

Machine Learning 1.5.1

ML Runtimes Pre-installed Packages

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Pre-Installed Packages in ML Runtimes

Cloudera Machine Learning ships with several base engine images that include Python kernels, and frequently used libraries.



Note: New ML Runtime releases are automatically added to the deployment, if internet connection is available.

Because the software and versions in these lists is installed in the images, you should not upgrade these versions because this will cause dependency conflicts. If any software in this list needs to be at a higher version, you should use a more recent version of the legacy engine or ML Runtime.

The Workbench Runtimes are being deprecated in favor of the PBJ Runtimes.

ML Runtimes 2022.11

This section lists the Python, R, and Scala libraries that ship with ML Runtimes 2022.11.



Note: Nvidia GPU Edition comes with CUDA 11.4.1 preinstalled.

Python 3.9 Libraries for Workbench

This section lists the packages in Python 3.9 Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 1: Packages in Python 3.9.11 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |

| Library | Version |
|-------------------|----------|
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 2: Packages in Python 3.9.11 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|-------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |

| Library | Version |
|--------------------|-----------|
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |

| Library | Version |
|---------|---------|
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 3: Packages in Python 3.9.11 PBJ Workbench Runtimes - Standard

| Library | Version |
|------------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |

| Library | Version |
|-------------------|----------|
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |

| Library | Version |
|---------|---------|
| zipp | 3.7.0 |

Python 3.8 Libraries for Workbench

This section lists the packages in Python 3.8 Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 4: Packages in Python 3.8.13 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.8.6 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |

| Library | Version |
|-------------------|----------|
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 5: Packages in Python 3.8.13 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |

| Library | Version |
|-------------------|----------|
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 6: Packages in Python 3.8.13 PBJ Workbench Runtimes - Standard

| Library | Version |
|----------------------|---------|
| python | 3.8.6 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |

| Library | Version |
|------------------------|-----------|
| certifi | 2021.10.8 |
| cff | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbcclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |

| Library | Version |
|-------------------|----------|
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Python 3.7 Libraries for Workbench

This section lists the packages in Python 3.7 Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 7: Packages in Python 3.7.13 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.7.13 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |

| Library | Version |
|--------------------|----------|
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

| Library | Version |
|---------|---------|
| zipp | 3.8.0 |

Table 8: Packages in Python 3.7.13 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.7.13 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.6.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.21.6 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |

| Library | Version |
|-------------------|---------|
| Pygments | 2.8.1 |
| pyparsing | 3.0.9 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.16.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 9: Packages in Python 3.7.13 PBJ Workbench - Standard

| Library | Version |
|----------------------|-----------|
| python | 3.7.13 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |

| Library | Version |
|------------------------|----------|
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |

| Library | Version |
|-------------------|---------|
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Scala 2.11 Libraries for Workbench

This section lists the packages in Scala 2.11.12 Workbench Runtimes that ship with ML Runtimes 2022.11.

Scala 2.11.12 Libraries for Workbench - Standard

| Library | Version |
|-------------------------------|---------|
| org.scala-lang:scala-library | 2.11.12 |
| org.scalatest:scalatest | 2.2.4 |
| org.scala-lang:scala-reflect | 2.11.12 |
| org.scala-lang:scala-compiler | 2.11.12 |
| io.circe:circe-generic | 0.11.2 |
| io.circe:circe-parser | 0.11.2 |
| org.scalameta:scalameta | 1.0.0 |

Python 3.9.6 Libraries for JupyterLab

This section lists the packages in Python 3.9 JupyterLab Runtimes that ship with ML Runtimes 2022.11.

Table 10: Packages in Python 3.9.11 JupyterLab Runtimes - Standard

| Library | Version |
|-----------------|---------|
| python | 3.9.6 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |

| Library | Version |
|---------------------|-----------|
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cff | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |

| Library | Version |
|-------------------|----------|
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 11: Packages in Python 3.9.11 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |

| Library | Version |
|---------------------|----------|
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |

| Library | Version |
|-------------------|---------|
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Python 3.8 Libraries for JupyterLab

This section lists the packages in Python 3.8 JupyterLab Runtimes that ship with ML Runtimes 2022.11.

Table 12: Packages in Python 3.8.13 JupyterLab Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.8.13 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |

| Library | Version |
|---------------------|---------|
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |

| Library | Version |
|-------------------|----------|
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 13: Packages in Python 3.8.13 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|-----------------|------------|
| python | 3.8.13 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |

| Library | Version |
|---------------------|-----------|
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cff | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |

| Library | Version |
|-------------------|----------|
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.3.0 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Python 3.7 Libraries for JupyterLab

This section lists the packages in Python 3.7 JupyterLab Runtimes that ship with ML Runtimes 2022.11.

Table 14: Packages in Python 3.7.13 JupyterLab Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.7.13 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |

| Library | Version |
|---------------------|----------|
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |

| Library | Version |
|-------------------|---------|
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 15: Packages in Python 3.7.13 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|-----------|
| python | 3.7.13 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.6.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.11.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |

| Library | Version |
|---------------------|----------|
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.4.4 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.21.6 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.2.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |

| Library | Version |
|-------------------|---------|
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

R 4.1 Libraries

This section lists the R 4.1 libraries that ship with ML Runtimes 2022.11.

Table 16: PBJ R 4.1.1 Libraries for Workbench

| Library | Version |
|----------------------|-----------|
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |

| Library | Version |
|------------------------|---------|
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |

| Library | Version |
|-------------------|----------|
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Table 17: R 4.1.1 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 4.1.1 |
| bitops | 1.0-7 |
| boot | 1.3-28 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |
| class | 7.3-19 |
| cli | 3.0.1 |
| cluster | 2.1.2 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |

| Library | Version |
|--------------|---------|
| compiler | 4.1.1 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 4.1.1 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.1.1 |
| grDevices | 4.1.1 |
| grid | 4.1.1 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-20 |
| labeling | 0.4.2 |
| lattice | 0.20-44 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-54 |
| Matrix | 1.3-4 |
| methods | 4.1.1 |
| mgcv | 1.8-36 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-16 |
| openssl | 1.4.4 |
| parallel | 4.1.1 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |

| Library | Version |
|-------------|---------|
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-14 |
| splines | 4.1.1 |
| stats | 4.1.1 |
| stats4 | 4.1.1 |
| survival | 3.2-11 |
| sys | 3.4 |
| tcltk | 4.1.1 |
| tibble | 3.1.4 |
| tools | 4.1.1 |
| utf8 | 1.2.2 |
| utils | 4.1.1 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 4.0 Libraries

This section lists the R 4.0 libraries that ship with ML Runtimes 2022.11.

Table 18: PBJ R 4.0.5 Libraries for Workbench

| Library | Version |
|---------------------|-----------|
| argon2-ffi | 21.3.0 |
| argon2-ffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| ffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |

| Library | Version |
|------------------------|----------|
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.21 |
| Pygments | 2.11.2 |

| Library | Version |
|-------------------|---------|
| yparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Table 19: R 4.0.5 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 4.0.5 |
| bitops | 1.0-7 |
| boot | 1.3-27 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |
| class | 7.3-18 |
| cli | 3.0.1 |
| cluster | 2.1.1 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |
| compiler | 4.0.5 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 4.0.5 |
| digest | 0.6.27 |

| Library | Version |
|--------------|----------|
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.0.5 |
| grDevices | 4.0.5 |
| grid | 4.0.5 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-18 |
| labeling | 0.4.2 |
| lattice | 0.20-41 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-53.1 |
| Matrix | 1.3-2 |
| methods | 4.0.5 |
| mgcv | 1.8-34 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-15 |
| openssl | 1.4.4 |
| parallel | 4.0.5 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |

| Library | Version |
|-------------|---------|
| spatial | 7.3-13 |
| splines | 4.0.5 |
| stats | 4.0.5 |
| stats4 | 4.0.5 |
| survival | 3.2-10 |
| sys | 3.4 |
| tcltk | 4.0.5 |
| tibble | 3.1.4 |
| tools | 4.0.5 |
| utf8 | 1.2.2 |
| utils | 4.0.5 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 3.6 Libraries

This section lists the R 3.6 libraries that ship with ML Runtimes 2022.11.

Table 20: PBJ R 3.6.3 Libraries for Workbench

| Library | Version |
|----------------------|-----------|
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |

| Library | Version |
|------------------------|----------|
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |

| Library | Version |
|-------------------|---------|
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Table 21: R 3.6.3 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 3.6.3 |
| bitops | 1.0-7 |
| boot | 1.3-24 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |
| class | 7.3-15 |
| cli | 3.0.1 |
| cluster | 2.1.0 |
| codetools | 0.2-16 |
| colorspace | 2.0-2 |
| compiler | 3.6.3 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 3.6.3 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-75 |
| ggplot2 | 3.3.5 |

| Library | Version |
|--------------|----------|
| glue | 1.4.2 |
| graphics | 3.6.3 |
| grDevices | 3.6.3 |
| grid | 3.6.3 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-16 |
| labeling | 0.4.2 |
| lattice | 0.20-38 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-51.5 |
| Matrix | 1.2-18 |
| methods | 3.6.3 |
| mgcv | 1.8-31 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-144 |
| nnet | 7.3-12 |
| openssl | 1.4.4 |
| parallel | 3.6.3 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-11 |
| splines | 3.6.3 |
| stats | 3.6.3 |
| stats4 | 3.6.3 |
| survival | 3.1-8 |

| Library | Version |
|-------------|---------|
| sys | 3.4 |
| tcltk | 3.6.3 |
| tibble | 3.1.4 |
| tools | 3.6.3 |
| utf8 | 1.2.2 |
| utils | 3.6.3 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

Python 3.9 Libraries for PBJ Workbench

This section lists the packages in Python 3.9 PBJ Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 22: Packages in Python 3.9.11 PBJ Workbench Runtimes - Standard

| Library | Version |
|----------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |

| Library | Version |
|------------------------|----------|
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| yparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |

| Library | Version |
|-------------------|---------|
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Python 3.8 Libraries for PBJ Workbench

This section lists the packages in Python 3.8 PBJ Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 23: Packages in Python 3.8.13 PBJ Workbench Runtimes - Standard

| Library | Version |
|----------------------|-----------|
| python | 3.8.6 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |

| Library | Version |
|------------------------|----------|
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |

| Library | Version |
|-------------------|---------|
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

Python 3.7 Libraries for PBJ Workbench

This section lists the packages in Python 3.7 PBJ Workbench Runtimes that ship with ML Runtimes 2022.11.

Table 24: Packages in Python 3.7.13 PBJ Workbench Runtimes - Standard

| Library | Version |
|----------------------|-----------|
| python | 3.7.13 |
| pip | 21.1.3 |
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |

| Library | Version |
|------------------------|----------|
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |

| Library | Version |
|-------------------|---------|
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

PBJ R 4.1 Libraries

This section lists the PBJ R 4.1 libraries that ship with ML Runtimes 2022.11.

Table 25: PBJ R 4.1.1 Libraries for Workbench

| Library | Version |
|---------------------|-----------|
| argon2-ffi | 21.3.0 |
| argon2-ffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| ffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |

| Library | Version |
|------------------------|----------|
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |

| Library | Version |
|-------------------|---------|
| terminado | 0.13.1 |
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

PBJ R 4.0 Libraries

This section lists the PBJ R 4.0 libraries that ship with ML Runtimes 2022.11.

