Advanced Configuration

Optional environment variables

WRF4G uses the following environmental variables:

- **WRF4G_DIR:** Directory for local configuration. If it is undefined, `$WRF4G_DIR` will be `~/.wrf4g`.
- **EDITOR:** Select the editor to configure configuration files. `vi` editor is used by default.

Logging configuration

Edit by typing `wrf4g conf logger`.

Configuration file for WRF4G logging. For more information about logging configuration directives, you should check out ?python logging configuration. Additionally, `%(WRF4G_DIR)s` variable indicates where WRF4G configuration resides.

```
[loggers]
keys=root,drm4gIm,drm4gEm,drm4gTm,drm4gConfigure,drm4gManager,drm4gCommunicator

[handlers]
keys=handDrm4gIm,handDrm4gEm,handDrm4gTm,handConfigure,handManager,handCommunicator

[formatters]
keys=form01

[logger_root]
handlers=

[logger_drm4gIm]
handlers=handDrm4gIm
level=INFO
qualname=drm4g.core.im_mad

[logger_drm4gEm]
handlers=handDrm4gEm
level=INFO
qualname=drm4g.core.em_mad

[logger_drm4gTm]
handlers=handDrm4gTm
level=INFO
qualname=drm4g.core.tm_mad

[logger_drm4gConfigure]
handlers=handConfigure
level=INFO
qualname=drm4g.core.configure

[logger_drm4gManager]
handlers=handManager
level=INFO
qualname=drm4g.managers

[logger_drm4gCommunicator]
handlers=handCommunicator
level=INFO
qualname=drm4g.communicators

[handler_handDrm4gIm]
class=handlers.RotatingFileHandler
```

```
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_im.log','w',5000000,4)

[handler_handDrm4gEm]
class=handlers.RotatingFileHandler
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_em.log','w',5000000,4)

[handler_handDrm4gTm]
class=handlers.RotatingFileHandler
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_tm.log','w',5000000,4)

[handler_handConfigure]
class=handlers.RotatingFileHandler
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_configure.log','w',5000000,4)

[handler_handManager]
class=handlers.RotatingFileHandler
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_manager.log','w',5000000,4)

[handler_handCommunicator]
class=handlers.RotatingFileHandler
level=INFO
formatter=form01
args=('%(WRF4G_DIR)s/var/log/drm4g_communicator.log','w',5000000,4)

[formatter_form01]
format=%(asctime)s %(levelname)-9s %(name)-8s %(message)s
```

Database configuration access

Edit by typing `wrf4g conf database`.

```
URL = mysql+pymysql://<user>:<password>@<host>:<port>/<dbname>
```

Default configuration :

```
[DEFAULT]
URL = mysql+pymysql://wrf4guser:Meteo2011@localhost:25000/WRF4GDB
```

Daemon configuration

Edit by typing `wrf4g conf daemon`.

General configuration:

- **GWD_PORT:** Daemon port.(Default value is 6725)
- **MAX_NUMBER_OF_CLIENTS:** Number of connections. (Default value is 50)

Size of pools:

- **NUMBER_OF_ARRAYS:** The number of array-jobs that will be handled by the scheduler. (Default value is 200000)
- **NUMBER_OF_JOBS:** The number of jobs that will be handled by the scheduler. (Default value is 200000)
- **NUMBER_OF_HOSTS:** The number of hosts that will be handled by the scheduler. (Default value is 1000)
- **NUMBER_OF_USERS:** The number of different users. (Default value is 30)

Intervals:

- **SCHEDULING_INTERVAL:** Period between two scheduling actions. (Default is 16 seconds)
- **DISCOVERY_INTERVAL:** How often the information manager searches for new hosts. (Default is 15 seconds)
- **MONITORING_INTERVAL:** How often the information manager updates the information of each resource. (Default is 20 seconds)
- **POLL_INTERVAL:** How often the underlying grid middleware is query about job state. (Default is 1000 seconds)

Scheduler configuration

Edit by typing `wrf4g conf sched`.

General configuration:

- **DISPATCH_CHUNK:** The maximum number of jobs that will be dispatched each scheduling action. Default value is 100, 0 dispatch as many jobs as possible.
- **MAX_RUNNING_USER:** The maximum number of simultaneous running jobs per user. Default value is 0, 0 to dispatch as many jobs as possible.

Job priority configuration. Pending jobs are prioritize according four policies:

  Fixed Priority (FP) Policy. Assign a fixed priority to each job (FP range [0,19]):
  - **FP_WEIGHT:** Weight for the policy. Default is 1 (real numbers allowed).
  - **FP_USER[<username>]:** Priority for jobs owned by <username>. Use the special username DEFAULT to set default priorities.
  - **FP_GROUP[<groupname>]:** Priority for jobs owned by users in group <groupname>.
- Share (SH) Policy. Allows to establish a dispatch ratio among users. It tracks the jobs submitted by each user so it targets the defined ratio:
  - **SH_WEIGHT:** Weight for the policy. Default is 1 (real numbers allowed).
  - **SH_USER[<username>]:** Share for jobs owned by <username>. Use the special username DEFAULT to set default shares.
  - **SH_WINDOW_DEPTH:** Number of intervals (windows) to "remember" each user dispatching history. The submissions of each window are exponentially "forgotten". Default is 5, and the maximum value is 10.
  - **SH_WINDOW_SIZE:** The size of each interval in days. Default is 1, real numbers allowed.
- Waiting-time (WT) Policy. The priority of a job is increased linearly with the waiting time to prevent job starvation:
  - **WT_WEIGHT:** Weight for the policy. Default is 1 (real numbers allowed)
- Deadline (DL) Policy. The priority of a job is increased exponentially as its deadline approaches:
  - **DL_WEIGHT:** Weight for the policy. Default is 1 (real numbers allowed)
  - **DL_HALF:** Number of remaining days when the job should get half of the maximum priority. Default is 1 (real numbers allowed).