**synergia\_workflow module**

The synergia\_workflow module provides support for parameterizing simulations, interacting with batch systems and keeping track of simulation runs.

**Python-only Classes**

*class* synergia\_workflow.Options(*name*)

Define a set of command-line options. Hierarchical sets of option may be created with add\_suboptions.

|  |  |
| --- | --- |
| **Parameters:** | **name** – The name for this set of options to appear in the --help output |

The value of each option is available as a data member. The following example prints the (integer) value 4:

from synergia\_workflow import Options

opts = Options("foo")

opts.add("bar", 4, "bar parameter")

print opts.bar

add(*option*, *default\_value*, *doc\_string*, *val\_type=None*, *valid\_values=None*)

Add a new option definition

|  |  |
| --- | --- |
| **Parameters:** | * **option** – the name of the option. Must be a legal Python identifier. * **default\_value** – the default value for the option. If None, val\_type is required. * **val\_type** – optionally specify the value type. Necessary if default value is None. * **valid\_values** – an optional list of valid values. If specified, invalid values will raise an exception. |

add\_suboptions(*suboptions*)

Add a set of suboptions.

|  |  |
| --- | --- |
| **Parameters:** | **suboptions** – An Options object |

get\_name()

Get the name of this set of options

has\_option(*option*)

Returns true if option present.

|  |  |
| --- | --- |
| **Parameters:** | **option** – Name of option. |

options(*include\_suboptions=True*)

Returns a list of options.

|  |  |
| --- | --- |
| **Parameters:** | **include\_suboptions** – whether to include suboptions |

parse\_argv(*argv*)

Parse command-line arguments from argv

rst\_usage()

Print usage message to stdout as a ReST table

usage()

Print usage message to stdout

*class* synergia\_workflow.Job\_manager(*script, opts, extra\_files=None, extra\_dirs=None, argv=None, extra\_opt\_files=None, extra\_opt\_dirs=['lattice\_cache'], standalone=False, subjob=False, subjob\_index=0*)

The main Synergia workflow class.

|  |  |
| --- | --- |
| **Parameters:** | * **script** – the name of the Synergia Python script or executable. * **opts** – an Options object containing the job options. The internally-defined job manager options will be added as a suboption to opts. * **extra\_files** – a list of additional files required to run the job. * **extra\_dirs** – a list of additional directories whose contents are required to run the job. * **argv** – the command-line arguments. Use sys.argv if None. * **extra\_opt\_files** – for internal use. * **extra\_opt\_dirs** – for internal use. * **standalone** – for internal use. * **subjob** – for internal use. * **subjob\_index** – for internal use. |

*class* synergia\_workflow.Override

The Override class provides a way to override default options in an Options object. Data members of an Override instance named override will override default values in the built-in options.

**Built-in Job\_manager options**

| **name** | **type** | **default** | **description** |
| --- | --- | --- | --- |
| account | str | None | Batch system account, default=None |
| createjob | bool | False | Whether to create new job directory, default=False |
| jobdir | str | run | Job directory, default=run |
| multitemplate | str | multijob | Base filename for multijob templates to look for in search path, default=multijob |
| multitemplatepath | str | None | Full path to the base name for multijob templates, default=None |
| numproc | int | 1 | Number of processes, default=1 |
| overwrite | bool | False | Whether to overwrite existing job directory, default=False |
| procspernode | int | 1 | Number of processes per node, default=1 |
| queue | str | None | Batch system queue, default=None |
| resumemultitemplate | str | resumemultijob | Base filename for resume multijob templates to look for in search path, default=resumemultijob |
| resumemultitemplatepath | str | None | Full path to the base name for resume multijob templates, default=None |
| resumetemplate | str | resumejob | Filename for resume job template to look for in search path, default=resumejob |
| resumetemplatepath | str | None | Full path to a resume job template, default=None |
| run | bool | False | Whether to immediately run job, default=False |
| setupsh | str | /usr/local/share/synergia/setup.sh | Path to Synergia2 setup.sh file, default=/usr/local/share/synergia/setup.sh |
| submit | bool | False | Whether to immediately submit job, default=False |
| synergia\_executable | str | synergia | Name or path of synergia executable, default=synergia |
| synergia\_resume\_executable | str | synergia-pyresume | Name or path of synergia resume executable, default=synergia-pyresume |
| template | str | job | Filename for job template to look for in search path, default=job |
| templatepath | str | None | Full path to a job template, default=None |
| walltime | str | None | Limit job to given wall time, default=None |