Table 26: PBJ R 4.0.5 Libraries for Workbench

| Library | Version |
|----------------------|-----------|
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |

| Library | Version |
|------------------------|----------|
| Jinja2 | 3.0.3 |
| jsonschem | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |

| Library | Version |
|-------------------|---------|
| testpath | 0.5.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

PBJ R 3.6 Libraries

This section lists the PBJ R 3.6 libraries that ship with ML Runtimes 2022.11.

Table 27: PBJ R 3.6.3 Libraries for Workbench

| Library | Version |
|----------------------|-----------|
| argon2-cffi | 21.3.0 |
| argon2-cffi-bindings | 21.2.0 |
| attrs | 21.4.0 |
| backcall | 0.2.0 |
| bitarray | 2.3.6 |
| bleach | 4.1.0 |
| certifi | 2021.10.8 |
| cffi | 1.15.0 |
| charset-normalizer | 2.0.11 |
| cycler | 0.11.0 |
| debugpy | 1.5.1 |
| decorator | 5.1.1 |
| defusedxml | 0.7.1 |
| entrypoints | 0.4 |
| idna | 3.3 |
| importlib-metadata | 4.11.0 |
| importlib-resources | 5.4.0 |
| impyla | 0.17.0 |
| ipykernel | 6.9.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.18.1 |
| Jinja2 | 3.0.3 |

| Library | Version |
|------------------------|----------|
| jsonschema | 4.4.0 |
| jupyter-client | 7.1.2 |
| jupyter-core | 4.9.1 |
| jupyter-kernel-gateway | 2.5.1 |
| jupyterlab-pygments | 0.1.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.2 |
| MarkupSafe | 2.0.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclient | 0.5.10 |
| nbconvert | 6.4.2 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.4 |
| notebook | 6.4.8 |
| numpy | 1.21.5 |
| packaging | 21.3 |
| pandocfilters | 1.5.0 |
| parso | 0.8.3 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.13.1 |
| prompt-toolkit | 3.0.27 |
| ptyprocess | 0.7.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.21 |
| Pygments | 2.11.2 |
| pyparsing | 3.0.7 |
| pyrsistent | 0.18.1 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.27.1 |
| Send2Trash | 1.8.0 |
| six | 1.16.0 |
| terminado | 0.13.1 |
| testpath | 0.5.0 |

| Library | Version |
|-------------------|---------|
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.0.1 |
| urllib3 | 1.26.8 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| zipp | 3.7.0 |

ML Runtimes 2022.04

This section lists the Python, R, and Scala libraries that ship with ML Runtimes 2022.04.



Note: Nvidia GPU Edition comes with CUDA 11.4.1 preinstalled.

Python 3.9 Libraries for Workbench

This section lists the packages in Python 3.9 Workbench Runtimes that ship with ML Runtimes 2022.04.

Table 28: Packages in Python 3.9.11 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |

| Library | Version |
|-------------------|----------|
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 29: Packages in Python 3.9.11 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|-------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |

| Library | Version |
|--------------------|-----------|
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |

| Library | Version |
|---------|---------|
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Python 3.8 Libraries for Workbench

This section lists the packages in Python 3.8 Workbench Runtimes that ship with ML Runtimes 2022.04.

Table 30: Packages in Python 3.8.13 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.8.6 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prompt-toolkit | 3.0.8 |

| Library | Version |
|-------------------|----------|
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 31: Packages in Python 3.8.13 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |

| Library | Version |
|-------------------|----------|
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Python 3.7 Libraries for Workbench

This section lists the packages in Python 3.7 Workbench Runtimes that ship with ML Runtimes 2022.04.

Table 32: Packages in Python 3.7.13 Workbench Runtimes - Standard

| Library | Version |
|-------------|---------|
| python | 3.7.11 |
| pip | 21.1.3 |
| argcomplete | 2.0.0 |

| Library | Version |
|--------------------|-----------|
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |

| Library | Version |
|-------------------|---------|
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 33: Packages in Python 3.7.13 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| argcomplete | 2.0.0 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| entrypoints | 0.4 |
| idna | 3.2 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| jedi | 0.17.2 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| nest-asyncio | 1.5.5 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |

| Library | Version |
|-------------------|----------|
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.2 |
| pyzmq | 22.3.0 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| zipp | 3.8.0 |

Table 34: Packages in Python 3.7.13 PBJ Workbench - Standard

| Library | Version |
|--------------------|------------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |

| Library | Version |
|---------------------|---------|
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbcassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |

| Library | Version |
|-------------------|----------|
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Scala 2.11 Libraries for Workbench

This section lists the packages in Scala 2.11.12 Workbench Runtimes that ship with ML Runtimes 2022.04.

Scala 2.11.12 Libraries for Workbench - Standard

| Library | Version |
|------------------------------|---------|
| org.scala-lang:scala-library | 2.11.12 |
| org.scalatest:scalatest | 2.2.4 |
| org.scala-lang:scala-reflect | 2.11.12 |

| Library | Version |
|-------------------------------|---------|
| org.scala-lang:scala-compiler | 2.11.12 |
| io.circe:circe-generic | 0.11.2 |
| io.circe:circe-parser | 0.11.2 |
| org.scalameta:scalameta | 1.0.0 |

Python 3.9.6 Libraries for JupyterLab

This section lists the packages in Python 3.9 JupyterLab Runtimes that ship with ML Runtimes 2022.04.

Table 35: Packages in Python 3.9.11 JupyterLab Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |

| Library | Version |
|---------------------|----------|
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |

| Library | Version |
|-------------------|---------|
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 36: Packages in Python 3.9.11 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |

| Library | Version |
|---------------------|---------|
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbcassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |

| Library | Version |
|-------------------|----------|
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Python 3.8 Libraries for JupyterLab

This section lists the packages in Python 3.8 JupyterLab Runtimes that ship with ML Runtimes 2022.04.

Table 37: Packages in Python 3.8.13 JupyterLab Runtimes - Standard

| Library | Version |
|---------|---------|
| python | 3.8.6 |
| pip | 21.1.3 |

| Library | Version |
|---------------------|-----------|
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |

| Library | Version |
|-------------------|----------|
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| yparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |

| Library | Version |
|-------------------|---------|
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 38: Packages in Python 3.8.13 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |

| Library | Version |
|---------------------|----------|
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |

| Library | Version |
|-------------------|---------|
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Python 3.7 Libraries for JupyterLab

This section lists the packages in Python 3.7 JupyterLab Runtimes that ship with ML Runtimes 2022.04.

Table 39: Packages in Python 3.7.13 JupyterLab Runtimes - Standard

| Library | Version |
|-----------------|-----------|
| python | 3.7.11 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |

| Library | Version |
|---------------------|---------|
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |

| Library | Version |
|-------------------|----------|
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

Table 40: Packages in Python 3.7.13 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|---------|----------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |

| Library | Version |
|---------------------|------------|
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argcomplete | 2.0.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| beautifulsoup4 | 4.11.1 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| debugpy | 1.6.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.4 |
| fastjsonschema | 2.15.3 |
| idna | 2.10 |
| importlib-metadata | 4.11.3 |
| impyla | 0.17.0 |
| ipykernel | 6.5.0 |
| ipython | 7.31.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 3.1.1 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 7.2.2 |
| jupyter-core | 4.9.2 |
| jupyter-server | 1.16.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |

| Library | Version |
|-------------------|----------|
| MarkupSafe | 2.1.1 |
| matplotlib | 3.3.4 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.5.0 |
| nbformat | 5.3.0 |
| nest-asyncio | 1.5.5 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 9.0.1 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.2 |
| pytz | 2021.1 |
| pyzmq | 22.3.0 |
| requests | 2.25.1 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| soupsieve | 2.3.2 |
| terminado | 0.9.2 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tinycss2 | 1.1.1 |
| tornado | 6.1 |

| Library | Version |
|-------------------|---------|
| traitlets | 5.1.1 |
| typing-extensions | 4.1.1 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.8.0 |

R 4.0 Libraries

This section lists the R 4.0 libraries that ship with ML Runtimes 2022.04.

Table 41: R 4.0.5 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 4.0.5 |
| bitops | 1.0-7 |
| boot | 1.3-27 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cds | 2.1 |
| class | 7.3-18 |
| cli | 3.0.1 |
| cluster | 2.1.1 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |
| compiler | 4.0.5 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 4.0.5 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.0.5 |
| grDevices | 4.0.5 |

| Library | Version |
|--------------|----------|
| grid | 4.0.5 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-18 |
| labeling | 0.4.2 |
| lattice | 0.20-41 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-53.1 |
| Matrix | 1.3-2 |
| methods | 4.0.5 |
| mgcv | 1.8-34 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-15 |
| openssl | 1.4.4 |
| parallel | 4.0.5 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-13 |
| splines | 4.0.5 |
| stats | 4.0.5 |
| stats4 | 4.0.5 |
| survival | 3.2-10 |
| sys | 3.4 |
| tcltk | 4.0.5 |
| tibble | 3.1.4 |

| Library | Version |
|-------------|---------|
| tools | 4.0.5 |
| utf8 | 1.2.2 |
| utils | 4.0.5 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 4.1 Libraries

This section lists the R 4.1 libraries that ship with ML Runtimes 2022.04.

Table 42: R 4.1.1 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 4.1.1 |
| bitops | 1.0-7 |
| boot | 1.3-28 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |
| class | 7.3-19 |
| cli | 3.0.1 |
| cluster | 2.1.2 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |
| compiler | 4.1.1 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 4.1.1 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.1.1 |
| grDevices | 4.1.1 |
| grid | 4.1.1 |

| Library | Version |
|--------------|---------|
| gtable | 0.3.0 |
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-20 |
| labeling | 0.4.2 |
| lattice | 0.20-44 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-54 |
| Matrix | 1.3-4 |
| methods | 4.1.1 |
| mgcv | 1.8-36 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-16 |
| openssl | 1.4.4 |
| parallel | 4.1.1 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-14 |
| splines | 4.1.1 |
| stats | 4.1.1 |
| stats4 | 4.1.1 |
| survival | 3.2-11 |
| sys | 3.4 |
| tcltk | 4.1.1 |
| tibble | 3.1.4 |
| tools | 4.1.1 |

| Library | Version |
|-------------|---------|
| utf8 | 1.2.2 |
| utils | 4.1.1 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 3.6 Libraries

This section lists the R 3.6 libraries that ship with ML Runtimes 2022.04.

Table 43: R 3.6.3 Libraries for Workbench

| Library | Version |
|------------|---------|
| askpass | 1.1 |
| base | 3.6.3 |
| bitops | 1.0-7 |
| boot | 1.3-24 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |
| class | 7.3-15 |
| cli | 3.0.1 |
| cluster | 2.1.0 |
| codetools | 0.2-16 |
| colorspace | 2.0-2 |
| compiler | 3.6.3 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 3.6.3 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-75 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 3.6.3 |
| grDevices | 3.6.3 |
| grid | 3.6.3 |
| gtable | 0.3.0 |

| Library | Version |
|--------------|----------|
| httr | 1.4.2 |
| isoband | 0.2.5 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-16 |
| labeling | 0.4.2 |
| lattice | 0.20-38 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-51.5 |
| Matrix | 1.2-18 |
| methods | 3.6.3 |
| mgcv | 1.8-31 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-144 |
| nnet | 7.3-12 |
| openssl | 1.4.4 |
| parallel | 3.6.3 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-11 |
| splines | 3.6.3 |
| stats | 3.6.3 |
| stats4 | 3.6.3 |
| survival | 3.1-8 |
| sys | 3.4 |
| tcltk | 3.6.3 |
| tibble | 3.1.4 |
| tools | 3.6.3 |
| utf8 | 1.2.2 |

| Library | Version |
|-------------|---------|
| utils | 3.6.3 |
| vctr | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

ML Runtimes 2021.12

This section lists the Python, R, and Scala libraries that ship with ML Runtimes 2021.12.



