Wikiprint Book

Title: Command Line Interface (CLI) for WRF4G

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Command Line Interface (CLI) for WRF4G

wrf4g_framework

Usage

wrf4g_framework {start|stop|restart|reload|status}

Synopsis

wrf4g_framework manages WRF4G framework components: GridWay and MySQL (in case it is needed). It loads the framework configuration from `$WRF4G_LOCATION/etc/framework4g.conf`.

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wrf4g_prepare

Usage

wrf4g_prepare [--dry-run] [--reconfigure] [--verbose] [--help]

Synopsis

Given a file (experiment.wrf4g) describing the experiment, prepare it by creating the realization and chunks needed to perform the experiment.

Options

```
 --dry-run        Perform a trial run with no changes made.
--reconfigure    Reconfigure experiment. With this option we can change the start and end date of the experiments
                 and add new physics. Values are taken from a modified experiment.wrf4g.
--verbose        Verbose mode. Explain what is being done
--help           Shows this help
```

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wrf4g_submit

Usage

wrf4g_submit [--dry-run] [--{exp Experiment|rea Realization|frea File|chunk ChunK|nchunk Number_of_chunks|nrea Number_of_realizations}] [--rerun] [--run-just-one][--priority P] [--verbose] [--force] [--tdep afterok | afternotok | afterany] [--help]

Synopsis

Submit an experiment or a realization. If the user doesn't specify an experiment or a realization with the options, the name of the experiment will be retrieved from experiment.wrf4g in case it exists in the current folder.

Options

```
 --version             Show program's version number and exit
-h, --help            Show this help message and exit
-n, --dry-run         Perform a trial run with no changes made
-e name, --exp=name   Name of the experiment to submit
-r name, --rea=name   Name of the realization to submit
-F FILE, --frea=FILE  File containing the name of the realization to submit.
-a, --rerun           Force to run although the realization or experiment
                      has finished
-o, --run-just-one    Run just the first chunk of the first realization.
                      Only for testing purposes.
-C N, --nchunk=N      Run the next N chunks not finished of each realization
-R N, --nrea=N        Run the next N realizations not finished of the
                      experiment
```

```
 -p P, --priority=P    P is the priority of the experiment or realization that is
                       going to be launched (P is an integer between 0 and 20)
 -v, --verbose         Verbose mode. It explains what is being done
 -f, --force           Don't ask the user if he wants to submit an experiment
                       already submitted
 -d TYPE_DEP, --tdep=TYPE_DEP
                       Specify dependencies between Chunks. afterok: The
                       chunk may be scheduled for execution only after jobs
                       jobid have finished without any error.  afternotok: The
                       chunk may be scheduled for execution only after jobs
                       jobid have finished with errors. afterany: The chunk
                       may be scheduled for execution after jobs jobid have
                       finished, with or without errors.
```

---

wrf4g_status

Usage

wrf4g_status [--{exp Experiment|rea Realization}] [--long] [--ncharacters N] [--help]

Synopsis

Print the experiment or realization status.

Options

```
  --version             Show program's version number and exit
 -h, --help            Show this help message and exit
 -e name, --exp=name   Name of the experiment.
 -r name, --rea=name   Name of the realization
 -l, --long            Show a detailed status.
 -n NUMBER_OF_CHARACTERS, --ncharacters=NUMBER_OF_CHARACTERS
                       Print n characters of the Experiment's name
                       (default value is 20 characters)
```

Output field description

Summarized output: Shows realizations' status of each experiment (Default).

```
[user@mycomputer~]$ wrf4g_status
Experiment P   W   R   D   F
test       0   0   0   1   0
uc_phys    0   4   1   0   0
uc_single  1   0   0   0   0
```

- P: Prepared
- W: Waiting
- R: Running
- F: Failed

Long output: Shows a detailed realization status of every experiment

```
[user@mycomputer~]$ wrf4g_status --long
Realization        GW  Stat Chunks Comp.Res   WN         Run.Sta       ext   %
test               2     D  3/3    mycomputer sipc18     Finished       0 100.00
uc_phys__phys1     3     R  1/3    mycomputer sipc18     WRF            - 0.00
uc_phys__phys2     6     W  1/3    -          -          Submitted      - 0.00
```

```
uc_phys__phys3     9     W  1/3    -          -          Submitted      - 0.00
uc_phys__phys4     12    W  1/3    -          -          Submitted      - 0.00
uc_phys__phys5     15    W  1/3    -          -          Submitted      - 0.00
uc_single          -     P  0/3    -          -          Prepared       - 0.00
```

