
workflow-nodes

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SETUP

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workflow-nodes is a collection of various tools mainly used to be executed within a *workflow*, in which each tool may also be referred to as *node*. Each node is an executable command line tool providing the `--xmlhelp` interface, which can be used to obtain a machine readable representation of the corresponding tool and its parameters (see also [xmlhelpy](#)). There are nodes for various different tasks, all written in Python 3.

CHAPTER ONE

INSTALLATION

The package can be installed using `pip3` (or `pip`, if there is no dedicated version of `pip` for Python 3 installed), which generally comes bundled with Python installations. Note that Python version `>=3.8` is required to install the latest version.

```
pip3 install workflow-nodes
```

Note that some tools require additional dependencies which are not installed by default, as they might require additional setup which can vary for each operating system. These dependencies can be installed by using the extras notation of `pip`, e.g.:

```
pip3 install workflow-nodes[<extra>]
```

The following extras currently exist:

- `ssh`: For using SSH tools via [Paramiko](#).

If desired, all optional dependencies can also be installed at once using:

```
pip3 install workflow-nodes[all]
```

In order to use a tool, make sure the `workflow-nodes` command is runnable from anywhere, e.g. by running:

```
workflow-nodes --help
```

If the command is not available, the `PATH` system variable may need to be adapted accordingly to include the path the executable resides in. For example, the following command can be used on Linux, assuming the executable resides in `~/.local/bin`:

```
export PATH=${HOME}/.local/bin:${PATH}
```

This line can also be added to `.bashrc` so it will be executed each time a new terminal is opened:

```
echo 'export PATH=${HOME}/.local/bin:${PATH}' >> ${HOME}/.bashrc
```

On Windows, the `PATH` can be modified permanently by editing the respective environment variable in the advanced system settings of the control panel.

To use the tools inside a workflow using `kadistudio`, they have to be added to the file `$HOME/.kadistudio/tools.txt`. Afterwards you can insert them using the “Add Tool” context menu option in the editor.

To register all available nodes from this repository at once, use the following command:

```
workflow-nodes --commands >> ~/.kadistudio/tools.txt
```

Autocompletion is also available for some shells, namely `bash`, `zsh` and `fish`, and can be activated using:

```
workflow-nodes config activate-autocompletion
```

DEVELOPMENT

When installing the package from source for development instead, it is recommended to install it in editable mode, which simply creates a link to the sources so all changes are reflected in the installed package immediately. The command will also install some additional development dependencies as defined in `pyproject.toml`.

```
pip3 install -e .[dev]
```

Especially for development, running the installation inside a virtual environment is recommended, see [Virtualenv](#) for more information.

At this point, it is also recommended to install the `pre-commit` hooks by running:

```
pre-commit install
```

Besides `pre-commit`, [Pylint](#) is used as a static code analysis tool. It can be used to check the whole project by running:

```
pylint workflow_nodes
```

For contributions, it is recommended to first create a fork of this project and clone it. The main repository can be added as an additional remote to the cloned project, often called `upstream`. Also checkout the `development` branch, which is currently used as the main development branch.

Afterwards, you may follow the following steps as a rough guideline on how to add a new tool:

- Create a Python file for the tool in a fitting subdirectory (if one exists), e.g. in `workflow_nodes/system/`, and implement the functionality of the tool. You can use other existing tools (and tool groups/directories) as a reference. Also, make sure to import the tool in the `main.py` file of the group, so it is actually added to the respective parent command.
- If there are any new dependencies, add them to `pyproject.toml` with appropriate version ranges, if necessary.
- Add an entry about any new functionality to `HISTORY.md`. You may also add yourself as a contributor to `AUTHORS.md`.
- Before creating a merge request on the main repository, make sure the GitLab CI runs through successfully in your fork.

**CHAPTER
THREE**

UPGRADING

To upgrade the package, the -U flag can be used:

```
pip3 install workflow-nodes -U
```

When installing from source for development, fetch the latest code first and install it in editable mode again:

```
pip3 install -e .[dev]
```

**CHAPTER
FOUR**

CONFIGURATION

Most of the tools within the package can be used directly after installation. Note that some tools, especially wrapper tools, might require installing additional, non-Python packages. However, each tool will check for any missing dependencies, packages or tools before actually running.

In case you are using tools which interact with a Kadi4Mat instance, make sure the connection is already configured. See the documentation of the [kadi-apy](#) library for more information.

This chapter describes how to install, upgrade and configure this package.

CLI

While the tools of this package were mainly created to be used within a *workflow*, all tools can also be executed directly in the terminal using their corresponding command line interface (CLI). This interface is also useful for scripting and the integration with programming languages other than Python.

The first entry point to the CLI is given by running:

```
workflow-nodes --help
```

5.1 workflow_nodes

The workflow-nodes tool collection.

```
workflow_nodes [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

5.1.1 config

Tools to manage configurations.

```
workflow_nodes config [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

activate-autocompletion

Activate the autocompletion for bash, zsh or fish.

```
workflow_nodes config activate-autocompletion [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --shell <shell>

Required Your shell type.

Options

bash | zsh | fish

5.1.2 converter

Converter tools.

