

## resources.wrf4g file

After configuring an experiment in `experiment.wrf4g`, you can choose the running environment that you want (data repositories, number of cores to use, requirements that Computing Resources (CR) must carry out,...). This configuration is done in `resources.wrf4g`.

If `resources.wrf4g` file is not present in the directory where the experiment is prepared, the system will use the default one, located in `$WRF4G_LOCATION/etc/`.

```
WRF4G_VERSION="1.0beta"
WRF_VERSION="3.1.1_r832INTEL_OMPI"
WRF4G_BASEPATH="$WRF4G_LOCATION/repository/output"
WRF4G_DOMAINPATH="$WRF4G_LOCATION/repository/domains"
WRF4G_INPUT="$WRF4G_LOCATION/repository/input"
WRF4G_APPS="$WRF4G_LOCATION/repository/apps"
NP=8
REQUIREMENTS = 'HOSTNAME = "mycomputer"'
```

The following is a complete list of the available options:

### WRF4G\_VERSION

WRF4G version to use. A file `WRF4G-[WRF4G_VERSION].tar.gz` must exist under `$WRF4G_LOCATION/etc/templates`.

### WRF\_VERSION

WRFbin version to use. A file `WRFbin-[WRF_VERSION].tar.gz` must exist under `$WRF4G_APPS`.

### WRF4G\_BASEPATH

Under this path one must find the following hierarchy to find the domain files and to save the `output/restart/realout` data

```
WRF4G_BASEPATH/
+-- domains
`-- experiments
    |-- [experiment_name]
        |-- [realization_name]
            +-- output
            +-- restart
            |   |-- wrfst_d01_1990-01-01_12:00:00
            |-- realout
```

This path can be local or remote. Local paths look like `/path/to/base/path` or `file:///path/to/base/path`. Additionally, the following protocols are supported (in general, any protocol supported by `vcp`) `GSIFTP` and `RSYNC`.

### WRF4G\_INPUT

This path can be used in `wrf.input` to set the `global_path` to access the input data. It supports the same access protocols as `WRF4G_BASEPATH`.

### WRF4G\_APPS

This is the path for the application binaries. Here you must find the files `WRF4G-[WRF4G_VERSION].tar.gz` and `WRFbin-[WRF_VERSION].tar.gz`. It supports the same access protocols as `WRF4G_BASEPATH`.

### NP

Number of processors requested in a parallel job. Note that it has to be enough resources to run. For example, if we only configure 1 processor (`NODECOUNT=1`) of a computer in `framework4g.conf`, `WRF4G` can not submit an experiment demanding `NP=2`.

If you are going to use **PBS/Torque** or **SLURM** resources, it is also highly recommendable to use **PPN** variable in order to indicate the number of processors available per node. For example, `NP = 4` and `REQUIREMENTS = 'PPN = 4'` which means 4 processors on one node

### REQUIREMENTS

Requirements asked to the CRs where the experiment is going to run (for more information see [advanced configuration](#)). For example, `REQUIREMENTS = 'HOSTNAME = "mycomputer"'`.

### ENVIRONMENT

Experiment environment variables are configuration options for the jobs (for more information see [advanced configuration](#)). For example, `ENVIRONMENT = 'WALLTIME = 01:00:00'` (one hour of max walltime).

## Running environment

In order to use **WRF4G** on Grid resources or via `ssh` `WRF4G_BASEPATH`, `WRF4G_DOMAINPATH`, `WRF4G_INPUT` and `WRF4G_APPS` must be updated. New supported URL syntaxes will be:

- On Grid resources

```
gsiftp://host[:port]/file
```

- On resources via `ssh`

```
rsync://user@host[:port]/file
```

If you are going to use remote paths via `rsync`, they have to be accessed without password.

The examples below show two possible `experiment.wrf4g` files to use WRF4G on different environments:

- Grid environments

```
WRF4G_VERSION="1.0beta"
WRF_VERSION="3.1.1_r832INTEL_OMPI"
WRF4G_BASEPATH="gsiftp://ui01.macc.unican.es/home/user/WRF4G/repository/output"
WRF4G_DOMAINPATH="gsiftp://ui01.macc.unican.es/home/user/WRF4G/repository/domains"
WRF4G_INPUT="gsiftp://ui01.macc.unican.es/home/user/WRF4G/repository/input"
WRF4G_APPS="gsiftp://ui01.macc.unican.es/home/user/WRF4G/repository/apps"
NP=1
REQUIREMENTS = 'HOSTNAME = "ce01.macc.unican.es"'
```

- SSH environments

```
WRF4G_VERSION="1.0beta"
WRF_VERSION="3.1.1_r832INTEL_OMPI"
WRF4G_BASEPATH="rsync://user@mycomputer/home/user/WRF4G/repository/output"
WRF4G_DOMAINPATH="rsync://user@mycomputer/home/user/WRF4G/repository/domains"
WRF4G_INPUT="rsync://user@mycomputer/home/user/WRF4G/repository/input"
WRF4G_APPS="rsync://user@mycomputer/home/user/WRF4G/repository/apps"
NP=1
REQUIREMENTS = 'HOSTNAME = "meteol.macc.unican.es"'
```