- Realization: Realization name.
- Status: It can take the following values: P(Prepared), S(Submitted), R(Running), F(Failed) and D(Done).
- Chunks [Chunk currently running/Total Chunks]: A realization is split into chunks. Each chunk is sent as a job.
- Computer resource: Computing Resource where the job is running. (It has to be one of the resources listed by wrf4g_resources)
- WN: Computing node where the job is running.
- Run.Sta: Job status in the WN (Downloading data, running ungrib, real, wrf, ...)
- ext: Exit Code. If exit code is different from 0, there has been an error. Error codes are explained in `$WRF4G_LOCATION/lib/bash/wrf4g_exit_codes.sh`
- % : percentage of simulation finished.

---

wrf4g_resources

Usage

wrf4g_resources [-h] [-c delay] [-nfx] [-m job_id] [host_id]

Synopsis

Print information about all the resources configured in framework4g.conf (default)

Options

```
  -h           print this help
 -c delay     refresh host information every delay seconds
 -n           do not print the header
 -f           full format
 -x           xml format
 -m job_id    print hosts matching the requirements of a given job
 host_id      only monitor this host_id, printing also queue information
```

Output field description

```
[user@mycomputer~]$  wrf4g_resources
HID PRIO OS              ARCH   NODES(U/F/T) LRMS              HOSTNAME
0   1    GNU/Linux2.6.32 x86_6         0/1/1 FORK              mycomputer
1   1    GNU/Linux2.6.18 x86_6       88/0/88 PBS               asna_t1
2   1    GNU/Linux2.6.18 x86_6     168/0/168 PBS               asna_b2
```

```
FIELD INFORMATION
 HID          host unique identification assigned by the GridWay system
 PRIO         priority assigned to the host
 OS           operating system
 ARCH         architecture
 NODES(U/F/T) number of slots: U = used by GridWay, F = free, T = total
 LRMS         local resource management system, the jobmanager name
 HOSTNAME     FQDN of this resource

QUEUE FIELD INFORMATION
 QUEUENAME    name of this queue
 SL(F/T)      slots:  F = Free, T = Total
 WALLT        queue wall time
 CPUT         queue cpu time
 COUNT        queue count number
```

```
MAXR         max. running jobs
MAXQ         max. queued jobs
STATUS       queue status
DISPATCH     queue dispatch type
PRIORITY     queue priority
```

wrf4g_priority

Usage

wrf4g_priority [--dry-run] [--{exp Experiment |rea Realization |frea File}] [--priority P] [--verbose] [--help]

Synopsys

Change the priority of an experiment/realization. The priority must be in range [0,20] and default value is 0. When a chunk gets a priority of 20, it becomes urgent. This chunk is dispatched as soon as possible, passing all the scheduling policies.

Options

```
 --version            Show program's version number and exit
-h, --help            Show this help message and exit
-n, --dry-run         Perform a trial run with no changes made
-e name, --exp=name   Name of the experiment
-r name, --rea=name   Name of the realization
-F FILE, --frea=FILE  File containing the name of the realization to change
                      the priority
-v, --verbose         Verbose mode. Explain what is being done
-p PRIORITY, --priority=PRIORITY
                      The priority must be in range [0,20].
```

wrf4g_kill

Usage

wrf4g_kill [--dry-run] [--{exp Experiment |rea Realization|frea File}] [--verbose] [--help]

Synopsys

wrf4g_kill command kill the jobs that belong to an experiment or realization. Additionally, the experiment and realization ckunks, which have not done, will go back to "Prepared" status

Options

```
  --version           Show program's version number and exit
-h, --help            Show this help message and exit
-n, --dry-run         Perform a trial run with no changes made
-e name, --exp=name   Name of the experiment
-r name, --rea=name   Name of the realization
-F FILE, --frea=FILE  File containing the name of the realization
-v, --verbose         Verbose mode. Explain what is being done.
```