

TOTCSI

Configuration for Simulation

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Contents

1 How to start configuration

Use the following lines at the beginning of your configuration file in order to import configuration class with all default options.

```
from totcsi.totcsi_configuration_logic import *
config = TOTCSIConfiguration()
```

2 Parameter explanations

2.1 General parameters

2.1.1 config.task_type

Type of task to be run

Values:

- "Reconstruction"
- "Simulation"

```
# Default:
config.task_type = "Reconstruction"
```

2.1.2 config.cmssw_dir

CMSSW location (full path), beginning with "/"

Has to be given by user!

```
# Example:
config.cmssw_dir = "/afs/cern.ch/exp/totem/scratch... \
...Release/raw_data_reco/rev5679/CMSSW_4_2_4"
```

2.1.3 config.map_output

Output directory for files (logs, results, configurations) for map phase.

Can be both CASTOR, EOS and AFS path.

It has to be set by user!

```
# Example:
config.map_output = "/castor/cern.ch/user/.../MapOutputFolder"
```

2.1.4 config.reduce_output

Output directory for files (logs, results, configurations) for reduce phase.

Can be both CASTOR, EOS and AFS path.

It has to be set by user!

```
# Example:
config.reduce_output = "/castor/cern.ch/user/.../ReduceOutputFolder"
```

2.1.5 `config.save_using_pool`

Flag saying whether output should be saved first to pool and then copied to output location (might help with errors regarding CASTOR saving scripts) or directly to output location.

Values:

- True - save with a use of pool (Default)
- False - try to directly save to output location

```
# Default:  
config.save_using_pool = True
```

2.2 TOTCSI workspace parameters

2.2.1 `config.workspace.create`

Flag specifying whether workspace directories should be created if they do not exist.

```
# Default:  
config.workspace.create = False
```

2.2.2 `config.workspace.map_split_dir`

Folder with map splitted configurations

Relative to `root_dir`

It will contain the map configurations generated by TOTCSI.

```
# Default:  
config.workspace.map_split_dir = "map_split"
```

2.2.3 `config.workspace.reduce_split_dir`

Folder with reduce splitted configurations

Relative to `root_dir`

It will contain the reduce configurations generated by TOTCSI.

```
# Default:  
config.workspace.reduce_split_dir = "reduce_split"
```

2.2.4 `config.workspace.root_dir`

Base directory for all configuration files of TOTCSI

Can be both relative and full path.

```
# Default:  
config.workspace.root_dir = "."
```

2.2.5 config.workspace.shell_template

Path to shell template. It is filled by TOTCSI and then submitted to computing cluster as job.

```
# Default:
config.workspace.shell_template = "totcsi/templates/job_template.sh"
```

Default template looks like:

```
#!/bin/sh
export RFIO_USE_CASTOR_V2=YES
export STAGE_HOST={{stage_host}}
export STAGE_SVCCLASS=default
export SCRAM_ARCH=slc5_amd64_gcc434
source /afs/cern.ch/cms/cmsset_default.sh
cd {{CMSSW_path}}
eval `scram runtime -sh`
cd -
{{rm_type}} {{file_to_remove}}
{{mkdir_type}} {{dir_to_create}}
cmsRun {{python_conf_file}}
{{optional_copy_command}}
```

2.3 Input parameters

2.3.1 config.input_config.map_path

Path to map template (production)

Has to be given by user!

```
# Usage:
config.input_config.map_path = "/afs/.../MapItTemplate.py"
```

2.3.2 config.input_config.reduce_path

Path to reduce template (validation)

Has to be given by user!

```
# Usage:
config.input_config.reduce_path = "/afs/.../ReduceItTemplate.py"
```

2.4 Simulation parameters

2.4.1 config.simulation.number_of_events

Number of events to be generated (integer number) per job

It has to be set by user!

```
# Example:
config.simulation.number_of_events = 1500
```

2.4.2 `config.simulation.number_of_jobs`

Number of jobs generating the simulation data (integer number)

Each job generates number of events specified by `config.simulation.number_of_events`

It has to be set by user!

```
# Example:  
config.simulation.number_of_jobs = 10
```

2.5 bsub parameters

2.5.1 Default bsub parameters for map and reduce

2.5.1.1 `config.bsub.pool_size`

Pool size for the job (integer)

```
# Default:  
config.bsub.pool_size = 30000
```

2.5.1.2 `config.bsub.swap_size`

Swap size for the job (integer)

```
# Default:  
config.bsub.swap_size = 2000
```

2.5.1.3 `config.bsub.queue`

Type of the queue to be used

Values:

- 1nh
- 8nh
- 1nd
- 2nd
- 1nw

```
# Default:  
config.bsub.queue = "1nh"
```

2.5.2 bsub parameters for map phase

2.5.2.1 `config.bsub_map.pool_size`

Pool size for the job (integer) for map phase (overrides `config.bsub` parameter)

```
# Default:  
config.bsub_map.pool_size = 30000
```

2.5.2.2 `config.bsub_map.swap_size`

Swap size for the job (integer) for map phase (overrides `config.bsub` parameter)

```
# Default:  
config.bsub_map.swap_size = 2000
```

2.5.2.3 `config.bsub_map.queue`

Type of the queue to be used for map phase (overrides `config.bsub` parameter)

Values:

- 1nh
- 8nh
- 1nd
- 2nd
- 1nw

```
# Default:  
config.bsub_map.queue = "1nh"
```

2.5.3 `bsub` parameters for reduce phase

2.5.3.1 `config.bsub_reduce.pool_size`

Pool size for the job (integer) for reduce phase (overrides `config.bsub` parameter)

```
# Default:  
config.bsub_reduce.pool_size = 30000
```

2.5.3.2 `config.bsub_reduce.swap_size`

Swap size for the job (integer) for reduce phase (overrides `config.bsub` parameter)

```
# Default:  
config.bsub_reduce.swap_size = 2000
```

2.5.3.3 `config.bsub_reduce.queue`

Type of the queue to be used for reduce phase (overrides `config.bsub` parameter)

Values:

- 1nh
- 8nh
- 1nd
- 2nd
- 1nw

```
# Default:  
config.bsub_reduce.queue = "1nh"
```

3 Configuration example

```
from totcsi.totcsi_configuration_logic import *ex

config = TOTCSIConfiguration()

config.task_type = "Simulation"
config.cmssw_dir = "/afs/cern.ch/i/ijurkows/cmssw/CMSSW_4_2_4"

config.map_output = "/castor/cern.ch/user/i/ijurkows/output"

config.save_using_pool = False #save right away

#setting the splitter workspace
config.workspace.create = True
config.workspace.root_dir = "/afs/cern.ch/i/ijurkows/private/MyTOTCSIWorkspace"
config.workspace.map_split_dir = "SplittedMaps"
config.workspace.reduce_split_dir = "SplittedReduces"

config.input_config.map_path = "/afs/cern.ch/user/i/ijurkows/public/\
    configurations_for_map/RPElasticbeta90energy3p5TeV2200ctober2011a3_cfg.py"
config.input_config.reduce_path = "/afs/cern.ch/user/i/ijurkows/public/\
    configurations_for_reduce/valRPElasticbeta90energy3p5TeV2200ctober2011a3_cfg.py"

config.bsub.pool_size = 20000
config.bsub_map.pool_size = 26000

config.simulation.number_of_events = 2000
config.simulation.number_of_jobs = 100
```