```
workflow_nodes converter [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

excel-to-kadi

Imports an Excel sheet, reads metadata and transfers them into Kadi.

```
workflow_nodes converter excel-to-kadi [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-v, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-f, --force

Force deleting and overwriting existing information.

Default

False

-k, --keep-formulas

Flag to indicate whether to print the formula of a given cell, even if a computed value is available.

Default

False

-S, --start-column <start_column>

Start column.

Default

E

-E, --end-column <end_column>

End column.

-p, --permission-new <permission_new>

Permission of new user or group.

Default

member

Options

member | collaborator | editor | admin

-b, --base-path <base_path>

Prefix path to be added in front of the files or paths specified in the Excel sheet.

-U, --use-ids

Use ids to specify collections, groups and users.

Default

False

-D, --identity-type <identity_type>

Identity type of the user.

Options

ldap | local | shib

-M, --metadatum-with-value

Consider only metadata which have a value.

Default

False

Arguments

FILE

Required argument

file-converter

Node for converting from various input formats into various output formats.

```
workflow_nodes converter file-converter [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-i, --inputfile <inputfile>

Required Inputfile with extension (dat, csv)

-o, --outputfile <outputfile>

Required Outputfile with extension (dat, csv, veusz_in, json, hdf5)

-s, --separator <separator>

Columns separator for the inputfile

Default

space

Options

space | tab | comma

-c, --c_size <c_size>

Chunk size in rows for reading in a big csv (dat) file, only supported for writing to HDF5

kadi-to-kadi

Copy record data between two Kadi4Mat instances.

```
workflow_nodes converter kadi-to-kadi [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-v, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-R, --record-identifier <record_identifier>

Identifier of the record to copy to the second instance

-r, --record-id <record_id>

ID of the record to copy to the second instance

-f, --force

Force deleting and overwriting existing data

Default

False

-T, --instance-2 <instance_2>

Required Name of the second Kadi4Mat instance to use for the API.

-p, --file-path <file_path>

Required File path for downloading/uploading files.

merge-tables

Merge from different files two columns respectively.

```
workflow_nodes converter merge-tables [OPTIONS] FILENAMES
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --separator_in <separator_in>

Columns separator input table

Default

tab

Options

space | tab | comma

-S, --separator_out <separator_out>

Columns separator output table

Options

space | tab | comma

-u, --columns <columns>

Specified columns from input file to be merged

-x, --columns_x <columns_x>

Columns for x axis data

-y, --columns_y <columns_y>

Columns for y axis data

-o, --output_name <output_name>

Name of the new merged table

Default

merged_table

-O, --output_format <output_format>

Format of the new merged table

Default

CSV

-m, --missing_number_fill_in <missing_number_fill_in>

Fill this in for missing numbers

Default

nan

Arguments

FILENAMES

Required argument

pace-to-kadi

Imports an infile_saved and transfers the contained metadata into Kadi.

```
workflow_nodes converter pace-to-kadi [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-V, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-R, --record-identifier <record_identifier>

Identifier of the record to add the metadata

-r, --record-id <record_id>

ID of the record to add the metadata

-S, --infile_saved <infile_saved>

Required Path to a file or directory.

-f, --force

Force deleting and overwriting existing metadata

Default

False

xml-to-kadi

Read an xml file and add the metadata to a record.

```
workflow_nodes converter xml-to-kadi [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-v, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-R, --record-identifier <record_identifier>

Identifier of the record to add the metadata

-r, --record-id <record_id>

ID of the record to add the metadata

-x, --xml-file <xml_file>

Required Path to xml file.

-c, --convert

Try to convert strings to integers, floats or bools.

Default

False

-f, --force

Force deleting and overwriting existing metadata.

Default

False

5.1.3 debug

Debug tools.

```
workflow_nodes debug [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

print-value

Tool to print a value.

```
workflow_nodes debug print-value [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--string_value <string_value>

string to print

--integer_value <integer_value>

integer to print

--float_value <float_value>

float to print

--bool_value <bool_value>

bool to print

5.1.4 environment

Environment tools.

```
workflow_nodes environment [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

mpirun

Run pace3D solvers on multiple processors using mpirun.

```
workflow_nodes environment mpirun [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--env-exec <env_exec>

Required Command string to be executed inside the environment.

-c, --numofprocesses <numofprocesses>

Number of processes used

-q, --quiet

Suppress helpful messages

Default

False

-v, --verbose

Be verbose

Default

False

screen

Execute a tool detached in the background using screen.

```
workflow_nodes environment screen [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--env-exec <env_exec>

Required Command string to be executed inside the environment.

-n, --name <name>

Name the session

Default

kadi-workflow-node

-r, --resume

Attempt to reattach previous session, if not existent, start new

Default

False

ssh

Execute a tool on a remote computer using SSH.

```
workflow_nodes environment ssh [OPTIONS]
```

Options**--version**

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--env-exec <env_exec>

Required Command string to be executed inside the environment.

--user <user>

Username

--host <host>

Specifies the host address

--confighost <confighost>

Use a predefined host from the ssh config

--port <port>

Specify a certain port

-X, --x-server

Enables X11-forwarding

Default

False

--working_dir <working_dir>

Change to a specific working directory on the remote machine.

--custom_sourcing <custom_sourcing>

Specify additional that should be sourced on the remote machine. This can for example be used to activate virtual environments using something similar to '/home/user/anaconda/bin/activate ENVNAME'.

-u, --disable-shell-sourcing

Disables sourcing the configuration files ~/.profile and ~/.bashrc

Default

False

5.1.5 excel

Excel tools.

