4_0
                                                            defaults
blosc
                         1.21.0
bokeh
                         2.3.2
                                          py38haa95532_0
                                                            defaults
hoto
                         2.49.0
                                                py38_0
                                                            defaults
                         1.3.2
                                          py38h2a96729_1
                                                            defaults
bottleneck
hrotli
                         1.0.9
                                              ha925a31 2
                                                            defaults
brotlipy
                         0.7.0
                                         py38h2bbff1b_1003
                                                            defaults
hzin2
                                                            defaults
                         1.0.8
                                              he774522 0
ca-certificates
                         2021.4.13
                                              haa95532 1
                                                            defaults
                                           h63a05c6 1001
cairo
                         1.16.0
                                                            conda-forge
certifi
                         2020.12.5
                                          py38haa95532_0
                                                            defaults
cffi
                                                            defaults
                         1.14.5
                                          pv38hcd4344a 0
chardet
                         4.0.0
                                         py38haa95532_1003
                                                             defaults
charls
                         2.2.0
                                              h6c2663c 0
                                                            defaults
click
                         7.1.2
                                            pyhd3eb1b0_0
                                                            defaults
cloudpickle
                         1.6.0
                                                  ру_0
                                                            defaults
                                                            defaults
clvent
                         1.2.2
                                                  py38_1
colorama
                         0.4.4
                                            pyhd3eb1b0 0
                                                            defaults
comtypes
                         1.1.9
                                         py38haa95532_1002
                                                            defaults
conda
                         4.10.1
                                          py38haa244fe_0
                                                            conda-forge
                                          py38haa95532_0
                                                            defaults
conda-build
                         3.21.4
conda-content-trust
                         0.1.1
                                            pyhd3eb1b0_0
                                                            defaults
                                                            defaults
conda-env
                         2.6.0
                                                      1
conda-package-handling
                                          py38h8cc25b3_1
                                                            defaults
                         1.7.3
                                            pyhd3eb1b0_0
                                                            defaults
conda-repo-cli
                         1.0.4
conda-token
                         0.3.0
                                            pyhd3eb1b0_0
                                                            defaults
conda-verify
                         3.4.2
                                                            defaults
                                                    py_1
console shortcut
                         0.1.1
                                                            defaults
                                                    ру_0
                                                            defaults
contextlib2
                         0.6.0.post1
cryptography
                         3.4.7
                                          py38h71e12ea_0
                                                            defaults
curl
                         7.71.1
                                              h2a8f88b 1
                                                            defaults
cycler
                         0.10.0
                                                  py38_0
                                                            defaults
cython
                         0.29.23
                                          py38hd77b12b 0
                                                            defaults
cytoolz
                         0.11.0
                                          py38he774522_0
                                                            defaults
dask
                         2021.4.0
                                            pyhd3eb1b0 0
                                                            defaults
dask-core
                         2021.4.0
                                            pyhd3eb1b0_0
                                                            defaults
decorator
                         5.0.6
                                            pyhd3eb1b0 0
                                                            defaults
                                                            defaults
defusedxml
                         9.7.1
                                            pyhd3eb1b0_0
                         20200713
                                                            defaults
diff-match-patch
                                                  ру 0
distributed
                         2021.4.0
                                          py38haa95532_0
                                                            defaults
docutils
                         0.17
                                          py38haa95532_1
                                                            defaults
                                                            defaults
entrypoints
                         0.3
                                                 py38_0
et xmlfile
                         1.0.1
                                                            defaults
                                                 py_1001
fastcache
                         1.1.0
                                          py38he774522 0
                                                            defaults
filelock
                         3.0.12
                                            pyhd3eb1b0 1
                                                            defaults
flake8
                         3.9.0
                                            pyhd3eb1b0 0
                                                            defaults
                                            pyhd3eb1b0_0
flask
                         1.1.2
                                                            defaults
freetype
                         2.10.4
                                              hd328e21 0
                                                            defaults
fsspec
                         0.9.0
                                            pyhd3eb1b0_0
                                                            defaults
                         0.18.2
                                                 py38_1
                                                            defaults
future
fuzzywuzzy
                         0.18.0
                                            pyhd8ed1ab_0
                                                            conda-forge
get terminal size
                         1.0.0
                                              h38e98db 0
                                                            defaults
gevent
                         21.1.2
                                          py38h2bbff1b_1
                                                            defaults
giflib
                         5.2.1
                                              h62dcd97 0