Note: Nvidia GPU Edition comes with CUDA 11.4.1 preinstalled.

Python 3.9 Libraries for Workbench

This section lists the packages in Python 3.9 Workbench Runtimes that ship with ML Runtimes 2021.12.

Table 44: Packages in Python 3.9.7 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |

| Library | Version |
|-----------------|----------|
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pyzmq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Table 45: Packages in Python 3.9.7 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |

| Library | Version |
|-----------------|----------|
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pyzmq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Python 3.8 Libraries for Workbench

This section lists the packages in Python 3.8 Workbench Runtimes that ship with ML Runtimes 2021.12.

Table 46: Packages in Python 3.8.6 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.8.6 |
| pip | 21.1.3 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |
| impyla | 0.17.0 |

| Library | Version |
|------------------|----------|
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pyzmq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Table 47: Packages in Python 3.8.6 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|-----------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |

| Library | Version |
|--------------------|-----------|
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pymzq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Table 48: Packages in Python 3.8.6 Workbench Runtimes - RAPIDS

| Library | Version |
|-------------------------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| _libgcc_mutex | 0.1 |
| _openmp_mutex | 4.5 |
| abseil-cpp | 20210324.2 |
| aiohttp | 3.8.1 |
| aiosignal | 1.2.0 |
| anyio | 3.4.0 |
| appdirs | 1.4.4 |
| argon2-cffi | 21.1.0 |
| arrow-cpp | 5.0.0 |
| arrow-cpp-proc | 3.0.0 |
| async-timeout | 4.0.1 |
| async_generator | 1.10 |
| attrs | 21.2.0 |
| aws-c-auth | 0.6.7 |
| aws-c-cal | 0.5.12 |
| aws-c-common | 0.6.17 |
| aws-c-compression | 0.2.14 |
| aws-c-event-stream | 0.2.7 |
| aws-c-http | 0.6.10 |
| aws-c-io | 0.10.13 |
| aws-c-mqtt | 0.7.9 |
| aws-c-s3 | 0.1.27 |
| aws-c-sdkutils | 0.1.1 |
| aws-checksums | 0.1.12 |
| aws-crt-cpp | 0.17.8 |
| aws-sdk-cpp | 1.9.145 |
| backcall | 0.2.0 |
| backports | 1.0 |
| backports.functools_lru_cache | 1.6.4 |
| bleach | 4.1.0 |
| blosc | 1.21.0 |
| bokeh | 2.4.0 |
| boost | 1.74.0 |
| boost-cpp | 1.74.0 |
| brotli | 1.0.9 |
| brotli-bin | 1.0.9 |

| Library | Version |
|--------------------|-----------|
| brotlipy | 0.7.0 |
| brunli | 0.1 |
| bzip2 | 1.0.8 |
| c-ares | 1.18.1 |
| c-blosc2 | 2.0.4 |
| ca-certificates | 2021.10.8 |
| cachetools | 4.2.4 |
| cairo | 1.16.0 |
| cds | 1.1.0 |
| certifi | 2021.5.30 |
| ffi | 1.15.0 |
| cfitsio | 3.470 |
| charls | 2.2.0 |
| charset-normalizer | 2.0.6 |
| click | 8.0.3 |
| click-plugins | 1.1.1 |
| cligj | 0.7.2 |
| cloudpickle | 2.0.0 |
| colorama | 0.4.4 |
| colorcet | 3.0.0 |
| cryptography | 36.0.1 |
| cucim | 21.12.00 |
| cuda-toolkit | 11.0.221 |
| cudf | 21.12.02 |
| cudf_kafka | 21.12.02 |
| cudnn | 8.2.1.32 |
| cugraph | 21.12.00 |
| cuml | 21.12.00 |
| cupy | 9.6.0 |
| curl | 7.80.0 |
| cusignal | 21.12.00 |
| cuspatial | 21.12.00 |
| custreamz | 21.12.02 |
| cuxfilter | 21.12.00 |
| cycler | 0.11.0 |
| cyrus-sasl | 2.1.27 |
| cytoolz | 0.11.2 |
| dask | 2021.11.2 |
| dask-core | 2021.11.2 |

| Library | Version |
|---------------------------|-----------|
| dask-cuda | 21.12.00 |
| dask-cudf | 21.12.02 |
| datashader | 0.11.1 |
| datashape | 0.5.4 |
| debugpy | 1.5.1 |
| decorator | 5.1.0 |
| defusedxml | 0.7.1 |
| distributed | 2021.11.2 |
| dlpack | 0.5 |
| entrypoints | 0.3 |
| expat | 2.4.1 |
| faiss-proc | 1.0.0 |
| fastavro | 1.4.7 |
| fastrlock | 0.8 |
| fiona | 1.8.20 |
| font-ttf-dejavu-sans-mono | 2.37 |
| font-ttf-inconsolata | 3.000 |
| font-ttf-source-code-pro | 2.038 |
| font-ttf-ubuntu | 0.83 |
| fontconfig | 2.13.1 |
| fonts-conda-ecosystem | 1 |
| fonts-conda-forge | 1 |
| fonttools | 4.28.4 |
| freetype | 2.10.4 |
| freexl | 1.0.6 |
| frozenlist | 1.2.0 |
| fsspec | 2021.11.1 |
| gdal | 3.3.2 |
| geopandas | 0.9.0 |
| geopandas-base | 0.9.0 |
| geos | 3.9.1 |
| geotiff | 1.7.0 |
| gettext | 0.19.8.1 |
| gflags | 2.2.2 |
| giflib | 5.2.1 |
| git | 2.34.1 |
| glog | 0.5.0 |
| gpuci-tools | 0.3.1 |
| grpc-cpp | 1.41.1 |

| Library | Version |
|----------------------|-----------|
| hdf4 | 4.2.15 |
| hdf5 | 1.12.1 |
| heapdict | 1.0.1 |
| icu | 68.2 |
| idna | 3.2 |
| imagecodecs | 2021.8.26 |
| imageio | 2.13.3 |
| importlib-metadata | 4.8.3 |
| importlib_metadata | 4.8.3 |
| importlib_resources | 5.4.0 |
| ipykernel | 6.6.0 |
| ipython | 7.30.1 |
| ipython_genutils | 0.2.0 |
| ipywidgets | 7.6.5 |
| jbig | 2.1 |
| jedi | 0.18.1 |
| jinja2 | 3.0.3 |
| joblib | 1.1.0 |
| jpeg | 9d |
| json-c | 0.15 |
| jsonschema | 4.3.1 |
| jupyter-server-proxy | 3.2.0 |
| jupyter_client | 7.1.0 |
| jupyter_core | 4.9.1 |
| jupyter_server | 1.13.1 |
| jupyterlab_pygments | 0.1.2 |
| jupyterlab_widgets | 1.0.2 |
| jxrlib | 1.1 |
| kealib | 1.4.14 |
| kiwisolver | 1.3.2 |
| krb5 | 1.19.2 |
| lcms2 | 2.12 |
| ld_impl_linux-64 | 2.36.1 |
| lerc | 3.0 |
| libaec | 1.0.6 |
| libblas | 3.9.0 |
| libbrotlicommon | 1.0.9 |
| libbrotlidec | 1.0.9 |
| libbrotlienc | 1.0.9 |

| Library | Version |
|----------------|--------------|
| libblas | 3.9.0 |
| libcucim | 21.12.00 |
| libcudf | 21.12.02 |
| libcudf_kafka | 21.12.02 |
| libcugraph | 21.12.00 |
| libcuml | 21.12.00 |
| libcumlprims | 21.12.00 |
| libcurl | 7.80.0 |
| libcusolver | 11.3.2.107 |
| libcuspatial | 21.12.00 |
| libdap4 | 3.20.6 |
| libdeflate | 1.8 |
| libedit | 3.1.20191231 |
| libev | 4.33 |
| libevent | 2.1.10 |
| libfaiss | 1.7.0 |
| libffi | 3.4.2 |
| libgcc-ng | 9.4.0 |
| libgcrypt | 1.9.4 |
| libgdal | 3.3.2 |
| libgfortran-ng | 11.2.0 |
| libgfortran5 | 11.2.0 |
| libglib | 2.70.2 |
| libpgg-error | 1.42 |
| libsasl | 1.10.0 |
| libhwloc | 2.3.0 |
| libiconv | 1.16 |
| libkml | 1.3.0 |
| liblapack | 3.9.0 |
| libllvm11 | 11.1.0 |
| libnetcdf | 4.8.1 |
| libnghttp2 | 1.43.0 |
| libnsl | 2.0.0 |
| libntlm | 1.4 |
| libopenblas | 0.3.18 |
| libpng | 1.6.37 |
| libpq | 13.5 |
| libprotobuf | 3.18.1 |
| librdkafka | 1.6.1 |

| Library | Version |
|-------------------|------------------------|
| librmm | 21.12.00 |
| librttopo | 1.1.0 |
| libsodium | 1.0.18 |
| libspatialindex | 1.9.3 |
| libspatialite | 5.0.1 |
| libssh2 | 1.10.0 |
| libstdc++-ng | 9.4.0 |
| libthrift | 0.15.0 |
| libtiff | 4.3.0 |
| libutf8proc | 2.7.0 |
| libuuid | 2.32.1 |
| libuv | 1.42.0 |
| libwebp | 1.2.1 |
| libwebp-base | 1.2.1 |
| libxcb | 1.13 |
| libxgboost | 1.5.0dev.rapidsai21.12 |
| libxml2 | 2.9.12 |
| libzip | 1.8.0 |
| libzlib | 1.2.11 |
| libzopfli | 1.0.3 |
| llvm-openmp | 12.0.1 |
| llvmlite | 0.37.0 |
| loket | 0.2.0 |
| lz4-c | 1.9.3 |
| mapclassify | 2.4.3 |
| markdown | 3.3.6 |
| markupsafe | 2.0.1 |
| matplotlib-base | 3.5.1 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| msgpack-python | 1.0.3 |
| multidict | 5.2.0 |
| multipledispatch | 0.6.0 |
| munch | 2.5.0 |
| munkres | 1.1.4 |
| nbclient | 0.5.9 |
| nbconvert | 6.3.0 |
| nbformat | 5.1.3 |
| nccl | 2.11.4.1 |

| Library | Version |
|-------------------|---------|
| ncurses | 6.2 |
| nest-asyncio | 1.5.4 |
| networkx | 2.6.3 |
| nodejs | 14.17.4 |
| notebook | 6.4.6 |
| nspr | 4.32 |
| nss | 3.73 |
| numba | 0.54.1 |
| numpy | 1.20.3 |
| nvtx | 0.2.3 |
| olefile | 0.46 |
| openjpeg | 2.4.0 |
| openssl | 1.1.11 |
| orc | 1.7.1 |
| packaging | 21.3 |
| pandas | 1.3.5 |
| pandoc | 2.16.2 |
| pandocfilters | 1.5.0 |
| panel | 0.12.4 |
| param | 1.12.0 |
| parquet-cpp | 1.5.1 |
| parso | 0.8.3 |
| partd | 1.2.0 |
| pcre | 8.45 |
| pcre2 | 10.37 |
| perl | 5.32.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| pillow | 8.4.0 |
| pip | 21.3.1 |
| pixman | 0.40.0 |
| pooch | 1.5.2 |
| poppler | 21.09.0 |
| poppler-data | 0.4.11 |
| postgresql | 13.5 |
| proj | 8.1.0 |
| prometheus_client | 0.12.0 |
| prompt-toolkit | 3.0.24 |
| protobuf | 3.18.1 |