```
workflow_nodes excel [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

excel-add-data

Adds data to an existing excel document.

```
workflow_nodes excel excel-add-data [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-f, --file <file>

Required The path to the document to modify

-d, --datafile <datafile>

Datafile (csv) with row/column numbers and value to insert

Default

.excel-values.csv

-o, --outputfile <outputfile>

The path to the output file, if not specified overwrite [file]

excel-data

Prepares data to be added to an Excel document.

Appends data to a CSV file containing values with target cells.

```
workflow_nodes excel excel-data [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-f, --file <file>

File with values, will be read line by line

-s, --single-value <single_value>

Single value. Can not be used together with -file|f

-r, --row <row>

Required Row number

-c, --column <column>

Required Column name (alphabetical)

-o, --outfile <outfile>

Output

Default

.excel-values.csv

excel-read-data

Read data from an Excel file.

```
workflow_nodes excel excel-read-data [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-c, --column <column>

Required The name of the (start) column.

-r, --row <row>

Required The number of the (start) row.

-C, --column-end <column_end>

The name of the end column.

-R, --row-end <row_end>

The number of the end row.

-o, --output <output>

Path to a file to write the output to. If not set, the output will be written to stdout.

-k, --keep-formulas

Flag to indicate whether to print the formula of a given cell, even if a computed value is available.

Default

False

Arguments

FILE

Required argument

5.1.6 misc

Miscellaneous tools.

```
workflow_nodes misc [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

compare-number

Compare two numbers and print the resulting boolean.

```
workflow_nodes misc compare-number [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-l, --leftside <leftside>

Required The left side of the comparison.

-o, --operator <operator>

Required The operator of the comparison.

Options

< | <= | == | != | >= | >

-r, --rightside <rightside>

Required The right side of the comparison.

-i, --cast_to_int

Cast the numbers to integers instead of floats.

Default

False

compare-string

Compare two strings and print the resulting boolean.

```
workflow_nodes misc compare-string [OPTIONS]
```

Options**--version**

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-l, --leftside <leftside>

Required The left side of the comparison.

-o, --operator <operator>

Required The operator of the comparison.

Options

== | !=

-r, --rightside <rightside>

Required The right side of the comparison.

create-qr-code

Create a QR-code of a string and save it as an image.

```
workflow_nodes misc create-qr-code [OPTIONS]
```

Options**--version**

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --string <string>

Required String to convert

-f, --filename <filename>

Name

Default

output

-t, --type <image_type>

Type

Default

png

Options

png | jpg | jpeg | svg

-p, --path <path>

Path

create-symlink

Create a symlink.

```
workflow_nodes misc create-symlink [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-t, --target <target>

Symlink target (default is current directory)

-p, --path <path>

Path where the symlink should be stored.

-n, --name <name>

Required Name of the Desktop entry

-f, --force

Force symlink creation (overwrite if exists)

Default

False

files-combine

Combines files row-wise or column-wise.

```
workflow_nodes misc files-combine [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-i, --files <files>

Required Inputfiles (tsv, csv); wildcard pattern is possible for file series.

-r, --headerrow <headerrow>

Specify that the files have no header. Per default they do have a header.

Default

0

Options

0 | None

-o, --outputfile <outputfile>

Required Name of the output file.

-d, --row_col <row_col>

Required Concatenate row-wise (same number of columns) or column-wise (same number of rows).

Options

rows | columns

-s, --separator <separator>

Columns separator.

Default

space

Options

space | tab | comma

gmsh

Wrapper node for gmsh.

```
workflow_nodes misc gmsh [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-a, --one-dimensional-mesh

Perform 1D mesh generation.

Default

False

-b, --two-dimensional-mesh

Perform 2D mesh generation.

Default

False

-c, --three-dimensional-mesh

Perform 3D mesh generation.

Default

False

-g, --geo-file <geo_file>

Required Specify geo-file name.

-o, --file <file>

Required Specify output file name.

-n, --set-number <set_number>

Set constant or option number name=value

-s, --save-and-exit

Save mesh, then exit

Default

False

-f, --format <format>

Select output mesh format

imagej-macro

A program to start an ImageJ macro with variables.

```
workflow_nodes misc imagej-macro [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-m, --macro <macro>

Required path to the macro file (.ijm)

-v, --variables <variables>

Define variables which will be inserted into the macro. Separate multiple variables by comma. Overwrites variables specified by -varfile.

-f, --varfile <varfile>

Load a list of variables from a file

-x, --virtual-framebuffer

Use a virtual framebuffer to hide windows which would be opened by imagej.

Default

False

imagej-variable

Turn a string value into a variable and store it in a file.

```
workflow_nodes misc imagej-variable [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-n, --name <name>

Required The name of the variable

-v, --value <value>

Required The value of the variable

-o, --outfile <outfile>

The file used as variable store, the new variable will be appended to it

Default

.variables.ijmv

-s, --split_vector

Split the variable value into multiple variables. The format must be [a, b, c, d, e...] where each item will be treated as a variable itself with the name \${variable_name}_0, \${variable_name}_1 and so forth.

Default

False

latexmk

Wrapper node for latexmk.

```
workflow_nodes misc latexmk [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --pdf

Generate pdf by pdflatex.

Default

False

-c, --change_directory <change_directory>

Change to directory of source file when processing.

matlab

Wrapper node for Matlab.

