

Slurm MGMT Database Interface

The purpose of this document is to describe the various functionalities and outputs of the Slurm job management database.

Creation of database

This is called automatically as part of install.sh – to manually create a db you can use the below

```
python create_mgmt_db.py <path_to_run_folder> [list of realisations]
e.g.
python create_mgmt_db.py ~/Documents/scratch/test_18p5/ test123 test_realisation1
```

Updating entries in database

Uses the same path name as used to create the db, rather than the absolute path of the db.

Can only progress the status, aka must move in a linear fashion. If a step fails it should advance to failed and a new entry created.

```
usage: update_mgmt_db.py [-h] [-r RUN_NAME] [-j JOB] [-e ERROR]
                        run_folder {EMOD3D,post_EMOD3D,HF,BB,IM_calculation}
                        {created,in-queue,running,completed,failed}

positional arguments:
  run_folder            folder to the collection of runs on Kupe
                        {EMOD3D,post_EMOD3D,HF,BB,IM_calculation}
                        {created,in-queue,running,completed,failed}

optional arguments:
  -h, --help            show this help message and exit
  -r RUN_NAME, --run_name RUN_NAME
                        name of run to be updated
  -j JOB, --job JOB     Job number on supercomputer
  -e ERROR, --error ERROR
                        text notes about why the run failed
e.g.
python update_mgmt_db.py ~/Documents/scratch/test_18p5/ HF in-queue --j 3 --run_name test123
python update_mgmt_db.py ~/Documents/scratch/test_18p5/ HF running --j 3
python update_mgmt_db.py ~/Documents/scratch/test_18p5/ HF failed --j 3 --error 'Hit wall clock limit 5000'
```

Querying status of database

Prints the status of the collection of runs.

```

query_mgmt_db.py [-h] [--error] run_folder [run_name]
positional arguments:
  run_folder  folder to the collection of runs on Kupe
  run_name    name of run to be queried
optional arguments:
  -h, --help  show this help message and exit
  --error, -e Optionally add an error string to the database

```

e.g.

```
slurm_gm_workflow/scripts/management$ python query_mgmt_db.py ~/Documents/scratch/test_18p5/
```

run_name	process	status	last_modified
test123	BB	in-queue	2018-05-16 03:53:55
test123	IM_calculation	in-queue	2018-05-16 03:53:55
test123	post_EMOD3D	running	2018-05-16 04:30:01
test123	EMOD3D	completed	2018-05-16 03:58:15
test123	HF	failed	2018-05-16 22:56:41
test_realiastion1	EMOD3D	created	2018-05-16 03:34:26
test_realiastion1	post_EMOD3D	created	2018-05-16 03:34:26
test_realiastion1	HF	created	2018-05-16 03:34:26
test_realiastion1	BB	created	2018-05-16 03:34:26
test_realiastion1	IM_calculation	created	2018-05-16 03:34:26

```
slurm_gm_workflow/scripts/management$ python query_mgmt_db.py ~/Documents/scratch/test_18p5/ test123
```

run_name	process	status	last_modified
test123	BB	in-queue	2018-05-16 03:53:55
test123	IM_calculation	in-queue	2018-05-16 03:53:55
test123	post_EMOD3D	running	2018-05-16 04:30:01
test123	EMOD3D	completed	2018-05-16 03:58:15
test123	HF	failed	2018-05-16 22:56:41

```
slurm_gm_workflow/scripts/management$ python query_mgmt_db.py ~/Documents/scratch/test_18p5/ --error
```

Run_name: test123

Process: EMOD3D

Status: completed

Last_Modified: 2018-05-16 03:58:15

Error: Demo error

Run_name: test123

Process: HF

Status: failed

Last_Modified: 2018-05-16 22:56:41

Error: hit wall clock limit 5000

Run_name: Kelly_HYP02-03_S1264

Process: EMOD3D

Status: failed

Last_Modified: 2018-05-18 02:30:03

Error: Task removed from squeue without completion

Inserting new tasks into database

Insert a new entry into the database with the status created for the given run_name

```
python insert_mgmt_db.py ~/Documents/scratch/test_18p5/ run_name {EMOD3D,post_EMOD3D,HF,BB,IM_calculation}
e.g.
python insert_mgmt_db.py ~/Documents/scratch/test_18p5/ test123 EMOD3D
```

Querying Slurm

Checking the queue to see the progress of a task.

```
python slurm_query_status.py run_folder [poll-interval]
e.g.

python slurm_query_status.py ~/Documents/scratch/test_18p5/
not updating status (running) of 'post_EMOD3D' on 'test123'
not updating status (in-queue) of 'BB' on 'test123'
updating 'IM_calculation' on 'test123' to the status of 'running' from 'in-queue'
Task 'EMOD3D' on 'test_realiastion1' not found on squeue; changing status to 'failed'

python slurm_query_status.py ~/Documents/scratch/test_18p5/
not updating status (running) of 'post_EMOD3D' on 'test123' (2183326)
not updating status (in-queue) of 'BB' on 'test123' (2183255)
not updating status (running) of 'IM_calculation' on 'test123' (2183303)
```