| Library | Version |
|------------------------|------------------------|
| psutil | 5.8.0 |
| pthread-stubs | 0.4 |
| ptxcompiler | 0.2.0 |
| ptyprocess | 0.7.0 |
| py-xgboost | 1.5.0dev.rapidsai21.12 |
| py4j | 0.10.9 |
| pyarrow | 5.0.0 |
| pycparser | 2.21 |
| pyct | 0.4.6 |
| pyct-core | 0.4.6 |
| pydeck | 0.5.0 |
| pyee | 8.1.0 |
| pygments | 2.10.0 |
| pynvml | 11.4.1 |
| pyopenssl | 21.0.0 |
| pyparsing | 3.0.6 |
| pypeteer | 0.2.6 |
| pyproj | 3.1.0 |
| pyrsistent | 0.18.0 |
| pysocks | 1.7.1 |
| python | 3.8.12 |
| python-confluent-kafka | 1.6.0 |
| python-dateutil | 2.8.2 |
| python_abi | 3.8 |
| pytz | 2021.3 |
| pyviz_comms | 2.1.0 |
| pywavelets | 1.2.0 |
| pyyaml | 6.0 |
| pyzmq | 22.3.0 |
| rapids | 21.12.00 |
| rapids-xgboost | 21.12.00 |
| re2 | 2021.11.01 |
| readline | 8.1 |
| requests | 2.26.0 |
| rmm | 21.12.00 |
| rtree | 0.9.7 |
| s2n | 1.3.0 |
| scikit-image | 0.18.1 |
| scikit-learn | 1.0.1 |

| Library | Version |
|-------------------|-----------------|
| scipy | 1.7.3 |
| send2trash | 1.8.0 |
| setuptools | 59.6.0 |
| shapely | 1.8.0 |
| simpervisor | 0.4 |
| six | 1.16.0 |
| snappy | 1.1.8 |
| sniffio | 1.2.0 |
| sortedcontainers | 2.4.0 |
| spdlog | 1.8.5 |
| sqlite | 3.37.0 |
| streamz | 0.6.3 |
| tblib | 1.7.0 |
| terminado | 0.12.1 |
| testpath | 0.5.0 |
| threadpoolctl | 3.0.0 |
| tiffifile | 2021.11.2 |
| tiledb | 2.3.4 |
| tk | 8.6.11 |
| toolz | 0.11.2 |
| tornado | 6.1 |
| tqdm | 4.62.3 |
| traitlets | 5.1.1 |
| treelite | 2.1.0 |
| treelite-runtime | 2.1.0 |
| typing-extensions | 4.0.1 |
| typing_extensions | 4.0.1 |
| tzcode | 2021e |
| tzdata | 2021e |
| ucx | 1.11.2+gef2bbcf |
| ucx-proc | 1.0.0 |
| ucx-py | 0.23.0 |
| unicodedata2 | 13.0.0.post2 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.3 |
| websockets | 9.1 |
| wheel | 0.37.0 |

| Library | Version |
|-------------------|------------------------|
| widetsnbextension | 3.5.2 |
| xarray | 0.20.2 |
| xerces-c | 3.2.3 |
| xgboost | 1.5.0dev.rapidsai21.12 |
| xorg-kbproto | 1.0.7 |
| xorg-libice | 1.0.10 |
| xorg-libsm | 1.2.3 |
| xorg-libx11 | 1.7.2 |
| xorg-libxau | 1.0.9 |
| xorg-libxdmcp | 1.1.3 |
| xorg-libxext | 1.3.4 |
| xorg-libxrender | 0.9.10 |
| xorg-renderproto | 0.11.1 |
| xorg-xextproto | 7.3.0 |
| xorg-xproto | 7.0.31 |
| xz | 5.2.5 |
| yaml | 0.2.5 |
| yaml | 1.7.2 |
| zeromq | 4.3.4 |
| zfp | 0.5.5 |
| zict | 2.0.0 |
| zip | 3.6.0 |
| zlib | 1.2.11 |
| zstd | 1.5.0 |

Python 3.7 Libraries for Workbench

This section lists the packages in Python 3.7 Workbench Runtimes that ship with ML Runtimes 2021.12.

Table 49: Packages in Python 3.7.11 Workbench Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.7.11 |
| pip | 21.1.3 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |

| Library | Version |
|------------------|----------|
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pyzmq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Table 50: Packages in Python 3.7.11 Workbench Runtimes - Nvidia GPU Edition

| Library | Version |
|-----------|------------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| backcall | 0.2.0 |

| Library | Version |
|--------------------|-----------|
| bitarray | 2.1.0 |
| certifi | 2021.5.30 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| idna | 3.2 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| matplotlib | 3.3.4 |
| numpy | 1.19.4 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| python-dateutil | 2.8.1 |
| pyzmq | 19.0.2 |
| requests | 2.26.0 |
| six | 1.15.0 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Table 51: Packages in Python 3.7.11 Workbench Runtimes - RAPIDS

| Library | Version |
|-------------------------------|------------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| _libgcc_mutex | 0.1 |
| _openmp_mutex | 4.5 |
| abseil-cpp | 20210324.2 |
| aiohttp | 3.8.1 |
| aiosignal | 1.2.0 |
| anyio | 3.4.0 |
| appdirs | 1.4.4 |
| argcomplete | 1.12.3 |
| argon2-cffi | 21.1.0 |
| arrow-cpp | 5.0.0 |
| arrow-cpp-proc | 3.0.0 |
| async-timeout | 4.0.1 |
| async_generator | 1.10 |
| asynctest | 0.13.0 |
| attrs | 21.2.0 |
| aws-c-auth | 0.6.7 |
| aws-c-cal | 0.5.12 |
| aws-c-common | 0.6.17 |
| aws-c-compression | 0.2.14 |
| aws-c-event-stream | 0.2.7 |
| aws-c-http | 0.6.10 |
| aws-c-io | 0.10.13 |
| aws-c-mqtt | 0.7.9 |
| aws-c-s3 | 0.1.27 |
| aws-c-sdkutils | 0.1.1 |
| aws-checksums | 0.1.12 |
| aws-crt-cpp | 0.17.8 |
| aws-sdk-cpp | 1.9.145 |
| backcall | 0.2.0 |
| backports | 1.0 |
| backports.functools_lru_cache | 1.6.4 |
| bleach | 4.1.0 |
| blosc | 1.21.0 |
| bokeh | 2.4.0 |
| boost | 1.74.0 |

| Library | Version |
|--------------------|-----------|
| boost-cpp | 1.74.0 |
| brotli | 1.0.9 |
| brotli-bin | 1.0.9 |
| brotlipy | 0.7.0 |
| brunsl | 0.1 |
| bzip2 | 1.0.8 |
| c-ares | 1.18.1 |
| c-blosc2 | 2.0.4 |
| ca-certificates | 2021.10.8 |
| cachetools | 4.2.4 |
| cairo | 1.16.0 |
| cdsw | 1.1.0 |
| certifi | 2021.5.30 |
| cff | 1.15.0 |
| cfitsio | 3.470 |
| charls | 2.2.0 |
| charset-normalizer | 2.0.6 |
| click | 8.0.3 |
| click-plugins | 1.1.1 |
| cligj | 0.7.2 |
| cloudpickle | 2.0.0 |
| colorama | 0.4.4 |
| colorcet | 3.0.0 |
| cryptography | 36.0.1 |
| cucim | 21.12.00 |
| cuda-toolkit | 11.0.221 |
| cudf | 21.12.02 |
| cudf_kafka | 21.12.02 |
| cuda-nn | 8.2.1.32 |
| cugraph | 21.12.00 |
| cuml | 21.12.00 |
| cupy | 9.6.0 |
| curl | 7.80.0 |
| cusignal | 21.12.00 |
| cuspatial | 21.12.00 |
| custreamz | 21.12.02 |
| cuxfilter | 21.12.00 |
| cycler | 0.11.0 |
| cyrus-sasl | 2.1.27 |

| Library | Version |
|---------------------------|-----------|
| cytoolz | 0.11.2 |
| dask | 2021.11.2 |
| dask-core | 2021.11.2 |
| dask-cuda | 21.12.00 |
| dask-cudf | 21.12.02 |
| datashader | 0.11.1 |
| datashape | 0.5.4 |
| debugpy | 1.5.1 |
| decorator | 5.1.0 |
| defusedxml | 0.7.1 |
| distributed | 2021.11.2 |
| dlpack | 0.5 |
| entrypoints | 0.3 |
| expat | 2.4.1 |
| faiss-proc | 1.0.0 |
| fastavro | 1.4.7 |
| fastrlock | 0.8 |
| fiona | 1.8.20 |
| font-ttf-dejavu-sans-mono | 2.37 |
| font-ttf-inconsolata | 3.000 |
| font-ttf-source-code-pro | 2.038 |
| font-ttf-ubuntu | 0.83 |
| fontconfig | 2.13.1 |
| fonts-conda-ecosystem | 1 |
| fonts-conda-forge | 1 |
| fonttools | 4.28.4 |
| freetype | 2.10.4 |
| freexl | 1.0.6 |
| frozenset | 1.2.0 |
| fsspec | 2021.11.1 |
| gdal | 3.3.2 |
| geopandas | 0.9.0 |
| geopandas-base | 0.9.0 |
| geos | 3.9.1 |
| geotiff | 1.7.0 |
| gettext | 0.19.8.1 |
| gflags | 2.2.2 |
| giflib | 5.2.1 |
| git | 2.34.1 |

| Library | Version |
|----------------------|-----------|
| glog | 0.5.0 |
| gpuci-tools | 0.3.1 |
| grpc-cpp | 1.41.1 |
| hdf4 | 4.2.15 |
| hdf5 | 1.12.1 |
| heapdict | 1.0.1 |
| icu | 68.2 |
| idna | 3.2 |
| imagecodecs | 2021.8.26 |
| imageio | 2.13.3 |
| importlib-metadata | 4.8.3 |
| importlib_metadata | 4.8.3 |
| importlib_resources | 5.4.0 |
| ipykernel | 6.6.0 |
| ipython | 7.30.1 |
| ipython_genutils | 0.2.0 |
| ipywidgets | 7.6.5 |
| jbig | 2.1 |
| jedi | 0.18.1 |
| jinja2 | 3.0.3 |
| joblib | 1.1.0 |
| jpeg | 9d |
| json-c | 0.15 |
| jsonschema | 4.3.1 |
| jupyter-server-proxy | 3.2.0 |
| jupyter_client | 7.1.0 |
| jupyter_core | 4.9.1 |
| jupyter_server | 1.13.1 |
| jupyterlab_pygments | 0.1.2 |
| jupyterlab_widgets | 1.0.2 |
| jxrllib | 1.1 |
| kealib | 1.4.14 |
| kiwisolver | 1.3.2 |
| krb5 | 1.19.2 |
| lcms2 | 2.12 |
| ld_impl_linux-64 | 2.36.1 |
| lerc | 3.0 |
| libaec | 1.0.6 |
| libblas | 3.9.0 |