```
workflow_nodes misc matlab [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-f, --startup-folder <startup_folder>

Change the matlab startup folder to defined path

-m, --execution-mode <mode>

Choose the desired execution mode: single=single execution of script in bash and Matlab closes automatically after runthrough; bash=bash execution of script and matlab stays open after runthrough; desktop=execution of script in Matlab desktop and matlab stays open after runthrough

Default

single

Options

single | bash | desktop

Arguments

FILE

Required argument

meshio-convert

Wrapper node for meshio convert.

```
workflow_nodes misc meshio-convert [OPTIONS] INFILE OUTFILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-f, --input-format <input_format>

Specifies the input file format.

-v, --output-format <output_format>

Specifies the output file format.

-p, --prune

Remove lower order cells, remove orphaned nodes.

Default

False

Arguments

INFILE

Required argument

OUTFILE

Required argument

octave

Wrapper node for Octave.

```
workflow_nodes misc octave [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --exec-path <path>

Set the execution path in which to look for the octave script

--gui

Force octave to open the gui

Default

False

-v, --variables <variables>

Variables passed to the script. Expects the variables as a string separated by ,

Arguments

FILE

Required argument

paraview-macro

Run a Paraview macro.

```
workflow_nodes misc paraview-macro [OPTIONS] MACRONAME
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-i, --inputfile <inputfile>

Inputfile including extension which is processed within the macro.

-o, --outputfile <outputfile>

Outputfile including extension which is created within the macro. It has to match with what is defined in the macro; either screenshot (e.g. png) or field data (e.g. vtk).

Arguments

MACRONAME

Required argument

pbatch

Wrapper node for pbatch.

```
workflow_nodes misc pbatch [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --script <script>

Required Script to be used.

-v, --vtk-file <vtk_file>

Required Vtk-file.

-o, --output-file <output_file>

Resulting output file.

random-value

Generate a pseudo-random number within a specified range and step.

Note that the generated numbers are pseudo-random and should not be used for security-related purposes.

```
workflow_nodes misc random-value [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--min_value <min_value>

Required Minimum value possible.

--max_value <max_value>

Required Maximum value possible.

--step_size <step_size>

Required Step size between the possible random values.

--seed <seed>

Seed value for deterministic random values.

Default

0

run-script

Run a shell script.

```
workflow_nodes misc run-script [OPTIONS] ARG0
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-a, --arguments <arguments>

Arguments to run the shell script with. Multiple arguments will be split according to the specified separator

-s, --separator <separator>

Separator used to split multiple arguments

Default

`` ``

-e, --execute-in <execute_in>

Overrides the path where the script will be executed (CWD)

-i, --interpreter <interpreter>

Use an interpreter command to run the script, e.g. ‘bash -c’

--ignore-exitcode

Ignore the exit code and always exit with success (code 0)

Default

False

Arguments

ARG0

Required argument

send-mail

Send an e-mail using a SMTP server and the corresponding login data.

```
workflow_nodes misc send-mail [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --smtp_server <smtp_server>

Required URL of the SMTP server.

-o, --smtp_port <smtp_port>

Port of the SMTP server.

Default

587

-f, --from <from_address>

Required Mail address where the e-mail will be send from. This is used as the username of the SMTP server.

-p, --password <user_password>

Required Password of the SMTP server account.

-t, --to <to_address>

Required Address of the recipient.

-i, --subject <subject>

Specify a subject for the e-mail.

-m, --message <message>

Specify a body for the e-mail.

Default

""

tectonic

Wrapper node for tectonic.

```
workflow_nodes misc tectonic [OPTIONS] MACRO
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

MACRO

Required argument

xmllint

Wrapper node for xmllint.

```
workflow_nodes misc xmllint [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--schema <schema>

do validation against the WXS schema

--xpath <>xpath>

evaluate the XPath expression, imply --noout

--noout

don't output the result tree

Default

False

Arguments

FILE

Required argument

5.1.7 plot

Plot tools.

```
workflow_nodes plot [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

plot-histo

A node for plotting a histogram using matplotlib.

Several distributions from different inputfiles can be plotted in one histogram. A PDF from the data is fitted as well.

```
workflow_nodes plot plot-histo [OPTIONS] FILENAME
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --plotname <plotname>

Name of the resulting plot.

-q, --output_format <output_format>

Resulting plot format, the format is controlled by file extension: *.svg, *.pdf, *.png, ...

Default

.pdf

Options

.pdf | .svg | .eps | .png | .pgf | .ps | .raw | .rgba | .svgz

-u, --columns <columns>

Specified columns to be printed from input file; if more than one file is processed, follow the order of the inputfile e.g. -u 2,3; the first column number belongs to the first inputfile, etc..

-w, --user_bins <user_bins>

Number of bins for the histogramm. If not specified an optimum value is calculated.

-x, --parameter_x <parameter_x>

Parameter name for the distribution.

-a, --xlabel <xlabel>

X label for the plot.

```
-b, --ylabel <ylabel>
    Y label for the plot.

    Default
        probability density, PDF(x)

-s, --separator <separator>
    Columns separator

    Default
        comma

    Options
        space | tab | comma

-t, --title <title>
    Title for the plot

--print_values
    Print mean and stddev.

    Default
        False
```

Arguments

FILENAME
Required argument

plot-matplotlib

A plot node for plotting columns from a text file using matplotlib.

```
workflow_nodes plot plot-matplotlib [OPTIONS]
```

Options

```
--version
    Print the version of this command and exit.