                                                            defaults
                                                            defaults
glob2
                         0.7
                                            pyhd3eb1b0_0
glpk
                         4.65
                                           h8ffe710 1004
                                                            conda-forge
                                                            defaults
greenlet
                         1.0.0
                                          py38hd77b12b_2
h5py
                         2.10.0
                                          py38h5e291fa_0
                                                            defaults
hdf5
                         1.10.4
                                              h7ebc959_0
                                                            defaults
                                                            defaults
heapdict
                         1.0.1
                                                    py_0
html5lib
                         1.1
                                                            defaults
                                                    ру_0
                         2019.0.0
                                              h0cc432a_1
                                                            defaults
icc_rt
                                                            defaults
icu
                         58.2
                                              ha925a31 3
idna
                         2.10
                                            pyhd3eb1b0 0
                                                            defaults
                         0.9.2
                                                            conda-forge
igraph
                                              h29cbd77 0
```

```
imagecodecs
                        2021.3.31
                                        py38h5da4933_0
                                                         defaults
imageio
                        2.9.0
                                          pyhd3eb1b0_0
                                                         defaults
imagesize
                        1.2.0
                                          pyhd3eb1b0_0
                                                         defaults
importlib-metadata
                        3.10.0
                                         py38haa95532_0
                                                         defaults
importlib_metadata
                        3.10.0
                                           hd3eb1b0_0
                                                         defaults
iniconfig
                        1.1.1
                                          pyhd3eb1b0_0
                                                         defaults
                        2021.2.0
                                          haa95532_616
                                                         defaults
intel-openmp
intervaltree
                        3.1.0
                                                  ру_0
                                                         defaults
                                         py38h5ca1d4c_0
                        5.3.4
                                                         defaults
ipykernel
                        7.22.0
                                                         defaults
ipython
                                        py38hd4e2768_0
ipython_genutils
                        0.2.0
                                          pyhd3eb1b0_1
                                                         defaults
ipywidgets
                        7.6.3
                                          pyhd3eb1b0_1
                                                         defaults
isort
                        5.8.0
                                          pyhd3eb1b0 0
                                                         defaults
                                                         defaults
itsdangerous
                        1.1.0
                                          pyhd3eb1b0_0
                        1.4.1
                                                         defaults
idcal
                                                  ру_0
jedi
                        0.17.2
                                        py38haa95532_1
                                                         defaults
                        2.11.3
                                          pyhd3eb1b0 0
                                                         defaults
iinia2
                                          pyhd3eb1b0_0
joblib
                        1.0.1
                                                         defaults
                                                         defaults
                        9b
                                            hb83a4c4 2
jpeg
json5
                        0.9.5
                                                  ру_0
                                                         defaults
                        3.2.0
                                                  py_2
                                                         defaults
isonschema
                                                py38_7
jupyter
                        1.0.0
                                                         defaults
jupyter-packaging
                        0.7.12
                                          pyhd3eb1b0 0
                                                         defaults
jupyter_client
                        6.1.12
                                          pyhd3eb1b0_0
                                                         defaults
jupyter console
                        6.4.0
                                          pyhd3eb1b0 0
                                                         defaults
jupyter_contrib_core
                        0.3.3
                                                 py_2
                                                         conda-forge
jupyter contrib nbextensions 0.5.1
                                             pyhd8ed1ab 2 conda-forge
jupyter_core
                        4.7.1
                                         py38haa95532_0
                                                        defaults
jupyter_highlight_selected_word 0.2.0
                                            py38haa244fe_1002 conda-forge
jupyter_latex_envs
                        1.4.6
                                        pyhd8ed1ab_1002
                                                         conda-forge
jupyter_nbextensions_configurator 0.4.1
                                               py38haa244fe_2 conda-forge
                                        py38haa95532_0 defaults
jupyter_server
                        1.4.1
                                                         defaults
jupyterlab
                        3.0.14
                                         pyhd3eb1b0_1
                                                         defaults
                        0.1.2
jupyterlab_pygments
                                                ру_0
jupyterlab_server
                        2.4.0
                                          pyhd3eb1b0_0
                                                         defaults
                        1.0.0
                                          pyhd3eb1b0 1
                                                        defaults
jupyterlab_widgets
                        22.3.0
                                        py38haa95532 0
                                                         defaults
keyring
                                        py38hd77b12b_0
                                                         defaults
kiwisolver
                        1.3.1
krh5
                        1.18.2
                                            hc04afaa_0
                                                         defaults
lazy-object-proxy
                                        py38h2bbff1b_0
                        1.6.0
                                                         defaults
1cms2
                        2.12
                                            h83e58a3_0
                                                         defaults
lerc
                        2.2.1
                                            hd77b12b 0
                                                         defaults
libaec
                        1.0.4
                                            h33f27b4_1
                                                         defaults
libarchive
                        3.4.2