| Library | Version |
|-----------------|--------------|
| libbrotlicommon | 1.0.9 |
| libbrotlidec | 1.0.9 |
| libbrotlienc | 1.0.9 |
| libblas | 3.9.0 |
| libcucim | 21.12.00 |
| libcudf | 21.12.02 |
| libcudf_kafka | 21.12.02 |
| libcugraph | 21.12.00 |
| libcuml | 21.12.00 |
| libcumlprims | 21.12.00 |
| libcurl | 7.80.0 |
| libcusolver | 11.3.2.107 |
| libcuspatial | 21.12.00 |
| libdap4 | 3.20.6 |
| libdeflate | 1.8 |
| libedit | 3.1.20191231 |
| libev | 4.33 |
| libevent | 2.1.10 |
| libfaiss | 1.7.0 |
| libffi | 3.4.2 |
| libgcc-ng | 9.4.0 |
| libgcrypt | 1.9.4 |
| libgdal | 3.3.2 |
| libgfortran-ng | 11.2.0 |
| libgfortran5 | 11.2.0 |
| libglib | 2.70.2 |
| libgpg-error | 1.42 |
| libgsasl | 1.10.0 |
| libhwloc | 2.3.0 |
| libiconv | 1.16 |
| libkml | 1.3.0 |
| liblapack | 3.9.0 |
| libllvm11 | 11.1.0 |
| libnetcdf | 4.8.1 |
| libnghttp2 | 1.43.0 |
| libnsl | 2.0.0 |
| libntlm | 1.4 |
| libopenblas | 0.3.18 |
| libpng | 1.6.37 |

| Library | Version |
|-------------------|------------------------|
| libpq | 13.5 |
| libprotobuf | 3.18.1 |
| librdkafka | 1.6.1 |
| librmm | 21.12.00 |
| librttopo | 1.1.0 |
| libsodium | 1.0.18 |
| libspatialindex | 1.9.3 |
| libspatialite | 5.0.1 |
| libssh2 | 1.10.0 |
| libstdc++-ng | 9.4.0 |
| libthrift | 0.15.0 |
| libtiff | 4.3.0 |
| libutf8proc | 2.7.0 |
| libuuid | 2.32.1 |
| libuv | 1.42.0 |
| libwebp | 1.2.1 |
| libwebp-base | 1.2.1 |
| libxcb | 1.13 |
| libxgboost | 1.5.0dev.rapidsai21.12 |
| libxml2 | 2.9.12 |
| libzip | 1.8.0 |
| libzlib | 1.2.11 |
| libzopfli | 1.0.3 |
| llvm-openmp | 12.0.1 |
| llvmlite | 0.37.0 |
| locket | 0.2.0 |
| lz4-c | 1.9.3 |
| mapclassify | 2.4.3 |
| markdown | 3.3.6 |
| markupsafe | 2.0.1 |
| matplotlib-base | 3.5.1 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| msgpack-python | 1.0.3 |
| multidict | 5.2.0 |
| multipledispatch | 0.6.0 |
| munch | 2.5.0 |
| munkres | 1.1.4 |
| nbclient | 0.5.9 |

| Library | Version |
|---------------|----------|
| nbconvert | 6.3.0 |
| nbformat | 5.1.3 |
| nccl | 2.11.4.1 |
| ncurses | 6.2 |
| nest-asyncio | 1.5.4 |
| networkx | 2.6.3 |
| nodejs | 14.17.4 |
| notebook | 6.4.6 |
| nspr | 4.32 |
| nss | 3.73 |
| numba | 0.54.1 |
| numpy | 1.20.3 |
| nvtx | 0.2.3 |
| olefile | 0.46 |
| openjpeg | 2.4.0 |
| openssl | 1.1.11 |
| orc | 1.7.1 |
| packaging | 21.3 |
| pandas | 1.3.5 |
| pandoc | 2.16.2 |
| pandocfilters | 1.5.0 |
| panel | 0.12.4 |
| param | 1.12.0 |
| parquet-cpp | 1.5.1 |
| parso | 0.8.3 |
| partd | 1.2.0 |
| pcre | 8.45 |
| pcre2 | 10.37 |
| perl | 5.32.1 |
| pexpect | 4.8.0 |
| pickle5 | 0.0.12 |
| pickleshare | 0.7.5 |
| pillow | 8.4.0 |
| pip | 21.3.1 |
| pixman | 0.40.0 |
| pooch | 1.5.2 |
| poppler | 21.09.0 |
| poppler-data | 0.4.11 |
| postgresql | 13.5 |

| Library | Version |
|------------------------|------------------------|
| proj | 8.1.0 |
| prometheus_client | 0.12.0 |
| prompt-toolkit | 3.0.24 |
| protobuf | 3.18.1 |
| psutil | 5.8.0 |
| pthread-stubs | 0.4 |
| ptxcompiler | 0.2.0 |
| ptyprocess | 0.7.0 |
| py-xgboost | 1.5.0dev.rapidsai21.12 |
| py4j | 0.10.9 |
| pyarrow | 5.0.0 |
| pycparser | 2.21 |
| pyct | 0.4.6 |
| pyct-core | 0.4.6 |
| pydeck | 0.5.0 |
| pyee | 8.1.0 |
| pygments | 2.10.0 |
| pynvml | 11.4.1 |
| pyopenssl | 21.0.0 |
| pyparsing | 3.0.6 |
| pypeteer | 0.2.6 |
| pyproj | 3.1.0 |
| pyrsistent | 0.18.0 |
| pysocks | 1.7.1 |
| python | 3.7.12 |
| python-confluent-kafka | 1.6.0 |
| python-dateutil | 2.8.2 |
| python_abi | 3.7 |
| pytz | 2021.3 |
| pyviz_comms | 2.1.0 |
| pywavelets | 1.2.0 |
| pyyaml | 6.0 |
| pyzmq | 22.3.0 |
| rapids | 21.12.00 |
| rapids-xgboost | 21.12.00 |
| re2 | 2021.11.01 |
| readline | 8.1 |
| requests | 2.26.0 |
| rmm | 21.12.00 |

| Library | Version |
|-------------------|-----------------|
| rtree | 0.9.7 |
| s2n | 1.3.0 |
| scikit-image | 0.18.1 |
| scikit-learn | 1.0.1 |
| scipy | 1.7.3 |
| send2trash | 1.8.0 |
| setuptools | 59.6.0 |
| shapely | 1.8.0 |
| simpervisor | 0.4 |
| six | 1.16.0 |
| snappy | 1.1.8 |
| sniffio | 1.2.0 |
| sortedcontainers | 2.4.0 |
| spdlog | 1.8.5 |
| sqlite | 3.37.0 |
| streamz | 0.6.3 |
| tblib | 1.7.0 |
| terminado | 0.12.1 |
| testpath | 0.5.0 |
| threadpoolctl | 3.0.0 |
| tiffio | 2021.11.2 |
| tiledb | 2.3.4 |
| tk | 8.6.11 |
| toolz | 0.11.2 |
| tornado | 6.1 |
| tqdm | 4.62.3 |
| traitlets | 5.1.1 |
| treelite | 2.1.0 |
| treelite-runtime | 2.1.0 |
| typing-extensions | 4.0.1 |
| typing_extensions | 4.0.1 |
| tzcode | 2021e |
| tzdata | 2021e |
| ucx | 1.11.2+gef2bbcf |
| ucx-proc | 1.0.0 |
| ucx-py | 0.23.0 |
| unicodedata2 | 13.0.0.post2 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |

Python 3.9.6 Libraries for JupyterLab

This section lists the packages in Python 3.9 JupyterLab Runtimes that ship with ML Runtimes 2021.12.

Table 52: Packages in Python 3.9.6 JupyterLab Runtimes - Standard

| Library | Version |
|---------------------|-----------|
| python | 3.9.6 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.3 |
| idna | 2.10 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |

| Library | Version |
|---------------------|----------|
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| yparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |

| Library | Version |
|------------------|---------|
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |

Table 53: Packages in Python 3.9.6 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.9.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.3 |
| idna | 2.10 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |

| Library | Version |
|---------------------|----------|
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |

| Library | Version |
|------------------|---------|
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |

Python 3.8 Libraries for JupyterLab

This section lists the packages in Python 3.8 JupyterLab Runtimes that ship with ML Runtimes 2021.012.

Table 54: Packages in Python 3.8.6 JupyterLab Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.8.6 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.3 |
| idna | 2.10 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |

| Library | Version |
|---------------------|----------|
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |

| Library | Version |
|---------------------|---------|
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |

Table 55: Packages in Python 3.8.6 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|--------------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.3 |
| idna | 2.10 |

| Library | Version |
|---------------------|----------|
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |

| Library | Version |
|---------------------|---------|
| pparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |

Table 56: Packages in Python 3.8.6 JupyterLab Runtimes - RAPIDS

| Library | Version |
|-----------------|------------|
| python | 3.8.6 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| _libgcc_mutex | 0.1 |
| _openmp_mutex | 4.5 |
| abseil-cpp | 20210324.2 |
| aiohttp | 3.8.1 |
| aiosignal | 1.2.0 |
| anyio | 3.3.0 |
| appdirs | 1.4.4 |
| argon2-cffi | 20.1.0 |
| arrow-cpp | 5.0.0 |
| arrow-cpp-proc | 3.0.0 |
| async-timeout | 4.0.1 |
| async_generator | 1.10 |

| Library | Version |
|-------------------------------|-----------|
| attrs | 20.3.0 |
| aws-c-auth | 0.6.7 |
| aws-c-cal | 0.5.12 |
| aws-c-common | 0.6.17 |
| aws-c-compression | 0.2.14 |
| aws-c-event-stream | 0.2.7 |
| aws-c-http | 0.6.10 |
| aws-c-io | 0.10.13 |
| aws-c-mqtt | 0.7.9 |
| aws-c-s3 | 0.1.27 |
| aws-c-sdkutils | 0.1.1 |
| aws-checksums | 0.1.12 |
| aws-crt-cpp | 0.17.8 |
| aws-sdk-cpp | 1.9.145 |
| babel | 2.9.1 |
| backcall | 0.2.0 |
| backports | 1.0 |
| backports.functools_lru_cache | 1.6.4 |
| bleach | 3.3.1 |
| blosc | 1.21.0 |
| bokeh | 2.4.0 |
| boost | 1.74.0 |
| boost-cpp | 1.74.0 |
| brtoli | 1.0.9 |
| brtoli-bin | 1.0.9 |
| brtolipty | 0.7.0 |
| brunslı | 0.1 |
| bzip2 | 1.0.8 |
| c-ares | 1.18.1 |
| c-blosc2 | 2.0.4 |
| ca-certificates | 2021.10.8 |
| cachetools | 4.2.4 |
| cairo | 1.16.0 |
| cdsw | 1.1.0 |
| certifi | 2020.11.8 |
| ffi | 1.14.4 |
| cfitsio | 3.470 |
| chardet | 4.0.0 |
| charls | 2.2.0 |