--xmlhelp
    Print the xmlhelp of this command and exit.

-F, --filename <filename>
    Name of the input file

-L, --filenames_list <filenames_list>
    Name of the input file

-s, --separator <separator>
    Columns separator

    Default
        tab
```

Options

space | tab | comma

-o, --plotoutput <plotoutput>

Resulting plot, the format is controlled by file extension: *.svg, *.pdf, *.png, ...

-q, --output_format <output_format>

Resulting plot format, the format is controlled by file extension: *.svg, *.pdf, *.png, ...

Default

pdf

Options

pdf | svg | eps | png | pgf | ps | raw | rgba | svgz

-u, --columns <columns>

Specified columns from input file to be printed, e.g. -u 2:3 for plot columns 3 to 4 in reading file

-x, --parameter_x <parameter_x>

Parameter for the x axis

-y, --parameter_y <parameter_y>

Parameter for the y axis

-l, --keylabel <keylabel>

Key label for the curve, ‘auto’ is automatic using the columns, when using the -x and -y option

-a, -- xlabel <xlabel>

X label for the plot.

-b, -- ylabel <ylabel>

Y label for the plot.

-t, --title <title>

Title for the plot.

-c, --color <color>

Color for the plot.

Default

black

-z, --linestyle <linestyle>

Linestyle for the plot, for example ‘-’, ‘-.’, ‘-.’, ‘:’, ‘None’, ‘solid’, ‘dashed’, ‘dashdot’, ‘dotted’.

Default

-

-w, -- linewidth <linewidth>

Linewidth for the plot.

Default

1

-e, --equal_axis <equal_axis>

Equals the scale of the axis.

-m, --x_lim <x_lim>

Limits of the x axis.

-n, --y_lim <y_lim>

Limits of the y axis.

-i, --x_scale <x_scale>

Scale of the x-axis

Options

linear | log | symlog.

-j, --y_scale <y_scale>

Scale of the y-axis.

Options

linear | log | symlog

-f, --x_minor_ticks <x_minor_ticks>

n-1 number of small ticks on x-axis.

Default

1

-g, --y_minor_ticks <y_minor_ticks>

n-1 number of small ticks on y-axis.

Default

1

-H, --major_grid

Major grid on, if used.

Default

False

-h, --minor_grid

Minor grid on, if used.

Default

False

-p, --position <position>

Position of the legend.

Default

best

Options

best | upper left | upper right | lower left | lower right

-M, --marker <marker>

Marker type.

Default

.

Options

. | o | v | ^ | < | > | x

plot-veusz

A Veusz-1.21.1 based node for plotting columns from a text file.

```
workflow_nodes plot plot-veusz [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-i, --pathfile <pathfile>

Required Name of the inputfile including import path to the file, header has to start with ‘descriptor’

-p, --plotoutput <plotoutput>

Required Resulting plot, the format is controlled by file extension: *.bmp, *.eps, *.jpg, *.pdf, *.png *.svg, *.tiff, *.xpm

-u, --columns <columns>

Specified columns from input file to be printed, e.g. -u 2:3

-o, --output <output>

Text file with Veusz commands, that can be used for reopening with the Veusz GUI.

-x, --parameter_x <parameter_x>

Parameter for the x axis

-y, --parameter_y <parameter_y>

Parameter for the y axis

-l, --keylabel <keylabel>

Key label for the curve

-s, --font

Font for axis label, numbers and key label

Default

cmr10

5.1.8 repo

Tools that interact with Kadi4Mat.

```
workflow_nodes repo [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

collection-visualize

Visualize all the records within a given collection.

```
workflow_nodes repo collection-visualize [OPTIONS] OUTPUT_FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-V, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-C, --collection-identifier <collection_identifier>

Identifier of the collection to visualize (main collection)

-c, --collection-id <collection_id>

ID of the collection to visualize (main collection)

-f, --output_format <output_format>

Output format of the collection graph.

Default

pdf

Options

svg | pdf | png

--label_id

Use id and identifier to label the collection(s) and records.

Default

False

--vis_per

Visualize the peripheral collection(s) from the records.

Default

False

Arguments**OUTPUT_FILE**

Required argument

record-visualize

Visualize the links of a given record.

```
workflow_nodes repo record-visualize [OPTIONS] OUTPUT_FILE
```

Options**--version**

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-V, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-R, --record-identifier <record_identifier>

Identifier of the record to start with

-r, --record-id <record_id>

ID of the record to start with

-f, --output_format <output_format>

Output format of the record graph.

Default

pdf

Options

svg | pdf | png

-l, --link_level <link_level>

The maximum link distance to visualize.

Default

2

--label_id

Use id and identifier to label the records.

Default

False

Arguments

OUTPUT_FILE

Required argument

record-visualize-all

Visualize a user's records and their links.

```
workflow_nodes repo record-visualize-all [OPTIONS] OUTPUT_FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-v, --verbose <verbose>

Verbose level to define the amount of print output.

Default

info

Options

error | warning | info | debug

-I, --instance <instance>

Name of a Kadi instance defined in the config file.

-f, --output_format <output_format>

Output format of the record graph.

Default

pdf

Options

svg | pdf | png

-l, --linked_only

Flag indicating whether only records with at least one link should be shown.

Default

False

--label_id

Use id and identifier to label the records.

Default

False

Arguments**OUTPUT_FILE**

Required argument

5.1.9 report

Report tools.