                                            h5e25573 0
                                                         defaults
libblas
                        3.9.0
                                       1_h8933c1f_netlib
                                                          conda-forge
libcblas
                        3.9.0
                                       5 hd5c7e75 netlib
                                                           conda-forge
libcurl
                        7.71.1
                                            h2a8f88b 1 defaults
libdeflate
                       1.7
                                            h2bbff1b_5
                                                         defaults
                                            h1df5818_7
libiconv
                                                         defaults
                        1.15
liblapack
                        3.9.0
                                       5_hd5c7e75_netlib
                                                          conda-forge
liblapacke
                                       5_hd5c7e75_netlib
                        3.9.0
                                                          conda-forge
liblief
                        0.10.1
                                           ha925a31_0
                                                        defaults
libpng
                                            h2a8f88b_0
                                                         defaults
                        1.6.37
libsodium
                        1.0.18
                                            h62dcd97_0
                                                         defaults
libspatialindex
                        1.9.3
                                            h6c2663c 0
                                                        defaults
libssh2
                        1.9.0
                                            h7a1dbc1_1
                                                         defaults
libtiff
                        4.2.0
                                            hd0e1b90 0
                                                         defaults
lihxml2
                        2.9.10
                                            hb89e7f3_3
                                                         defaults
libxslt
                        1.1.34
                                            he774522 0
                                                         defaults
libzopfli
                        1.0.3
                                            ha925a31_0
                                                         defaults
llvmlite
                        0.36.0
                                        py38h34b8924 4
                                                         defaults
locket
                        0.2.1
                                        py38haa95532_1
                                                         defaults
1xm1
                        4.6.3
                                        py38h9b66d53 0
                                                         defaults
                                                         defaults
174-c
                        1.9.3
                                            h2bbff1b 0
1zo
                        2.10
                                            he774522 2
                                                         defaults
m2w64-gcc-libgfortran
                                                         defaults
                        5.3.0
                                                     6
m2w64-gcc-libs
                        5.3.0
                                                         defaults
                                                     7
                                                         defaults
m2w64-gcc-libs-core
                        5.3.0
                                                         defaults
m2w64-gmp
                        6.1.0
m2w64-libwinpthread-git 5.0.0.4634.697f757
                                                       2 defaults
                                        pyh44b312d_0
                                                        conda-forge
mako
                        1.1.4
markupsafe
                                        py38he774522 0
                                                         defaults
                        1.1.1
                        3.3.4
                                        py38haa95532 0
                                                         defaults
matplotlib
                        3.3.4
                                        py38h49ac443 0
                                                         defaults
matplotlib-base
```

```
mccabe
                          0.6.1
                                                    py38_1
                                                              defaults
menuinst
                          1.4.16
                                           py38he774522_1
                                                              defaults
mistune
                          0.8.4
                                           py38he774522_1000
                                                                defaults
mkl
                          2021.2.0
                                             haa95532_296
                                                              defaults
mkl-service
                          2.3.0
                                            py38h2bbff1b_1
                                                              defaults
mkl_fft
                          1.3.0
                                           py38h277e83a_2
                                                              defaults
                                                              defaults
mkl\_random
                          1.2.1
                                            py38hf11a4ad_2
mock
                                              pyhd3eb1b0_0
                                                              defaults
                          8.7.0
                                                              defaults
more-itertools
                                              pyhd3eb1b0 0
mpir
                          3.0.0
                                             he025d50_1002
                                                              conda-forge
                                            py38haa95532_0
                                                              defaults
mpmath
                          1.2.1
msgpack-python
                          1.0.2
                                            py38h59b6b97_1
                                                              defaults
msys2-conda-epoch
                          20160418
                                                              defaults
                                                              defaults
multipledispatch
                          0.6.0
                                                    py38_0
                          0.4.3
                                                              defaults
mypy_extensions
                                                    py38_0
                          0.2.1
                                                              defaults
navigator-updater
                                                    py38_0
                                              pyhd3eb1b0_0
                                                              defaults
nhclassic
                          0.2.6
nbclient
                          0.5.3
                                              pyhd3eb1b0_0
                                                              defaults
                                                    py38_0
                                                              defaults
nbconvert
                          6.0.7
nbformat
                          5.1.3
                                              pyhd3eb1b0_0
                                                              defaults
                          0.6.1
                                            py38haa244fe 1
                                                              conda-forge
nbgrader
nest-asyncio
                          1.5.1
                                              pyhd3eb1b0_0
                                                              defaults
                                                              defaults
networkx
                          2.5
                                                      py 0
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