| Library | Version |
|--------------------|-----------|
| charset-normalizer | 2.0.6 |
| click | 8.0.3 |
| click-plugins | 1.1.1 |
| cligj | 0.7.2 |
| cloudpickle | 2.0.0 |
| colorama | 0.4.4 |
| colorcet | 3.0.0 |
| cryptography | 36.0.1 |
| cucim | 21.12.00 |
| cuda-toolkit | 11.0.221 |
| cudf | 21.12.02 |
| cudf_kafka | 21.12.02 |
| cuda-nn | 8.2.1.32 |
| cugraph | 21.12.00 |
| cuml | 21.12.00 |
| cupy | 9.6.0 |
| curl | 7.80.0 |
| cusignal | 21.12.00 |
| cuspatial | 21.12.00 |
| custreamz | 21.12.02 |
| cuxfilter | 21.12.00 |
| cycler | 0.11.0 |
| cyrus-sasl | 2.1.27 |
| cytoolz | 0.11.2 |
| dask | 2021.11.2 |
| dask-core | 2021.11.2 |
| dask-cuda | 21.12.00 |
| dask-cudf | 21.12.02 |
| datashader | 0.11.1 |
| datashape | 0.5.4 |
| debugpy | 1.5.1 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| distributed | 2021.11.2 |
| dlpack | 0.5 |
| entrypoints | 0.3 |
| expat | 2.4.1 |
| faiss-proc | 1.0.0 |
| fastavro | 1.4.7 |

| Library | Version |
|---------------------------|-----------|
| fastrlock | 0.8 |
| fiona | 1.8.20 |
| font-ttf-dejavu-sans-mono | 2.37 |
| font-ttf-inconsolata | 3.000 |
| font-ttf-source-code-pro | 2.038 |
| font-ttf-ubuntu | 0.83 |
| fontconfig | 2.13.1 |
| fonts-conda-ecosystem | 1 |
| fonts-conda-forge | 1 |
| fonttools | 4.28.4 |
| freetype | 2.10.4 |
| freexl | 1.0.6 |
| frozenlist | 1.2.0 |
| fsspec | 2021.11.1 |
| gdal | 3.3.2 |
| geopandas | 0.9.0 |
| geopandas-base | 0.9.0 |
| geos | 3.9.1 |
| geotiff | 1.7.0 |
| gettext | 0.19.8.1 |
| gflags | 2.2.2 |
| giflib | 5.2.1 |
| git | 2.34.1 |
| glog | 0.5.0 |
| gpuci-tools | 0.3.1 |
| grpc-cpp | 1.41.1 |
| hdf4 | 4.2.15 |
| hdf5 | 1.12.1 |
| heapdict | 1.0.1 |
| icu | 68.2 |
| idna | 2.10 |
| imagecodecs | 2021.8.26 |
| imageio | 2.13.3 |
| importlib-metadata | 4.8.3 |
| importlib_metadata | 4.8.3 |
| importlib_resources | 5.4.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython_genutils | 0.2.0 |

| Library | Version |
|----------------------|------------|
| ipywidgets | 7.6.5 |
| jbig | 2.1 |
| jedi | 0.17.2 |
| jinja2 | 2.11.3 |
| joblib | 1.1.0 |
| jpeg | 9d |
| json-c | 0.15 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyter-server-proxy | 3.2.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-server | 2.7.2 |
| jupyterlab_pygments | 0.1.2 |
| jupyterlab_widgets | 1.0.2 |
| jxrlib | 1.1 |
| kealib | 1.4.14 |
| kiwisolver | 1.3.2 |
| krb5 | 1.19.2 |
| lcms2 | 2.12 |
| ld_impl_linux-64 | 2.36.1 |
| lerc | 3.0 |
| libaec | 1.0.6 |
| libblas | 3.9.0 |
| libbrotlicommon | 1.0.9 |
| libbrotlidec | 1.0.9 |
| libbrotlienc | 1.0.9 |
| libcblas | 3.9.0 |
| libcucim | 21.12.00 |
| libcudf | 21.12.02 |
| libcudf_kafka | 21.12.02 |
| libcugraph | 21.12.00 |
| libcuml | 21.12.00 |
| libcumlprims | 21.12.00 |
| libcurl | 7.80.0 |
| libcusolver | 11.3.2.107 |
| libcuspatial | 21.12.00 |

| Library | Version |
|-----------------|--------------|
| libdap4 | 3.20.6 |
| libdeflate | 1.8 |
| libedit | 3.1.20191231 |
| libev | 4.33 |
| libevent | 2.1.10 |
| libfaiss | 1.7.0 |
| libffi | 3.4.2 |
| libgcc-ng | 9.4.0 |
| libgcrypt | 1.9.4 |
| libgdal | 3.3.2 |
| libgfortran-ng | 11.2.0 |
| libgfortran5 | 11.2.0 |
| libglib | 2.70.2 |
| libgpg-error | 1.42 |
| libgsasl | 1.10.0 |
| libhwloc | 2.3.0 |
| libiconv | 1.16 |
| libkml | 1.3.0 |
| liblapack | 3.9.0 |
| libllvm11 | 11.1.0 |
| libnetcdf | 4.8.1 |
| libnghttp2 | 1.43.0 |
| libnsl | 2.0.0 |
| libntlm | 1.4 |
| libopenblas | 0.3.18 |
| libpng | 1.6.37 |
| libpq | 13.5 |
| libprotobuf | 3.18.1 |
| librdkafka | 1.6.1 |
| librmm | 21.12.00 |
| librttopo | 1.1.0 |
| libsodium | 1.0.18 |
| libspatialindex | 1.9.3 |
| libspatialite | 5.0.1 |
| libssh2 | 1.10.0 |
| libstdc++-ng | 9.4.0 |
| libthrift | 0.15.0 |
| libtiff | 4.3.0 |
| libutf8proc | 2.7.0 |

| Library | Version |
|-------------------|------------------------|
| libuuid | 2.32.1 |
| libuv | 1.42.0 |
| libwebp | 1.2.1 |
| libwebp-base | 1.2.1 |
| libxcb | 1.13 |
| libxgboost | 1.5.0dev.rapidsai21.12 |
| libxml2 | 2.9.12 |
| libzip | 1.8.0 |
| libzlib | 1.2.11 |
| libzopfli | 1.0.3 |
| llvm-openmp | 12.0.1 |
| llvmlite | 0.37.0 |
| locket | 0.2.0 |
| lz4-c | 1.9.3 |
| mapclassify | 2.4.3 |
| markdown | 3.3.6 |
| markupsafe | 1.1.1 |
| matplotlib-base | 3.5.1 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| msgpack-python | 1.0.3 |
| multidict | 5.2.0 |
| multipledispatch | 0.6.0 |
| munch | 2.5.0 |
| munkres | 1.1.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nccl | 2.11.4.1 |
| ncurses | 6.2 |
| nest-asyncio | 1.5.1 |
| networkx | 2.6.3 |
| nodejs | 14.17.4 |
| notebook | 6.4.3 |
| nspr | 4.32 |
| nss | 3.73 |
| numba | 0.54.1 |
| numpy | 1.20.3 |

| Library | Version |
|-------------------|------------------------|
| nvtx | 0.2.3 |
| olefile | 0.46 |
| openjpeg | 2.4.0 |
| openssl | 1.1.11 |
| orc | 1.7.1 |
| packaging | 20.9 |
| pandas | 1.3.5 |
| pandoc | 2.16.2 |
| pandocfilters | 1.4.3 |
| panel | 0.12.4 |
| param | 1.12.0 |
| parquet-cpp | 1.5.1 |
| parso | 0.7.1 |
| partd | 1.2.0 |
| pcre | 8.45 |
| pcre2 | 10.37 |
| perl | 5.32.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| pillow | 8.4.0 |
| pip | 21.3.1 |
| pixmap | 0.40.0 |
| pooch | 1.5.2 |
| poppler | 21.09.0 |
| poppler-data | 0.4.11 |
| postgresql | 13.5 |
| proj | 8.1.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| protobuf | 3.18.1 |
| psutil | 5.8.0 |
| pthread-stubs | 0.4 |
| ptxcompiler | 0.2.0 |
| ptyprocess | 0.6.0 |
| py-xgboost | 1.5.0dev.rapidsai21.12 |
| py4j | 0.10.9 |
| pyarrow | 5.0.0 |
| pyparser | 2.20 |
| pyct | 0.4.6 |

| Library | Version |
|------------------------|------------|
| pyct-core | 0.4.6 |
| pydeck | 0.5.0 |
| pyee | 8.1.0 |
| pygments | 2.8.1 |
| pynvml | 11.4.1 |
| pyopenssl | 21.0.0 |
| pyparsing | 2.4.7 |
| pypeteer | 0.2.6 |
| pyproj | 3.1.0 |
| pyrsistent | 0.17.3 |
| pysocks | 1.7.1 |
| python | 3.8.12 |
| python-confluent-kafka | 1.6.0 |
| python-dateutil | 2.8.1 |
| python_abi | 3.8 |
| pytz | 2021.1 |
| pyviz_comms | 2.1.0 |
| pywavelets | 1.2.0 |
| pyyaml | 6.0 |
| pyzmq | 19.0.2 |
| rapids | 21.12.00 |
| rapids-xgboost | 21.12.00 |
| re2 | 2021.11.01 |
| readline | 8.1 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| rmm | 21.12.00 |
| rtree | 0.9.7 |
| s2n | 1.3.0 |
| scikit-image | 0.18.1 |
| scikit-learn | 1.0.1 |
| scipy | 1.7.3 |
| send2trash | 1.5.0 |
| setuptools | 59.6.0 |
| shapely | 1.8.0 |
| simpervisor | 0.4 |
| six | 1.15.0 |
| snappy | 1.1.8 |
| sniffio | 1.2.0 |

| Library | Version |
|--------------------|------------------------|
| sortedcontainers | 2.4.0 |
| spdlog | 1.8.5 |
| sqlite | 3.37.0 |
| streamz | 0.6.3 |
| tblib | 1.7.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| threadpoolctl | 3.0.0 |
| tiff file | 2021.11.2 |
| tiledb | 2.3.4 |
| tk | 8.6.11 |
| toolz | 0.11.2 |
| tornado | 6.1 |
| tqdm | 4.62.3 |
| traitlets | 4.3.3 |
| treelite | 2.1.0 |
| treelite-runtime | 2.1.0 |
| typing-extensions | 4.0.1 |
| typing_extensions | 4.0.1 |
| tzcode | 2021e |
| tzdata | 2021e |
| ucx | 1.11.2+gef2bbcf |
| ucx-proc | 1.0.0 |
| ucx-py | 0.23.0 |
| unicodedata2 | 13.0.0.post2 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| websockets | 9.1 |
| wheel | 0.37.0 |
| widgetsnbextension | 3.5.2 |
| xarray | 0.20.2 |
| xerces-c | 3.2.3 |
| xgboost | 1.5.0dev.rapidsai21.12 |
| xorg-kbproto | 1.0.7 |
| xorg-libice | 1.0.10 |
| xorg-libsm | 1.2.3 |
| xorg-libx11 | 1.7.2 |

| Library | Version |
|------------------|---------|
| xorg-libxau | 1.0.9 |
| xorg-libxdmcp | 1.1.3 |
| xorg-libxext | 1.3.4 |
| xorg-libxrender | 0.9.10 |
| xorg-renderproto | 0.11.1 |
| xorg-xextproto | 7.3.0 |
| xorg-xproto | 7.0.31 |
| xz | 5.2.5 |
| yaml | 0.2.5 |
| yaml | 1.7.2 |
| zeromq | 4.3.4 |
| zfp | 0.5.5 |
| zict | 2.0.0 |
| zippp | 3.6.0 |
| zlib | 1.2.11 |
| zstd | 1.5.0 |

Python 3.7 Libraries for JupyterLab

This section lists the packages in Python 3.7 JupyterLab Runtimes that ship with ML Runtimes 2021.12.