```
workflow_nodes report [OPTIONS] COMMAND [ARGS] ...
```

Options**--version**

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

attachment-report

Add a file as attachment to the report.

```
workflow_nodes report attachment-report [OPTIONS]
```

Options**--version**

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-n, --name <name>

The name of the excel file (must be unique)

-f, --file <file>

Required The file to attach

-s, --section <section>

Section name

Default

Attachments

compile-latex-report

Compile a latex document.

```
workflow_nodes report compile-latex-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --file <file>

Required Name of the Latex file

end-report

Finish a report and generate the PDF.

```
workflow_nodes report end-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-o, --output <output>

Path of the pdf file to generate.

Default

output.pdf

image-report

A program to embed an image into a latex snippet.

```
workflow_nodes report image-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --path <path>

Required Path to the image to display

-c, --caption <caption>

Caption of the figure wrapping this image.

-s, --section <section>

Section title. Inserts no section if not specified.

-w, --imagewidth <imagewidth>

Specifies the width of the images.

Default

0.5

input-report

A program to input a latex file.

```
workflow_nodes report input-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --path <path>

Required Name of the Latex file

math-report

A program to embed a formula into a latex snippet.

```
workflow_nodes report math-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-f, --formula <formula>

Latex code of the formula.

plot-report

A program to embed a plot into a latex snippet.

```
workflow_nodes report plot-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-p, --path <path>

Required Path to the data file to plot

-c, --caption <caption>

Caption of the figure wrapping this image.

-s, --section <section>

Section title. Inserts no section if not specified.

start-report

Initialize a report.

```
workflow_nodes report start-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-t, --title <title>

Report title

Default

Autogenerated Report

-a, --author <author>

Report title

Default

Anonymous author

text-report

A program to embed text into a latex report.

```
workflow_nodes report text-report [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-t, --text <text>

Text to insert

Default

No text specified

-s, --section <section>

Latex Section

5.1.10 simulation

Simulation tools.

```
workflow_nodes simulation [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

mpipace3d

Start a simulation using multiple processors.

```
workflow_nodes simulation mpipace3d [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-s, --specificsolver <specificsolver>

Specify a certain mpipace3D solver

-n, --numofprocessors <numofprocessors>

Required Set the number of processors

-I, --infile <infile>

Required Required to specify the starting values of the simulation embedded Infile

-P, --pathname <pathname>

Required This path specifies the working path where all simulation files will be written to

-f, --force

Force to remove existing outfiles

Default

False

-o, --overwrite <overwrite>

Give a list of key=value pairs separated by ‘|’ for overwriting or appending values in the infile. This feature is useful for simulation series.

-C, --continuing

Continue a simulation starting with the last frame.

Default

False

-R, --respawn <respawn>

Specify a data set as a starting configuration for the simulation. /path/to/simulation.p3simgeo represents the whole simulation data set to be used

-F, --frame <frame>

Frame number to start the simulation for respawn. As a special value ‘end’ can be used for the last available frame of all data files.

-c, --copy

Copy previous frames up to the respawn timestep into the outfiles, in case of a respawn.

Default

False

-a, --append

Append simulation to an existing one

Default

False

-p, --dopreconditioning

Preconditioning from infile should be used after respawn.

Default

False

-d, --dofilling

Filling functions from infile should be used after loading the respawn data.

Default

False

-L, --logfile <logfile>

Specify a file to which the log output data is going to be written to, otherwise stdout/stderr is used.

-M, --msgscript <msgscript>

Specify a script which will receive messages. This script should send the messages given as a parameter to the user.

-m, --msglevel <msglevel>

How many messages should be send. 0: start/stop, 1: all

-i, --info

Print program and system information.

Default

False

-v, --verbose <verbose>

Enable the output (stderr) of some (helpful) log messages, a higher level will create more messages.

-h, --showhelp

print help

Default

False

5.1.11 system

System wrapper tools.

```
workflow_nodes system [OPTIONS] COMMAND [ARGS]...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

awk

Wrapper node for awk.

```
workflow_nodes system awk [OPTIONS] EXPRESSION [FILE]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-v, --assign <assign>

Arguments

EXPRESSION

Required argument

FILE

Optional argument

bc

Wrapper node for bc.

```
workflow_nodes system bc [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-i, --interactive

Force interactive mode.

Default

False

-l, --mathlib

Define the standard math library.

Default

False

-w, --warn

Give warnings for extensions to POSIX bc.

Default

False

-s, --standard

Process exactly the POSIX bc language.

Default

False

-q, --quiet

Do not print the normal GNU bc welcome.

Default

False

Arguments

FILE

Required argument

cat

Wrapper node for cat.

```
workflow_nodes system cat [OPTIONS] FILES...
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

FILES

Required argument(s)

chmod

Wrapper node for basic chmod operations.

```
workflow_nodes system chmod [OPTIONS] FILEPATH
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-u, --usertype <usertype>

The usertype the permission applies to.

Options

u | g | o

-o, --operator <operator>

Required The operator to determine whether to remove, add or set the permission.

Options

- | + | =

-t, --type <permission_type>

Required The type of permission.

Options

r | w | x

Arguments

FILEPATH

Required argument

compress

Wrapper node for compressing files or folders.

```
workflow_nodes system compress [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-c, --compresstarget <compresstarget>

Required Folder or file to be compressed.

-p, --outputpath <outputpath>

Name and path of target folder. Defaults to current folder and name ‘compressedfile’

-t, --compressiontype <compressiontype>

Type of compression

Default

zip

Options

targz|zip

-o, --force_overwrite

Default

False

cp

Wrapper node for cp.

```
workflow_nodes system cp [OPTIONS] FILE1 FILE2
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-d, --recursive

Copies directories recursively.

Default

False

Arguments

FILE1

Required argument

FILE2

Required argument

echo

Wrapper node for echo.

```
workflow_nodes system echo [OPTIONS] MESSAGE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-n, --no-newline

Do not output the trailing newline

Default

False

-e, --enable-backslash-escapes

Enable interpretation of backslash escapes

Default

False

-E, --disable-backslash-escapes

Disable interpretation of backslash escapes

Default

False

Arguments

MESSAGE

Required argument

ls

Wrapper node for ls.

```
workflow_nodes system ls [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--path <path>

Required Path to be listed.

-l, --list

Show details of directory.

Default

False

-a, --all

Show all details.

Default

False

mkdir

Wrapper node for mkdir.

```
workflow_nodes system mkdir [OPTIONS] PATH
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

PATH

Required argument

mv

Wrapper node for mv.

```
workflow_nodes system mv [OPTIONS] SOURCES... DESTINATION
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--force

Force the move command.

Default

False

Arguments

SOURCES

Required argument(s)

DESTINATION

Required argument

paste

Wrapper node for paste.

```
workflow_nodes system paste [OPTIONS] FILE1 FILE2
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

FILE1

Required argument

FILE2

Required argument

rm

Wrapper node for rm.

```
workflow_nodes system rm [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

--recursive

Remove files recursively.

Default

False

Arguments

FILE

Required argument

scp

Copy files using the scp protocol.

```
workflow_nodes system scp [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-h, --hostname <hostname>

Required Hostname

```
-P, --port <port>
    Port

    Default
        22

-u, --username <username>
    Username

-p, --password <password>
    Password

-t, --local <local>
    Required Local path

    Default
        ~

-s, --remote <remote>
    Required Remote path

    Default
        ~

-g, --get
    get / put

    Default
        False

-r, --recursive
    Recursive

    Default
        False
```

sed

Wrapper node for sed.

```
workflow_nodes system sed [OPTIONS] STRING1 STRING2
```

Options

```
--version
    Print the version of this command and exit.

--xmlhelp
    Print the xmlhelp of this command and exit.

-p, --path <path>
    Required Name of the file
```

Arguments

STRING1

Required argument

STRING2

Required argument

sleep

Pause for a specific number of seconds.

```
workflow_nodes system sleep [OPTIONS] NUMBER
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

NUMBER

Required argument

sort

Wrapper node for sort.

```
workflow_nodes system sort [OPTIONS] FILE
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-t, --field-separator <field_separator>

separator of fields

-n, --numeric-sort

compare according to string numerical value

Default

False

-k, --key <key>

sort via a key

Arguments

FILE

Required argument

ssh

Establish a SSH connection and execute a command.

```
workflow_nodes system ssh [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-h, --hostname <hostname>

Required Hostname

-P, --port <port>

Port

Default

22

-u, --username <username>

Username

-p, --password <password>

Password

-c, --command <command>

Command

-b, --blocking

Blocking channel

Default

False

unpack

Wrapper node for unpacking archives.

```
workflow_nodes system unpack [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-c, --unpacktarget <unpacktarget>

Required Archive to be unpacked.

-p, --outputpath <outputpath>

Target directory path. Defaults to a folder in the current working directory using the base name of the archive.

-o, --force_overwrite

Default

False

-d, --delete_compressed_folder

Default

False

5.1.12 wsl

Tools for Windows Subsystem for Linux (WSL).

```
workflow_nodes wsl [OPTIONS] COMMAND [ARGS] ...
```

Options

--version

Print the version of this group and exit.

--commands

Print a list of all commands this group contains and exit.

convert-path

For converting WSL file paths into Windows file paths

```
workflow_nodes wsl convert-path [OPTIONS] PATH
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

Arguments

PATH

Required argument

labview-cli

Wrapper node for LabVIEWCLI on MS Windows.

```
workflow_nodes wsl labview-cli [OPTIONS]
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-o, --operation-name <operation_name>

Name of LabVIEWCLI operation (eg: MassCompile, CloseLabVIEW, RunVI, ...)

-n, --port-number <port_number>

Port on which the remote LabVIEW application is listening

-p, --labview-path <labview_path>

Path of the LabVIEW in which the operation will run

-l, --logfile-path <logfile_path>

Path of the LabVIEWCLI log file.

-c, --no-log-to-console

If set, the output gets logged only to log file (otherwise log file and console)

Default

False

-v, --verbosity <verbosity>

This command line argument is used to control the output being logged. Default is “Default”. Possible values are Minimal, Default, Detailed, Diagnostic

Default

Default

-a, --additional-operation-directory <additional_operation_directory>

Additional directory where LabVIEWCLI will look for additional operation class other than default location

win-shell-run

Run scripts or files using CMD or some other interpreter from within WSL.