Table 57: Packages in Python 3.7.11 JupyterLab Runtimes - Standard

| Library | Version |
|--------------------|-----------|
| python | 3.7.11 |
| pip | 21.1.3 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cffi | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |

| Library | Version |
|---------------------|---------|
| entrypoints | 0.3 |
| idna | 2.10 |
| importlib-metadata | 3.4.0 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |

| Library | Version |
|---------------------|----------|
| py4j | 0.10.9.1 |
| pyparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| typing-extensions | 3.7.4.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.4.0 |

Table 58: Packages in Python 3.7.11 JupyterLab Runtimes - Nvidia GPU Edition

| Library | Version |
|-----------------|------------|
| python | 3.7.11 |
| pip | 21.1.3 |
| cuda | 11.4.1-1 |
| libcudnn8 | 8.2.2.26-1 |
| anyio | 3.3.0 |
| argon2-cffi | 20.1.0 |
| async-generator | 1.10 |
| attrs | 20.3.0 |
| Babel | 2.9.1 |
| backcall | 0.2.0 |
| bitarray | 2.1.0 |

| Library | Version |
|---------------------|-----------|
| bleach | 3.3.1 |
| certifi | 2020.11.8 |
| cff | 1.14.4 |
| chardet | 4.0.0 |
| charset-normalizer | 2.0.6 |
| cycler | 0.10.0 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| entrypoints | 0.3 |
| idna | 2.10 |
| importlib-metadata | 3.4.0 |
| impyla | 0.17.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython-genutils | 0.2.0 |
| jedi | 0.17.2 |
| Jinja2 | 2.11.3 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyterlab | 3.2.8 |
| jupyterlab-pygments | 0.1.2 |
| jupyterlab-server | 2.7.2 |
| kerberos | 1.3.1 |
| kiwisolver | 1.3.1 |
| MarkupSafe | 1.1.1 |
| matplotlib | 3.3.4 |
| mistune | 0.8.4 |
| nbclassic | 0.3.1 |
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nest-asyncio | 1.5.1 |
| notebook | 6.4.3 |
| numpy | 1.19.4 |
| packaging | 20.9 |
| pandocfilters | 1.4.3 |

| Library | Version |
|---------------------|----------|
| parso | 0.7.1 |
| pexpect | 4.8.0 |
| pickleshare | 0.7.5 |
| Pillow | 8.4.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| ptyprocess | 0.6.0 |
| pure-sasl | 0.6.2 |
| py4j | 0.10.9.1 |
| pycparser | 2.20 |
| Pygments | 2.8.1 |
| pyparsing | 2.4.7 |
| pyrsistent | 0.17.3 |
| python-dateutil | 2.8.1 |
| pytz | 2021.1 |
| pyzmq | 19.0.2 |
| requests | 2.25.1 |
| requests-unixsocket | 0.2.0 |
| Send2Trash | 1.5.0 |
| six | 1.15.0 |
| sniffio | 1.2.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| thrift | 0.11.0 |
| thrift-sasl | 0.4.3 |
| tornado | 6.1 |
| traitlets | 4.3.3 |
| typing-extensions | 3.7.4.3 |
| urllib3 | 1.26.6 |
| wcwidth | 0.2.5 |
| webencodings | 0.5.1 |
| websocket-client | 1.2.1 |
| zipp | 3.4.0 |

Table 59: Packages in Python 3.7.11 JupyterLab Runtimes - RAPIDS

| Library | Version |
|---------------|---------|
| python | 3.7.11 |
| pip | 21.1.3 |
| _libgcc_mutex | 0.1 |

| Library | Version |
|-------------------------------|------------|
| _openmp_mutex | 4.5 |
| abseil-cpp | 20210324.2 |
| aiohttp | 3.8.1 |
| aiosignal | 1.2.0 |
| anyio | 3.3.0 |
| appdirs | 1.4.4 |
| argcomplete | 1.12.3 |
| argon2-cffi | 20.1.0 |
| arrow-cpp | 5.0.0 |
| arrow-cpp-proc | 3.0.0 |
| async-timeout | 4.0.1 |
| async_generator | 1.10 |
| asynctest | 0.13.0 |
| attrs | 20.3.0 |
| aws-c-auth | 0.6.7 |
| aws-c-cal | 0.5.12 |
| aws-c-common | 0.6.17 |
| aws-c-compression | 0.2.14 |
| aws-c-event-stream | 0.2.7 |
| aws-c-http | 0.6.10 |
| aws-c-io | 0.10.13 |
| aws-c-mqtt | 0.7.9 |
| aws-c-s3 | 0.1.27 |
| aws-c-sdkutils | 0.1.1 |
| aws-checksums | 0.1.12 |
| aws-crt-cpp | 0.17.8 |
| aws-sdk-cpp | 1.9.145 |
| babel | 2.9.1 |
| backcall | 0.2.0 |
| backports | 1.0 |
| backports.functools_lru_cache | 1.6.4 |
| bleach | 3.3.1 |
| blosc | 1.21.0 |
| bokeh | 2.4.0 |
| boost | 1.74.0 |
| boost-cpp | 1.74.0 |
| brotli | 1.0.9 |
| brotli-bin | 1.0.9 |
| brotlipy | 0.7.0 |

| Library | Version |
|--------------------|-----------|
| brunsl | 0.1 |
| bzip2 | 1.0.8 |
| c-ares | 1.18.1 |
| c-blosc2 | 2.0.4 |
| ca-certificates | 2021.10.8 |
| cachetools | 4.2.4 |
| cairo | 1.16.0 |
| cds | 1.1.0 |
| certifi | 2020.11.8 |
| cff | 1.14.4 |
| cfitsio | 3.470 |
| chardet | 4.0.0 |
| charls | 2.2.0 |
| charset-normalizer | 2.0.6 |
| click | 8.0.3 |
| click-plugins | 1.1.1 |
| cligj | 0.7.2 |
| cloudpickle | 2.0.0 |
| colorama | 0.4.4 |
| colorcet | 3.0.0 |
| cryptography | 36.0.1 |
| cucim | 21.12.00 |
| cuda-toolkit | 11.0.221 |
| cudf | 21.12.02 |
| cudf_kafka | 21.12.02 |
| cuda-nn | 8.2.1.32 |
| cugraph | 21.12.00 |
| cuml | 21.12.00 |
| cupy | 9.6.0 |
| curl | 7.80.0 |
| cusignal | 21.12.00 |
| cuspatial | 21.12.00 |
| custreamz | 21.12.02 |
| cuxfilter | 21.12.00 |
| cycler | 0.11.0 |
| cyrus-sasl | 2.1.27 |
| cytoolz | 0.11.2 |
| dask | 2021.11.2 |
| dask-core | 2021.11.2 |

| Library | Version |
|---------------------------|-----------|
| dask-cuda | 21.12.00 |
| dask-cudf | 21.12.02 |
| datashader | 0.11.1 |
| datashape | 0.5.4 |
| debugpy | 1.5.1 |
| decorator | 4.4.2 |
| defusedxml | 0.6.0 |
| distributed | 2021.11.2 |
| dlpack | 0.5 |
| entrypoints | 0.3 |
| expat | 2.4.1 |
| faiss-proc | 1.0.0 |
| fastavro | 1.4.7 |
| fastrlock | 0.8 |
| fiona | 1.8.20 |
| font-ttf-dejavu-sans-mono | 2.37 |
| font-ttf-inconsolata | 3.000 |
| font-ttf-source-code-pro | 2.038 |
| font-ttf-ubuntu | 0.83 |
| fontconfig | 2.13.1 |
| fonts-conda-ecosystem | 1 |
| fonts-conda-forge | 1 |
| fonttools | 4.28.4 |
| freetype | 2.10.4 |
| freexl | 1.0.6 |
| frozenset | 1.2.0 |
| fsspec | 2021.11.1 |
| gdal | 3.3.2 |
| geopandas | 0.9.0 |
| geopandas-base | 0.9.0 |
| geos | 3.9.1 |
| geotiff | 1.7.0 |
| gettext | 0.19.8.1 |
| gflags | 2.2.2 |
| giflib | 5.2.1 |
| git | 2.34.1 |
| glog | 0.5.0 |
| gpuci-tools | 0.3.1 |
| grpc-cpp | 1.41.1 |

| Library | Version |
|----------------------|-----------|
| hdf4 | 4.2.15 |
| hdf5 | 1.12.1 |
| heapdict | 1.0.1 |
| icu | 68.2 |
| idna | 2.10 |
| imagecodecs | 2021.8.26 |
| imageio | 2.13.3 |
| importlib-metadata | 3.4.0 |
| importlib_metadata | 4.8.3 |
| importlib_resources | 5.4.0 |
| ipykernel | 5.3.4 |
| ipython | 7.16.1 |
| ipython_genutils | 0.2.0 |
| ipywidgets | 7.6.5 |
| jbig | 2.1 |
| jedi | 0.17.2 |
| jinja2 | 2.11.3 |
| joblib | 1.1.0 |
| jpeg | 9d |
| json-c | 0.15 |
| json5 | 0.9.5 |
| jsonschema | 3.2.0 |
| jupyter-client | 6.1.7 |
| jupyter-core | 4.6.3 |
| jupyter-server | 1.10.2 |
| jupyter-server-proxy | 3.2.0 |
| jupyterlab | 3.2.8 |
| jupyterlab-server | 2.7.2 |
| jupyterlab_pygments | 0.1.2 |
| jupyterlab_widgets | 1.0.2 |
| jxrlib | 1.1 |
| kealib | 1.4.14 |
| kiwisolver | 1.3.2 |
| krb5 | 1.19.2 |
| lcms2 | 2.12 |
| ld_impl_linux-64 | 2.36.1 |
| lerc | 3.0 |
| libaec | 1.0.6 |
| libblas | 3.9.0 |

| Library | Version |
|-----------------|--------------|
| libbrotlicommon | 1.0.9 |
| libbrotlidec | 1.0.9 |
| libbrotlienc | 1.0.9 |
| libblas | 3.9.0 |
| libcucim | 21.12.00 |
| libcudf | 21.12.02 |
| libcudf_kafka | 21.12.02 |
| libcugraph | 21.12.00 |
| libcuml | 21.12.00 |
| libcumlprims | 21.12.00 |
| libcurl | 7.80.0 |
| libcusolver | 11.3.2.107 |
| libcuspatial | 21.12.00 |
| libdap4 | 3.20.6 |
| libdeflate | 1.8 |
| libedit | 3.1.20191231 |
| libev | 4.33 |
| libevent | 2.1.10 |
| libfaiss | 1.7.0 |
| libffi | 3.4.2 |
| libgcc-ng | 9.4.0 |
| libgcrypt | 1.9.4 |
| libgdal | 3.3.2 |
| libgfortran-ng | 11.2.0 |
| libgfortran5 | 11.2.0 |
| libglib | 2.70.2 |
| libgpg-error | 1.42 |
| libgsasl | 1.10.0 |
| libhwloc | 2.3.0 |
| libiconv | 1.16 |
| libkml | 1.3.0 |
| liblapack | 3.9.0 |
| libllvm11 | 11.1.0 |
| libnetcdf | 4.8.1 |
| libnghttp2 | 1.43.0 |
| libnsl | 2.0.0 |
| libntlm | 1.4 |
| libopenblas | 0.3.18 |
| libpng | 1.6.37 |