```
workflow_nodes wsl win-shell-run [OPTIONS] ARG0
```

Options

--version

Print the version of this command and exit.

--xmlhelp

Print the xmlhelp of this command and exit.

-a, --arguments <arguments>

Arguments to run the shell script with. Separate multiple arguments with spaces

-i, --interpreter <interpreter>

Overwrites the interpreter (default: Path to cmd.exe). Please specify an absolute unix path to any interpreter accepting a runnable file with the option “/C”. It must be reachable from within the WSL shell.

Default

/mnt/c/Windows/System32/cmd.exe

Arguments

ARG0

Required argument

This chapter describes all available nodes and their command line interface (CLI).

RELEASE HISTORY

6.1 0.20.1 (2024-01-26)

- Updated dependencies.

6.2 0.20.0 (2023-10-24)

- Modified `misc run_script` for handling arguments with spaces in them such as filepaths.
- Added a parameter to `plot plot-histo` to print the mean and standard deviation of the calculated distribution.
- Modified the `ssh` environment node for sourcing additional files (e.g. for activating virtual environments) and changing the working directory on the remote machine.
- Added support for Python 3.12.

6.3 0.19.0 (2023-09-08)

- Dropped support for Python 3.7.
- `system unpack` node expands `~` to the user's home directory
- Added `wsl` node `convert_path` to convert WSL paths to the Windows path format.
- Removed the `__version__` attribute in favor of using `importlib.metadata.version("workflow-nodes")`.

6.4 0.18.0 (2023-06-15)

- Added support for Python 3.11.

6.5 0.17.0 (2023-04-21)

- Added `misc` node `compare_number` to compare two numbers.
- Added `misc` node `compare_string` to compare two strings.
- Added `system` wrapper node for `chmod`.
- Removed the helper script to create new workflow wrapper tools based on an existing program.
- Added a `separator` parameter to the `run_script` node.

6.6 0.16.0 (2022-11-04)

- Added `misc` node `random_number` to generate pseudo-random numbers.
- Added `system` wrapper node for `mv`.
- Added `system` wrapper node for `rm`.
- Fixed the visualization nodes within the `repo` subcommand.
- Fixed the `compress` node not working for certain compression types.

6.7 0.15.0 (2022-05-18)

- Added recursive option to `cp` wrapper node to copy directories.
- Added wrapper node for `gmsh`.
- Added wrapper node for `latexmk`.
- Added wrapper node for `meshio convert`.
- Added wrapper node for `tectonic`.
- Added wrapper node for `pbatch`.
- Added wrapper node for `cat`.
- Added wrapper node for `ls`.
- Removed support for Python 3.6.
- Added wrapper node for `sleep`.
- Fixed sourcing bug in environment `ssh` node.

6.8 0.14.0 (2022-03-07)

- Made some requirements optional and added appropriate checks to the corresponding tools.

6.9 0.13.0 (2022-01-17)

- Removed the `click_completion` dependency. Autocompletion is now only supported for bash, fish and zsh.

6.10 0.12.0 (2021-11-24)

- Relaxed required Python version again.
- Update kadi-apy and xmlhelpy dependency.

6.11 0.11.0 (2021-11-12)

- Added option so that `plot-matplotlib` runs with a tokenlist as input.
- Add docs.

6.12 0.10.1 (2021-11-05)

- Bumped to kadi-apy v0.18.0.

6.13 0.10.0 (2021-11-04)

- Adjusted the direction parameters in the record visualization commands for the newest Kadi version.
- Removed the explicit version of each command. All commands now inherit the `workflow-nodes` group's version, which corresponds to the current package version.
- Run-script now supports non-absolute paths and has improved error handling.

6.14 0.9.0 (2021-10-25)

- Added a node for octave.
- Moved matlab node into misc.
- Added mpirun and ssh environment nodes.
- Added nodes for compressing files/folders and unpacking archives.

6.15 0.8.0 (2021-07-16)

- Removed pinning of dependencies to allow for more flexibility once again.

6.16 0.7.1 (2021-07-12)

- Update package dependencies.

6.17 0.7.0 (2021-07-07)

- Add a node for scp.
- Add a node for ssh.
- Add a script to create new workflow wrapper tools based on an existing program.
- Pinned all Python dependencies to ensure reproducible installations.

6.18 0.6.0 (2021-02-02)

- Bumped to kadi-apy 0.12.0.

6.19 0.5.0 (2021-05-10)

- Add matlab wrapper node.
- Add wrapper node for xmllint.
- Add handling of exit code to RunScript node.

6.20 0.4.1 (2021-04-26)

- Add pypi deploy runner.

6.21 0.4.0 (2021-04-22)

- Add autocomplete.
- Add xml_to_kadi converter.

6.22 0.3.0 (2021-02-26)

- Add a node for histograms.
- Add simple smtp node.
- Bumped the kadi-apy dependency to the correct version.
- Adjust record visualization tools.

6.23 0.2.1 (2021-02-03)

- Bumped the kadi-apy dependency to the correct version.

6.24 0.2.0 (2021-02-02)

- Added a tool to run a shell script using CMD or Powershell via the WSL.
- Added a tool to merge tables.
- Added a general file converter tool.
- Added tools to visualize records in a Kadi4Mat instance.
- Added a tool for combining files.
- Added a tool to create QR codes.
- Removed the basic Kadi4Mat integration tools, which are replaced by the CLI provided by the kadi-apy itself.
- Refactored all existing tools to use a single parent command `workflow-nodes`.
- Various other fixes and refactorings.

6.25 0.1.0 (2020-10-16)

- The first few tools for various common use-cases are provided, including tools for converting, plotting and analysing data, for generating reports and for connecting to a Kadi4Mat instance.

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