| Library | Version |
|-------------------|------------------------|
| libpq | 13.5 |
| libprotobuf | 3.18.1 |
| librdkafka | 1.6.1 |
| librmm | 21.12.00 |
| librttopo | 1.1.0 |
| libsodium | 1.0.18 |
| libspatialindex | 1.9.3 |
| libspatialite | 5.0.1 |
| libssh2 | 1.10.0 |
| libstdc++-ng | 9.4.0 |
| libthrift | 0.15.0 |
| libtiff | 4.3.0 |
| libutf8proc | 2.7.0 |
| libuuid | 2.32.1 |
| libuv | 1.42.0 |
| libwebp | 1.2.1 |
| libwebp-base | 1.2.1 |
| libxcb | 1.13 |
| libxgboost | 1.5.0dev.rapidsai21.12 |
| libxml2 | 2.9.12 |
| libzip | 1.8.0 |
| libzlib | 1.2.11 |
| libzopfli | 1.0.3 |
| llvm-openmp | 12.0.1 |
| llvmlite | 0.37.0 |
| locket | 0.2.0 |
| lz4-c | 1.9.3 |
| mapclassify | 2.4.3 |
| markdown | 3.3.6 |
| markupsafe | 1.1.1 |
| matplotlib-base | 3.5.1 |
| matplotlib-inline | 0.1.3 |
| mistune | 0.8.4 |
| msgpack-python | 1.0.3 |
| multidict | 5.2.0 |
| multipledispatch | 0.6.0 |
| munch | 2.5.0 |
| munkres | 1.1.4 |
| nbclassic | 0.3.1 |

| Library | Version |
|---------------|----------|
| nbclient | 0.5.1 |
| nbconvert | 6.0.7 |
| nbformat | 5.1.3 |
| nccl | 2.11.4.1 |
| ncurses | 6.2 |
| nest-asyncio | 1.5.1 |
| networkx | 2.6.3 |
| nodejs | 14.17.4 |
| notebook | 6.4.3 |
| nspr | 4.32 |
| nss | 3.73 |
| numba | 0.54.1 |
| numpy | 1.20.3 |
| nvtx | 0.2.3 |
| olefile | 0.46 |
| openjpeg | 2.4.0 |
| openssl | 1.1.11 |
| orc | 1.7.1 |
| packaging | 20.9 |
| pandas | 1.3.5 |
| pandoc | 2.16.2 |
| pandocfilters | 1.4.3 |
| panel | 0.12.4 |
| param | 1.12.0 |
| parquet-cpp | 1.5.1 |
| parso | 0.7.1 |
| partd | 1.2.0 |
| pcre | 8.45 |
| pcre2 | 10.37 |
| perl | 5.32.1 |
| pexpect | 4.8.0 |
| pickle5 | 0.0.12 |
| pickleshare | 0.7.5 |
| pillow | 8.4.0 |
| pip | 21.3.1 |
| pixman | 0.40.0 |
| pooch | 1.5.2 |
| poppler | 21.09.0 |
| poppler-data | 0.4.11 |

| Library | Version |
|------------------------|------------------------|
| postgresql | 13.5 |
| proj | 8.1.0 |
| prometheus-client | 0.9.0 |
| prompt-toolkit | 3.0.8 |
| protobuf | 3.18.1 |
| psutil | 5.8.0 |
| pthread-stubs | 0.4 |
| ptxcompiler | 0.2.0 |
| ptyprocess | 0.6.0 |
| py-xgboost | 1.5.0dev.rapidsai21.12 |
| py4j | 0.10.9 |
| pyarrow | 5.0.0 |
| pycparser | 2.20 |
| pyct | 0.4.6 |
| pyct-core | 0.4.6 |
| pydeck | 0.5.0 |
| pyee | 8.1.0 |
| pygments | 2.8.1 |
| pynvml | 11.4.1 |
| pyopenssl | 21.0.0 |
| pyparsing | 2.4.7 |
| pyppeteer | 0.2.6 |
| pyproj | 3.1.0 |
| pyrsistent | 0.17.3 |
| pysocks | 1.7.1 |
| python | 3.7.12 |
| python-confluent-kafka | 1.6.0 |
| python-dateutil | 2.8.1 |
| python_abi | 3.7 |
| pytz | 2021.1 |
| pyviz_comms | 2.1.0 |
| pywavelets | 1.2.0 |
| pyyaml | 6.0 |
| pyzmq | 19.0.2 |
| rapids | 21.12.00 |
| rapids-xgboost | 21.12.00 |
| re2 | 2021.11.01 |
| readline | 8.1 |
| requests | 2.25.1 |

| Library | Version |
|---------------------|-----------------|
| requests-unixsocket | 0.2.0 |
| rmm | 21.12.00 |
| rtree | 0.9.7 |
| s2n | 1.3.0 |
| scikit-image | 0.18.1 |
| scikit-learn | 1.0.1 |
| scipy | 1.7.3 |
| send2trash | 1.5.0 |
| setuptools | 59.6.0 |
| shapely | 1.8.0 |
| simpervisor | 0.4 |
| six | 1.15.0 |
| snappy | 1.1.8 |
| sniffio | 1.2.0 |
| sortedcontainers | 2.4.0 |
| spdlog | 1.8.5 |
| sqlite | 3.37.0 |
| streamz | 0.6.3 |
| tblib | 1.7.0 |
| terminado | 0.9.2 |
| testpath | 0.4.4 |
| threadpoolctl | 3.0.0 |
| tifffile | 2021.11.2 |
| tiledb | 2.3.4 |
| tk | 8.6.11 |
| toolz | 0.11.2 |
| tornado | 6.1 |
| tqdm | 4.62.3 |
| traitlets | 4.3.3 |
| treelite | 2.1.0 |
| treelite-runtime | 2.1.0 |
| typing-extensions | 3.7.4.3 |
| tzcode | 2021e |
| tzdata | 2021e |
| ucx | 1.11.2+gef2bbcf |
| ucx-proc | 1.0.0 |
| ucx-py | 0.23.0 |
| unicodedata2 | 13.0.0.post2 |
| urllib3 | 1.26.6 |

| Library | Version |
|------------|----------|
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdrw | 2.1 |
| class | 7.3-18 |
| cli | 3.0.1 |
| cluster | 2.1.1 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |
| compiler | 4.0.5 |
| crayon | 1.4.1 |
| curl | 4.3.2 |
| datasets | 4.0.5 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.0.5 |
| grDevices | 4.0.5 |
| grid | 4.0.5 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-18 |
| labeling | 0.4.2 |
| lattice | 0.20-41 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-53.1 |
| Matrix | 1.3-2 |
| methods | 4.0.5 |
| mgcv | 1.8-34 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-15 |

| Library | Version |
|--------------|---------|
| openssl | 1.4.4 |
| parallel | 4.0.5 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-13 |
| splines | 4.0.5 |
| stats | 4.0.5 |
| stats4 | 4.0.5 |
| survival | 3.2-10 |
| sys | 3.4 |
| tcltk | 4.0.5 |
| tibble | 3.1.4 |
| tools | 4.0.5 |
| utf8 | 1.2.2 |
| utils | 4.0.5 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 4.1 Libraries

This section lists the R 4.1 libraries that ship with ML Runtimes 2021.12.

Table 61: R 4.0.5 Libraries for Workbench

| Library | Version |
|---------|---------|
| askpass | 1.1 |
| base | 4.1.1 |
| bitops | 1.0-7 |
| boot | 1.3-28 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |

| Library | Version |
|------------|---------|
| caTools | 1.18.2 |
| csw | 2.1 |
| class | 7.3-19 |
| cli | 3.0.1 |
| cluster | 2.1.2 |
| codetools | 0.2-18 |
| colorspace | 2.0-2 |
| compiler | 4.1.1 |
| crayon | 1.3.4 |
| curl | 4.3.2 |
| datasets | 4.1.1 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-81 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 4.1.1 |
| grDevices | 4.1.1 |
| grid | 4.1.1 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-20 |
| labeling | 0.4.2 |
| lattice | 0.20-44 |
| lifecycle | 1.0.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-54 |
| Matrix | 1.3-4 |
| methods | 4.1.1 |
| mgecv | 1.8-36 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.1-152 |
| nnet | 7.3-16 |
| openssl | 1.4.4 |
| parallel | 4.1.1 |

| Library | Version |
|--------------|---------|
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-14 |
| splines | 4.1.1 |
| stats | 4.1.1 |
| stats4 | 4.1.1 |
| survival | 3.2-11 |
| sys | 3.4 |
| tcltk | 4.1.1 |
| tibble | 3.1.4 |
| tools | 4.1.1 |
| utf8 | 1.2.2 |
| utils | 4.1.1 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

R 3.6 Libraries

This section lists the R 3.6 libraries that ship with ML Runtimes 2021.12.

Table 62: R 3.6.3 Libraries for Workbench

| Library | Version |
|---------|---------|
| askpass | 1.1 |
| base | 3.6.3 |
| bitops | 1.0-7 |
| boot | 1.3-24 |
| brew | 1.0-6 |
| Cairo | 1.2-0 |
| caTools | 1.18.2 |
| cdsw | 2.1 |

| Library | Version |
|------------|----------|
| class | 7.3-15 |
| cli | 3.0.1 |
| cluster | 2.1.0 |
| codetools | 0.2-16 |
| colorspace | 2.0-2 |
| compiler | 3.6.3 |
| crayon | 1.4.4 |
| curl | 4.3.2 |
| datasets | 3.6.3 |
| digest | 0.6.27 |
| ellipsis | 0.3.2 |
| fansi | 0.5.0 |
| farver | 2.1.0 |
| foreign | 0.8-75 |
| ggplot2 | 3.3.5 |
| glue | 1.4.2 |
| graphics | 3.6.3 |
| grDevices | 3.6.3 |
| grid | 3.6.3 |
| gtable | 0.3.0 |
| httr | 1.4.2 |
| jsonlite | 1.7.2 |
| KernSmooth | 2.23-16 |
| labeling | 0.4.2 |
| lattice | 0.20-38 |
| lifecycle | 0.1.0 |
| magrittr | 2.0.1 |
| MASS | 7.3-51.5 |
| Matrix | 1.2-18 |
| methods | 3.6.3 |
| mgcv | 1.8-31 |
| mime | 0.11 |
| munsell | 0.5.0 |
| nlme | 3.4-144 |
| nnet | 7.3-12 |
| openssl | 1.4.4 |
| parallel | 3.6.3 |
| pillar | 1.6.2 |
| pkgconfig | 2.0.3 |

| Library | Version |
|--------------|---------|
| png | 0.1-7 |
| R6 | 2.5.1 |
| RColorBrewer | 1.1-2 |
| RJSONIO | 1.3-1.5 |
| rlang | 0.4.11 |
| Rook | 1.1-1 |
| rpart | 4.1-15 |
| Rserve | 1.7-0 |
| scales | 1.1.1 |
| spatial | 7.3-11 |
| splines | 3.6.3 |
| stats | 3.6.3 |
| stats4 | 3.6.3 |
| survival | 3.1-8 |
| sys | 3.4 |
| tcltk | 3.6.3 |
| tibble | 3.1.4 |
| tools | 3.6.3 |
| utf8 | 1.2.2 |
| utils | 3.6.3 |
| vctrs | 0.3.8 |
| viridisLite | 0.4.0 |
| withr | 2.4.2 |

ML Runtimes 2020.11

This section lists the Python and R libraries that ship with ML Runtimes 2020.11.

All ML Runtimes 2020.11 contain NumPy 1.19.2 and Matplotlib 3.1.2.

- Matplotlib - 3.1.2
- NumPy - 1.19.2 and the Python versions, which are 3.6.10, 3.7.9, and 3.8.3